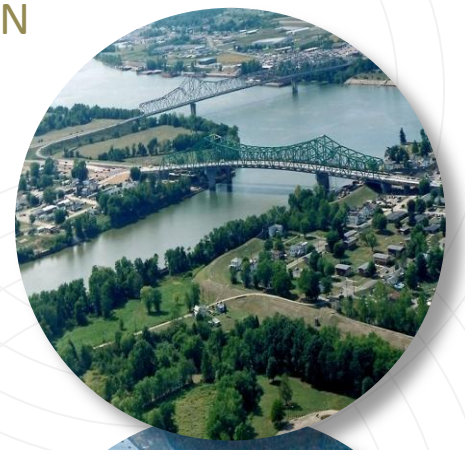
WEST VIRGINIA PUBLIC PORT AUTHORITY

STATEWIDE STRATEGIC PORT MASTER PLAN



PHASE I: STATEWIDE STRATEGIC PLAN

FINAL REPORT

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West Virginia Public Port Authority

Vision

A thriving state economy supported by a successful intermodal transportation system throughout West Virginia.

Mission

To foster and sustain economic prosperity in the state through continued enhancement of its transportation assets and services.

Goals

Economic Prosperity – Stimulate business and employment opportunities in the state for the benefit of its citizens.

Efficient, Competitive Transportation Network – Seamlessly integrate the state's transportation modes (ports, rail, highway and aviation) to improve freight and passenger mobility.

Public-Private Collaboration – Work in concert with private industry and all levels of government to advance economic opportunities in West Virginia.

Service Excellence and Stewardship - Balance the enhancement of the state's intermodal transportation system with community and environmental stewardship.

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EXECUTIVE SUMMARY

Emerging global economies, shifting manufacturing centers, advancement of transportation technologies and shifting supply chain flows are reshaping North America's freight transportation environment. Traditional inland transportation services are being restructured to integrate landside connections and transfer freight collection and distribution functions to inland terminals. At the heart of the U.S. East Coast transportation network, West Virginia has the opportunity to offer shippers and carriers landside logistics operations and facilities to efficiently transfer cargo to inland North American destinations.

To take advantage of this potential and the opportunities resulting from the future terminals in Prichard, WV and Chambersburg, Pa., the West Virginia Public Port Authority (WVPPA) commissioned a statewide freight transportation study. The study is intended to assist the WVPPA proactively plan for future growth of the state's multi-modal system by integrating transportation initiatives into policy, planning, and investment strategies. The study identified the state's existing freight transportation infrastructure, analyzed market conditions, and evaluated business opportunities for successful freight logistics services, specifically for four selected regions within the state. Upon conclusion, strategic recommendations and action plans were identified on which the WVPPA may focus its efforts over the next 20 years. The results of the study are contained in this Strategic Statewide Plan report, which consists of six sections: Trade & Logistics Trends, West Virginia Freight Transportation System, Regional Multimodal Freight Opportunities, Outreach Program, Strategic Assessment, and Recommended Strategies.

TRADE & LOGISTICS TRENDS

West Virginia's freight transportation environment is affected by global, national and regional trade and logistics trends.

GLOBAL AND NATIONAL ECONOMIC AND TRADE TRENDS

The North American economy was severely affected by the 2008-2010 recession; however, trade is expected to return to pre-recession levels in 2012. Forecasts anticipate positive trade growth from 2012 onwards. Much of this trade is represented by maritime container traffic, which has become the dominant shipping mode for goods manufacturing in East Asia destined for North America. In response, shipping companies are increasing ship sizes to larger, post-Panamax vessels and transporting more goods to hub port centers as a means to achieve economies of scale.

The Panama Canal expansion, slated for completion in 2014, will allow the passage of these post-Panamax vessels to directly serve East Coast ports. This potential shift in supply chain flows could produce opportunities for West Virginia, as increasing container traffic and capacity constraints require East Coast seaports to route cargo inland for consolidation and further processing.

Railroads have assumed a significant role in transporting containers from East Coast ports to inland markets over the past decade. Various developments have aided in the increase in intermodal rail service such as the benefits of short-haul economics, new or planned rail corridors that increase capacity and improve transit times, hub and spoke operating models, truck driver shortages and increased energy costs. Consequently, new and existing rail corridors in West Virginia have the potential to cost-effectively support container train service.

Another national initiative that impacts West Virginia's freight transportation system is the Marine Highway Program established and championed by the U.S. Maritime Administration. It seeks to

utilize key waterways as extensions of the existing surface transportation system. Not limited by highway weight restrictions or rail clearance limitations, the waterway system can be more cost-efficient than other modes for moving cargo (especially heavy or hazardous materials). M-70 is an identified corridor passing through West Virginia using the Ohio River.

ECONOMIC AND TRADE TRENDS IN THE STATE AND REGION

West Virginia's economy experienced substantial growth from 2006 to 2010. The state's GDP for all industries rose 16.8 percent outpacing national growth. The transportation and warehousing industry grew modestly for both the U.S. and West Virginia as seen in Table ES-1.

TABLE ES-1: GDP: U.S. AND WEST VIRGINIA COMPARISON 2006-2010 (IN $MILLIONS)

United States					
	2006	2007	2008	2009	2010
All Industries	13,310,937	13,969,323	14,270,462	14,014,849	14,551,782
Transportation & Warehousing	395,480	405,412	418,738	389,498	406,520
West Virginia					
All Industries	55,334	57,001	59,039	61,043	64,642
Transportation & Warehousing	1,796	1,819	1,967	1,856	1,929

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

West Virginia's employment statistics in the transportation and warehousing industry mirrored the U.S. from 2006 to 2009, showing an overall decline due to the turbulent economy as indicated in Table ES-2.

TABLE ES-2: TOTAL FULL AND PART-TIME EMPLOYMENT: U.S. AND WEST VIRGINIA COMPARISON 2006-2009

United States				
	2006	2007	2008	2009
All Industries	176,124,600	179,899,700	179,610,200	173,809,200
Transportation & Warehousing	5,759,900	5,948,900	5,852,600	5,499,300
West Virginia				
All Industries	906,983	920,610	924,591	910,416
Transportation & Warehousing	26,686	26,965	26,452	24,794

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

Commodity flows in West Virginia are dominated by coal and petroleum products. In 2008, the state handled 74 million tons of freight with a value of $4.6 billion. Coal accounted for 77% of total tonnage and petroleum products were second at 10%. The river system is a vital component of the state's transportation network as it was used to haul 61% of the state's total tonnage.

WEST VIRGINIA FREIGHT TRANSPORTATION SYSTEM

West Virginia supports 555 miles of interstate roadways, 2,401 miles of active rail track and 682 miles of navigable waterways, giving it a solid foundation for multimodal access and freight movements.

West Virginia's highway network consists of six Interstate highways and twenty U.S. highways giving the state access to major metropolitan areas within a day's drive. Two Class I railroads and eleven short line railroads comprise the state's rail network. Both modes of transportation see less activity than neighboring states, but as traffic continues to grow towards capacity, alternative

routes through West Virginia could be utilized. The state's navigable waterways are comprised of four rivers, thirteen navigation locks and more than two hundred public and private docks that facilitate the movement of bulk commodities.

The state created the WVPPA to champion the development of intermodalism by combining all modes of the state's transportation network to maximize the state's economic advantages. The WVPPA created five local port districts to assist in carrying out its mission. These port districts are located in regions where there is multimodal access and are listed below:

- Buffalo-Putnam Port District
- Kanawha Valley Local Port Authority District
- Weirton Area Port Authority
- Jackson County Port Authority District
- Cabell/Wayne Port District

Multimodal Comparison

Transit time and transportation costs are important factors in determining the mode of transport that cargo will flow through West Virginia. A comparison of travel distances, transit times and costs was provided between the three modes of transportation (truck, rail and barge) for different freight journeys between four West Virginia origins and five interstate destinations.

- Travel distances: Overall barge distances were 1.5 to 2 times higher for each route than truck or rail.
- Transit times: Truck and intermodal rail are very competitive and are considerably faster than barge.
- Operational costs: Due to economies of scale, barging freight provides the lowest cost per ton.

Competitive Environment

The feasibility of a new inland port, intermodal terminal or logistics facility in West Virginia could be determined by its competitive landscape. The following are major facilities (active or proposed) that could compete with a logistics development in West Virginia:

- Virginia Inland Port – Front Royal, VA
- CSXT Intermodal Terminal – Chambersburg, PA
- CSXT Northwest Ohio Intermodal Terminal – North Baltimore, OH
- NS Roanoke Region Intermodal Facility – Roanoke, VA
- NS Franklin County Regional Intermodal Facility – Greencastle, PA
- South Point Industrial Park – South Point, OH
- Columbiana County Port Authority – East Liverpool, OH
- Port of Pittsburgh – Pittsburgh, PA

Regional Multimodal Freight Opportunities

The opportunity for developing regional multimodal freight facilities was evaluated by several criteria such as physical characteristics and existing infrastructure. Four regions were identified as strategic focal points for potential site development. The regional areas are:

- Huntington/Prichard/U.S. Highway 35 Corridor
- Martinsburg
- Weirton
- Clarksburg

HUNTINGTON/PRICHARD/U.S. HIGHWAY 35 CORRIDOR

Huntington is located in the southwestern part of the state with access to multiple modes of transportation including the Ohio River, Interstate 64, two Class I railroads and a commercial airport. Prichard is located 20 miles south of Huntington and is currently being developed into an intermodal terminal initially serving rail and truck. The U.S. Highway 35 Corridor runs north/south from Teays Valley on Interstate 64 to Point Pleasant. It parallels the Kanawha River, a navigable river that is a tributary of the Ohio River, and a Class I railroad.

Forty-three commercial sites were identified in this region for potential multimodal freight opportunities. The majority of these sites are located within a forty mile radius of Huntington with twelve sites (28%) having direct access to two modes of transportation.

In 2008 Huntington's truck movements[1] totaled 39 million tons classified by the following major cargo types:

- 42% dry bulk products (non-metallic minerals, clay, concrete, glass, stone)
- 31% secondary traffic (warehouse)
- 22% break-bulk products (rubber, miscellaneous products, pulp, paper, allied products)

In the same year, Prichard's truck movements totaled 40 million tons classified by the following major cargo types:

- 44% dry bulk products (non-metallic minerals, clay, concrete, glass, stone)
- 29% secondary traffic (warehouse)
- 23% break-bulk products (pulp, paper, allied, lumber and forest products)

MARTINSBURG

Martinsburg is located in the eastern panhandle of West Virginia with proximity to Washington D.C. and Baltimore, MD. Martinsburg has access to multiple modes of transportation including a commercial airport, two Class I railroads and Interstate-81.

Twenty-seven commercial sites were identified in this region for potential multimodal freight opportunities. All of the identified sites are located within a fifteen mile radius of Martinsburg, with fourteen (52%) having direct access to two modes of transportation.
Martinsburg's truck movements in 2008 totaled 156 million tons classified by the following major cargo types:

- 40% dry bulk products (non-metallic minerals, clay, concrete, glass, stone)
- 32% secondary traffic (warehouse)
- 16% break-bulk products (wood and lumber products, printed matter)

WEIRTON

Weirton is located in the northern panhandle of West Virginia with proximity to Pittsburgh, PA. Weirton has access to multiple modes of transportation including the Ohio River, a commercial airport in Pittsburgh and U.S. Highway 22.

Sixteen commercial sites were identified in this region for potential multimodal freight opportunities. All of the identified sites are located within a fifteen mile radius of Weirton, with six (38%) having direct access to three modes of transportation.

[1] Freight movements for each region were analyzed using a 100-mile radius for the catchment area.

In 2008 Martinsburg's truck movements totaled 168 million tons classified by the following major cargo types:

- 41% dry bulk products (non-metallic minerals, clay, concrete, glass, stone)
- 35% secondary traffic (warehouse)
- 15% break-bulk products (primary metal products)

CLARKSBURG

Clarksburg is located in the north central region of West Virginia. Clarksburg has access to multiple modes of transportation including Interstate-79, a commercial airport and one Class I railroad.

Twenty-five commercial sites were identified in this region for potential multimodal freight opportunities. The majority of the identified sites are located within a ten mile radius of Clarksburg, with nine (36%) having direct access to two modes of transportation.

In 2008 Clarksburg's truck movements totaled 23 million tons classified by the following major cargo types:

- 50% dry bulk products (non-metallic minerals, clay, concrete, glass, stone)
- 28% secondary traffic (warehouse)
- 15% break-bulk products (wood and lumber products)

OUTREACH PROGRAM

The Outreach Program consisted of initial stakeholder conferences, regional meetings and a shipper survey. Interviews were conducted by the project team with key stakeholders in each region to contribute to the study by identifying opportunities for each region.

The regional meetings were held in Martinsburg, Weirton, Huntington and Clarksburg. The meetings provided the attendees with an opportunity to comment on various initiatives and to better understand the drivers of infrastructure investment. The following were the main discussion points for each location:

- Huntington/Prichard/Highway 35: multi-modal freight movements, transportation infrastructure, regional agencies collaboration
- Martinsburg: marketability/future development, air freight, local strengths
- Weirton: market analysis, WAPA's vision and role, logistics and transportation trends
- Clarksburg: CSXT rail line/intermodal service, North Central WV Airport, local business

The shipper survey was administered to fully understand the shippers' behavior and to capture data that was relevant and specific to this phase of the study. The survey included questions that focused on commodity types, shipping origins and destinations, modal choices and general questions about shippers' needs and how it pertains to the future of West Virginia's transportation network. The survey results indicated that many shippers are heavily reliant on trucking as the favored mode of transportation and improvements are needed in warehousing and in transfer facilities (truck to rail and vice versa).

STRATEGIC ASSESSMENT

The Strategic Assessment focused on evaluating and identifying opportunities for each targeted region. The process used a SWOT analysis to develop an inventory of the strengths and weaknesses, determining opportunities, reviewing the results with regional stakeholders and assessing potential threats. Table ES-3 summarizes each region's attributes in the SWOT analysis.

TABLE ES-3: SWOT ANALYSIS

Strengths/Opportunities	Weaknesses/Threats
Huntington	
• Location • Infrastructure • Future Development	• Competition • Infrastructure
Prichard	
• Location • Value Added Services • Demand • Current Business	• Lack of Support Services • Market Competition • Financial
Martinsburg	
• Location • Limited Congestion • Air Freight Interest	• Proximity to Large Airports • Infrastructure • Competition • Air Freight Limitations
Weirton	
• Location • Limited Congestion • Future Development	• Regional Cooperation • Infrastructure • Competition
Clarksburg	
• Location • Infrastructure	• Proximity to Intermodal Facilities • Strategic • Infrastructure

Source: Parsons Brinckerhoff Analysis

The evaluation criteria of the strategic assessment concentrated on the logistics of containerized freight because it offers the greatest potential for economic development in each region. Specifically it evaluated the viability of an intermodal rail terminal (container and trailer on flat cars) by analyzing various criteria for location and railroad cooperation. The four primary criteria used in the evaluation were:

- Location: terminal must be located on a Class I rail intermodal network
- Volume: terminal volumes must be significant and sufficient to support frequent, long trains
- Proximity: terminal should avoid overlapping geographic catchment areas with other similar terminals
- Balance: the flows of inbound and outbound containers need to be balanced to produce terminal efficiencies

RECOMMENDED STRATEGIES

Recommended strategic initiatives were developed for enhancing each region's freight network and achieve its economic benefit goals.

HUNTINGTON-PRICHARD

This region has the broadest existing logistics services base from which to develop including two Class I railroads, the M70 Marine Highway and the planned Prichard Intermodal Terminal. The strategic assessment of this area reveals the geographic location and its transportation assets place it in a strong competitive position as a multimodal transportation and logistics center. Its attributes include the Prichard Intermodal Terminal, Huntington's location, the Tri-State Airport and the South Point Multimodal Facility. The development of the Prichard Intermodal Terminal provides a centralized freight transportation hub to build upon in the greater Huntington region.

The strategic initiatives of the Huntington-Prichard area seek to take advantage of the region's transportation assets by focusing on improving operations of the multimodal system, having suitable capacity in the transportation network and having multijurisdictional support and cooperation.

- Develop required highway access to the Prichard Intermodal Terminal
- Develop logistics clusters centered on the Prichard Intermodal Terminal
- Develop logistics infrastructure and services to support extraction and processing of natural gas
- Improve waterside modal transfer capacity
- Adopt the Kansas City Smart Port model to coordinate the region's logistics activities
- Develop information technology capability

MARTINSBURG

The Martinsburg region benefits from existing freight network assets that can provide a foundation for logistics development and its close proximity to metropolitan areas. Currently an initiative is underway to establish an inland port in Martinsburg with the goal of stimulating economic development and job growth opportunities. Other attributes of the area include access to Class I rail lines with intermodal capabilities and Shepherd Field, the area's commercial airport.

The strategic initiatives of the Martinsburg area include:

- Continue to promote its industrial parks, the regional assets and position itself as a warehousing and distribution center complex for the Baltimore-Washington region
- Adopt the Kansas City Smart Port model to coordinate the region's logistics activities through information technology
- Develop information technology capability
- Explore the need for and development of an intermodal container terminal
- Continue to explore niche air cargo markets

WEIRTON

The strategic assessment of the Weirton area indicates its location on the Ohio River, access to a Class I railroad and proximity to I-70 and Pittsburgh could support logistics based developments. Weirton has significant waterfront acreage that can be developed into a multi-modal terminal handling various commodities especially since navigating the Ohio River north of Weirton (to Pittsburgh) is difficult and slow.

The strategic initiatives of the Weirton area include:

- Develop as a staging and transshipment point for supplying the Marcellus Shale extraction industry
- As the M70 corridor of the Marine Highway emerges, Weirton should consider developing a container transfer facility for the Pittsburgh metropolitan area
- Develop as a western logistics center for Greater Pittsburgh
- Develop information technology capability

CLARKSBURG

Clarksburg has a good centralized location, however its assets are limited compared to the other three regions. The strategic assessment for this area focuses more on the movement of bulk products and the transportation services needed for Marcellus Shale natural gas extraction.

The strategic initiatives of the Clarksburg area include:

- Use its CSXT terminal capacity to participate in the emerging natural gas industry
- Establish a partnership with CSXT to market its bulk transfer capability

Taken together, the vision, mission, goals, and recommended strategies set forth in this Statewide Strategic Plan reflect the desires of the WVPPA and its constituents to partner together to preserve and enhance the state's transportation system, while recognizing the challenges and opportunities that exist in a rapidly changing economy. As the WVPPA executes the Strategic Plan, the recommended strategies should periodically be reviewed to maintain the intent of the Port Authority's vision, mission and goals in view of evolving priorities.

INTRODUCTION

The freight industry in the U.S. is facing increasing container traffic and capacity constraints on the West Coast, the expansion of the Panama Canal, shifting intermodal corridors and the driving need for a more sustainable supply chain. Under these circumstances, ports on the East Coast of North America are developing strategies to capture cargo from Asia that could potentially be diverted through the Canal to ports closer to the ultimate markets. Strategies to link these seaports more closely to inland operations and invest in landside network improvements will become imperative for ports to increase their market share in the future. There is particular interest in the development of inland facilities as a means to facilitate domestic and international trade while avoiding coastal congestion and enhancing shipping options for manufacturers at locations away from traditional seaports.

In this evolving environment of transportation logistics, West Virginia affords an ideal centralized location — at the heart of the U.S. East Coast transportation network, away from congestion points and within one day shipping proximity to consumption zones of more than 150 million people in the U.S. and more than a third of the Canadian population. To take advantage of this potential and the opportunities resulting from the future terminals in Prichard, WV and Chambersburg, Pa., the West Virginia Public Port Authority (WVPPA) needs a strategic plan to guide efforts in fostering intermodal related developments in key inland areas within West Virginia. Therefore, this Strategic Plan has been commissioned to identify market potential and business opportunities on which the WVPPA may focus its future efforts over the next 20 years.

PROJECT OBJECTIVES AND GOALS

The main objective of this project is to assist the WVPPA to proactively plan for future growth of the state's multi-modal system by integrating freight transportation strategies into policy, planning, and investment processes, while at the same time, taking advantage of the freight infrastructure that is currently in place.

The principal goals underlying the development of this Strategic Plan include:

- Support the WVPPA with defining its vision for development of port and intermodal logistics initiatives through 2030.
- Describe and assess the state's existing and future connectivity to the North American transportation system and ability to reach selected markets.
- Perform an analysis of the specific markets and associated economic and operational factors that will translate into a successful freight logistics service from the key stakeholder's perspective.
- Encourage the development of freight partnerships that promote the exchange of information, ideas and opportunities between the shipping community and WVPPA.
- Provide specific action plans and implementable recommendations for realizing inland port, distribution facility and freight logistics opportunities based upon a variety of factors all aimed at increasing the strength and viability of the region's freight system.

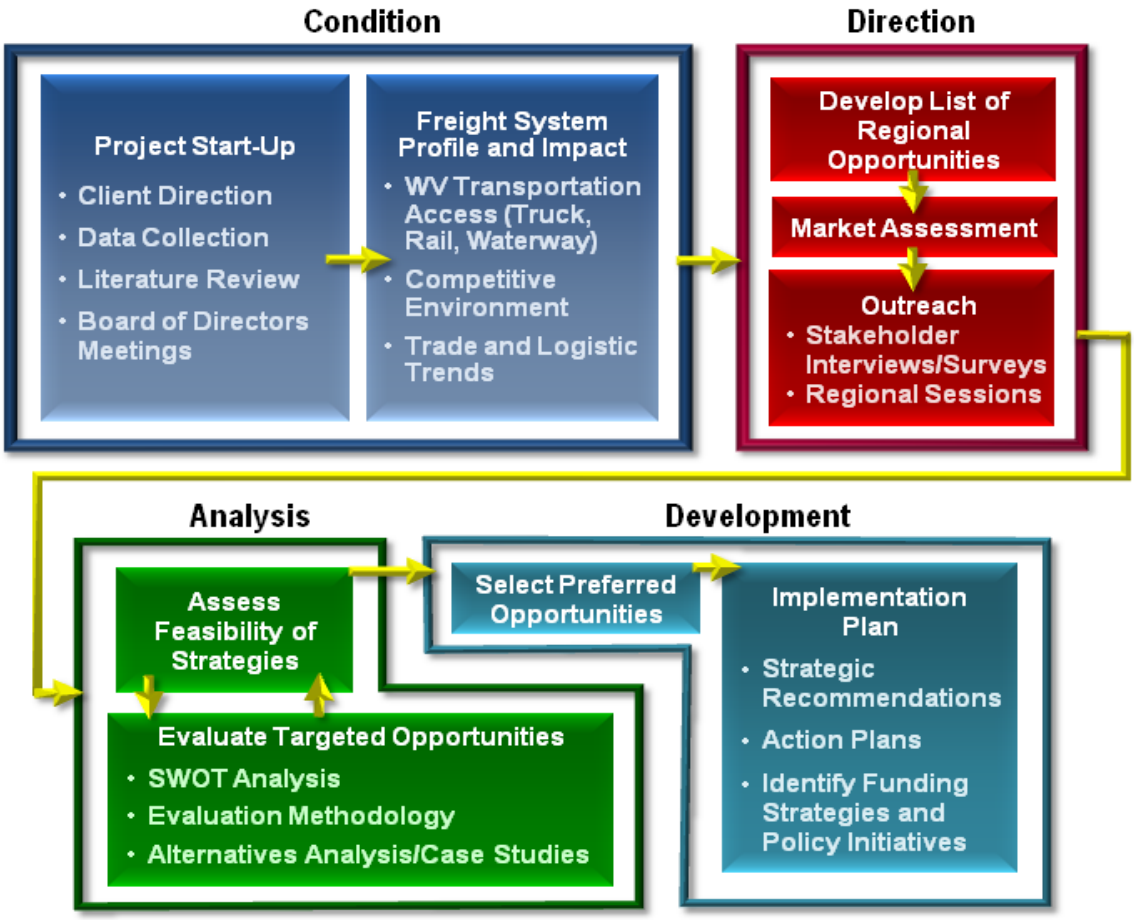
APPROACH & METHODOLOGY

The WVPPA commissioned Parsons Brinckerhoff to develop a Strategic Master Plan to guide the future focus of freight transportation infrastructure activity in the State of West Virginia. A two-phased approach was developed. Phase 1 focuses on the evaluation and identification of the

strategic opportunities and path for the WVPPA to participate in multi-modal projects and Phase 2 focuses on the Master Planning of WVPPA assets. During the initial stages of the analysis, the WVPPA agreed to initiate Phase 1, this **Strategic Plan** and use the results to guide the focus of the Phase 2 Master Plan.

The team employed a straightforward, four-part process to develop the WVPPA Strategic Plan, which is illustrated in Figure I--1904999620-1. The methodology has been refined and customized to accommodate the specific requirements necessary to determine economic development strategies that are practical and viable for West Virginia.

FIGURE I--1904999620-1: STRATEGIC PLAN APPROACH



Source: Parsons Brinckerhoff Analysis

PART I: CONDITION

The project team began the planning process by assembling the quantitative and qualitative information required to identify West Virginia's current freight transportation conditions, competitive issues, and trends within the national and regional freight network. An analysis of the regional and global marketplace conditions that define the principal drivers of freight demand and how those drivers affect shippers, carriers and distributors of goods in West Virginia is provided in Section 1 – Trade and Logistics Trends. An inventory of the region's current truck, rail and water routes, and their significance to freight (origin, destination or transiting) was prepared from past studies, U.S. Army Corps of Engineers surveys, state DOT data, and proprietary sources such as railroad model data. The state's transportation profile is provided in Section 2 – West Virginia Freight Transportation System.

PART II: DIRECTION

With the initial data collection process completed, the team began determining the direction of the strategic planning process by compiling a suite of regional strategic opportunities based on their potential market viability and compatibility with existing initiatives in West Virginia. Section 3 – Regional Multimodal Transportation Opportunities presents a summary of each region's physical features, transportation assets and market characteristics that led to the identification of potential freight handling facilities or value-added activities within each region.

To gain a more in-depth understanding of the risks and opportunities associated with the regions under study, the team interviewed freight stakeholders and shippers about their businesses' shipping and freight related issues. In addition, industry representatives with special understanding of the regional freight community were engaged at outreach sessions to discuss their rationale, criteria, needs, and ideas for value-based improvements to the region's freight distribution and movement system. A summary of the findings from these meetings and interviews is provided in Section 4 – Market Outreach.

PART III: ANALYSIS

Based on the findings of the preceding sub-tasks, alternative commodity-services-operating configurations and/or potential locations for inland freight facilities in the four regions were identified and evaluated in Section 5 – Strategic Assessment. The strengths, opportunities, weaknesses and threats were evaluated for each regional initiative to determine the merits of each configuration and location. Evaluation criteria were provided that identified the decision-making factors that trigger changes in intermodal development strategies.

PART IV: DEVELOPMENT

The final effort of the study focused on creating an implementation plan by identifying and developing a variety of recommended strategic initiatives for enhancing the freight system in order to achieve the region's economic benefit goals. Section 6 – Implementation Plan identifies step-by-step action plans for each initiative presented in an outline form to promote simplicity and understanding.

DATA SOURCES

The study team collected and reviewed background materials related to West Virginia industries, freight and transport systems and interviewed key stakeholders including various shippers, Norfolk Southern (NS), CSX Transportation (CSXT) and others. Information on regional case studies was also collected to compare West Virginia opportunities with other initiatives.

The following documents and supporting project data were reviewed by the project team to determine the significance and relevance to the Strategic Plan:

- Draft WV Public Transportation Service Update: April 2009[2]
    - This portion of the WVDOT's long-range multimodal transportation plan is a five-year update to the original study. It assessed the current market demand for public transportation services in West Virginia. The study's database was updated to reflect changes in capital and operating costs required to sustain existing public transportation services, extend services into adjacent, unserved areas and to establish new operations in unserved markets.

[2] Wilbur Smith Associates (2009) *Draft WV Public Transportation Service Update.* Retrieved from: http://www.wvtransplan.com/docs.htm

- Technical Memorandum – Trade & West Virginia Logistics: March 2009[3]
    - This is part of WVDOT's long-range multimodal transportation plan, and identified and assessed trade trends impacting West Virginia on commodity and infrastructure levels. The technical memorandum used the trade trend results to perform a needs analysis for an intermodal facility, evaluating several sites throughout the state.
- WVSWP Rail Analysis: March 2009[4]
    - Part of WVDOT's long-range multimodal transportation plan that outlines the various passenger services currently in operation in West Virginia.
- Aviation Plan: February 2009[5]
    - As a component of the WVDOT's long-range multimodal transportation plan, this document updates the basic inventory data for West Virginia's public-use airports.
- Policy Committee Workshop Summary: October 2008[6]
    - A meeting/workshop performed as part of the WVDOT's long-range multimodal transportation plan was held to identify what the transportation plan must address to be a meaningful guide for future transportation investments.
- West Virginia Development Office Data Disc: July 2010[7]
    - The data disc contained PDF files of available properties (buildings and land) throughout West Virginia. Each site inventory included site characteristics, aerial photograph(s), topographic maps and state maps identifying potential development sites.
- Economic and Market Analysis for an Inland Intermodal Port: September 2007[8]
    - This report includes an evaluation of the role a proposed intermodal terminal in Prichard, West Virginia would have on the state's economy.
- Eastern Panhandle Inland Port Master Plan
    - Includes an evaluation of a proposed inland port in Martinsburg, West Virginia and its effect on the local and regional economy and job creation.
- IHS Global Insight Transearch and Intermodal Freight Visual Database
    - This national database of freight traffic flows covers all modes and commodities. Catchment areas included 47 counties in West Virginia, Kentucky and Ohio. All volumes shown in tons are in short tons.
- U.S. trade forecasts by the Federal Highway Administration (FHWA) as part of the Freight Analysis Framework (FAF3), released in November 2010[9].
    - FAF3 historic data includes the most recent year for which comprehensive data are available (2007). Forecasts are based on global macroeconomic forecasts prepared by IHS Global Insight and take into account the global downturn of 2008 and 2009. The forecasts do not incorporate shifts in routing or modes such as those that might occur as a result of Panama Canal expansion or the Heartland Corridor improvements and should therefore be considered trend or baseline projections.

[3] Wilbur Smith Associates (2009) *Tech Memo Trade and West Virginia Logistics*. Retrieved from: http://www.wvtransplan.com/docs.htm

[4] Wilbur Smith Associates (2009) *WVSWP Rail Analysis*. Retrieved from: http://www.wvtransplan.com/docs.htm

[5] Wilbur Smith Associates (2009) *Aviation Plan*. Retrieved from: http://www.wvtransplan.com/docs.htm

[6] Wilbur Smith Associates (2008) *Policy Committee Workshop Summary*. Retrieved from: http://www.wvtransplan.com/docs.htm

[7] West Virginia Development Office (2010) *WV Port Authority*. Data disc, files of buildings and land in West Virginia for sale, unpublished.

[8] DMJM Harris / AECOM (2007) *Economic and Market Analysis for an Inland Intermodal Port*. Retrieved from http://www.transportation.wv.gov/ports/prichard/Pages/EconomicandMarketAnalysis.aspx

[9] FHWA, FAF3 (2010). Retrieved from http://ops.fhwa.dot.gov/ freight/freight_analysis/faf/index.htm

SECTION 1: TRADE AND LOGISTICS TRENDS

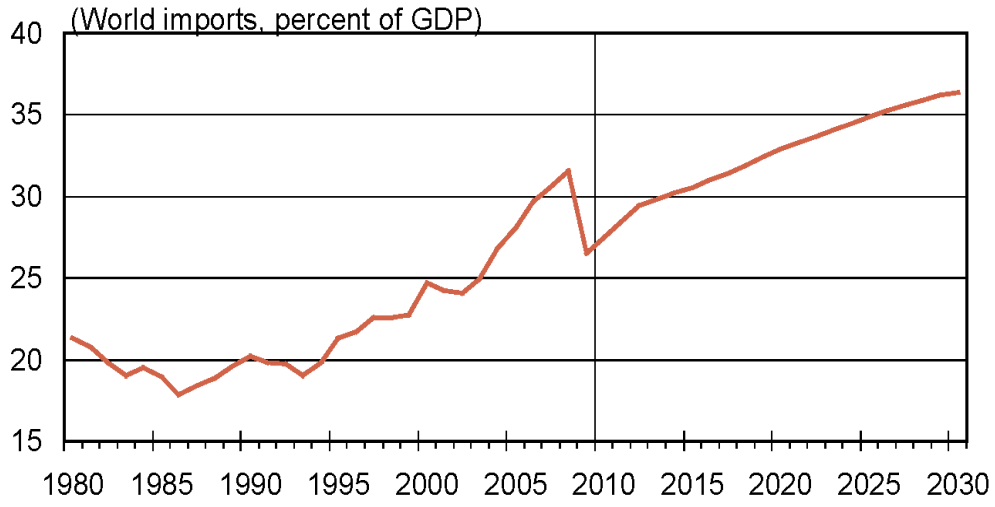
The past several decades have seen significant changes in global trade patterns. Worldwide trade has more than doubled since 1990. Maritime container traffic has grown to represent over 85 percent of merchandise cargo shipped worldwide. The expansion of global manufacturing into Asia has led to explosive trade growth between North America and the Far East, particularly China.

In the future, emerging economies, shifting manufacturing centers, advancement of transportation technologies and shifting supply chain flows are expected to continue to reshape North America's freight transportation environment.

1.1. GLOBAL AND NATIONAL ECONOMIC AND TRADE TRENDS

After a modest recovery in 2010 from the global recession, trade is expected to return to pre-recession levels by 2012 and forecasts anticipate substantial trade growth from 2012 onwards. World Bank predicts that global trade in goods and services could rise more than threefold to $27 trillion in 2030, and trade as a share of the global economy will rise from one-quarter today to more than one-third.

FIGURE 1-1: WORLD TRADE SHARE OF ECONOMIC ACTIVITY

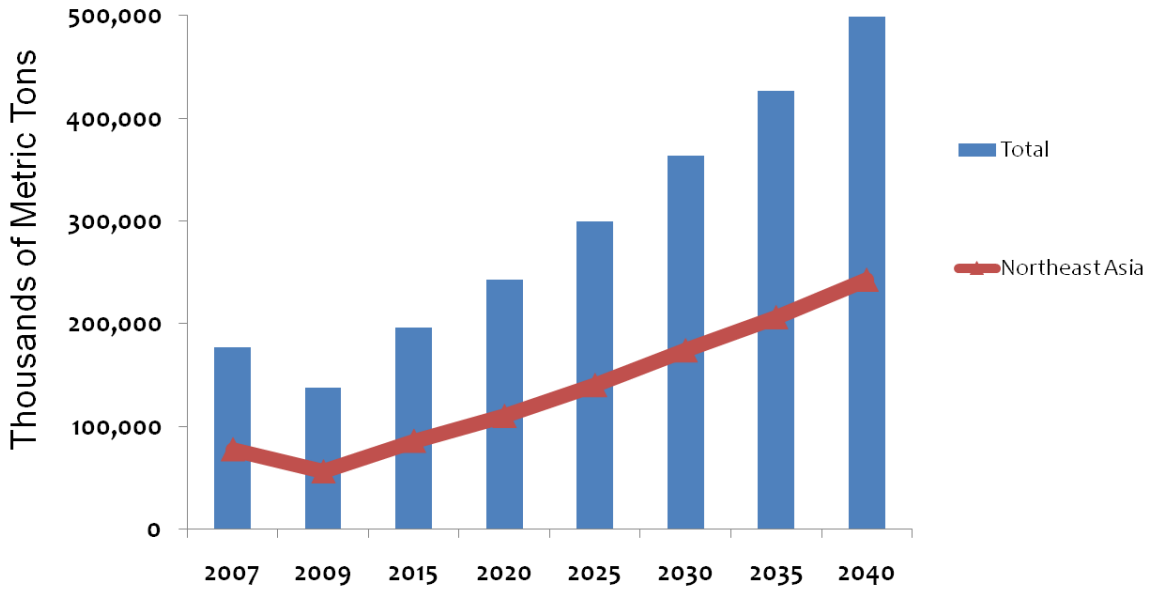


Source: IHS Global Insight

Although Asia leads future growth in world and U.S. trade, U.S. imports are projected to grow from 1.3 billion tons in 2007 to 2.5 billion tons in 2040—87 percent over 33 years, according to forecasts from IHS Global Insight. Northeast Asia is expected to have the greatest trade volume growth—3.1 percent annually—followed by Southeast Asia at 2.6 percent annually. Exports are forecasted to grow significantly more quickly than imports, although from a much lower base (total imports in 2007 were 1.3 billion tons, while total exports amounted to 0.7 billion tons). As with imports, trade volume growth is greatest for exports to Northeast and Southeast Asia.[10]

[10] Federal Highway Administration, Freight Analysis Framework, 2011

FIGURE 1-2: TRENDS IN U.S. IMPORT CONTAINER TRADE FROM NORTHEAST ASIA



Source: FHWA, Freight Analysis Framework, 2011

Asian centers of production are expected to shift westward to Southeast Asia and the Indian Subcontinent, which will have an important impact on trade flows. As a majority of the new ships entering the world fleet in the next five years will be post-Panamax vessels ready to transport cargo from China, Southeast Asia and India to North America, leading carriers are poised to employ larger container ships with service at fewer hub ports to capture economies of scale.

1.1.1 PANAMA CANAL EFFECT

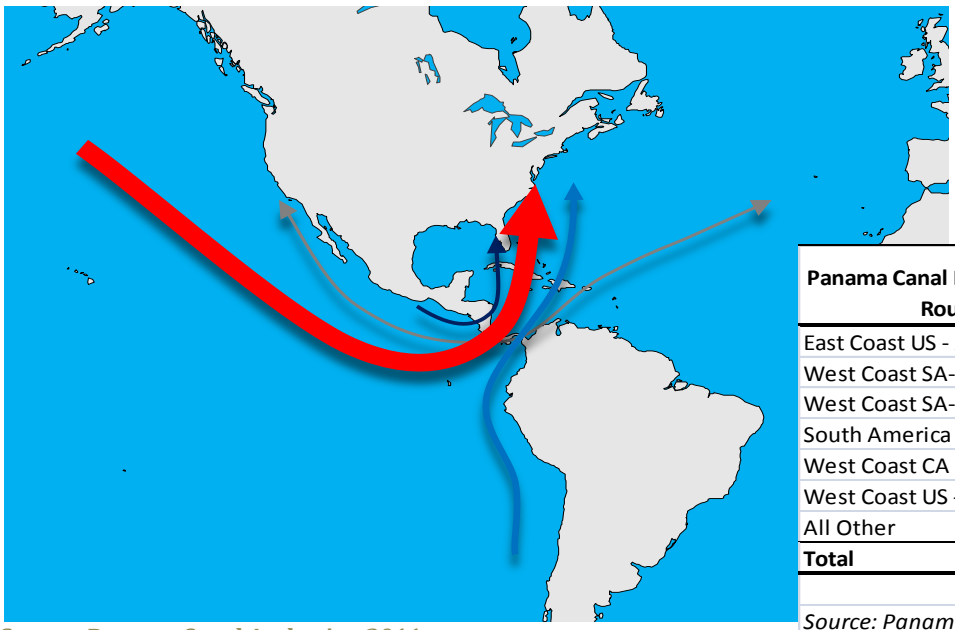
In 2010, more than 66 percent of the cargo tonnage transiting the Canal either originated from or was destined for the United States. Figure 1-3 shows the major North American trade routes (by volume) that transit the Panama Canal. It is expected that the Northeast Asia–U.S. trade will be the most impacted route resulting from the Panama Canal expansion.

A third set of locks will be added to the Panama Canal by 2014—larger than the existing ones— to permit the passage of larger ships and expedite their movement. By widening and deepening the access channels, Lake Gatun, and the channel cut between Panama's mountains, the Canal's maximum cargo carrying capacity will double.

For container ships, the current maximum size that can transit through the Canal will increase from those designed to carry about 5,100 20-foot equivalent unit (TEU) containers (current "Panamax" size) to 12,600 TEUs or more. The resulting scale of economies are expected to reduce the average waterborne and operating costs for transporting containers from Northeast Asia to the U.S. East Coast. For dry bulk shippers, the ability to send Capesize ships (up to 180,000 Dead Weight Tons) through the Canal may provide cost-effective options for U.S. exports of bulk commodities such as grain and coal.

The expansion could create an opportunity for West Virginia, since it will allow larger ships to directly reach East Coast ports, and because most rail cargo from East Coast ports must be moved to inland locations before it can be reconfigured into denser and more balanced trains to serve eastern and Midwest markets.

FIGURE 1-3: PRINCIPAL PANAMA CANAL TRADE ROUTES



Panama Canal Principal Trade Routes	Volume *(million long tons)*
East Coast US - Asia	83.2
West Coast SA- East Coast US	23.8
West Coast SA- Europe	13.3
South America Intercoastal	12.7
West Coast CA - East Coast US	10.3
West Coast US - Europe	7.7
All Other	53.8
Total	**204.8**

Source: Panama Canal Authority, (ACP, 2011)

Source: Panama Canal Authority, 2011

1.1.2 EAST COAST PORT IMPROVEMENTS

Major infrastructure projects are under construction at various East Coast ports to achieve the required capacity demand that will occur once the Panama Canal expansion is completed. The Port Authority of New York and New Jersey (PANYNJ) is undertaking two major projects. $2 billion has been invested as a part of a harbor deepening project in which key navigation channels in the port will be dredged to 50 feet to accommodate larger ships. PANYNJ is also working on raising the Bayonne Bridge from 151 feet to 215 feet to accommodate larger vessel air draft. This will allow bigger ships to pass below the bridge to the marine terminals located west of the bridge[11].

The Ports of Virginia and Baltimore are currently the only two ports on the East Coast capable of handling bigger ships requiring a draft of 50 feet[12]. The Port of Virginia has increased its capacity for container handling with the development and operation of the former APM terminal and the port has secured an additional site, Craney Island, for a massive new container terminal. With the development of the Heartland Corridor, the Port of Virginia will have double stack rail connection to the Midwest and Appalachian region.

By August 2012, the Port of Baltimore's Seagirt Marine Terminal Berth IV project will be complete, which will include a 50-ft berth and four new Super Post-Panamax cranes to accommodate 14,000 TEU ships. CSXT is considering four locations near the entrance to Howard Street Tunnel for a new intermodal container transfer facility that would use automated stacking cranes to transfer containers from the short line to Seagirt and onto CSXT's National Gateway Project, which can handle stacktrains from Baltimore to Ohio.[13]

[11] The Port Authority of New York and New Jersey, www.panynj.gov

[12] www.nab.usace.army.mil/Navigation

[13] http://mpa.maryland.gov/_media/client/News-Publications/2011/media/04042011press.pdf

The Port of Savannah has planned to invest $1.2 billion in expansion projects and increasing the depth of the Savannah River Navigation Channel from 42 to 48 feet. Completion of this project is estimated for 2014[14].

These improvements are designed to support the increasing container traffic anticipated for East Coast ports which could, in turn, lower the unit costs of train operations and increase rail traffic through inland locations such as West Virginia.

1.1.3 INLAND PORTS

In response to the increasing trade and capacity constraints, East Coast railroads and seaports are turning to inland ports or other trade processing facilities as a means to process cargo while avoiding coastal congestion, making use of Foreign Trade Zones (FTZs) and adding value to the freight supply chain. Models of inland ports range from conventional terminals located hundreds of miles from a seaport to freight transfer and consolidation facilities to virtual ports aimed at adding value to the freight supply chain.

NS and CSXT mainlines cross the Southern region and Eastern Panhandle region of West Virginia, which connects the East Coast ports with Midwest in North West Ohio and Chicago, IL. With the availability of rail infrastructure in locations such as Huntington and Martinsburg area, there is an opportunity for development of an inland port network in West Virginia. Moreover, Port of Huntington is the largest inland river port in the U.S. in terms of total tonnage of cargo and is located near the alignment of the Heartland Corridor.

1.1.4 NATIONAL RAIL DEVELOPMENTS

During the last decade, the railroads became a major participant in the overland transportation of containers from the North American ports to inland markets.

RAIL SHORT-HAUL ECONOMICS

In the past, the comparative economics of rail and motor carrier transportation resulted in railroads being the dominant competitor at distances greater than 800-1,000 miles. A combination of more efficient rail operations and increasing energy costs have reduced the distance in which rail had a competitive advantage over trucking to 550 miles. In some corridors such as Atlanta-Savannah, the distance is even less. With expected continuing increases in the cost of energy, railroads are focused on increasing their participation in the shorter-distance corridors.

RAIL CORRIDORS

Railroads serving the East Coast have been developing new high-speed, double-stack corridors in anticipation of the growing intermodal market for East Coast ports. The most notable corridors, and those that will impact goods movement in West Virginia, include the Heartland Corridor (NS), the National Gateway (CSXT), and the Crescent Corridor (NS).

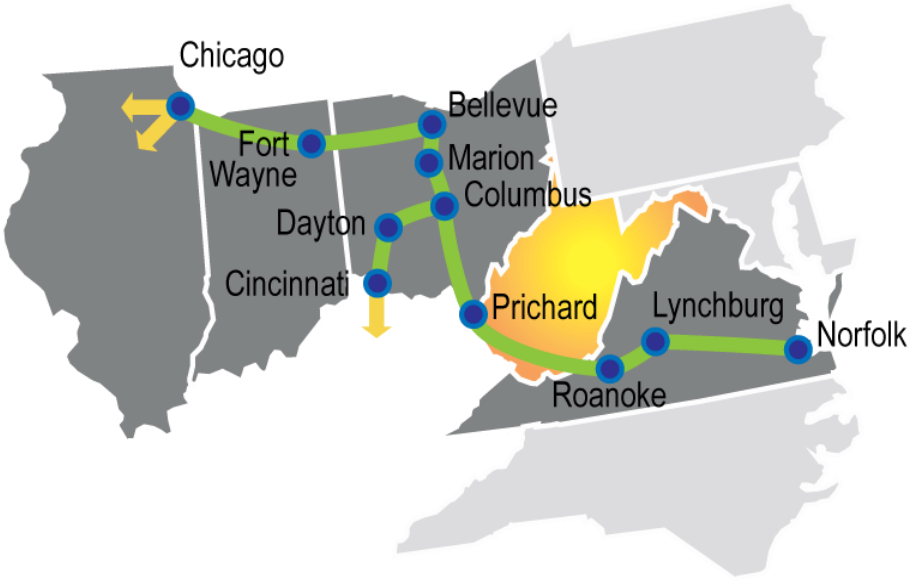
The Heartland Corridor project is a $200 million investment to improve the NS rail line connecting the Port of Virginia and Midwest states by clearing the double-stack rail overhead restrictions through the corridor. The Heartland Corridor is a public-private partnership initiative between NS, the U.S. Federal Highway Administration, and the States of Ohio, West Virginia and Virginia.

[14] http://www.gaports.com/Facilities/OceanTerminal/FutureExpansion.aspx

The three-year project raised the height of 27 tunnels (23 were located in West Virginia) and removed overhead obstacles on the main lines to allow clearance, which permitted NS to operate double stack trains over the entire corridor. The project also added provisions for rail-truck container transfer terminals along the route, such as the Prichard Intermodal Terminal in West Virginia. The intermodal terminal to be constructed in Prichard is a public-private partnership project between the state of West Virginia and NS.

The Heartland Corridor opened on September 9th, 2010 to double-stacked intermodal traffic. The investment ultimately reduced each container move by approximately 225 route miles and decreased transit times by 48 hours. Figure 1-4 shows the Heartland Corridor, which traverses through McDowell, Mingo, and Wayne County in West Virginia while making its way to Chicago, IL.

FIGURE 1-4: THE HEARTLAND CORRIDOR



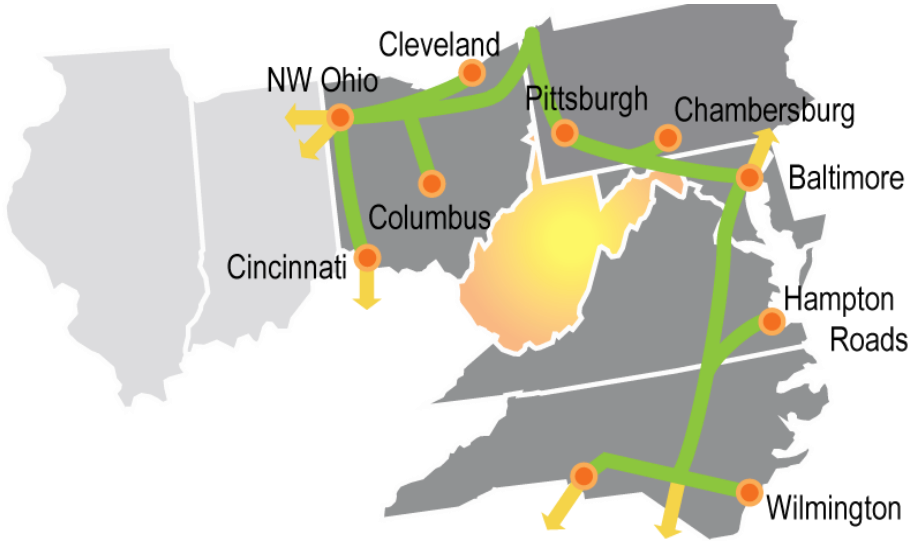
Source: Parsons Brinckerhoff Analysis

CSXT National Gateway is a multi-state infrastructure project to improve the cargo flow between the East Coast ports and Midwest states by clearing key freight corridors to accommodate double-stack container cars. The project parallels the I-95 corridor, connecting North Carolina with Baltimore, MD, and travels east along the I-70/I-76 Corridor between Washington, DC and Northwest Ohio via Pittsburgh, PA. In total, 40 clearance projects will be completed, including track lowering, bridge replacements, raisings or removals of overhead structures and work on several tunnels to create greater clearance for the taller double-stack trains. The National Gateway passes through Martinsburg in the Eastern Panhandle region of West Virginia as shown in Figure 1-5.

This project is a public-private partnership with state and federal funds available for the project. The project has a total investment of $842 million of which $393 million will be invested by CSXT and the remaining $449 million will come from state and federal funding ($258 million from federal and $191 million from various state governments)[15].

[15] The National Gateway: Preparing for Tomorrow, June 2010

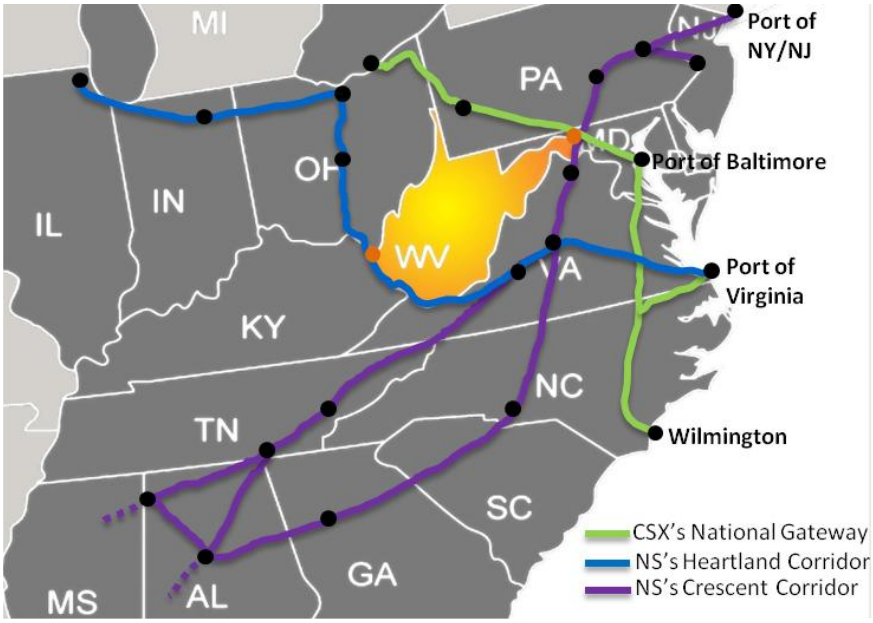
FIGURE 1-5: THE NATIONAL GATEWAY CORRIDOR



Source: Parsons Brinckerhoff Analysis

The Crescent Corridor is a program to improve infrastructure and other facilities to create a high capacity 2,500 mile intermodal route that covers 26 percent of the nation's population and 30 percent of the nation's manufacturing output. The Corridor runs from New Jersey to Memphis, and beyond to New Orleans, paralleling the I-81 highway corridor. NS, with assistance from the corridor states and USDOT, is upgrading the line to accommodate high-speed double-stack train service. The improvements are expected to assist NS in expanding its penetration in the domestic containerized freight market, making the railroad more competitive with motor carriers. NS predicts that this corridor will remove about 738,000 trucks off I-81, passing through Martinsburg[16]. Figure 1-6 shows the alignment of CSXT's and NS's rail corridors with respect to West Virginia.

FIGURE 1-6: CSXT AND NS MAJOR FREIGHT CORRIDORS



Source: Parsons Brinckerhoff Analysis

[16] NS http://www.thefutureneedsus.com/images/uploads/WV_CCFactSheet.pdf

HUB AND SPOKE OPERATING MODEL

Rail container service has historically been provided on a point-to-point basis. Direct train service is operated between two intermodal terminals with trucking services provided at each end. With the development of its new Northwest Ohio intermodal terminal located on the National Gateway Corridor, CSXT is adopting a hub and spoke operating model. With this approach, containers are transferred using high productivity/advanced technology cranes, between trains that terminate and originate in the Northwest Ohio facility. By consolidating containers among trains, CSXT will be able to provide services in a greater number of corridors with fewer trains than with the more traditional point-to-point model. Consequently, corridors that once had inadequate container volumes to cost-effectively support container train service can now have service.

SHIFT FROM TRUCKING

In addition to the increase in energy costs, the trucking industry is expected to suffer from severe driver shortages. Recently proposed federal legislation reduces the hours that can be driven, expanding the need for additional drivers. Pre-employment background screening has become more intensive resulting in fewer applicants becoming drivers. Fewer people are interested in driving because of the lifestyle.

Many trucking companies are increasing their use of rail transportation for container shipments due to the cost advantage that railroads have in the longer distance traffic lanes. JB Hunt and Schneider Trucking, for example, have historically relied on rail service in certain corridors. Their use has increased, while additional companies are using rail to move containers or trailers.

1.1.5 MARINE HIGHWAY

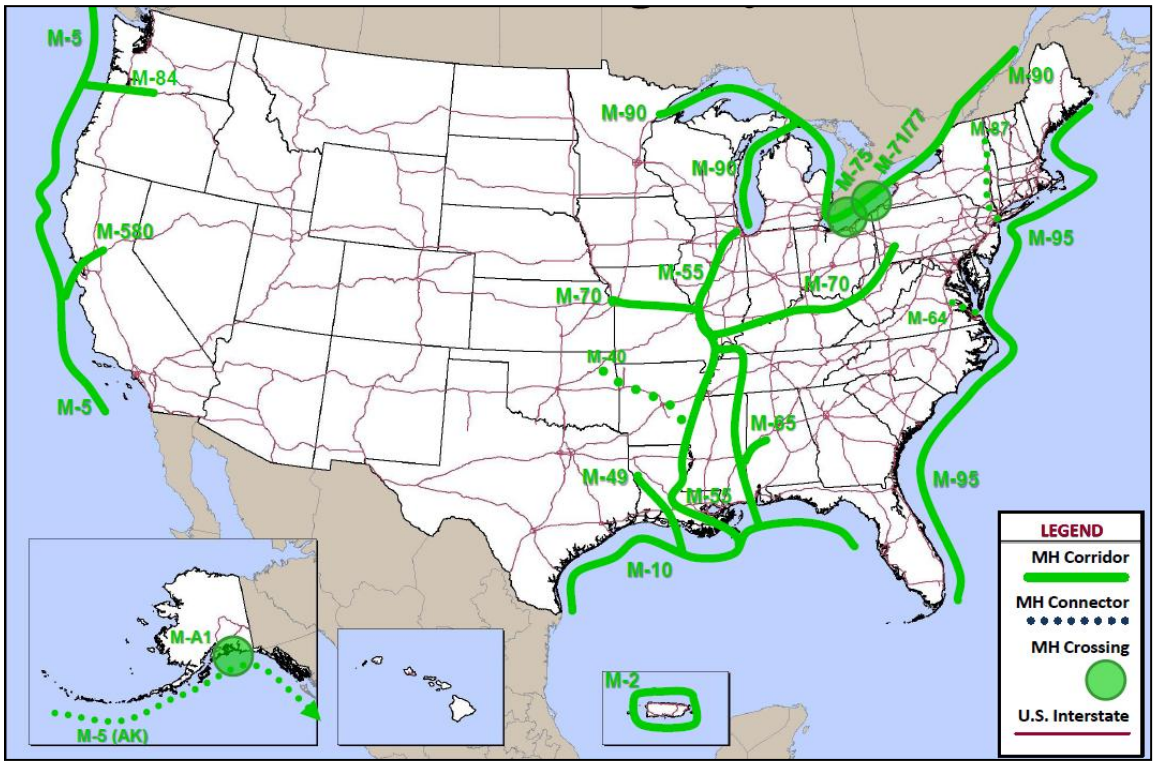
In August 2010, U.S. Transportation Secretary Ray LaHood identified 18 marine corridors, eight projects, and six initiatives for further development as part of "America's Marine Highway Program" (see Figure 1-7 for a map of the corridors). The 18 marine (all-water) corridors consist of 11 major waterway systems, four connecting systems, and three crossing systems that can serve as extensions of the existing and planned surface transportation system.

These corridors include routes where water transportation presents an opportunity to carry commercial traffic that would otherwise move on congested landside corridors, to reduce highway-related air emissions, or to address other logistics challenges. Corridors consisting of major waterway systems are generally longer, multi-state routes, whereas the connecting systems represent shorter routes that serve as feeders to the larger corridor systems. The crossing systems are short routes that transit harbors or waterways and offer alternatives to much longer or less convenient land routes between points[17]. Not limited by highway weight restrictions or rail clearance limitations, the waterway system can be more cost-efficient than other modes for moving cargo (especially heavy or hazardous materials) depending on the route.

West Virginia's waterways are used primarily to transport bulk commodities for which Panama Canal expansion may increase export opportunities. The waterways may also provide a cost-effective alternative for handling increased container trade, and moving traffic off congested highways and onto Marine Highway corridors.

[17] Excerpts from USDOT. Maritime Administration Marine Highway description at: http://www.marad.dot.gov/ships_shipping_landing_page/mhi_home/mhi_home.htm

FIGURE 1-7: PROPOSED MARINE HIGHWAY CORRIDORS



Source: U.S. Maritime Administration, February 2011

The M-70 marine highway corridor serves Ohio, Mississippi and Missouri Rivers by connecting the commercial navigation channels, ports and terminals from Pittsburgh to Kansas City. M-70 could help West Virginia to alleviate the congestion from the existing landside routes. It could also reduce emissions and highway maintenance costs for the state. West Virginia is also supporting the M-65 and M-71/77 marine highway corridor programs as these corridors support cargoes navigating through the Ohio River and in turn through West Virginia terminals. The M-65 corridor serves cargoes navigating through Mobile, Tombigbee and Black Rivers via Ohio and the Mississippi River.

1.2. ECONOMIC AND TRADE TRENDS IN THE STATE AND REGION

1.2.1 WEST VIRGINIA ECONOMY

From 2006 to 2010 time period, the 'All industries' U.S. Gross Domestic Product (GDP) increased by approximately 9.3 percent. Over the same time period, the 'All Industries' GDP for the State of West Virginia grew by 16.8 percent, significantly outpacing national growth. Substantive growth from 2006 to 2010 for both the U.S. (22.9 percent) and West Virginia (54.3 percent) account for a significant portion of the overall increases. Transportation and warehousing GDP showed modest increases for both the U.S. and West Virginia over the 2006-2010 time period (at 2.8 percent and 7.4 percent respectively).

TABLE 1-1: GDP BY SELECTED INDUSTRIES: U.S. AND WEST VIRGINIA COMPARISON 2006-2010 (IN $MILLIONS)

United States					
	2006	2007	2008	2009	2010
All Industries	13,310,937	13,969,323	14,270,462	14,014,849	14,551,782
Mining	228,996	254,174	317,067	240,843	281,448
Manufacturing	1,651,486	1,698,901	1,647,591	1,584,834	1,717,525
Durable Goods*	923,114	942,758	927,269	867,200	961,179
Nondurable Goods**	728,372	756,142	720,322	717,634	756,346
Transportation and warehousing	395,480	405,412	418,738	389,498	406,520
Air transportation	59,702	60,177	61,014	61,858	(NA)
Rail transportation	30,619	31,729	34,845	30,833	(NA)
Water transportation	12,353	13,528	14,832	14,300	(NA)
Truck transportation	125,322	127,015	124,680	113,087	(NA)
Transit and ground passenger transportation	22,583	24,036	23,423	23,373	(NA)
Pipeline transportation	11,288	12,445	16,242	12,017	(NA)
Other transportation & support activities	96,408	96,509	101,989	94,679	(NA)
Warehousing and storage	37,205	39,973	41,714	39,351	(NA)

West Virginia					
	2006	2007	2008	2009	2010
All Industries	55,334	57,001	59,039	61,043	64,642
Mining	4,645	5,124	5,656	6,108	7,162
Manufacturing	6,082	5,730	5,648	6,194	6,670
Durable Goods*	3,209	2,993	2,838	2,667	2,870
Nondurable Goods**	2,873	2,736	2,810	3,526	3,801
Transportation and warehousing	1,796	1,819	1,967	1,856	1,929
Air transportation	19	15	17	16	(NA)
Rail transportation	402	429	489	441	(NA)
Water transportation	94	103	113	114	(NA)
Truck transportation	723	703	723	676	(NA)
Transit and ground passenger transportation	25	23	22	23	(NA)
Pipeline transportation	169	176	228	241	(NA)
Other transportation & support activities	283	279	286	271	(NA)
Warehousing and storage	80	90	88	75	(NA)

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

The U.S. as a whole and the State of West Virginia saw declines in GDP from 2008 to 2009 for virtually all of the mining, manufacturing and transportation industries and their subsectors mirroring the economic turbulence of the period. However, all of the GDP industries examined here were observed to have increases in 2010 to their 2008 levels at a minimum (save for 'Transportation and warehousing" for the U.S. as a whole).

Despite the recent economic downturn, GDP for the Mining, Manufacturing and Pipeline transportation sectors witnessed nominal growth over the last several years.

TABLE 1-2: TOTAL FULL- AND PART-TIME EMPLOYMENT BY SELECTED NAICS INDUSTRIES: U.S. AND WEST VIRGINIA COMPARISON 2006-2009

United States				
	2006	2007	2008	2009
All Industries	176,124,600	179,899,700	179,610,200	173,809,200
Mining	930,200	1,013,300	1,209,200	1,358,500
Manufacturing	14,688,200	14,472,800	13,989,300	12,393,700
Durable Goods*	9,315,700	9,173,500	8,831,400	7,619,900
Nondurable Goods**	5,372,500	5,299,300	5,157,900	4,773,800
Transportation and warehousing	5,759,900	5,948,900	5,852,600	5,499,300
Air transportation	506,600	513,300	512,100	480,900
Rail transportation	205,100	204,000	202,000	188,000
Water transportation	68,000	73,900	75,500	73,100
Truck transportation	2,116,300	2,182,600	2,070,900	1,878,700
Transit and ground passenger transportation	621,100	659,200	663,200	655,400
Pipeline transportation	39,500	40,900	42,000	42,100
Other transportation & support activities	1,509,600	1,555,300	1,533,400	1,423,200
Warehousing and storage	693,700	719,700	753,500	757,900
West Virginia				
All Industries	906,983	920,610	924,591	910,416
Mining	33,627	35,157	40,963	44,409
Manufacturing	63,107	61,312	58,866	52,927
Durable Goods*	39,794	38,625	36,939	32,393
Nondurable Goods**	23,313	22,687	21,927	20,534
Transportation and warehousing	26,686	26,965	26,452	24,794
Air transportation	420	296	285	234
Rail transportation	(D)	2,934	2,988	2,778
Water transportation	717	774	792	763
Truck transportation	12,887	12,935	12,249	11,249
Transit and ground passenger transportation	799	807	833	839
Pipeline transportation	1,378	1,409	1,607	1,592
Other transportation & support activities	5,568	5,720	5,499	5,205
Warehousing and storage	1,970	2,090	2,199	2,134

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

Transportation employment in both the U.S. and West Virginia witnessed a decline over the 2007-2009 time periods. The U.S. shed more than 260,000 jobs in the transportation and warehousing sector from 2006 to 2009, accounting for an approximate 4.5 percent decline. Over the same time period, the West Virginia economy lost nearly 1,900 jobs in the transportation and warehousing sector, equating to an approximate 7.1 percent decline. Air transportation in West Virginia was one of the hardest hit sectors, in terms of employment numbers, during the 2006 to 2009 time period losing roughly 44.3 percent of jobs in that industry.

TABLE 1-3: PER EMPLOYEE GDP BY SELECTED INDUSTRIES: U.S. AND WEST VIRGINIA COMPARISON 2006-2009 (IN $)

United States				
	2006	2007	2008	2009
All Industries	$75,577	$77,651	$79,452	$80,634
Mining	$246,179	$250,838	$262,212	$177,286
Manufacturing	$112,436	$117,386	$117,775	$127,874
Durable Goods*	$99,092	$102,770	$104,997	$113,807
Nondurable Goods**	$135,574	$142,687	$139,654	$150,328
Transportation and warehousing	$68,661	$68,149	$71,547	$70,827
Air transportation	$117,848	$117,236	$119,145	$128,630
Rail transportation	$149,288	$155,534	$172,500	$164,005
Water transportation	$181,662	$183,058	$196,450	$195,622
Truck transportation	$59,218	$58,194	$60,206	$60,194
Transit and ground passenger transportation	$36,360	$36,462	$35,318	$35,662
Pipeline transportation	$285,772	$304,279	$386,714	$285,439
Other transportation & support activities	$63,863	$62,052	$66,512	$66,525
Warehousing and storage	$53,633	$55,541	$55,360	$51,921

West Virginia				
	2006	2007	2008	2009
All Industries	$61,009	$61,917	$63,854	$67,050
Mining	$138,133	$145,746	$138,076	$137,540
Manufacturing	$96,376	$93,456	$95,947	$117,029
Durable Goods*	$80,640	$77,489	$76,829	$82,333
Nondurable Goods**	$123,236	$120,598	$128,153	$171,715
Transportation and warehousing	$67,301	$67,458	$74,361	$74,857
Air transportation	$45,238	$50,676	$59,649	$68,376
Rail transportation	n/a	$146,217	$163,655	$158,747
Water transportation	$131,102	$133,075	$142,677	$149,410
Truck transportation	$56,103	$54,349	$59,025	$60,094
Transit and ground passenger transportation	$31,289	$28,501	$26,411	$27,414
Pipeline transportation	$122,642	$124,911	$141,879	$151,382
Other transportation & support activities	$50,826	$48,776	$52,009	$52,065
Warehousing and storage	$40,609	$43,062	$40,018	$35,145

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

In most of the industry sectors/subsectors analyzed here, West Virginia lags behind the U.S. as a whole in terms of per employee GDP by industry. Only within the transportation and warehousing sector as a whole has the West Virginia figures equaled or outpaced the national figures. West Virginia has seen progress in the mining, nondurable goods (subsector), air transportation, and pipeline transportation industries over the 2006 to 2009 time period.

TABLE 1-4: PER EMPLOYEE GDP BY SELECTED INDUSTRIES: WEST VIRGINIA AS A PERCENT OF THE U.S. 2006-2009

United States				
	2006	2007	2008	2009
All Industries	80.7%	79.7%	80.4%	83.2%
Mining	56.1%	58.1%	52.7%	77.6%
Manufacturing	85.7%	79.6%	81.5%	91.5%
Durable Goods*	81.4%	75.4%	73.2%	72.3%
Nondurable Goods**	90.9%	84.5%	91.8%	114.2%
Transportation and warehousing	98.0%	99.0%	103.9%	105.7%
Air transportation	38.4%	43.2%	50.1%	53.2%
Rail transportation	n/a	94.0%	94.9%	96.8%
Water transportation	72.2%	72.7%	72.6%	76.4%
Truck transportation	94.7%	93.4%	98.0%	99.8%
Transit and ground passenger transportation	86.1%	78.2%	74.8%	76.9%
Pipeline transportation	42.9%	41.1%	36.7%	53.0%
Other transportation & support activities	79.6%	78.6%	78.2%	78.3%
Warehousing and storage	75.7%	77.5%	72.3%	67.7%

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

**Durable goods include the manufacture of: wood products, nonmetallic mineral products, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment and appliances, motor vehicle body, trailer and parts, other transportation equipment, furniture and related products, and miscellaneous manufacturing.*
*** Nondurable goods include the manufacture of: food products, textile and textile products, apparel, paper, printing and related support activities, petroleum and coal products, chemical, plastics and rubber products.*
(D) Data does not meet number of firm disclosure rules.

In nominal terms, the Per Capita Income for West Virginia residents has increased by roughly 20 percent over the 2005 to 2009 time period.

TABLE 1-5: PER CAPITA INCOME IN WEST VIRGINIA 2005-2009

	2005	2006	2007	2008	2009
West Virginia	$26,685	$28,697	$29,870	$31,522	$32,080

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

West Virginia has seen a significant decline in civilian labor force participation from 2006 to 2010. Over that time period, roughly 33,800 less people were considered part of the West Virginia labor force, equating to a decline of approximately 4.1 percent. Over that same time period, the unemployment rate in West Virginia went from 4.5 percent (in 2006) to 9.1 percent (in 2010).

TABLE 1-6: WEST VIRGINIA CIVILIAN LABOR FORCE AND UNEMPLOYMENT DATA 2006-2010

West Virginia	2006	2007	2008	2009	2010
Civilian Labor Force	816,100	818,200	808,500	797,900	782,300
Unemployment Rate	4.5%	4.2%	4.3%	7.9%	9.1%

Source: Workforce WV

1.2.2 West Virginia Trade and Commodities

In 2008, 74 million tons of freight were moved to, from, and within West Virginia, which had a combined value of $4.6 billion. Coal comprised 77 percent of this tonnage, followed by petroleum products at 10 percent. Out of these 74 million tons of cargo, more than 45 million tons were shipped on the river system out of the state. Coal accounted for about 84 percent of the portion of this tonnage. Docks in the state received almost 18.4 million tons, with coal again being the largest commodity. More than 10 million tons moved within the state. In 2008, the 74 million tons shipped to, from and within West Virginia were worth $4.6 billion[18]. Table 1-7 shows the commodity flow in/out of West Virginia through waterways in terms of weight and value.

Table 1-7: Commodity flow through West Virginia, 2008

Commodity	Shipped (Tons)	Received (Tons)	Within (Tons)	Total (Tons)	Value ($ M)
Coal	37,852,214	10,232,231	9,007,558	57,092,003	$2,183
Petroleum	5,567,634	796,648	986,548	7,350,830	$1,053
Aggregates	1,511,662	4,629,926	154,660	6,296,248	$293
Chemicals	227,663	908,307	69,876	1,205,846	$526
Ores/Minerals	---	574,482	---	574,482	$46
Iron/Steel	113,317	277,804	---	391,121	$194
Other	50,090	1,070,817	24,197	1,145,104	$320
TOTAL	**45,322,580**	**18,490,215**	**10,242,839**	**74,055,634**	**$4,615**

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

Coal

The U.S. Energy Information Administration notes that Panama Canal expansion: "…should enhance opportunities for coal exports from both the United States and South America traveling westward to Asian markets[19]." Dry bulk cargo such as coal exported to Asia is largely carried by Panamax vessel. Use of larger vessels, such as Capesize ships, could result in reduced per-unit transportation costs, potentially increasing exports of coal and liquefied natural gas (LNG).

West Virginia is the second largest coal producing state in the U.S. after Wyoming. It provides 50 percent of all American coal exports. Total coal production in 2009 was 144,017,758 tons, out of which about 60 percent were produced through underground mines. As the highest producer of coal in the state, Boone County produces 27.3 million tons, or about 19 percent of West Virginia's annual coal output. Table 1-8 shows coal production in West Virginia by region for 2009[20].

Table 1-8: West Virginia Coal Production, 2009

Region	Mines	Percentage of Total	Total Production (Tons)
Eastern Panhandle	---	0.00%	---
Potomac Highland	7	2.18%	3,143,623
New River-Greenbrier Valley	171	15.50%	22,328,723

[18] U.S. Army Corp of Engineers, Huntington District. Retrieved from http://outreach.lrh.usace.army.mil/States/WV/Default.htm

[19] US Energy Information Administration International Energy Outlook 2010

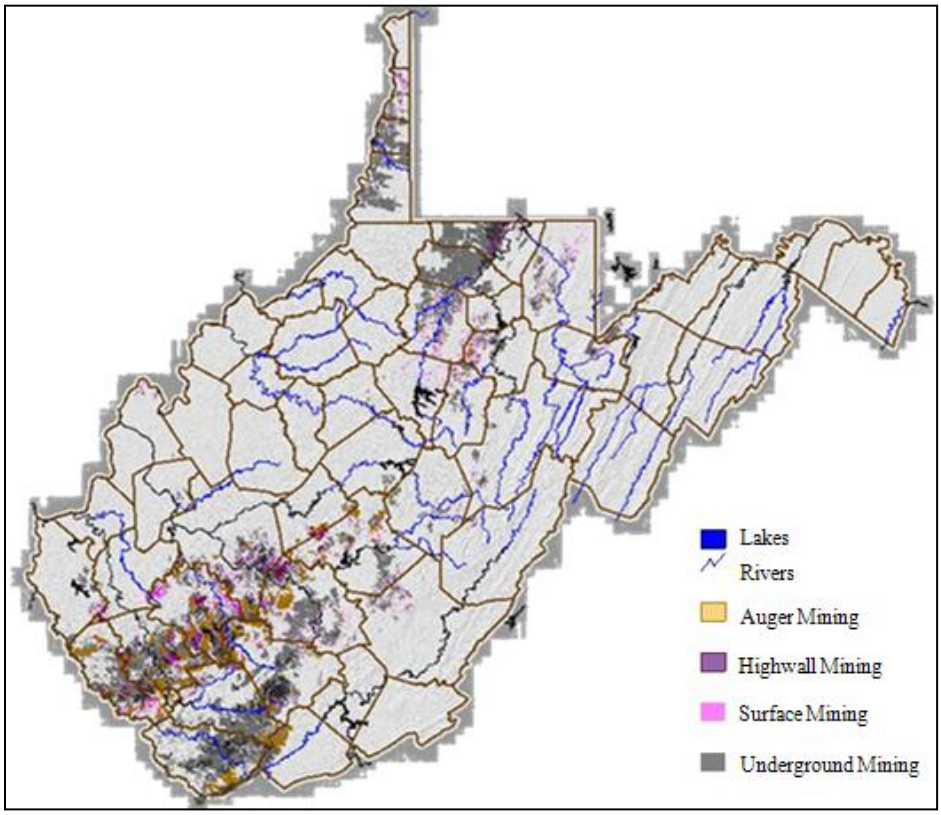
[20] WV Coal Association

Region	Mines	Percentage of Total	Total Production (Tons)
Mountaineer Country	52	16.37%	23,574,664
Mountain Lakes	37	9.49%	13,665,583
Northern Panhandle	7	7.16%	10,307,157
Mid-Ohio Valley	---	0.00%	---
Metro Valley	58	8.82%	12,701,849
Hatfield McCoy Mountains	206	40.51%	58,337,239
Total	**537**	**100%**	**144,017,758**

Source: West Virginia Coal Association

Coal is produced by four different methods of mining in the state; underground mining, surface mining, highwall mining and auger mining. In 2009, about 87 million tons of coal were produced by underground mining. West Virginia is the leading state in the nation in underground coal production. Figure 1-8 shows a map with the location of where different types of mining occur in West Virginia.

FIGURE 1-8: WEST VIRGINIA COAL MINING MAP



Source: West Virginia Geological and Economic Survey

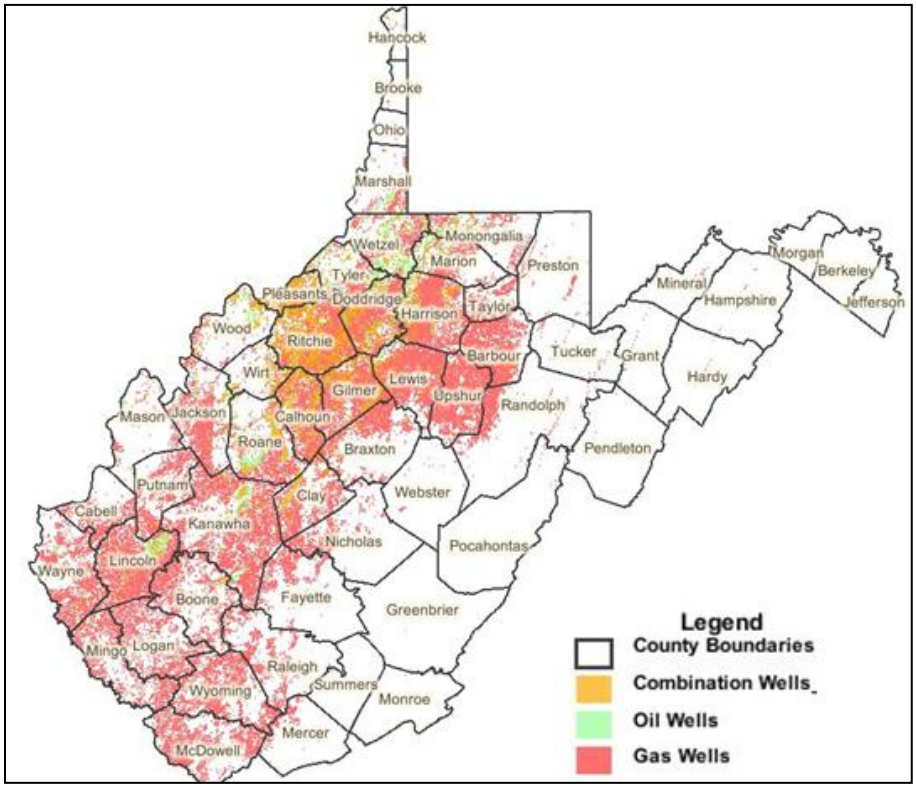
Taxes paid by the coal industry and by utility companies that make electricity using West Virginia coal account for two-thirds, or more than 60 percent of business taxes paid in the state. The coal industry pays approximately $70 million in property taxes annually. The Coal Severance Tax adds about $214 million into West Virginia's economy. Every year $24 million collected of coal severance taxes goes into the Infrastructure Bond Fund. Coal is responsible for more than $3.5 billion annually in the gross state product.

More than half of U.S. electricity is generated from coal burning plants. It provides a majority of the electric power in 32 states. About 99 percent of West Virginia's electricity is generated through coal fired power plants. There are currently 14 coal fired power generating facilities in West Virginia.

OIL AND NATURAL GAS

Both oil and natural gas were discovered in western Virginia by the first explorers in the mid-1700s. The commercial oil industry was operational as early as 1819 with the first major wells drilled at Petroleum, outside Parkersburg, in early 1859; and Burning Springs a year later in 1860[21]. In 2009, the state produced more than 257,177,239 million cubic feet (MCF) of natural gas and 1.5 million barrels of oil. Out of 55 counties in West Virginia, 53 have oil and gas wells. Similar to the coal market, in 2010, the oil and gas industry helped the state, with more than $105 million in the form of property tax and $60 million in severance tax[22]. Figure 1-9 shows the location of oil and natural gas wells across the state.

FIGURE 1-9: WEST VIRGINIA OIL AND NATURAL GAS LOCATIONS



Source: West Virginia Geological and Economic Survey

SHALE IN WEST VIRGINIA

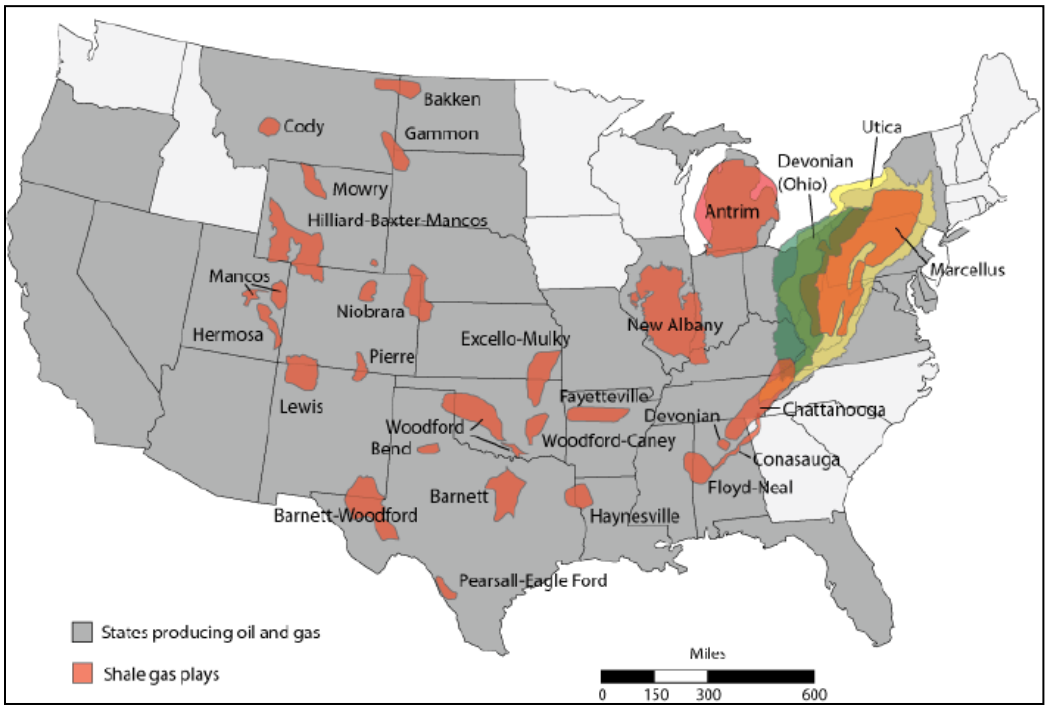
Important shale gas formations are found in many parts of the U.S., as shown on the map in Figure 1-10. Much of the early rapid growth in shale gas production took place in the Barnett Shale formation near Fort Worth, Texas. As the technology evolved, operators began to explore other large shale formations in other parts of the country. The most active shales to date are the Barnett Shale, the Fayetteville Shale, the Antrim Shale, the Haynesville Shale, the Marcellus Shale, and the Woodford Shale[23].

[21] Independent Oil and Gas Association of West Virginia

[22] West Virginia Oil and Natural Gas Association

[23] Oil & Natural Gas Technology, Argonne National Lab

FIGURE 1-10: U.S. SHALE GAS PLAYS



Source: U.S. DOE, Office of Fossil Energy

Natural gas is developed from either conventional or unconventional reservoirs, with the most recently developed unconventional natural gas reservoir being the Marcellus Shale play. The Marcellus Shale play stretches across an area of 95,000 square miles from southern New York across Pennsylvania, into western Maryland, West Virginia, and eastern Ohio. While formed in the Appalachian Basin over 300 million years ago, the Marcellus Shale play has recently become an economically viable source of natural gas due to technological advances in horizontal drilling and hydraulic fracturing, as well as relatively high natural gas prices.

Since 2002, drilling and development operations in the Marcellus Shale play have become an important component of the natural gas industry in West Virginia[24]. The Marcellus Shale is a large layer of rock located deep below the earth's surface and when fractured, can produce a large amount of natural gas. West Virginia is the largest producer of oil and natural gas east of the Mississippi River and ranks 33rd in nation for oil production and 11th for natural gas production. It is the only net exporter of natural gas east of the Mississippi River. The Marcellus Shale covers a majority of West Virginia (shown in Figure 1-11) offering the potential for considerable growth and development in the shale industry in the near future. Extraction plants and/or processing plants could also be established in the state leading to by-products of the fracturing process such as plastics.

The Marcellus Shale development has a positive economic impact on the economy of West Virginia. The development has generated about 7,600 total jobs (3,600 direct and 4,000 indirect) with $297.9 million in employee compensation ($145.2 million direct and $152.7 million indirect). This has created $2.35 billion in business volume and $1.16 billion in total value added in West Virginia.

[24] The Economic Impact of the Natural Gas Industry and the Marcellus Shale Development in West Virginia in 2009

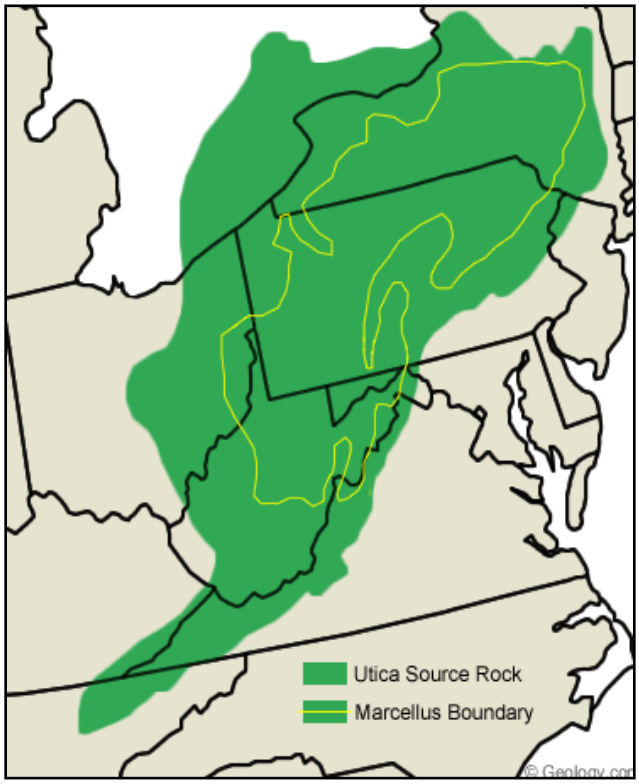
FIGURE 1-11: MARCELLUS SHALE DISTRIBUTION

Source: American Association of Petroleum Geologist

Expanded extraction of natural gas from the Marcellus Shale formation will have significant impacts on the state's transportation system. The need for drilling materials such as fracturing sand and equipment will increase the demand for rail, truck, and water transportation. The movement of refined product, and its demand for logistics infrastructure, will depend on the extent that gas processing occurs in the state.

Utica Shale is a rock layer under Marcellus Shale and is quickly becoming the next play in the natural gas market. It has an extensive geographical reach, spanning many states along the Appalachian Mountains. Figure 1-12 shows the geographic extent of Marcellus Shale and Utica Shale. The process for drilling and extracting Utica Shale is in its early stages (less than four years) with the majority of commercial drilling occurring in Ohio and Ontario, Canada. As commercial drilling becomes more prominent, localities with infrastructure in place for Marcellus Shale drilling will have a competitive advantage, because it could be used for Utica Shale extraction. However Marcellus Shale should be the major natural gas source for the foreseeable future, because it is closer to the surface and less expensive to drill and develop.

FIGURE 1-12: UTICA MARCELLUS SHALE DISTRIBUTION



Source: Geology.com

CHEMICALS & POLYMERS

The chemical and polymer industry in West Virginia has become an important sector of the state's economy. Approximately 150 companies that employ 12,800 workers are located in West Virginia, and the state is ranked sixth in the nation for its share of GDP derived from chemicals and polymers[25]. Large companies such as Bayer, DuPont, and Dow have facilities in West Virginia indicating the state has the necessary infrastructure to make it a strategic and economically viable location.

There are two organizations in West Virginia that focus on promoting the chemicals and polymers industry and attracting companies to their respective areas within the state.

The Chemical Alliance Zone (CAZ) is a non-profit group comprised of various citizens and officials in the counties of Cabell, Kanahwa, Putnam, Wayne and parts of Marshall championing the chemical industry in West Virginia. The Polymer Alliance Zone is a membership organization of polymer and related industries whose industrial base are located in the counties of Jackson, Mason and Wood.

[25] http://chemicalswv.com/default.aspx

SECTION 2: WEST VIRGINIA FREIGHT TRANSPORTATION SYSTEM

West Virginia's transportation infrastructure network is an essential component in the statewide intermodal movement of freight. The state supports 555 miles of interstate roadway, 7,368 bridges, 2,401 miles of active rail track, and 682 miles of navigable waterways. The Ohio River inland port at Huntington, where West Virginia meets Ohio and Kentucky, is the nation's largest inland port, handling more than 80 million tons of cargo annually. Each transportation mode (highway, rail and water) and inland facilities in the state are summarized in this section.

FIGURE 2-1: WEST VIRGINIA FREIGHT TRANSPORTATION NETWORK

Source: U.S. Geological Survey

2.1. HIGHWAYS

West Virginia has an accessible highway network consisting of six Interstate highways and twenty U.S. Highways. These roadways give the state four-lane access to neighboring urbanized areas such as the greater metro Washington D.C. area, Pittsburgh and Columbus, allowing freight to move to/from these locations within a one day trip. Table 2-1 provides a summary of the 36,000+ miles of roads across the state.

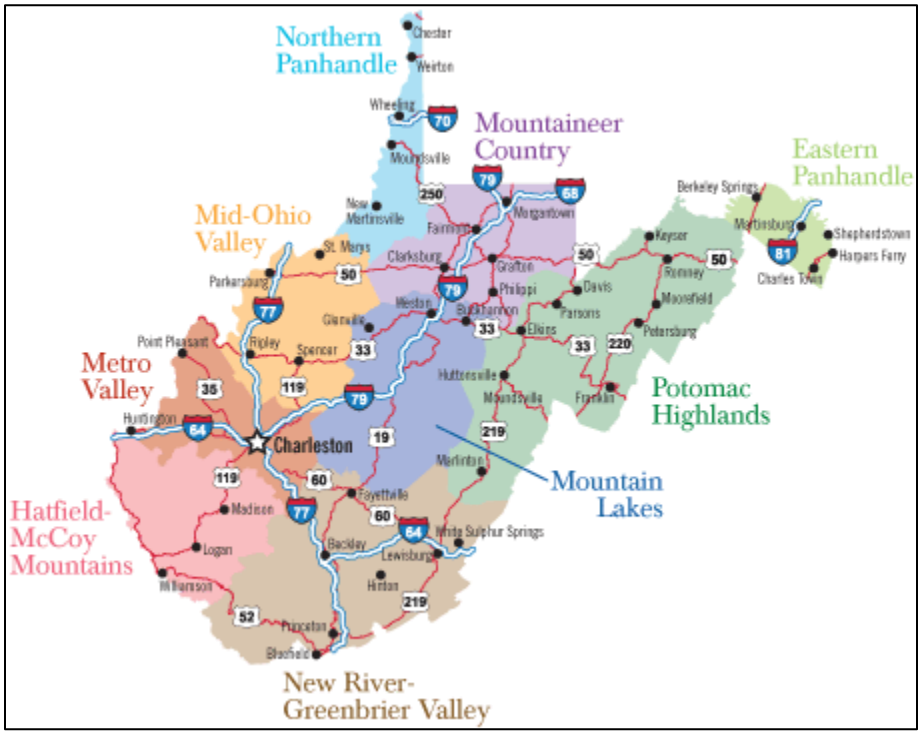
TABLE 2-1: WEST VIRGINIA ROAD MILEAGE

Road Type	Mileage (miles)	Percentage of Total
Interstate	554	1.5%
U.S. Routes	1,799	5.0%
WV Routes	3,659	10.1%
County Routes	28,874	79.7%
State parks/Forests	195	0.5%
Federal Aid non-state	279	0.8%
Harp	885	2.4%
Total	**36,245**	**100%**

Source: WV DOT, Division of Highways

The longest interstate highway in West Virginia is I-77, which enters the state from Virginia through a tunnel under the East River Mountain near Bluefield and travels north 187 miles to exit by a bridge across the Ohio River north of Parkersburg. I-64 enters in West Virginia from Kentucky in Huntington and joins in with I-77 after passing through Wayne, Cabell, Putnam and Kanawha Counties. I-64 travels 123 miles in West Virginia before joining into I-77 where it travels 50 miles.

FIGURE 2-2: WEST VIRGINIA HIGHWAY NETWORK



Source: West Virginia Department of Commerce

The 310-mile long I-79 starts from Charleston, WV and travels north-east towards Erie, PA. I-79 travels 160 miles in West Virginia. The most heavily traveled interstate in West Virginia is I-81, which traverses through the Eastern Panhandle and is about 26 miles long. The shortest interstate in West Virginia is I-70, which travels across Ohio County from Ohio to Pennsylvania[26].

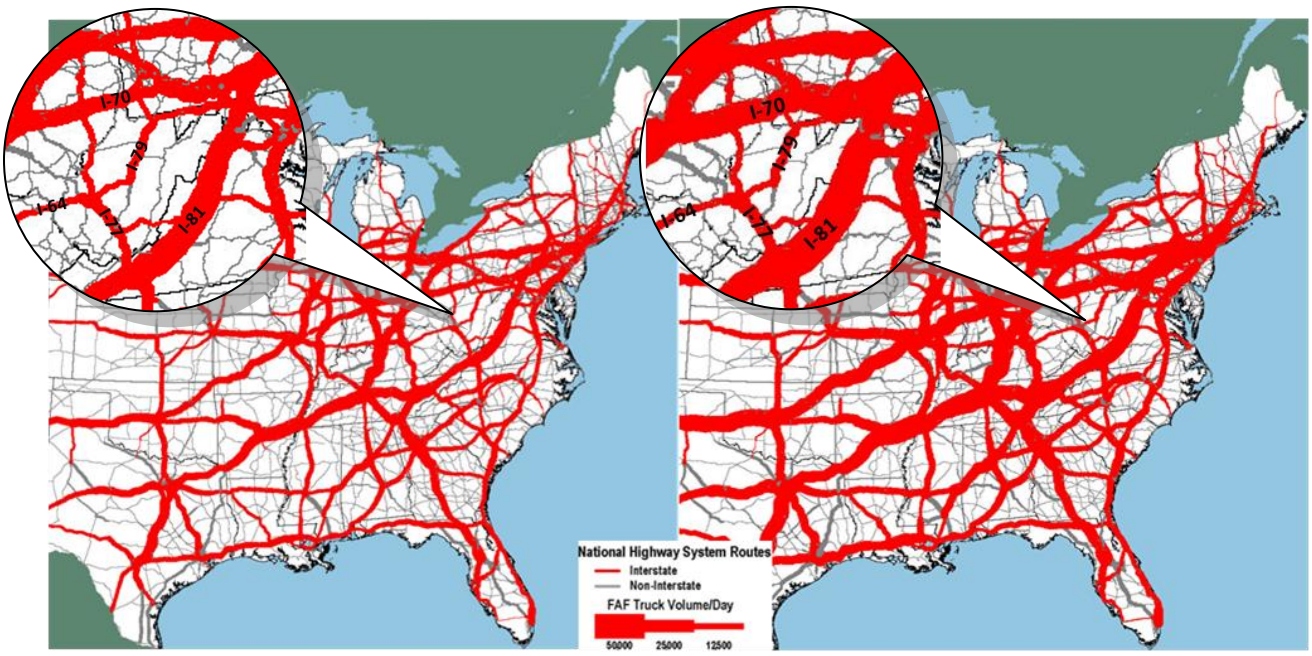
[26] http://www.wvencyclopedia.org/articles/861

The Federal Highway Administration's Planning Sector has a list of planned highways (part of the National Highway System (NHS)) that are considered "high priorities". Congress has designated such corridors since 1991 and this designation enables funding that may be provided directly or indirectly through multiyear surface transportation authorizations.

The I-73/74 Corridor is a NHS Congressional High Priority Corridor designated as Future Interstates with portions passing through West Virginia. The corridor runs from Charleston, SC to Detroit, MI and Sault Ste. Marie, MI. In West Virginia, the Corridor shall generally follow U.S. Highway 460 from the West Virginia state line to U.S. Highway 52 at Bluefield, WV and through the state which encompasses five counties[27]. The annual economic impact is estimated to be $220.3 million that sustains 2,020 jobs after construction is complete[28].

The interstates passing through West Virginia has less truck traffic volume as compared to their nearby interstates. However, I-70 and I-81 passing through the Northern and Eastern Panhandle regions respectively carry more traffic volume per year. Figure 2-3 below shows the truck volume per day for 2040 based on the Freight Analysis Framework (FAF) model, version 3. It can be observed that truck traffic along I-77 between I-64 junction (at Charleston) and I-81 is predicted to have significant growth in traffic volume. Also, I-79 which connects Clarksburg with Charleston is also predicted to see significant growth in truck volume.

FIGURE 2-3: AVERAGE TRUCK TRAFFIC COMPARISON FOR 2007 & 2040



Source: FHWA and Parsons Brinckerhoff Analysis

The West Virginia Commercial Driver's License Manual identifies the following maximum designated speeds for trucks:

- Interstate maximum speed: 70 mph
- Open highway: 55 mph
- Business or residential area: 25 mph

[27] http://www.fhwa.dot.gov/planning/nhs/hipricorridors/hpcor.html
[28] http://www.wvkingcoal.com/pdf/I73impact.pdf

The weight and height restrictions in West Virginia vary based on different types of roadways. Interstates and divided routes have higher clearances and weight allowance as compared to other routes such as U.S. Highways. Table 2-2 shows the list of clearances and weight allowance on different types of routes throughout West Virginia. The state's weight and dimensional restrictions according to the West Virginia DOT include:

- Maximum gross vehicle weight
  - Interstate highway: 80,000 lbs
  - U.S. & State highway: 80,000 lbs
  - Local service roads: 65,000 lbs
- Maximum width
  - Interstate, U.S. & State highways with 10' wide lane or greater: 8'6"
  - Local service roads with lanes under 10' wide: 8'
- Maximum height: 13'6"

TABLE 2-2: WEST VIRGINIA ROAD RESTRICTIONS AND CLEARANCES

Criteria	Interstate and Divided Routes	U.S. Highways and Selected Routes	All Other Routes
Height	14'6"	14'0"	13'6"
Width	14'0"	12'0"	12'0"
Length	95'0"	75'0"	75'0"
Overhang	15'0"	10'0"	10'0"
Weight (lbs.)	110,000	90,000	Legal Weight

Source: WV DOT, Division of Highway

2.2. FREIGHT RAIL SYSTEM

The West Virginia rail system comprises two Class I railroads (CSX Transportation and Norfolk Southern) and 11 short line or regional railroads. The state's railroad system contains 2,401 route miles of track with CSX Transportation (CSXT) operating 1,113 route miles of track and Norfolk Southern (NS) operating 801 route miles of track. The short lines and regional railroads comprise the remaining 487 route miles of track and primarily service freight to and from coal mines[29]. Table 2-3 below shows mile route of different short line services. Additional details on the 11 regional short line railroads are provided in Appendix A.

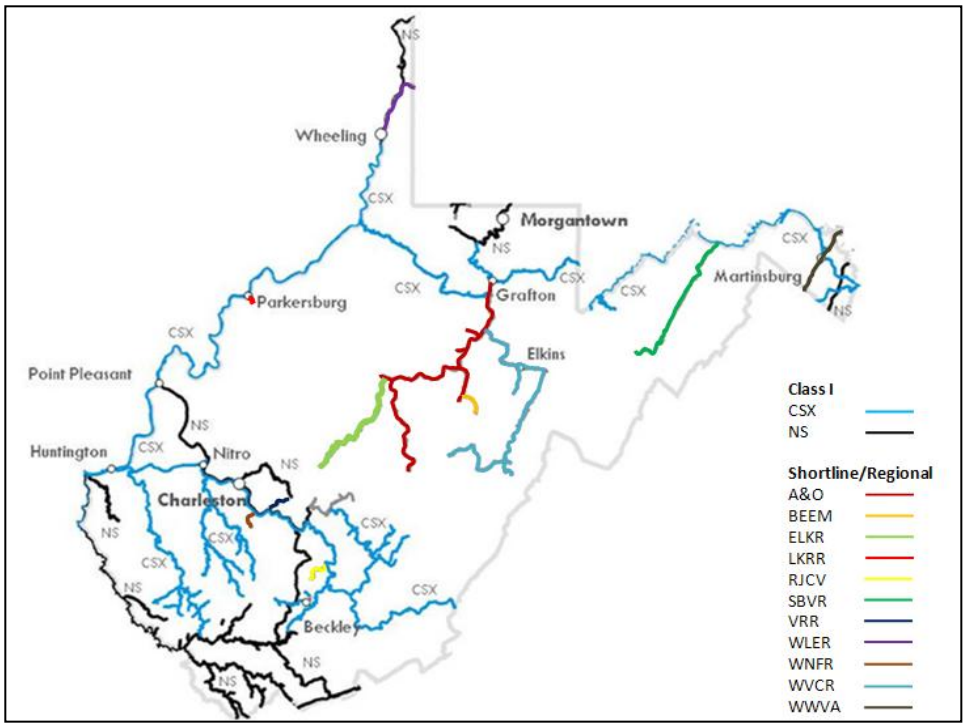
TABLE 2-3: WEST VIRGINIA SHORTLINE SERVICE

Shortline Rail	Trackage (miles)
Appalachian and Ohio Railroad	158
Beech Mountain Railroad	8
Elk River Railroad	61
Little Kanawha River Railroad	3
R.J. Corman Railroad Company / WV Lines	16
South Branch Valley Railroad	52
West Virginia Central Railroad	132
Winchester and Western Railroad	50

Source: Various Sources and Parsons Brinckerhoff Analysis

[29] WVDOT, retrieved from: http://www.transportation.wv.gov/rail/freight/Pages/default.aspx

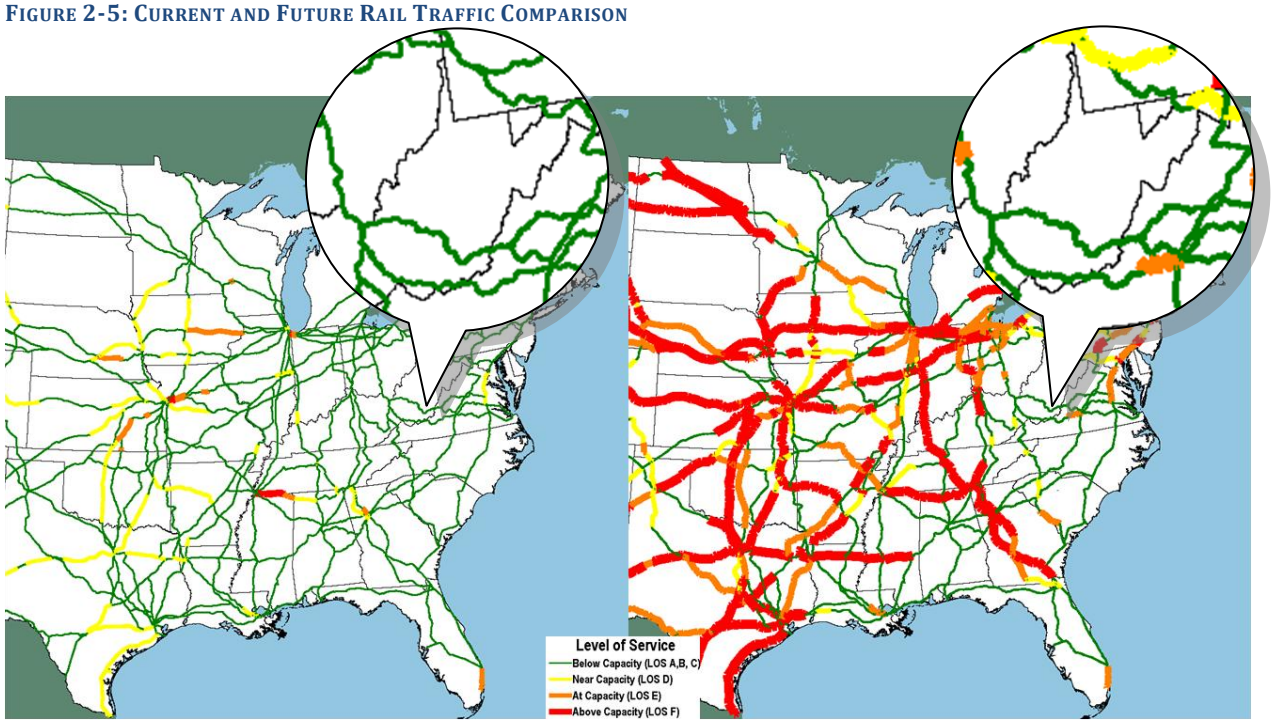
FIGURE 2-4: WEST VIRGINIA FREIGHT RAIL MAP



Source: Association of American Railroads, modified by Parsons Brinckerhoff

West Virginia does not have heavy rail traffic as compared to its nearby states. Figure 2-5 shows a comparison between current rail traffic and projected 2035 rail traffic across the U.S. As the nearby rail routes reach their capacity, there will be development alternatives available in the state of West Virginia.

FIGURE 2-5: CURRENT AND FUTURE RAIL TRAFFIC COMPARISON



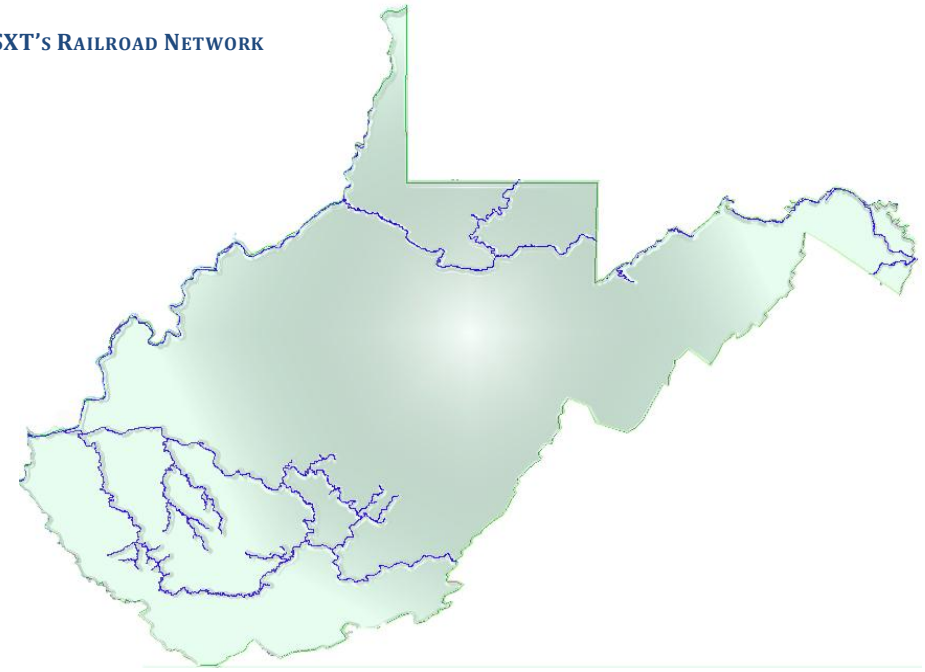
Source: FHWA

2.2.1 CSX TRANSPORTATION

CSXT operates approximately 1,113 miles of rail line throughout West Virginia with major rail yards in Charleston, Huntington, Logan and Parkersburg. During 2010, CSXT handled about 1.5 million carloads of freight in West Virginia. The main commodities shipped are coal, rock, textile chemicals, plastics and lime. The mainline, through other short lines, connects West Virginia's coal mines to its markets. It also connects the state with East Coast ports and the market in the Midwest. The line has annual traffic densities of over 60 million gross ton-miles per route mile[30]. Figure 2-6 identifies CSXT's rail network.

CSXT's rail line near Martinsburg is part of the National Gateway project that crosses the Eastern Panhandle. There are seven improvement projects in the state as a part of the National Gateway project, which involves bridge and tunnel improvement and construction of the new universal interlocking[31]. The total cost of these improvements for West Virginia is $62 million[32].

FIGURE 2-6: CSXT'S RAILROAD NETWORK



Source: FRA

2.2.2 NORFOLK SOUTHERN RAILWAY

NS operates approximately 801 miles of rail line throughout the state with major coal transloading facilities in Cyrus, Ceredo and Kenova and major rail yards in Bluefield, Quincy and Wiliamson. The main commodities shipped by NS are coal and industrial products such as aggregates and chemicals. Similar to CSXT, NS also connects the state of West Virginia with its market in the Mid-west and East Coast ports, having annual traffic density similar to CSXT. In Bluefield, WV, NS handles nearly 100 million gross ton-miles per route mile[30]. Figure 2-7 identifies NS's rail network.

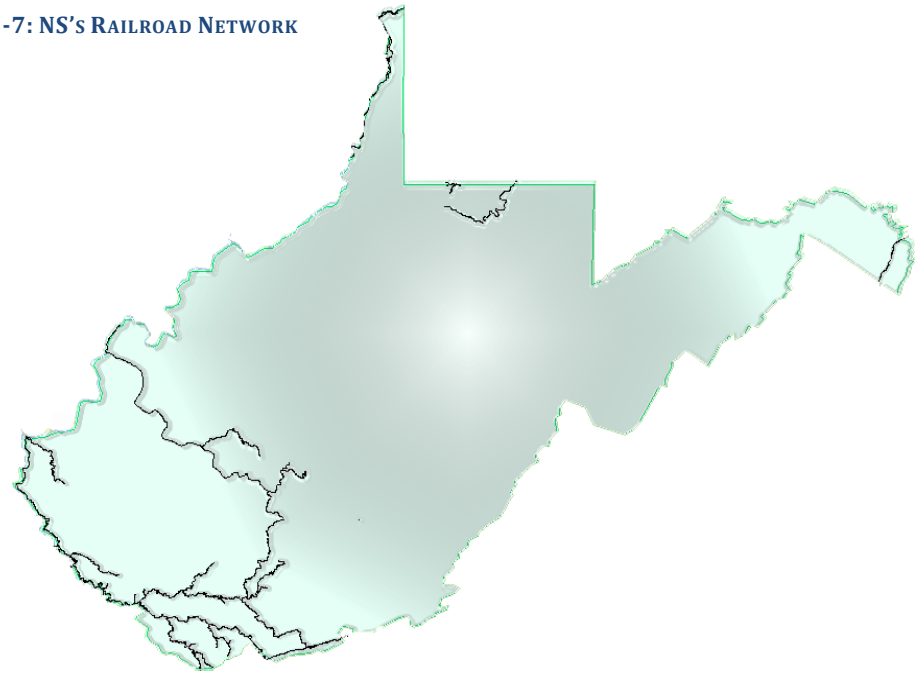
30 WVPPA Tech Memo – Trade and West Virginia Logistics

31 http://www.nationalgateway.org/projects?state=WV

32 http://www.journal-news.net/page/content.detail/id/531138.html?showlayout=0

The NS Heartland Corridor traverses through McDowell, Mingo, and Wayne County in West Virginia, while making its way to Chicago, IL. The Crescent Corridor runs along I-81 and crosses the Eastern Panhandle region near Charlestown, WV.

FIGURE 2-7: NS'S RAILROAD NETWORK



Source: FRA

2.3. WATERWAYS

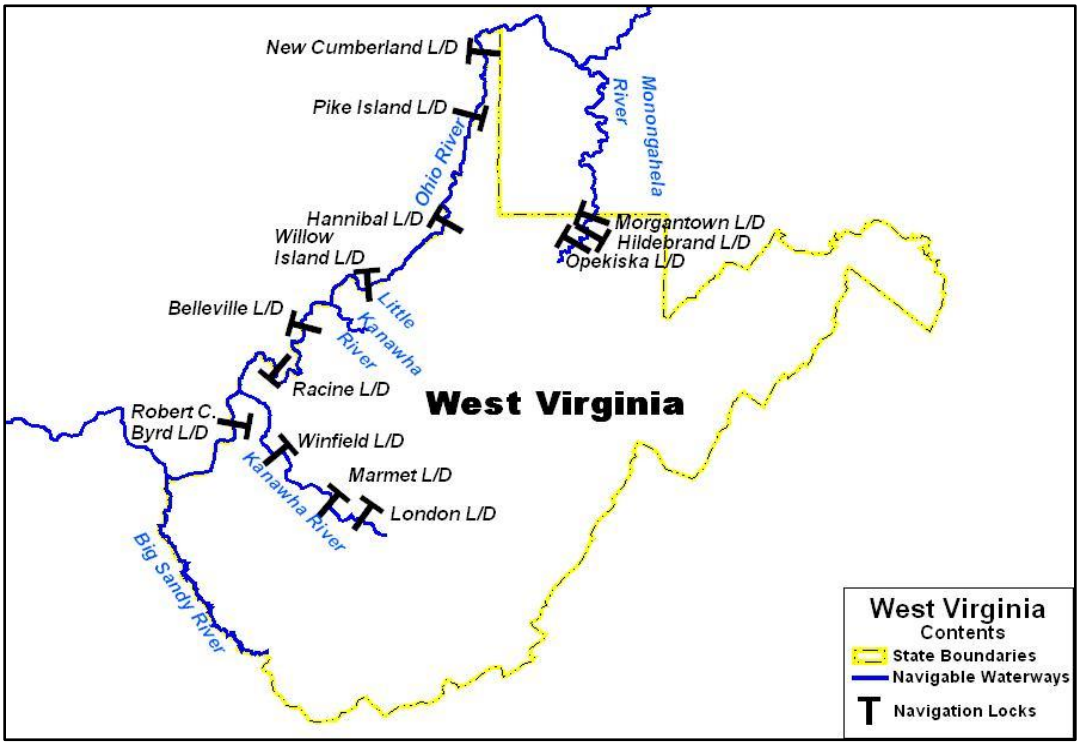
West Virginia's navigable inland waterways make up a significant section of the U.S. Inland Waterway System. The state borders 277 miles of the Ohio River's 981-mile length and contains the entire 91-mile navigable length of the Kanawha River, four navigable miles of the Little Kanawha River and 37 miles of the upper Monongahela River.

The inland waterways and 13 navigation locks on these rivers are maintained by the U.S. Army Corps of Engineers (USACE). These waterways facilitate the transportation of freight, primarily bulk commodities such as coal, petroleum and grain. As the second-leading coal-producing state, the movement of coal by barge along these waterways is vital to West Virginia's economy[33].

The natural depth of Ohio River varies from 3 feet to 40 feet. However, with the construction of dams, the water level has been raised, which allows for commercial navigation. The average depth of the Ohio River is 27 feet. USACE maintains the depth of inland waterway's navigation channel to 9 feet. The Big Sandy River flows along the southwestern border of the state with 10 miles used for commercial navigation.

[33] U.S. Army Corp of Engineers, Huntington District. Retrieved from http://outreach.lrh.usace.army.mil/States/WV/Default.htm

FIGURE 2-8: WEST VIRGINIA'S NAVIGABLE WATERWAYS & LOCKS



Source: USACE

Figure 2-8 identifies the state's navigable rivers and associated locks. The navigation locks along the Ohio River feature 1,200 foot chambers that can accommodate a 15 barge tow and towboat in a single lockage. Unlike most other portions of the U.S. inland navigation system, this capacity for a 15 barge tow in a single lock allows for lower lockage times and reduces associated delays. The width of the main lock is 110 feet (except on the Monongahela River at 84 feet). The width of auxiliary lock is 110 feet on Ohio River and 56 feet on Kanawha River. The USACE maintains a minimum depth of nine feet along all the waterways to safely ensure the passage of commercial vessels.

Table 2-4 shows the condition of the locks in West Virginia along Ohio, Kanawha and Monongahela Rivers. Most of these locks have a design life of 50 years[34]. Approximately 30 percent of the locks have exceeded their design life[35].

TABLE 2-4: WEST VIRGINIA LOCKS SPECIFICATIONS

Lock	River	Year Operational	Year Rehabilitated	Lock Size (ft.) Main	Auxiliary
New Cumberland	Ohio	1959	---	1200x110	600x110
Pike Island	Ohio	1965	---	1200x110	600x110
Hannibal	Ohio	1972	---	1200x110	600x110
Willow Island	Ohio	1972	---	1200x110	600x110
Belleville	Ohio	1968		1200x110	600x110

[34] ASCE Infrastructure Report Card. Retrieved from http://www.infrastructurereportcard.org/node/178

[35] Ohio River mainstem sytem study, USACE 2006

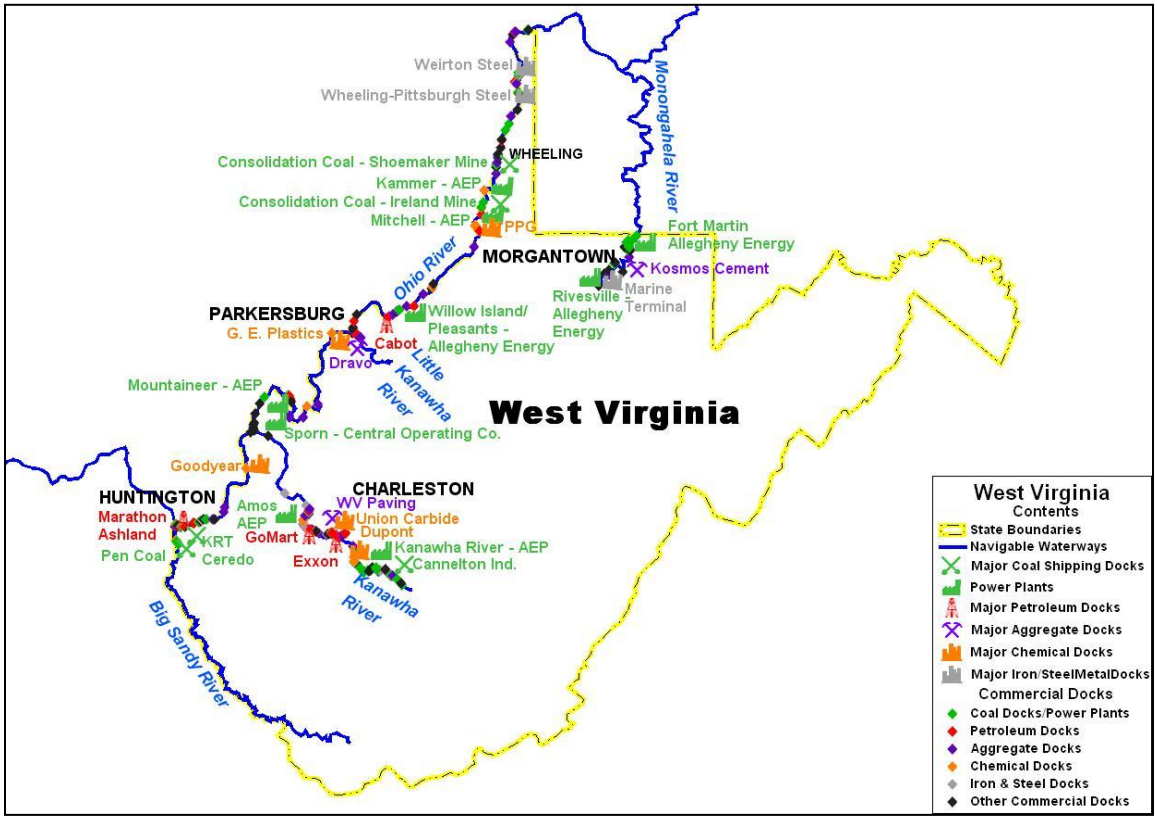
Lock	River	Year Operational	Year Rehabilitated	Lock Size (ft.) Main	Auxiliary
R. C. Byrd	Ohio	1937	1993	1200x110	600x110
Racine	Ohio	1967	---	1200x110	600x110
Winfield	Kanawha	1935	1997	800x110	2(360x56)
Marmet	Kanawha	1934	2008	800x110	2(360x56)
London	Kanawha	1933	2003	360x56	360x56
Morgantown	Monongahela	1950	---	600x84	---
Hildebrand	Monongahela	1959	---	600x84	---
Opekiska	Monongahela	1964	---	600x84	---

Source: Great Lakes and Ohio River Navigation Systems Commerce Report, USACE 2008

2.3.1 DOCKS

There are more than 200 docking facilities along the Ohio, Kanawha and Monongahela rivers that handle coal, petroleum, aggregates, chemicals, steel and many other commodities. An inventory of docking facilities is provided in Appendix B. In 2009, West Virginia docks shipped commodities by barge to 16 other states, and received commodities from 13 other states. The leading state shipped to was Ohio, receiving almost 17 million tons of goods. The leading state shipping by barge to West Virginia was Kentucky, which transported 4.34 million tons. Louisiana shipments to West Virginia of high-value commodities such as ores/minerals, iron/steel and chemicals were worth more than $339 million.

FIGURE 2-9: WEST VIRGINIA'S DOCKS



Source: USACE

TABLE 2-5: WEST VIRGINIA WATERBORNE CARGO TO/FROM OTHER STATES, 2009

Shipments To	Million Tons	Top Commodity	Shipments From	Million Tons	Top Commodity
Ohio	16.58	Coal	Kentucky	4.34	Coal
Pennsylvania	10.04	Coal	Pennsylvania	4.30	Coal
Kentucky	2.12	Coal	Ohio	4.04	Coal
Louisiana	1.98	Coal	Indiana	1.45	Aggregates
Indiana	1.24	Coal	Louisiana	1.60	Ores/Minerals

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

2.3.2 PORT DISTRICTS & REGIONAL PORT AREAS

The WVPPA has five approved local port districts that act as branches, with WVPPA being the governing authority. The local port districts have their own organization structure and are encouraged to come up with development initiatives. WVPPA will provide technical guidance to facilitate the development of port districts. Figure 2-10 shows the location of the five different local port districts in West Virginia, as well as the regional Port of Huntington Tri-State.

JACKSON COUNTY PORT AUTHORITY DISTRICT

Jackson County Port was the first inland public port to be established in the state[36]. The Jackson County Port Authority District covers all jurisdictional boundaries in Jackson County and was established to allow the local authority to be more aggressive and responsive in assessing and meeting transportation needs and efficiency of the Polymer Alliance Zone[37]. The Jackson County Maritime and Industrial Center, located in Jackson County, has a 25-acre barge loading/unloading facility on Ohio River. It is centrally located among three of West Virginia's largest cities; Charleston, Huntington, and Parkersburg. It has approximately 159 acres of land in the Ohio River Valley in Western West Virginia[38]. The industrial center is served by CSXT mainline throughout the region. The region has an access to I-77 that is six miles from the center via WV Route 2.

BUFFALO-PUTNAM PORT DISTRICT

This district manages a port located along Kanawha River in the Putnam County. The port site has an area of 290 acres and is located next to a 230-acre site of Toyota motor facility. The major commodities handled at the port include sand, gravel, machinery and fabricated metal products. About 15 million tons of cargo is handled at the port through 14 terminals. NS's main line provides the rail access to the port site running adjacent to the Kanawha River. Key projects within the Port District include the reinternment of the 664 Native Americans taken from the Archeological Site in Buffalo, West Virginia.

KANAWHA VALLEY LOCAL PORT AUTHORITY DISTRICT

The Kanawha Valley Local Port Authority covers an area of 20 miles to the east and west of the Kanawha River and from Putnam County to Raleigh County. The North Charleston tank farm and distribution center is one of the key projects of the port authority, which allows it to market excess capacity of the tank farm with Dow Chemicals[39]. Another project includes the continued planning of the Public Port in South Charleston. This project, when completed, will allow the Local Port

[36] WVPPA Annual Report

[37] http://www.transportation.wv.gov/ports/Pages/WVPorts.aspx

[38] http://www.jcda.org/Jackson_County_maritime_industrial_center.html

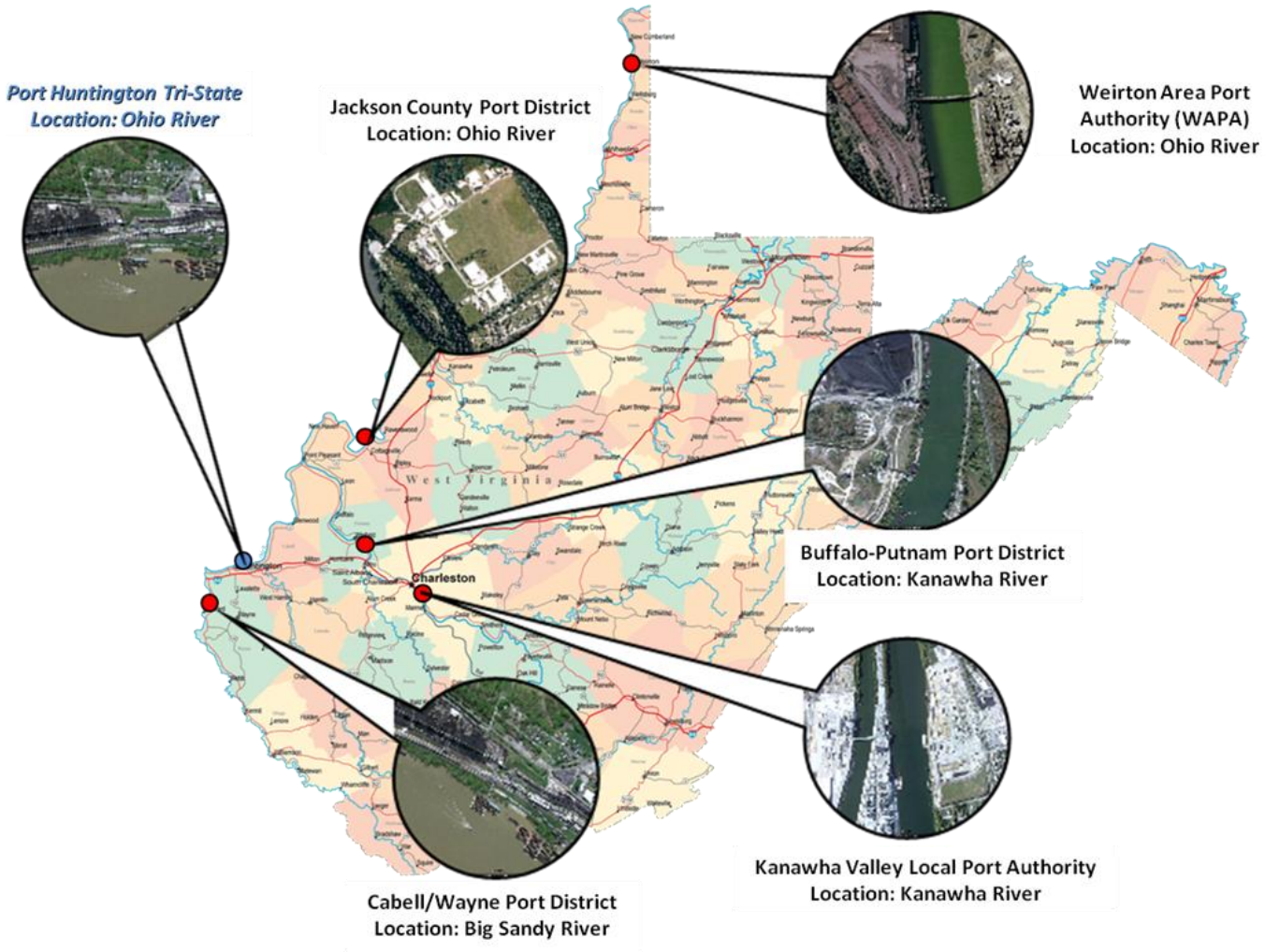
[39] http://www.transportation.wv.gov/PORTS/Pages/WVPorts.aspx

Authority to use the FMC Brownfield Remedied site for the development of a public drumming facility, warehousing and container on barge activities. The Local Port Authority continues to raise Inland River System Marine Domain Awareness through an aggressive Public Outreach Program.

WEIRTON PORT AUTHORITY DISTRICT

The Weirton Area Port Authority (WAPA), comprising Brooke and Hancock Counties, was created in 1997 to develop an inland port in the northern panhandle of the state. There is about 40 miles of navigable waterway on the Ohio River under WAPA's jurisdiction, which also covers the New Cumberland Lock and Dam. More than 80 terminals service the region's waterways including private terminals. The port district is connected to Class I railroads through the main lines of CSXT and NS[40].

FIGURE 2-10: WV PORTS & WVPPA LOCAL PORT DISTRICTS



Source: Parsons Brinckerhoff Analysis

[40] http://wapainc.org/About.html

CABELL/WAYNE PORT DISTRICT

The Cabell/Wayne Port District is located near the Big Sandy River in Wayne County. Development of Prichard Intermodal Terminal is one of the major projects considered under this port district. The project will be located on the banks of Big Sandy River near Prichard, WV. The intermodal terminal will be developed by NS and is sited along the rail corridor. The terminal will have access to I-64 through U.S. Route 52.

Separately from these districts, the Port of Huntington Tri-State is a regional port area and the only recognized port area in West Virginia by the USACE. It is not a physical entity but a designation for a given area of inland ports whose collective data is used for statistical purposes.

PORT OF HUNTINGTON TRI-STATE

The Port of Huntington Tri-State is the largest inland port in the U.S. in terms of total tonnage, as well as ton-miles of cargo. The port stretches 100 miles along the Ohio River from the mouth of the Scioto River near Portsmouth, stretching upstream to the northern boundary of Gallia County; 99 miles along the Kanawha River and nine miles along the Big Sandy River. The Port of Huntington Tri-State's tonnage is more than 80 million tons per year with a cargo value of $5.3 billion in coal, petroleum, chemicals, steel and other bulk products transported through the region's waterways[41]. There is no current central port authority or commission that oversees port operations at Port Huntington[42]. However the Cabell-Wayne Port Authority located at the western terminus of the Port of Huntington Tri-State, although largely inactive, is involved in new intermodal and economic development initiatives at the Tri-State Airport and along the Big Sandy River.

2.3.3 FOREIGN TRADE ZONES

A foreign-trade zone (FTZ) is a designated location in the U.S. where companies can use special procedures that help encourage U.S. activity and value-added services – in competition with foreign alternatives – by allowing delayed or reduced duty payments on foreign merchandise, as well as other savings. A site which has been granted zone status may not be used for zone activity until the site has been separately approved for FTZ activation by local U.S. Customs and Border Protection (CBP) officials, and the zone activity remains under the supervision of CBP. FTZ sites and facilities remain within the jurisdiction of local, state or federal governments or agencies[43].

West Virginia has two general-purpose FTZs. West Virginia Economic Development Authority is responsible for grant applications and acts as a grantee for FTZs in the state. FTZ 229 is designated to Charleston, which is an official CBP designated port of entry. FTZ 229 has three subzones, 229A, 229B and 229C. Subzone 229A was authorized in 1998 to Toyota Motors Manufacturing for its engine manufacturing plant in Buffalo. This subzone was modified in 2000 to expand the company's manufacturing authority. Subzone 229B was authorized in 2004 to E.I. du Pont de Nemours & Co. in Belle, WV for crop protection products. Subzone 229C was authorized in 2011 to Cabela's Inc. for its warehouse and distribution facility in Triadelphia. FTZ 240 is designated to Martinsburg and uses Front Royal, VA as its CBP designated port of entry.

The Prichard Intermodal Terminal could spur the development of a FTZ in the Prichard/Kenova (Tri-State Airport) area. It is estimated the Prichard Intermodal Terminal would be a general-purpose zone, because it is a public facility used by more than one firm and therefore would not be sponsored by FTZ 229.

41 http://www.huntingtonwaterways.com/

42 http://www.epa.gov/region3/oecej/Huntington_Fact_Sheet.pdf

43 http://ia.ita.doc.gov/ftzpage/info/zone.html

2.4. Multi-Modal Comparison

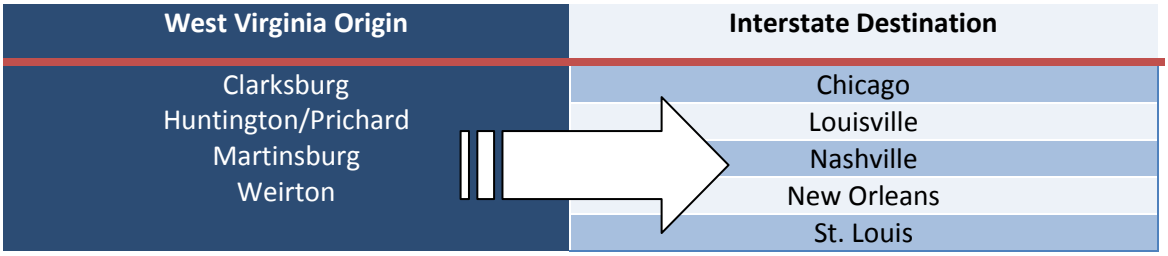
Three factors are generally considered to be the prime determinants of how goods are moved: reliability, transit time, and transportation costs. Of these three, reliability is the most subjective. Reliability can be influenced by variation in transit time, frequency of transportation service, flexibility of distribution networks, or many other factors. Ultimately, however, it reflects the shipper's confidence that cargo will consistently arrive at its specified destination on schedule and in good condition, and at predictable rates.

Transit time is important in determining how goods move because "time is money." Higher-value products tend to be shipped on faster routes and services, with the most valuable goods shipped by air, if possible.

Of course, transportation costs also affect how goods are moved. All-water routing is particularly attractive for transporting lower-value products, for which longer transit times are less important than the net transportation costs. Even in the case of low and moderate value products, however, reliability is still important, particularly when the all-water leg serves as part of an "inventory in transit" management system.

The role of each of these factors is significant in determining the mode of transport that cargo will flow through West Virginia. The following subsection provides a comparison of travel distances, transit times and costs between the three modes of transportation (truck, rail and barge) for different freight journeys between four West Virginia origins and five interstate destinations.

Figure 2-11: Selected West Virginia Origins and Interstate Destinations



Source: Parsons Brinckerhoff Analysis

Figure 2-12 highlights the journey origins (black) and the destinations (red) to compare the geographical proximity of the points to each other in contrast to the actual travel path of the rivers to each destination.

FIGURE 2-12: MULTI-MODAL COMPARISON - ORIGINATIONS AND DESTINATIONS

Source: http://upload.wikimedia.org/wikipedia/commons/5/54/Mississippirivermapnew.jpg and Parsons Brinckerhoff Analysis

2.4.1 TRAVEL DISTANCES

Table 2-6 provides the travel distances between four West Virginia origins and five interstate destinations for a movement by barge, truck, and rail. Truck routing maximized West Virginia interstates and highways with preference given to interstates if the route is longer but the route time is shorter.

The barge route assumed that freight would be transported by truck (drayed) twice during the voyage. A 25-mile dray is assumed from the cargo origin to the selected WV locations, and a second 25-mile dray is assumed from the destination terminal to the ultimate cargo destination.

Neither Clarksburg nor Martinsburg are adjacent to a navigable waterway and, therefore, any freight originating in or destined for either city must be moved by truck or rail to the closest river port. For the water transportation leg of freight originating in Martinsburg, it is assumed that any cargo transloading will occur downstream of the Morgantown Lock and Dam. The total barge mileage indicated in Table 2-6 incorporates the following additional drayage distances:

- Clarksburg to/from Fairmont, WV: 24 miles
- Martinsburg to/from Morgantown, WV: 150 miles

There are two distinct rail moves: a carload and an intermodal container. The total rail mileage for carload assumes an initial 50-mile dray from the origin to the closest of one of the four selected cities in West Virginia.

The total rail intermodal mileage assumes an initial 25-mile dray from the origin to the closest of one of the four selected cities in West Virginia and a 25-mile dray from the destination intermodal yard to the ultimate destination of the container. The intermodal mileage also includes the following distances to dray the cargo from one of the four West Virginia cities to the closest of three intermodal yards in the region (Pittsburgh, Pa., Chambersburg, Pa. or Prichard, WV):

- Clarksburg to/from Pittsburgh: 110 miles
- Huntington to/from Prichard: 22 miles
- Martinsburg to/from Chambersburg, PA: 42 miles
- Weirton to/from Pittsburgh: 38 mile

TABLE 2-6: MODAL COMPARISON OF TRAVEL DISTANCE (MILES)

Clarksburg	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	540	371	511	989	632
Barge	1,711	754	1,290	2,017	1,338
Rail (intermodal)	694	761	952	1,568	901
Rail (carload)	685	550	741	1,532	894

Huntington/ Prichard	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	497	199	339	869	459
Barge	1,224	267	803	1,530	851
Rail (intermodal)	641	454	645	1,194	829
Rail (carload)	510	315	506	1,122	547

Martinsburg	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	643	551	626	1,046	760
Barge	1,813	856	1,392	2,119	1,440
Rail (intermodal)	863	930	1,171	1,477	1,071
Rail (carload)	744	811	1,002	1,331	952

Weirton	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	455	353	526	1,057	569
Barge	1,472	515	1,051	1,778	1,099
Rail (intermodal)	622	689	880	1,496	829
Rail (carload)	510	581	717	1,244	694

Source: Parsons Brinckerhoff Analysis

On average, the barge route is 1.5 to 2 times longer than the rail or truck route. While the distance that a barge must travel is sometimes twice the distance that a truck or railcar must travel, its ability to take advantage of economies of scale with larger payloads of cargo can result in a cost-competitive option for shippers.

2.4.2 TRANSIT TIMES

Roadway transit times are general and provided by open source mapping software. These times assume normal traffic and roadway conditions. River transit times are provided by the USACE and an open source transportation management resource.[44] Transit times on the Monongahela River are based on average lockage times for all locks on the river[45] and an average speed of seven miles per hour.[46] For determining an approximate time to tow from Clarksburg (Fairmont) and Martinsburg (Morgantown) to their destinations, the journey time on the Monongahela is estimated to be one day from Fairmont to Pittsburgh and .75-days from Morgantown to Pittsburgh. Approximate rail transit times were provided by railroad resources[47] and Parsons Brinckerhoff rail modeling analysis.

While seven miles per hour is used as an average speed for a towboat, actual speeds are heavily dependent upon the direction of travel (upstream vs. downstream), river conditions, traffic density, towboat horsepower rating, quantity of barges and tonnage of cargo in-tow, and lock conditions (i.e., number of cuts required, state-of-repair, etc.). Towboats generally travel between three and eleven miles per hour.[48] For example, the journey between St. Louis and New Orleans is 1,039 miles, has no locks to transit, but has a winding course, unlike the Upper Mississippi River, which is straighter but has 29 locks. A transit time between St. Louis and New Orleans, a descending journey, will take approximately 10.7 days, whereas the ascending journey is approximately 18.2 days.

The trucking time is based on an assumed 500 miles per day, which takes into consideration the federal restriction on hours of service to a maximum of 11 hours per day. All transit times include any required or assumed drayage time.

TABLE 2-7: MODAL COMPARISON OF TRANSIT TIMES (IN DAYS)

Clarksburg	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	1.08	0.74	1.02	1.98	1.26
Barge	29	10.25	19	22	19
Intermodal Rail	1.2	1.26	1.42	1.95	1.38
Carload Rail	5.3	7.6	7.7	11	8.7

[44] Average transit times provided by ACL Connect, http://www.acltrac.com/transit_times.asp?cat=bargeinfo, retrieved 25 July 2011.

[45] Average lockage time of 35 minutes is the average of all lockage times for the Monongahela for June 2011, as recorded by the USACE, http://www2.mvr.usace.army.mil/omni/webrpts/omni_gr/RPT10w.cfm?srvr=LRD&cc_river_code=MN&cc_start_datetext=20110601000000&cc_end_datetext=20110630240000&dist=LRP&cc_vt=I, retrieved 25 July 2011.

[46] "Towboats," Globalsecurity.org, http://www.globalsecurity.org/military/systems/ship/towboat.htm, retrieved 25 July 2011.

[47] ShipCSX is an online service provided by CSX Transportation to help customers determine routes and times for the freight, http://shipcsx.com/public/ec.shipcsxpublic/Main?module_url=/ec.serviceschedulepublic/ServiceSchedule, retrieved 25 July 2011.

[48] "Towboats," Globalsecurity.org, http://www.globalsecurity.org/military/systems/ship/towboat.htm, retrieved 25 July 2011.

Huntington/ Prichard	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	0.99	0.40	0.68	1.74	0.92
Barge	24	5	14	17	13.5
Intermodal Rail	1.25	1.08	1.54	1.74	1.41
Carload Rail	5.5	3.8	4	8.3	4.9

Martinsburg	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	1.29	1.10	1.25	2.09	1.52
Barge	30	11	20	23	20
Intermodal Rail	1.4	1.46	1.63	1.93	1.58
Carload Rail	3.6	4	5	8.3	5

Weirton	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	0.91	0.71	1.05	2.11	1.14
Barge	27.5	8.5	17.5	20.25	17
Intermodal Rail	1.2	1.26	1.42	1.95	1.38
Carload Rail	9.7	8.3	9	12.8	8.4

Source: Parsons Brinckerhoff Analysis

2.4.3 Operational Costs

Transportation costs, rather than rates, were examined for this study since (1) they are a fundamental component of rates charged to shipping customers and (2) they can be built up from individual costs components such as labor, fuel usage, and capital expenses. Rates can also fluctuate widely based on short-term economic and demand conditions, while costs can be somewhat more stable. Given the large role that fuel plays in transportation costs, oil prices can also cause significant changes in costs and thus in rates.

In general, costs provide a long-range floor on which the actual rates charged to customers are based. For each mode, certain fixed and variable costs (such as rate of fuel consumption, cost of machinery, federal and state licensing cost and permitting requirements) are generalized to provide a benchmark that compares each mode's relative cost.

Table 2-8 is based on general daily operating costs for each mode, which are found in Appendix C. The daily operating costs are then used as the basis for determining the relative cost per ton to transport a given cargo bound for a specific destination by each means of conveyance. It was assumed that the maximum payload on the truck is 22 tons, 1,500 tons for one barge, 100 tons for a rail carload, and 15 tons for an intermodal railcar.

In the barging scenario, it is assumed that the average tow is comprised of nine 1,500-ton capacity covered hopper barges[49].

The trucking component assumes a cost per mile of $1.338 and a daily mileage rate of 500 miles per day. Given these parameters, the daily operating cost is $669.

TABLE 2-8: MODAL COMPARISON OF COST TO TRANSPORT ONE TON

Clarksburg	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	$32.84	$22.56	$31.08	$60.15	$38.44
Barge	$17.09	$6.04	$11.20	$12.96	$11.20
Intermodal Rail	$33.46	$34.79	$38.56	$50.71	$37.54
Carload Rail	$16.16	$13.43	$17.30	$33.34	$20.39

Huntington/ Prichard	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	$30.23	$12.10	$20.62	$52.85	$27.92
Barge	$14.14	$2.95	$8.25	$10.02	$7.96
Intermodal Rail	$32.86	$28.09	$30.41	$46.92	$37.64
Carload Rail	$12.62	$8.65	$12.53	$25.04	$13.36

Martinsburg	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	$39.11	$33.51	$38.07	$63.62	$46.22
Barge	$17.68	$6.48	$11.79	$13.55	$11.79
Intermodal Rail	$32.07	$33.40	$37.17	$44.19	$36.19
Carload Rail	$17.35	$18.72	$22.60	$29.26	$21.59

Weirton	Chicago	Louisville	Nashville	New Orleans	St. Louis
Truck	$27.67	$21.47	$31.99	$64.28	$34.61
Barge	$16.20	$5.01	$10.31	$11.93	$10.02
Intermodal Rail	$27.04	$28.37	$32.14	$44.29	$31.12
Carload Rail	$13.82	$15.49	$18.60	$30.98	$18.12

Source: Parsons Brinckerhoff Analysis

[49] Information provided by the USACE's Navigation Information website, which maintains detailed reports of vessel traffic through the Corps' locks. The average tow size is based on information collected for tows currently on the Ohio River. "Vessel Locations/Queued/Lockages," http://www2.mvr.usace.army.mil/omni/webrpts/omni_vl/vessel_current_location_all.cfm?SRVR=LRD&cc_river_code=OH.

2.5. COMPETITIVE ENVIRONMENT

Similar to other industries, logistics facilities operate in a competitive environment. The availability and capability of other facilities affect the success of new terminal development. In determining the feasibility of inland port and logistics facilities in West Virginia, an assessment was made of the competitive landscape identifying other logistics facilities that could prove to be a threat to new development in West Virginia. The major competing facilities are described below.

2.5.1 VIRGINIA INLAND PORT

The Virginia Inland Port, located in Front Royal Virginia, has stimulated the attraction of some 246 million square feet of industrial space together with employee levels of over 7,000 workers. Household names like Wal-Mart, Target, Home Depot, Dollar Tree, Lillian Vernon, and Cost Plus have all set up distribution facilities in Virginia in large measure due to the presence of a world class port facility and structure.

TABLE 2-9: VIRGINIA INLAND PORT CHARACTERISTICS

Parameters	Description
Cargo Characteristics	Truck-Rail Container Transfer
Size	160 acres
Rail Provider (Class I)	NS
Access to Interstate Highway	within 5 miles of two major interstate highways
Throughput	30,414 Containers (2010)
Rail service	One train each direction, five days/week
Customs/Other	Customs Port of Entry and a Free Trade Zone
Logistics Attributes	25 Distribution Centers

Source: Various Sources and Parsons Brinckerhoff

This inland port is owned and operated by the Virginia Port Authority and was developed to intercept truck cargo bound for/origination from competitive ports and deliver/receive trains to/from the port's container terminals. This is the one neutrally owned/operated inland port (not owned or operated by a railroad or port operator) that is directly linked to ocean port terminals in the U.S. Most inland ports are owned by a railroad company or third party owner/operator.

2.5.2 CHAMBERSBURG TERMINAL

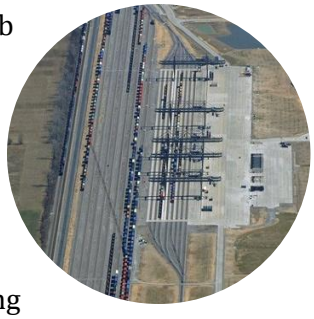
The CSXT Intermodal Chambersburg Terminal is an 85-acre facility close to the center of Chambersburg, Pennsylvania. The facility is a part of CSXT's National Gateway project that connects the Mid-Atlantic ports and markets with the Mid-West. As a part of the National Gateway project, Chambersburg – Northwest Ohio rail corridor received a $98 million grant for its development which will help to increase the freight volume.

TABLE 2-10: CHAMBERSBURG INTERMODAL TERMINAL CHARACTERISTICS

Parameters	Description
Cargo Characteristics	Truck-Rail Container Transfer
Size	85 acres
Distance from closest Seaport	85 miles (Port of Baltimore)
Rail Provider (Class I)	CSXT
Access to Interstate Highway	I-81
Throughput	100,000 Containers Per Year (Projected)
Rail service	Chicago, Buffalo, Nashville

Source: Various Sources and Parsons Brinckerhoff

2.5.3 NORTHWEST OHIO TERMINAL



The Northwest Ohio Terminal Facility is a 185-acre freight distribution hub and center of CSXT's nationwide intermodal network. The new $175 million facility opened in February 2011. It spans 500 acres in southern Wood County, Ohio. The terminal allows CSXT to bypass Chicago when transporting containerized cargo from East or West Coast ports to Mid-west distribution facilities, which reduces transit times by a day.

The terminal is part of the CSXT National Gateway network. The North Baltimore facility features five electric cranes that span the eight processing tracks and a truck lane. During the first year of operation, it is expected to handle 20,000 local lifts that will serve markets including Toledo, Findlay, Napoleon, Fostoria, Bowling Green, Cincinnati and Columbus.[50]

TABLE 2-11: NORTHWEST OHIO INTERMODAL TERMINAL CHARACTERISTICS

Parameters	Description
Cargo Characteristics	Truck-Rail Container Transfer
Size	185 acres
Rail Provider (Class I)	CSXT (Part of National Gateway)
Access to Interstate Highway	I-75
Throughput	2,000,000 Containers Per Year (Projected)
On-site Facilities	24,000 feet working track, 100,000 feet block swapping track and parking for approx. 280 units
Rail service	30 trains per day

Source: Various Sources and Parsons Brinckerhoff

[50] http://www.csx.com/share/wwwcsx_mura/assets/File/Media/Northwest_Ohio_Terminal_Fact_Sheet.pdf

2.5.4 ROANOKE REGION INTERMODAL FACILITY (PROPOSED)

Roanoke Intermodal Facility is a part of the Heartland Corridor initiative. The Heartland Corridor multi-state freight rail initiative will save 48 hours over the current freight rail shipping time between the ports of Virginia and the Midwest. The intermodal facility in the Roanoke region will help manage truck traffic and improve freight shipments along both the I-81 and Route 460 corridors. The site located three miles from I-81 having access by US-460 and SR-603.

NS estimates that between 2010 and 2020, an average of 60 containers will be shipped per day and beyond 2020 this number will increase to 150 per day. The anticipated short haul truck traffic generated will be approximately 87 trucks per day from 2010-2020 and 235 trucks per day in 2020 and beyond.

TABLE 2-12: ROANOKE REGION INTERMODAL TERMINAL CHARACTERISTICS

Parameters	Description
Cargo Characteristics	Truck-in/Rail-Out & Rail-in/Truck-out
Size	65 acres
Rail Provider (Class I)	NS (Part of Heartland Corridor)
Access to Interstate Highway	I-81 (6 miles), US-460
Throughput	300,000 Containers Per Year (Projected)

Source: Various Sources and Parsons Brinckerhoff

2.5.5 GREENCASTLE – FRANKLIN COUNTY REGIONAL INTERMODAL TERMINAL (PROPOSED)

Franklin County regional intermodal terminal is a $95 million facility developed by NS. The facility is currently under construction and is expected to be operational by 2012. This terminal will be a part of NS's Crescent Corridor. The facility will serve as a northeast hub for domestic traffic, and international cargo moving between the Gulf of Mexico ports and the Port of Virginia, and the northeast. Greencastle is located in the Southern Pennsylvania near Maryland-Pennsylvania state line and has access to I-81 and US-11. The terminal will have gate and terminal automation technology that will reduce the truck waiting time and improve the terminal's overall efficiency.

TABLE 2-13: FRANKLIN COUNTY REGIONAL INTERMODAL TERMINAL CHARACTERISTICS

Parameters	Description
Cargo Characteristics	Truck-Rail Container Transfer
Size	200 acres
Distance from closest Seaport	90 miles (Port of Baltimore)
Rail Provider (Class I)	NS (Part of Crescent Corridor)
Access to Interstate Highway	I-81, US-11
Throughput	85,000 Containers (Projected)
Rail service	Daily service of four intermodal trains

Source: NS

2.5.6 SOUTH POINT INDUSTRIAL PARK ON THE OHIO RIVER

The South Point Industrial Park is located in South Point, Ohio which covers more than 500 acres of land area. The park is located along the Ohio River with 3400 feet of river frontage and has rail access through NS rail line. The multi-modal facility at the park provides access to the Heartland Corridor for bulk goods. Custom clearance service available at the park helps the shippers to clear the customs procedure at the facility. The park has highway access via US-52, which runs besides the property. Access to I-64 is 6 miles from the park.

The industrial park has been recently constructed and has new infrastructure in place. The facility allows handling of all dry bulk, liquid bulk and container products between NS's Heartland Corridor, the Ohio River and the highway system via U.S. 52 and I-64.

TABLE 2-14: SOUTH POINT INDUSTRIAL PARK CHARACTERISTICS

Parameter	Description
Number of Terminals	1
Total Area	504 acres
Rail Provider (Class I)	NS
Highway Access	I-64 (6 miles away), US-52
Commodities handled	Dry Bulk, Liquid bulk and Container

Source: Various Sources and Parsons Brinckerhoff

2.5.7 COLUMBIANA COUNTY PORT AUTHORITY

Columbiana County is located in the eastern region of Ohio along the Cleveland-Pittsburgh Industrial Corridor. This corridor is the nation's fourth largest market with over 6.5 million people. The geographical location of the county puts it in the middle of five of the largest metropolitan centers, stretching from Chicago in the west to New York in the east and Atlanta in the south. The port has two rail spurs served by NS with capacity for one unit train of 100 cars (3,600-feet, with plans to extend to 6,000 feet). The terminal primarily handles iron and steel products.

TABLE 2-15: COLUMBIANA COUNTY PORT CHARACTERISTICS

Parameter	Description
Number of Terminals	1
Total Area	35+ acres (700 acres available along Route 7)
Rail Provider (Class I)	NS
Highway Access	Route 7
Commodities handled	Iron, Steel, Liquid bulk

Source: Columbiana County Port Authority

2.5.8 PORT OF PITTSBURGH

Pittsburgh Port District consists of 12 counties in Pennsylvania with 200 miles of navigable waterways along Allegheny, Monongahela and Ohio Rivers. It is the second largest inland port in the U.S. after Port Huntington and is the 19th busiest port in the nation.

The port district includes 31 public and private terminals and is served by two Class I railroads, four Class II railroads and six switching lines. The port also has highway access to four interstates (I-65, I-70, I-79 and I-80) and other state highways which connects the port with the other parts of the country. A $705 million project to improve the locks on Monongahela River will make the waterway more efficient and hence will increase port's cargo handling. Table 2-16 below provides a summary of the rail and road access along with the type of cargo handled at the port.

TABLE 2-16: PORT OF PITTSBURG CHARACTERISTICS

Parameter	Description
Number of Terminals	31
Total Area	560+ acres
Rail Provider (Class I)	CSXT and NS
Highway Access	I-65, I-70, I-79, I-80, and other state routes
Commodities handled	Coal, Steel, Ferro Alloy, Ores, Chemicals, Lumber, Salt, Aggregates, Grain and other Break Bulk and Dry Bulk cargo.

Source: Port of Pittsburgh

PLANNED FUTURE DEVELOPMENT

CSXT is planning two additional container terminals in the market region, one in Pittsburgh and the second in the Baltimore area. Specific locations have yet to be determined.

SECTION 3: REGIONAL MULTIMODAL TRANSPORTATION OPPORTUNITIES

Potential regional locations for multimodal facilities were evaluated based on physical characteristics, existing or potential transportation access points, land availability, existing infrastructure, and other related factors. Four sites or regional areas were identified as focal points for the potential development of freight transportation hubs in West Virginia. Each of the following locations, as shown in Figure 3-1, has its own unique characteristics that provide strategic advantages for future development.

- Huntington/Prichard/U.S. Highway 35 Corridor
- Martinsburg
- Weirton
- Clarksburg

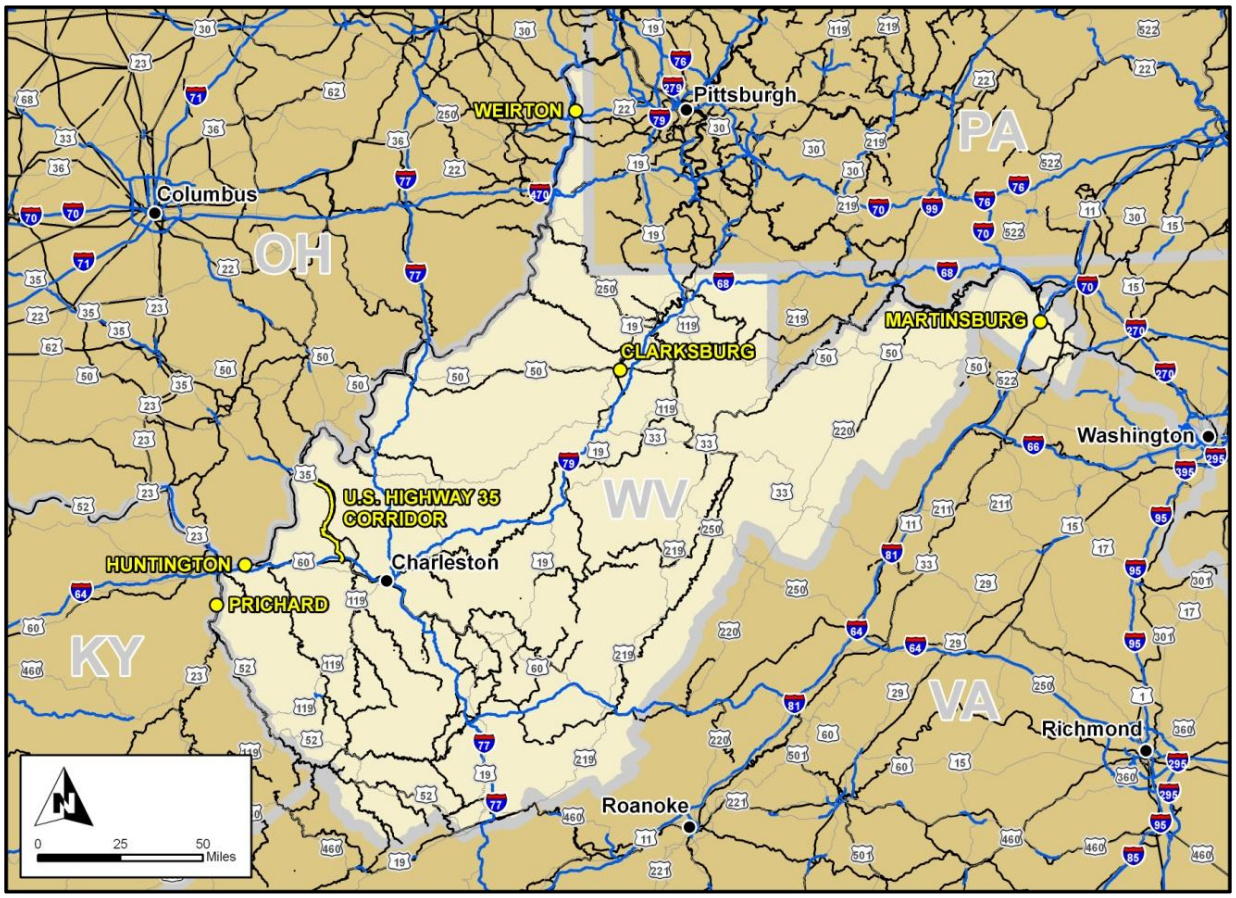
This section describes the physical assets and market conditions of each region as related to its potential for value-added, multi-modal transportation activities. The section also features a facility inventory of vacant/for sale properties that could serve as intermodal or multimodal facilities.

The West Virginia Development Office (WVDO) provided fact sheets for 111 various sites and business/industrial parks located in or near the four regions. The facility inventory is a sample of the state's private and public sites and is exploratory in nature. The fact sheets are summarized in a tabular format for each location throughout the section. The following is an explanation of the column headings:

- Total Area: the site's total footprint size in terms of acreage or square footage
- Four-Lane Highway Access: distance to nearest four-lane highway
- Rail: indicates if rail infrastructure is located on or adjacent to the property
- Rail Siding: indicates if there is a rail siding on the property
- Nav. River: indicates if there is a navigable river adjacent to the property
- On-Site Barge: indicates if the site has marine infrastructure for barge berthing
- Utilities: indicates if power, gas, water, sewer and communication(s) are located on-site

The complete description of each site is included in Appendix D.

FIGURE 3-1: REGIONAL MULTIMODAL LOCATIONS



Source: Parsons Brinckerhoff Analysis

3.1. HUNTINGTON/ PRICHARD/U.S. HIGHWAY 35 CORRIDOR

The Huntington/Prichard/U.S. Highway 35 Corridor area is located in the southwestern part of West Virginia. Huntington is the second largest city in West Virginia and combined with the other two locales; provide a large area of economic activity for potential businesses and/or developers. Huntington is located directly on the Ohio River (designated as a Marine Highway by MARAD), has direct access to Interstate-64, home to the Tri-State Airport (FedEx hub) and has access to two Class I railroads. The Port of Huntington-Tristate is the largest U.S. inland port and eighth largest port in the U.S. in terms of tonnage in 2009 according to the USACE[51]. All of the commodities transiting the Port of Huntington-Tristate are shipped domestically with coal and petroleum comprising the majority of overall tonnage.

3.1.1 PHYSICAL CHARACTERISTICS

Huntington is located in the Southwest region of West Virginia along the Ohio River. The topographic condition of the city is much lower than other high altitude regions of the state. The city covers about 18 square miles with approximately 11 percent of the area consisting of water. Figure 3-2 shows the location of Huntington and Prichard with its topographical condition along with the location of US-35 corridor.

[51] http://www.ndc.iwr.usace.army.mil/wcsc/portton08.htm

Prichard is currently being developed into a rail-truck intermodal container terminal. It is located on NS's Heartland Corridor line approximately 20 miles south of Huntington on U.S. Highway 52 adjacent to the Big Sandy River. Its waterside location, however, does afford the site alternative opportunities in the future, such as a terminal for container on barge service. Future interoperability among rail, truck and water could become a possibility if demand warrants, and if technological advances in areas such as barge fleeting, size/channel requirements make river transport competitive with truck and rail.

The U.S. Highway 35 Corridor extends north from Teays Valley on Interstate-64, paralleling the Kanawha River to Point Pleasant where it converges with the Ohio River. The Kanawha River is navigable with freight being hauled by barge to the Charleston area. Also a Class-I railroad parallels the Kanawha River and U.S. Highway 35.

3.1.2 ROAD

Huntington is near the Kentucky border adjacent to Interstate 64 as shown in Figure 3-1. Other major highways include U.S. Highway 52 (West Huntington Expressway), U.S. Highway 23, U.S. Highway 60, West Virginia 152/527, West Virginia 10 and West Virginia 2 which parallels the navigable Ohio River. The greater Huntington area is located within a one day drive of 44 percent of the industrial (business) market and 37 percent of the consumer market in the U.S.

The U.S. Highway 35 Corridor is currently being expanded to a four-lane expressway that runs 35 miles from Henderson on the Ohio River and follows the Kanawha River south to the Interstate 64 intersection as shown by the yellow line in Figure 3-1. As of June 30, 2009 the U.S. Highway 35 configuration is four-lanes from the intersection with Interstate 64 to Buffalo (12 miles), two-lanes from Buffalo to Beech Hill (13 miles), two-lanes from Beech Hill to Henderson (8 miles) and four-lanes from Henderson to the Ohio River (2 miles). The two-lane section from Beech Hill to Henderson was completed in the Fall of 2010. The two-lane section from Buffalo to Beech Hill is not scheduled for construction at this point due to funding issues.

As previously mentioned, the Prichard site will be located along U.S. Highway 52, providing the only highway access to Prichard from Huntington (I-64). It is a two lane unrestricted roadway from Prichard to the Tri-State Airport (2 miles south of I-64) spanning approximately 13 miles. This section of highway needs to be improved (i.e. increase lanes) to accommodate the truck traffic transporting cargo to and from the Prichard site, to relieve current congestion from coal trucks and to provide safe driving conditions for all vehicles using this roadway. Also the intersection of U.S. 52 and WV 75 needs to be improved, because it is an incomplete diamond interchange that does not facilitate a positive flow of traffic.

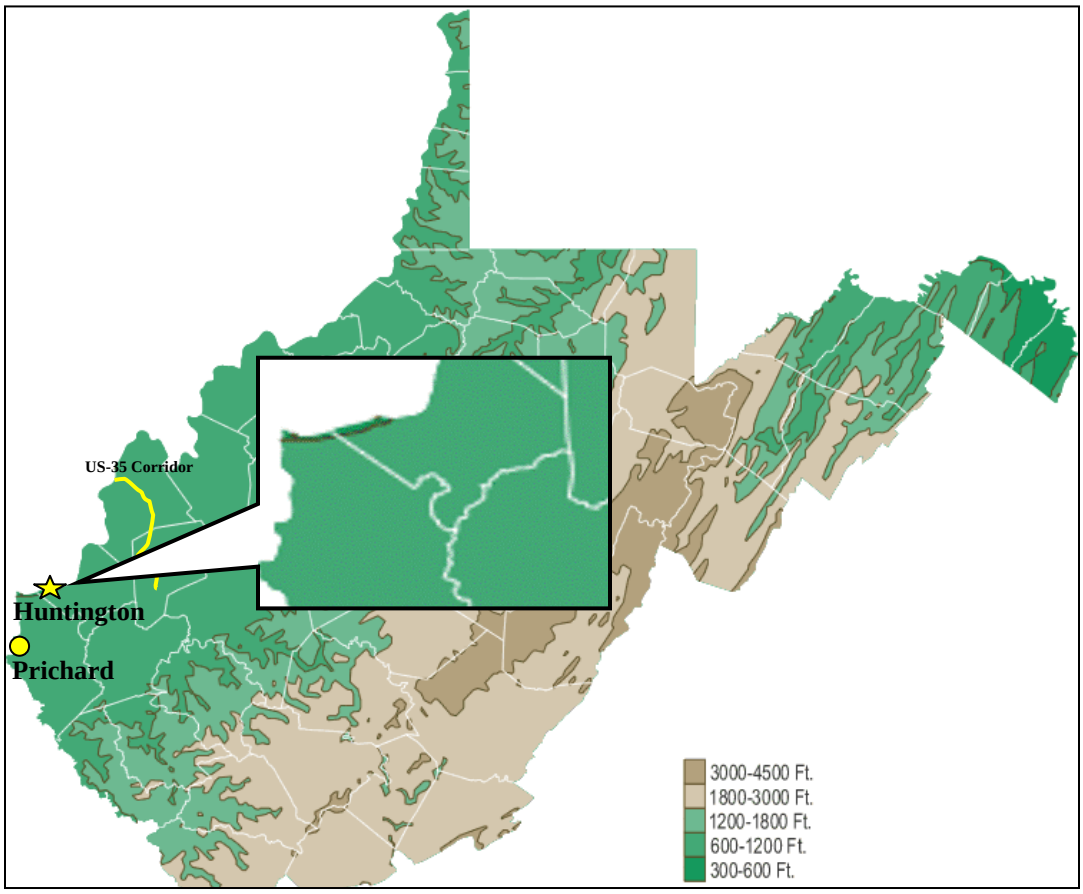
3.1.3 RAIL

The Huntington area has a significant rail infrastructure with key transloading facilities for both Class I rail lines (CSXT and NS) for the distribution of coal from rail to barge. CSXT maintains its divisional headquarters, as well as a major rail yard in Huntington.

The U.S. Highway 35 corridor also has rail and river access that runs parallel to the highway. NS's rail line parallels the Kanawha River to the north side from Henderson to Scott Depot. It connects to CSXT in Point Pleasant. CSXT has trackage rights across the Ohio River on the Point Pleasant Rail Bridge to the Pomeroy Subdivision in Ohio. Point Pleasant is located on CSXT's Ohio River Subdivision. The rail line follows the Ohio River on the east shore from Huntington to Wheeling and has an annual traffic density between 10 and 20 million gross ton-miles per mile. The trains are controlled by manual track warrant control (TWC), instead of centralized traffic control (CTC). Most

of the line is single track but passing sidings are located at intervals, which permit the frequent passing of oncoming trains. Trains are usually limited to speeds of 10 mph to 30 mph[52].

FIGURE 3-2: HUNTINGTON TOPOGRAPHIC MAP



Source: Parsons Brinckerhoff Analysis

3.1.4 WATERWAYS

Port of Huntington Tri-State region comprises of 199 miles of navigable waterways of which 100 miles are along Ohio River, 90 miles are along Kanawha River and nine miles are along Big Sandy River. The port's area as defined by the USACE extends from mile 256.8 to mile 356.8 on the Ohio River, plus the navigable portions of the Kanawha and Big Sandy Rivers. Figure 3-3 shows the boundary of Port Huntington – Tristate. Port Huntington also covers 90 miles of navigable waterway in Kanawha River. The river is maintained by USACE at nine feet. The deepest point in the river is 32 feet.

[52] Wilbur Smith Associates (2009) *Tech Memo Trade and West Virginia Logistics*. Retrieved from: http://www.wvtransplan.com/docs.htm [Accessed 19 February 2010], pg 58.

FIGURE 3-3: PORT OF HUNTINGTON – BOUNDARY MAP

Source: EPA

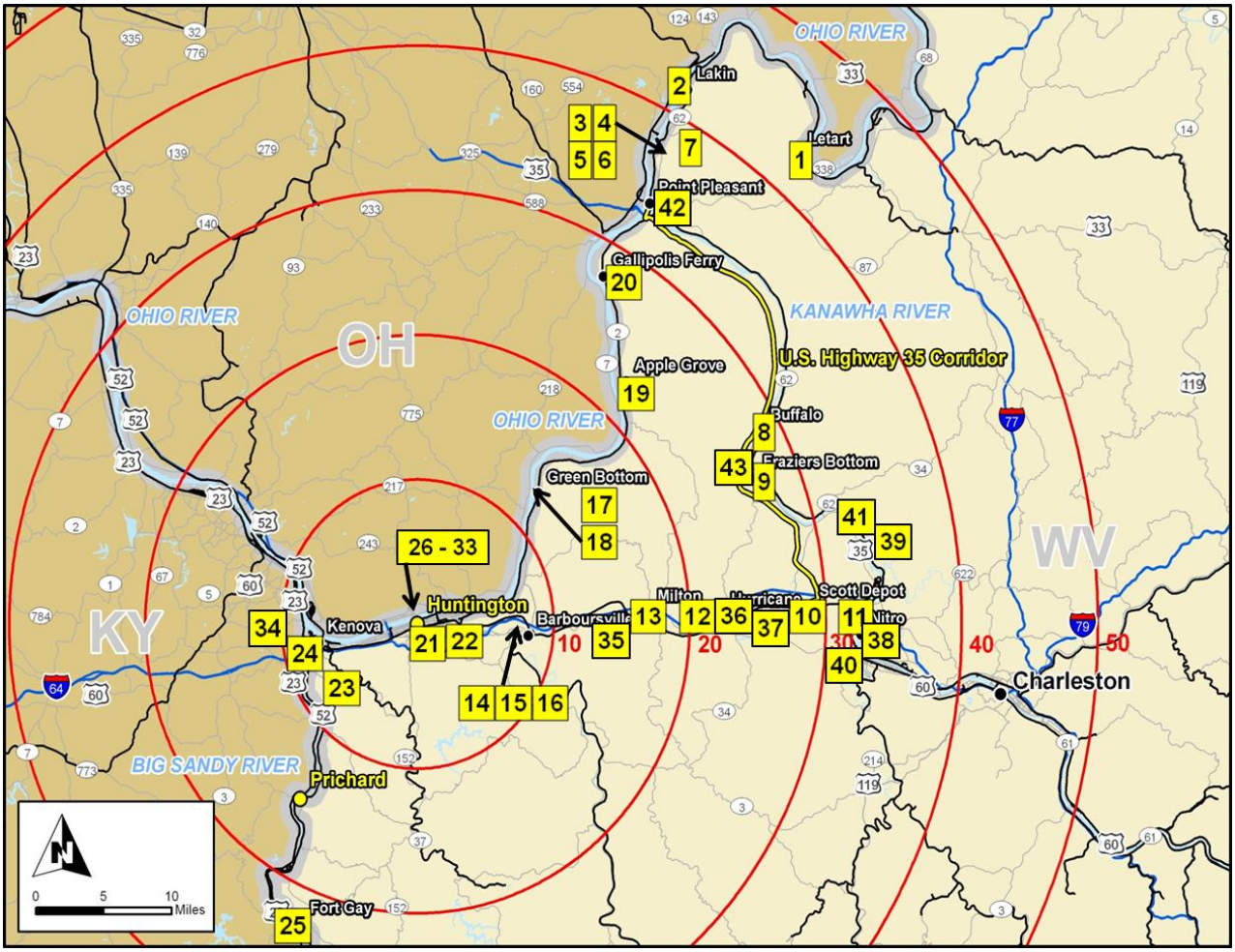
The Kanawha River is navigable to commercial traffic from the Ohio River to Charleston (and further points southeast). The main issue concerning a multimodal facility in this corridor is the location of U.S. Highway 35 on the east (or north) side of the Kanawha River and the Class I rail line's location on the west (or south) side of the river. Depending on the site's location, access to a four-lane highway or rail line could be limited.

3.1.5 FACILITY PROFILES

Forty-three commercial sites identified in the greater Huntington area and along the U.S. Highway 35 corridor were profiled in the WVDOT Data Disc and are shown in Figure 3-4. The sites are numbered and their corresponding attributes are listed in Table 3-1. The majority of the identified sites are located within a forty mile radius of Huntington (identified by the red circles in Figure 3-4), primarily to the east and along a major highway, rail line or river.

Of the forty-three sites, seventeen have access to three modes of transportation, twelve have access to two modes of transportation and fourteen have only highway access. The region's transportation infrastructure provides multimodal access in numerous locations within a relative close distance to Huntington.

FIGURE 3-4: HUNTINGTON & SURROUNDING VICINITY



Source: Parsons Brinckerhoff Analysis

The site information in the WVDO Data Disc is listed in Table 3-1.

TABLE 3-1: HUNTINGTON SITES

Site #	Site Name	Miles from Huntington	Total Area (acres/sf)	4-Lane Highway Access	Rail	Rail Siding	Nav. River	On-Site Barge	Utilities				
									Power	Gas	Water	Sewer	Comm.
1	Jesco Corporation Site	58	185	12 miles to I-77	CSX	None	Ohio River	None	Yes	None	Yes	None	Yes
2	Lakin Site	51	344	31 miles to I-77; 10 miles to US 35	CSX	None	Ohio River	None	Yes	Yes	N/A	None	Yes
3	Bartow Jones Site	43	142	32 miles to I-77; 7.5 miles to US 35	CSX	None	Ohio River	None	N/A	Yes	N/A	Yes	Yes
4	Deerfield Site	43	702	32 miles to I-77; 8 miles to US 35	CSX	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
5	Pleasant Point Site	43	13	32 miles to I-77; 7.5 miles to US 35	CSX	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
6	Mason County Development Authority Industrial Park	43	252	33 miles to I-77; 8 miles to US 35	CSX	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
7	Thompson Site	43	131	33 miles to I-77; 9 miles to US 35	CSX	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
8	Solco Site	48	9	15 miles to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
9	Putnam Business Park	43	205	9 miles to I-64	None	None	Kanawha River	None	Yes	Yes	Yes	Yes	Yes
10	Teays Valley Business & Industrial Park	35	13	¾ mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
11	Solutia Nitro Site	40	123	1 mile to I-64	NS	None	Kanawha River	Yes	Yes	Yes	Yes	Yes	Yes
12	Henderson Site	28	43	½ mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
13	Morris Memorial Business Park	19	180	1.5 miles to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
14	Barboursville Business Complex	10	13	2.5 miles to I-64	CSX	None	None	None	Yes	None	Yes	Yes	Yes
15	Barboursville Business Complex II	10	20	2.5 miles to I-64	CSX	None	None	None	Yes	None	Yes	Yes	Yes
16	Barboursville Site	10	48	2 miles to I-64	CSX	None	None	None	N/A	N/A	N/A	N/A	N/A
17	Hadco Business Park	20	72	13 miles to I-64	CSX	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
18	Hadco Business Park II	20	55	13 miles to I-64	CSX	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
19	Apple Grove	28	1,400	20 miles to I-64; 15 miles to US 35	CSX	None	Ohio River	None	Yes	Yes	Yes	None	Yes
20	Rolfe Lee Site	36	1,002	27 miles to I-64	CSX	None	Ohio River	None	Yes	Yes	Yes	None	Yes
21	CSX Yard at 26th/27th Street Site	-	13	4 miles to I-64	CSX	Yes	None	None	Yes	Yes	Yes	Yes	Yes
22	Kinetic Park	-	35	¼ mile to I-64	None	None	None	None	N/A	N/A	N/A	N/A	Yes
23	Tri-State Airport Site	-	95	1 mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes

24	The Jim C. Hamer Company Site	8	20	1 mile to I-64	CSX & NS	NS	None	None	Yes	Yes	Yes	Yes	Yes
25	Hammonds Bottom Site	31	123	21 miles to I-64; 2 miles to US 23	NS	None	None	None	N/A	N/A	N/A	N/A	Yes
26	Allied Warehousing Services Building #5	-	174,000 ft²	9 miles to I-81	CSX	Avail	Ohio River	None	Yes	Yes	Yes	Yes	Yes
27	Allied Warehousing Services Building #6	-	42,000 ft²	4.5 miles to I-81	CSX	Avail	Ohio River	None	Yes	Yes	Yes	Yes	Yes
28	Business Center at Commerce Park	-	20,000 ft²	0.5 mile to I-81	CSX	None	None	None	Yes	Yes	Yes	Yes	Yes
29	Corbin Building	-	93,000 ft²	1 mile to I-64	CSX	None	None	None	Yes	Yes	Yes	Yes	Yes
30	DJ Manufacturing Building	-	36,000 ft²	2 miles to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
31	Dolin Supply Building	-	89,000 ft²	4 miles to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
32	Service Pump & Supply Building	-	20,000 ft²	2 miles to I-64	NS	None	None	None	Yes	Yes	Yes	Yes	Yes
33	SNE Buildings	-	397,000 ft²	2 miles to I-64	CSX	Yes	None	None	Yes	Yes	Yes	Yes	Yes
34	Allied Warehousing Services Building at Kenova	8	183,000 ft²	1 mile to I-81	NS	Yes	Ohio River	None	Yes	Yes	Yes	Yes	Yes
35	Marco Building	14	18,000 ft²	1 mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
36	Former Tri-State/Ward Trucking Terminal	28	14,000 ft²	2 miles to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
37	Ghiz Building	28	16,000 ft²	0.5 mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
38	Allied Warehousing Services Building at Nitro	40	350,000 ft²	1 mile to I-81	NS	None	None	None	Yes	Yes	Yes	Yes	Yes
39	Central Van & Storage Building	40	22,000 ft²	1 mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
40	Kanawha Valley Distribution Center	40	137,000 ft²	0.5 mile to I-64	None	None	None	None	Yes	Yes	Yes	Yes	Yes
41	PM Enterprises Building	40	59,000 ft²	1 mile to I-64	NS	None	Kanawha River	Yes	Yes	Yes	Yes	Yes	Yes
42	Stover Building	43	27,000 ft²	33 miles to I-77; 8 miles to US 35	CSX (near)	None	None	None	Yes	Yes	Yes	Yes	Yes
43	Kanawha Manufacturing Buffalo Plant	48	38,000 ft²	14 miles to I-64	NS	None	Kanawha River	Yes	Yes	Yes	Yes	Yes	Yes

Source: WV Development Office

3.1.6 FREIGHT DEMOGRAPHICS

HUNTINGTON

Freight movements originating from or destined to Huntington within a 100-mile radius by truck totaled 39 million tons in 2008 according to data obtained from Global Insight. This data excluded petroleum and coal, and only high volume cargo groups were considered such as dry bulk, break-bulk and secondary traffic due to the planning process of the facility type. Secondary traffic is defined as freight flows to and from distribution centers/warehouses. These freight movements in and out of Huntington comprised the following cargo classification types:

- 42% dry bulk products
- 31% secondary traffic
- 22% break-bulk products
- 2% liquid bulk products
- 2% farm products
- 1% other

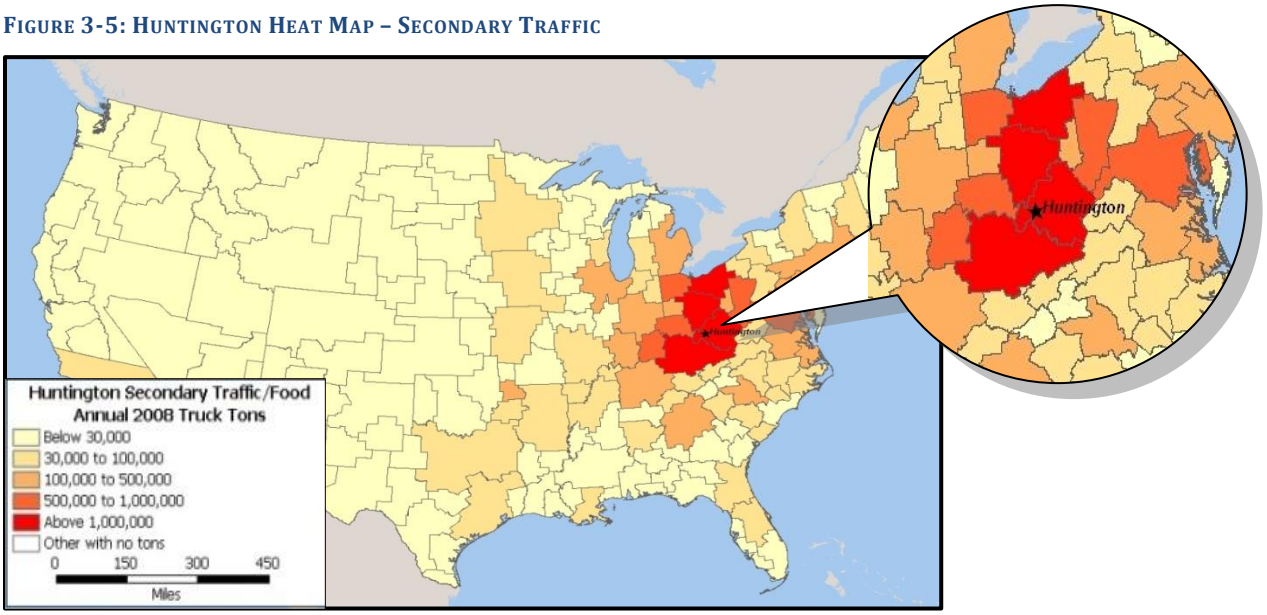
The top commodities being shipped in and out of Huntington are:

- Non-metallic minerals (bulk)
- Clay, concrete, glass or stone (bulk)
- Rubber of miscellaneous products (break-bulk)
- Pulp, paper or allied products (break-bulk)
- Lumber and forest products (break-bulk)
- Textile mill products (break-bulk)
- Secondary (Warehouse) traffic/food

Figure 3-5 identifies the secondary (warehouse) traffic annual truck tonnage in and out of the catchment area (100-mile radius of Huntington). The secondary (warehouse) traffic is heavily congested in the catchment area but also has market presence along the East Coast, Great Lakes and Midwest. Huntington's secondary (warehouse) traffic represents a broad freight distribution pattern with market presence extending as far south as Texas and west as Southern California.

Table 3-2 lists the top ten secondary (warehouse) traffic freight lanes used in conjunction with heat map in Figure 3-5. The top ten tonnage freight lanes account for 3,122,000 tons or 25 percent of total secondary (warehouse) traffic and primarily comprise regionalized inbound truck movements from Ohio, Pittsburgh and Louisville.

FIGURE 3-5: HUNTINGTON HEAT MAP – SECONDARY TRAFFIC



Source: Global Insight

TABLE 3-2: HUNTINGTON CARGO TONNAGE – SECONDARY TRAFFIC

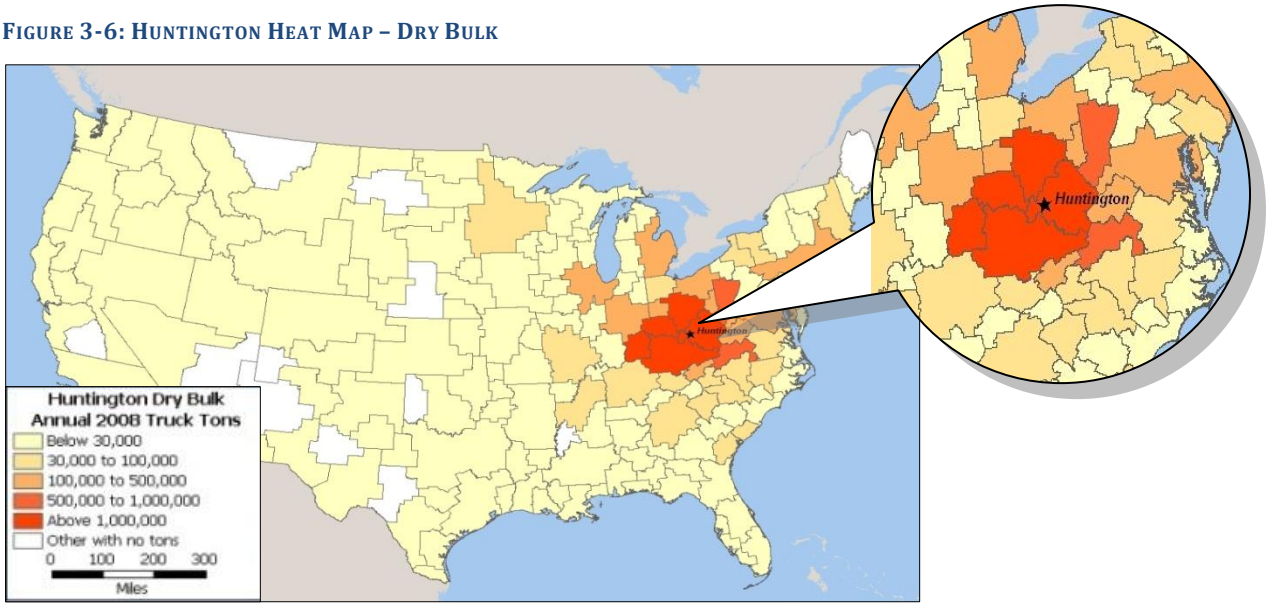
Direction	Origin BEA	Destination BEA	Tons (in 000s)	Percent
Inbound	Pittsburgh, PA	Charleston, WV	514	4%
Inbound	Charleston, WV	Charleston, WV	478	4%
Inbound	Columbus, OH	Columbus, OH	346	3%
Inbound	Toledo, OH	Columbus, OH	323	3%
Inbound	Cleveland, OH	Columbus, OH	298	2%
Inbound	Columbus, OH	Charleston, WV	295	2%
Inbound	Cleveland, OH	Charleston, WV	239	2%
Inbound	Toledo, OH	Charleston, WV	229	2%
Inbound	Louisville, KY	Lexington, KY	209	2%
Outbound	Charleston, WV	Cleveland, OH	190	2%
Total Top Ten			3,122	25%
All Others			9,195	75%
Sum Secondary Traffic			12,317	

Source: Global Insight

Figure 3-6 identifies the dry bulk annual truck tonnage in and out of the catchment area (100-mile radius of Huntington). The dry bulk traffic is heavily congested in the catchment area, which results in short truck hauls throughout Ohio and Kentucky with additional market presence in the Northeast and around the Great Lakes.

Table 3-3 lists the top ten dry bulk traffic freight lanes used in conjunction with heat map in Figure 3-6. The top ten tonnage freight lanes account for 8,997,000 tons or 52 percent of total dry bulk traffic and are comprised of a mix of regionalized inbound and outbound truck movements from Columbus, Louisville and Lexington.

FIGURE 3-6: HUNTINGTON HEAT MAP – DRY BULK



Source: Global Insight

TABLE 3-3: HUNTINGTON CARGO TONNAGE – DRY BULK

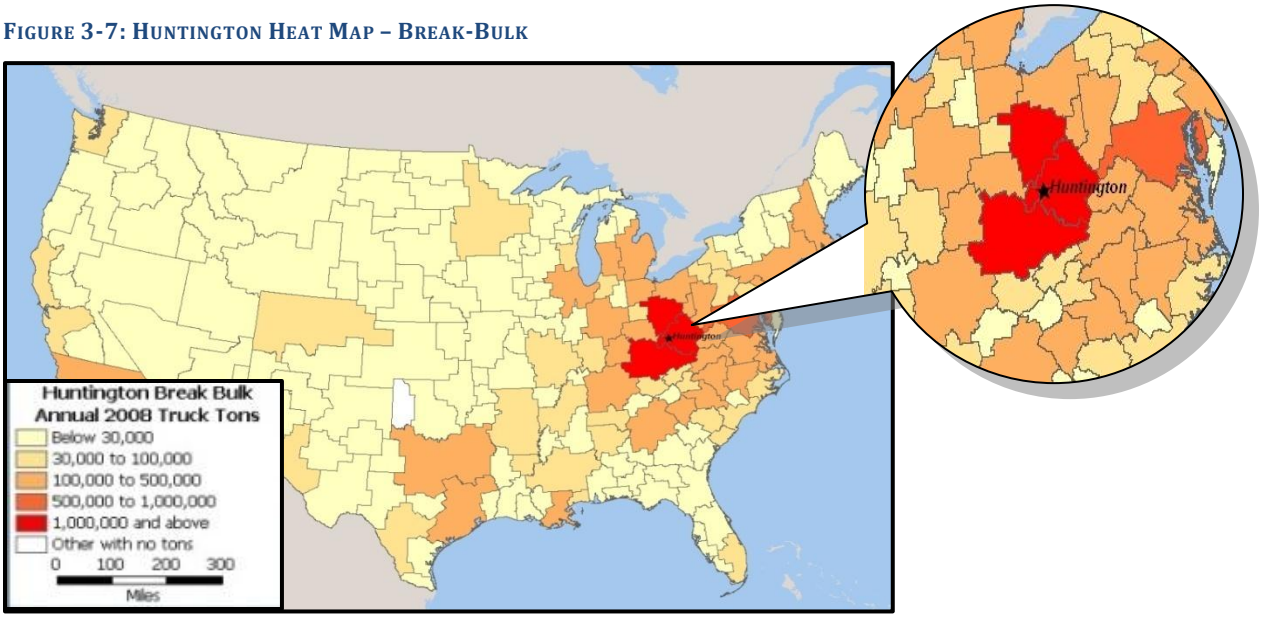
Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Inbound	Lexington, KY	Lexington, KY	Nonmetallic Minerals	3,488	20%
Outbound	Charleston, WV	Charleston, WV	Nonmetallic Minerals	1,125	6%
Inbound	Louisville, KY	Lexington, KY	Nonmetallic Minerals	951	5%
Inbound	Cincinnati, OH	Lexington, KY	Nonmetallic Minerals	815	5%
Outbound	Charleston, WV	Roanoke, VA	Nonmetallic Minerals	659	4%
Inbound	Columbus, OH	Columbus, OH	Clay, Concrete, Glass	447	3%
Outbound	Charleston, WV	Pittsburgh, PA	Nonmetallic Minerals	442	3%
Outbound	Columbus, OH	Columbus, OH	Clay, Concrete, Glass	375	2%
Outbound	Columbus, OH	Columbus, OH	Nonmetallic Minerals	356	2%
Outbound	Charleston, WV	Lexington, KY	Nonmetallic Minerals	339	2%
Total Top Ten				8,997	52%
All Others				8,360	48%
Sum Dry Bulk				17,357	

Source: Global Insight

Figure 3-7 identifies the break-bulk traffic annual truck tonnage in and out of the catchment area (100-mile radius of Huntington). The break-bulk traffic is heavily congested in the catchment area but also has market presence along the East Coast, Great Lakes and Midwest. Huntington's break-bulk traffic represents a broad freight distribution pattern with market presence extending as far south as Texas and west as Southern California.

Table 3-4 lists the top ten break-bulk freight lanes used in conjunction with heat map in Figure 3-7. The top ten tonnage freight lanes account for 1,118,000 tons or 13 percent of total break-bulk traffic and are comprised of inbound and outbound truck movements from Dallas, Washington D.C., Chicago and Columbus.

FIGURE 3-7: HUNTINGTON HEAT MAP – BREAK-BULK



Source: Global Insight

TABLE 3-4: HUNTINGTON CARGO TONNAGE – BREAK-BULK

Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Inbound	Wheeling, WV	Charleston, WV	Pulp, Paper or Allied Products	181	2%
Outbound	Columbus, OH	Toledo, OH	Lumber or Wood Products	133	1%
Outbound	Charleston, WV	Dallas, TX	Rubber or Misc Plastics	121	1%
Inbound	Chicago, IL	Charleston, WV	Pulp, Paper or Allied Products	115	1%
Outbound	Lexington, KY	Boston, MA	Textile Mill Products	109	1%
Inbound	Grand Rapids, MI	Charleston, WV	Pulp, Paper or Allied Products	103	1%
Outbound	Columbus, OH	New York, NY	Lumber or Wood Products	92	1%
Outbound	Charleston, WV	Washington, DC	Rubber or Misc Plastics	92	1%
Inbound	Biloxi, MS	Charleston, WV	Rubber or Misc Plastics	87	1%
Outbound	Charleston, WV	Houston, TX	Rubber or Misc Plastics	87	1%
Total Top Ten				1,118	13%
All Others				7,808	87%
Sum Break-Bulk				8,926	

Source: Global Insight

PRICHARD

Freight movements originating from or destined to Prichard within a 100-mile radius by truck totaled 40 million tons in 2008 according to data obtained from Global Insight. These freight movements in and out of Prichard comprised the following cargo classification types:

- 44% dry bulk products
- 29% secondary traffic
- 23% break-bulk products
- 2% liquid bulk products
- 2% farm products
- 1% other

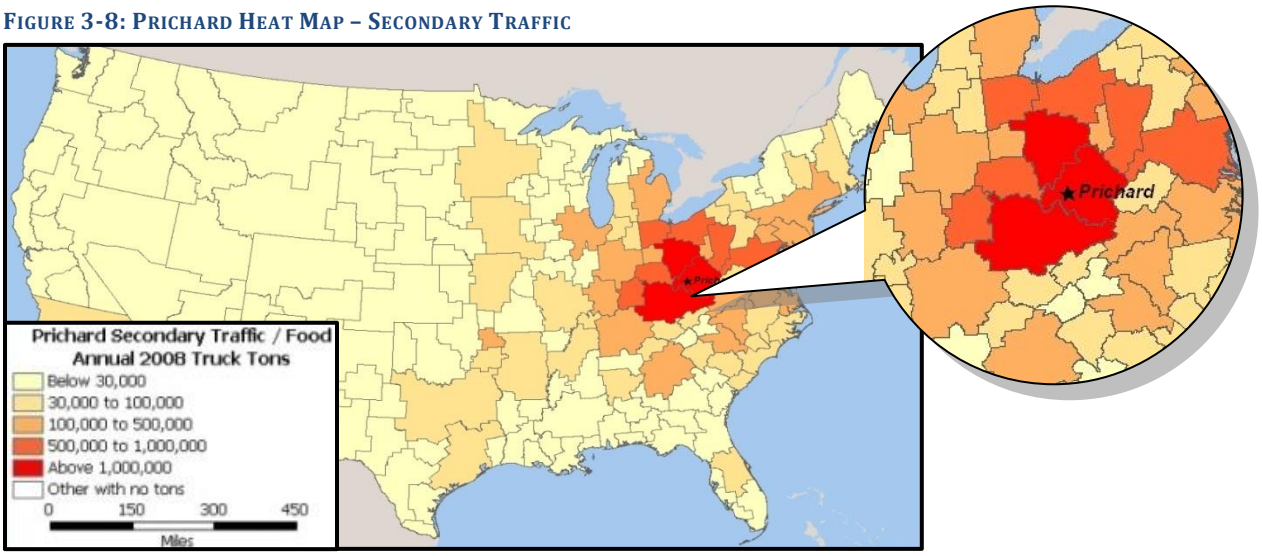
The top commodities being shipped in and out of Prichard are:

- Pulp, paper or allied products (break-bulk)
- Lumber and forest products (break-bulk)
- Rubber of miscellaneous products (break-bulk)
- Non-metallic minerals (bulk)
- Clay, concrete, glass or stone (bulk)
- Secondary (Warehouse) traffic/food

Figure 3-8 identifies the secondary (warehouse) traffic annual truck tonnage in and out of the catchment area. The secondary (warehouse) traffic is heavily congested in the catchment area but also has market presence along the East Coast, Mid-Atlantic, Great Lakes and Midwest representing a fairly large and diverse distribution pattern.

Table 3-5 lists the top ten secondary (warehouse) traffic freight lanes used in conjunction with heat map in Figure 3-8. The top ten tonnage freight lanes account for 2,909,000 tons or 24 percent of total secondary (warehouse) traffic and are comprised primarily of inbound truck movements from Pittsburgh, Ohio and Kentucky.

FIGURE 3-8: PRICHARD HEAT MAP – SECONDARY TRAFFIC



Source: Global Insight

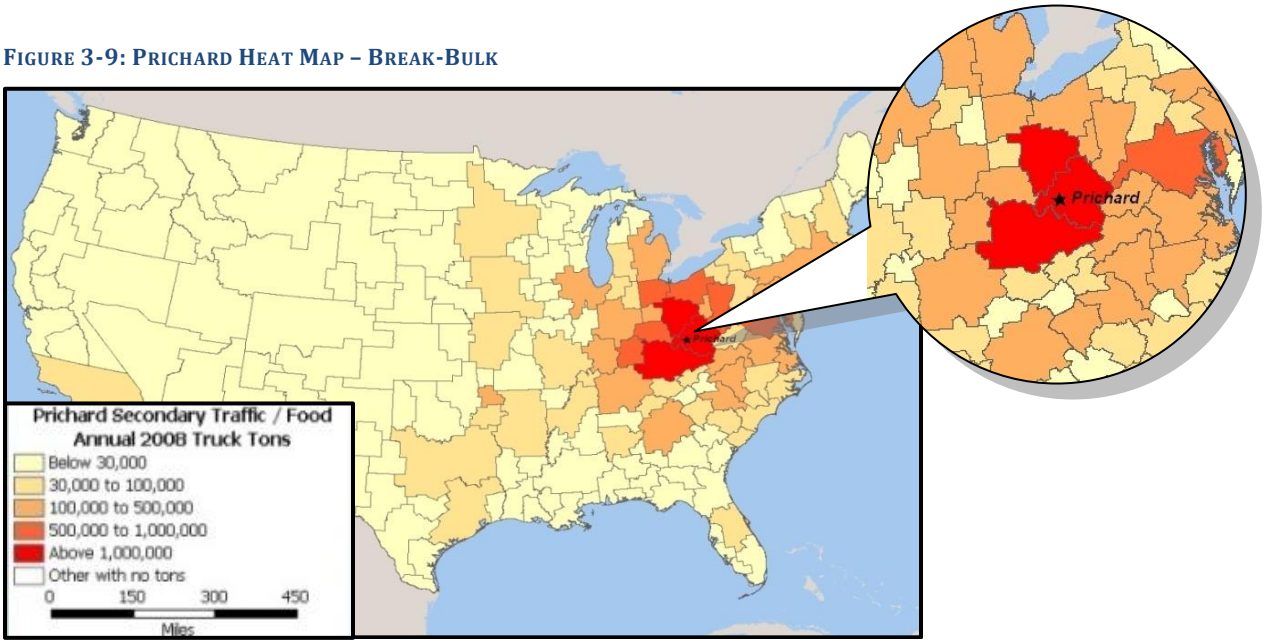
TABLE 3-5: PRICHARD CARGO TONNAGE – SECONDARY TRAFFIC

Direction	Origin BEA	Destination BEA	Tons (in 000s)	Percent
Inbound	Pittsburgh, PA	Charleston, WV	523	4%
Inbound	Columbus, OH	Columbus, OH	326	3%
Inbound	Toledo, OH	Columbus, OH	314	3%
Inbound	Cleveland, OH	Columbus, OH	289	2%
Inbound	Louisville, KY	Lexington, KY	270	2%
Outbound	Charleston, WV	Washington, DC	270	2%
Inbound	Charleston, WV	Charleston, WV	247	2%
Outbound	Charleston, WV	Pittsburgh, PA	238	2%
Outbound	Charleston, WV	Charleston, WV	220	2%
Inbound	Lexington, KY	Lexington, KY	212	2%
Total Top Ten			2,909	24%
All Others			8,984	76%
Sum Secondary Traffic			11,893	

Figure 3-9 identifies the break-bulk annual truck tonnage in and out of the catchment area (100-mile radius of Huntington). The break-bulk traffic is heavily congested in the catchment area which results in short truck hauls throughout Ohio and Kentucky with additional market presence in the Northeast, Mid-Atlantic, Ohio Valley and Midwest representing a broad distribution pattern.

Table 3-6 lists the top ten break-bulk traffic freight lanes used in conjunction with heat map in Figure 3-9. The top ten tonnage freight lanes account for 1,160,000 tons or 13 percent of total break-bulk traffic and are comprised of a mix of inbound and outbound truck movements from Columbus, Chicago, Washington D.C. and Lexington.

FIGURE 3-9: PRICHARD HEAT MAP – BREAK-BULK



Source: Global Insight

TABLE 3-6: PRICHARD CARGO TONNAGE – BREAK-BULK

Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Inbound	Wheeling, WV	Charleston, WV	Pulp, Paper or Allied Products	180	2%
Outbound	Columbus, OH	Toledo, OH	Lumber or Wood Products	132	1%
Outbound	Charleston, WV	Dallas, TX	Rubber or Misc Plastics	120	1%
Inbound	Chicago, IL	Charleston, WV	Pulp, Paper or Allied Products	115	1%
Outbound	Charleston, WV	Charlotte, NC	Lumber or Wood Products	114	1%
Outbound	Lexington, KY	Boston, MA	Textile Mill Products	109	1%
Inbound	Grand Rapids, MI	Charleston, WV	Pulp, Paper or Allied Products	103	1%
Outbound	Charleston, WV	Washington, DC	Lumber or Wood Products	102	1%
Inbound	Washington, DC	Charleston, WV	Machinery	94	1%
Outbound	Charleston, WV	Washington, DC	Rubber or Misc Plastics	92	1%
Total Top Ten				1,160	13%
All Others				7,759	87%
Sum Break-Bulk				8,919	

Source: Global Insight

3.2. MARTINSBURG

Martinsburg is the largest municipality in the eastern panhandle of West Virginia and is continually growing. Its proximity to major metropolitan areas including the greater Washington D.C. and Baltimore areas present a relatively new suburb for commuters or people relocating to a less congested area. Martinsburg's freight infrastructure has the necessary components to establish a multi-modal (e.g. intermodal yard) or single-modal (e.g. warehouse) freight facility.

Martinsburg is home to the Eastern West Virginia Regional Airport, has two Class-I railroads nearby and is directly on Interstate-81. The area also has multiple commercial sites available for multi-modal freight facility development. These characteristics combined with its location outside of the heavily congested areas make it attractive to potential developers or businesses. Martinsburg is also home to the Eastern Panhandle Inland Port Coalition (EPIPC), approved by the West Virginia Public Port Authority, with the ultimate goal of establishing an inland port in the Martinsburg area. Currently EPIPC is working on developing a Master Plan, seeking funding for a feasibility study and construction of the necessary infrastructure and value-added services to facilitate freight movement.

3.2.1 PHYSICAL CHARACTERISTICS

Martinsburg is located in the Eastern Panhandle of West Virginia and is the largest city in that region. It is a principal city of Hagerstown-Martinsburg, MD-WV Metropolitan Statistical Area consisting of three counties; Morgan, Berkeley (in West Virginia) and Washington (in Maryland). The city is located at an elevation of 453 feet above sea-level. Figure 3-10 shows the location of Martinsburg with its topographical condition.

3.2.2 ROAD

Martinsburg is located in the Eastern Panhandle of the state, adjacent to Interstate 81. It serves as a major trucking corridor between northern and southern states, and is witness to upwards of 40 percent truck traffic in certain locales. Other highways include U.S. Highway 11 and West Virginia Routes 9, 45, 51 and 901. Its location in the northeastern part of the state gives it good truck accessibility to the greater Washington D.C. area.

3.2.3 RAIL

Martinsburg's rail network is supported by two Class I rail lines, CSXT and NS, and a short line is located in the vicinity. The short line is operated by Winchester and Western Railroad Co., which extends in northerly direction of Martinsburg before joining in to both CSXT and NS rail lines[53].

3.2.4 AIR

Martinsburg is home to the Eastern West Virginia Regional Airport (EWVRA). EWVRA is located south of Martinsburg adjacent to U.S. Highway 11. It is positioned on 1,005 acres and has a runway that is 8,800' long by 150' wide able to handle aircraft with a maximum weight of 600,000 lbs., a 400,000 ft^2 parking area for non-commercial/military aircraft and a rail spur that connects CSXT's network. Martinsburg's modal access is limited to air, rail and truck because there is not a navigable river in the vicinity.

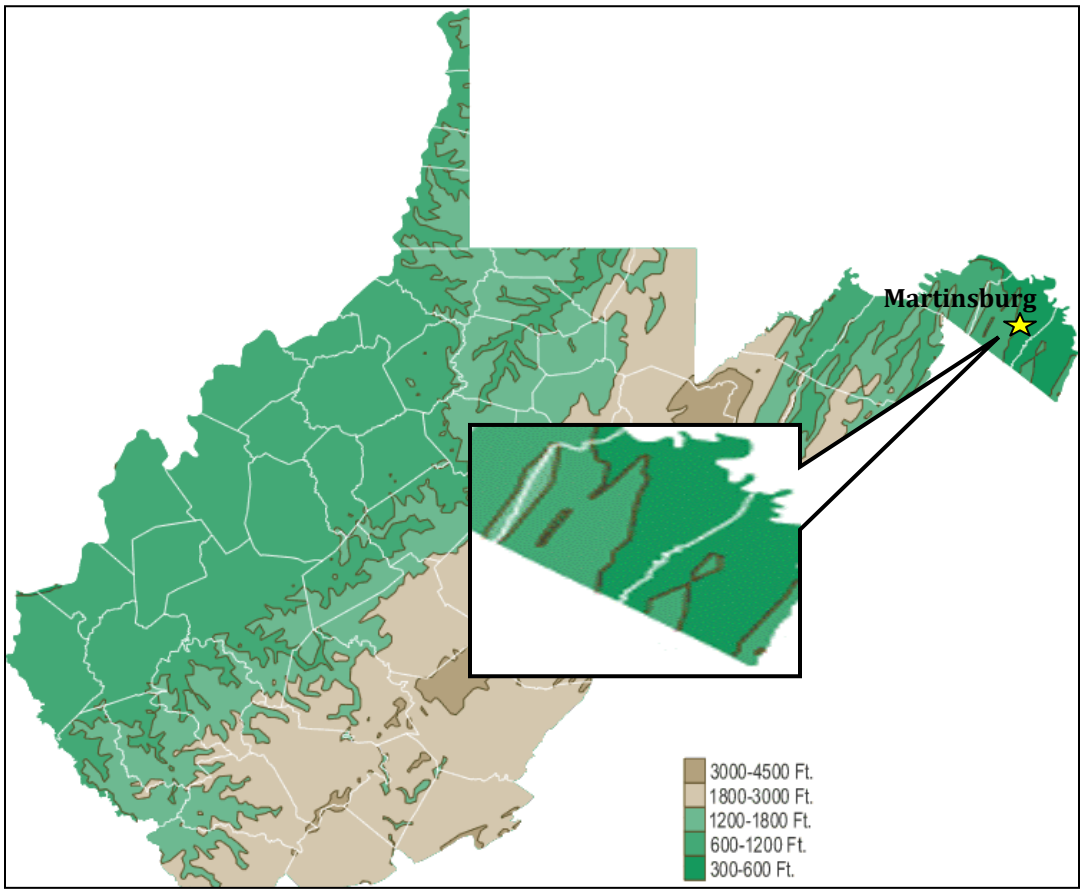
Currently the EWVRA handles C-5 military aircraft and has the capability to handle 747 civilian aircraft. EWVRA is also pursuing funding for a new crosswind runway that could reduce current

[53] Eastern Panhandle Inland Port Master Plan

congestion by 20 percent, allowing the larger aircrafts to use the main runway more frequently and providing a safer launching and landing conditions when weather is severe.

The Eastern Panhandle Inland Port Coalition (EPIPC) is currently developing a Master Plan for an Inland Port on or near the EWVRA. This facility would be eligible for FTZ status and offer direct access to air, rail and road and provide value added services such as duty U.S. Customs processing, bonded warehouses, etc.

FIGURE 3-10: MARTINSBURG TOPOGRAPHIC MAP



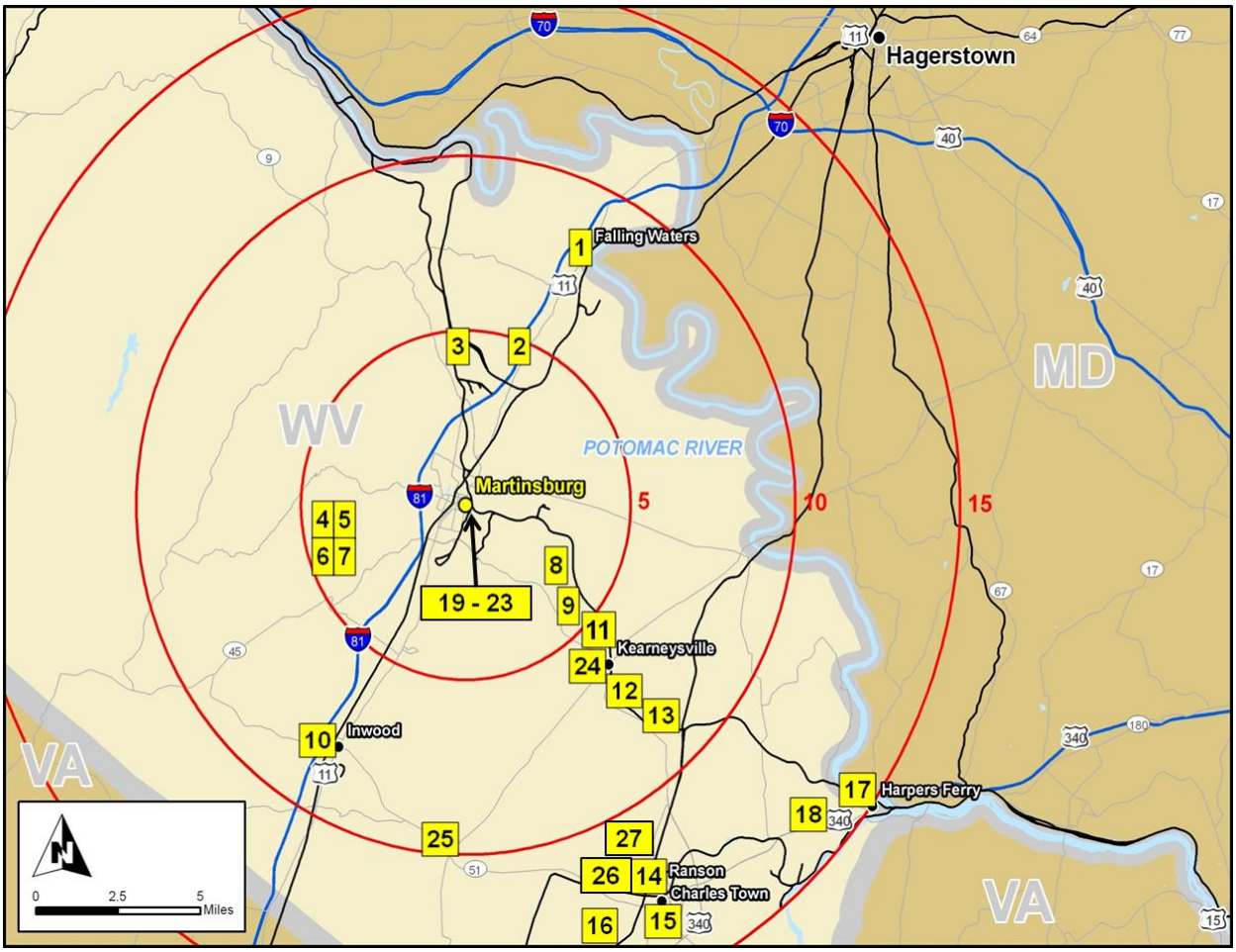
Source: Parsons Brinckerhoff Analysis

3.2.5 FACILITY PROFILES

Twenty-seven potential sites located in the greater Martinsburg area were profiled in the WVDO Data Disc. The sites are numbered and their corresponding attributes are listed in Table 3-7. All of the sites identified are located within a fifteen mile radius of Martinsburg (identified by the red circles in Figure 3-11).

Of the twenty-seven sites, fourteen have access to two modes of transportation (rail and highway) and thirteen have only highway access.

FIGURE 3-11: MARTINSBURG & SURROUNDING VICINITY



Source: Parsons Brinckerhoff Analysis

The site information in the WVDO Data Disc is listed in Table 3-7.

TABLE 3-7: MARTINSBURG SITES

Site #	Site Name	Miles from Martinsburg	Total Area (acres/sf)	4-Lane Highway Access	Rail	Rail Siding	Nav. River	On-Site Barge	Utilities				
									Power	Gas	Water	Sewer	Comm.
1	Route 11 at DuPont Road Site	10	54	¼ mile to I-81	Winchester & Western	None	None	None	Yes	None	Yes	Yes	Yes
2	Falling Waters Business Center	-	74	¼ mile to I-81	None	None	None	None	Yes	None	Yes	Yes	Yes
3	Cumbo Yard Industrial Park	-	630	1 mile to I-81	CSX	None	None	None	Yes	Yes	Yes	Yes	Yes
4	Tabler Station Business Park	-	280	½ to I-81	Winchester & Western	None	None	None	Yes	Yes	Yes	Yes	Yes
5	John D. Rockefeller IV Science & Tech Center	-	210	1.5 miles to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
6	Bryarly Manor Orchards Site	-	174	2.5 miles to I-81	Winchester & Western	None	None	None	Yes	Yes	Yes	Yes	Yes
7	Tabler Station Site	-	21	On I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
8	Willis Site	-	40	5 miles to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
9	Liberty Business Park	-	275	4 miles to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
10	NE Quadrant Intersection of I-81 & WV Route 51 Site	9	50	On I-81	Winchester & Western	None	None	None	Yes	Yes	Yes	Yes	Yes
11	F.O. Day Site	8	184	5 miles to I-81	CSX	None	None	None	Yes	Yes	Yes	Yes	Yes
12	Jefferson Orchards Site	8	400	9 miles to I-81	CSX	None	None	None	Yes	None	Yes	Yes	Yes
13	Burr Business Park	8	311	On WV 9	CSX	None	None	None	Yes	None	Yes	Yes	Yes
14	Blackford Village Site	16	49	On WV 9	None	None	None	None	Yes	None	Yes	Yes	Yes
15	Chakmakian Bypass Site	19	90	On US 340	None	None	None	None	Yes	None	Yes	Yes	Yes
16	Sunnyside Business Park	19	100	On US 340	NS	None	None	None	Yes	None	None	None	Yes
17	Old Standard Site	21	407	¼ mile to US 340	CSX	Yes	None	None	Yes	None	Yes	Yes	Yes
18	Harpers Ferry Site	21	47	¼ mile to US 340	None	None	None	None	Yes	None	Yes	Yes	Yes
19	Baltimore Street Manufacturing Building	-	74,000 ft²	1 mile to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
20	Berkeley Business Park	-	389,000 ft²	2 miles to I-81	Winchester & Western	Yes	None	None	Yes	Yes	Yes	Yes	Yes
21	Schmidt Baking Building	-	43,000 ft²	2 miles to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
22	Shockey Commerce Center	-	2,277,000 ft²	0.5 mile to I-81	CSX	Yes	None	None	Yes	Yes	Yes	Yes	Yes
23	Tabler Station Warehouse & Distribution Facility	-	101,000 ft²	0.5 mile to I-81	Winchester & Western	Yes	None	None	Yes	Yes	Yes	Yes	Yes
24	North Thompson Building	7	241,000 ft²	0.5 mile to WV 9	None	None	None	None	Yes	Yes	Yes	Yes	Yes
25	Kodak Building	14	325,000 ft²	6 miles to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
26	AB&C Building	16	92,000 ft²	9 miles to I-81	None	None	None	None	Yes	Yes	Yes	Yes	Yes
27	Kidde Building	16	82,000 ft²	9 miles to I-81	CSX	None	None	None	Yes	Yes	Yes	Yes	Yes

Source: WV Development Office

3.2.6 FREIGHT DEMOGRAPHICS

Freight movements originating from or destined to Martinsburg within a 100-mile radius by truck totaled 156 million tons in 2008 according to data obtained from Global Insight. These freight movements in and out of Martinsburg were comprised of the following cargo classification types:

- 40% dry bulk products
- 32% secondary traffic
- 16% break-bulk products
- 6% liquid bulk products
- 4% farm products
- 2% other

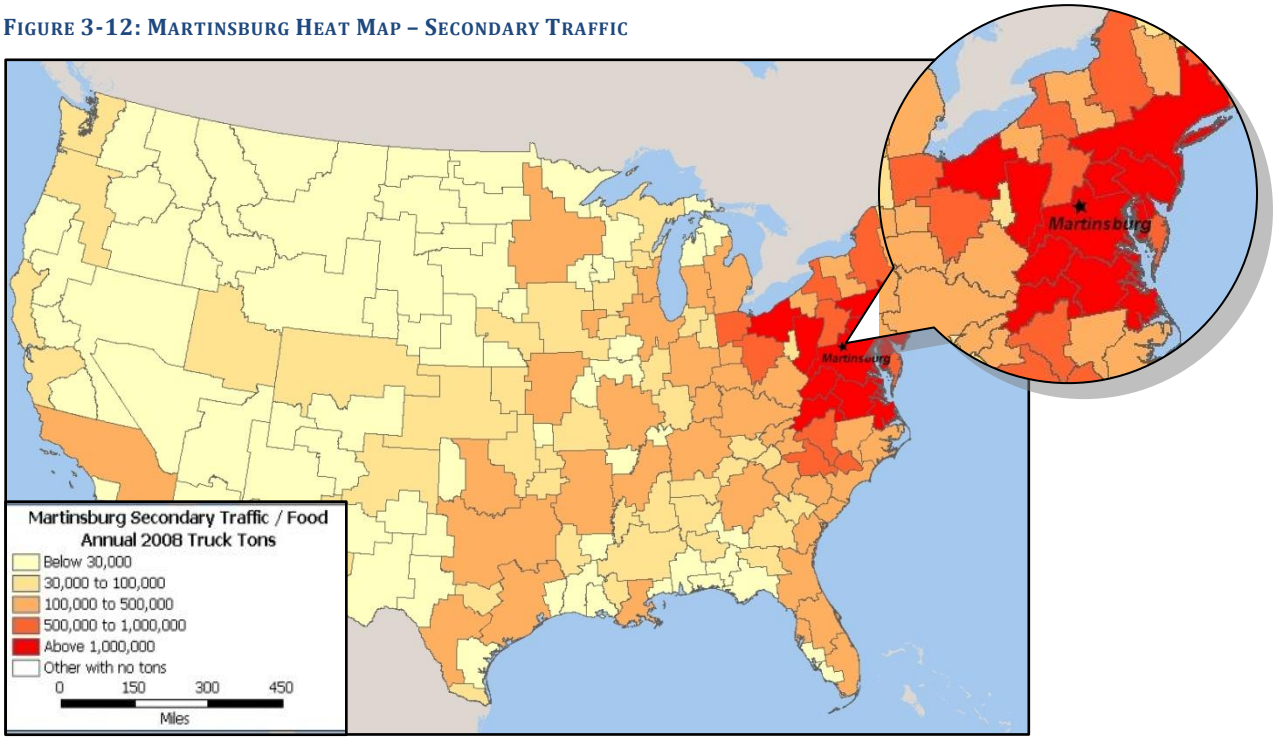
The top commodities being shipped in and out of Clarksburg are:

- Secondary (Warehouse) traffic/food
- Non-metallic minerals (bulk)
- Clay, concrete, glass or stone (bulk)
- Wood and lumber products (break-bulk)
- Printed matter (break-bulk)

Figure 3-12 identifies the secondary (warehouse) traffic annual truck tonnage in and out of the catchment area (100-mile radius of Martinsburg). The secondary (warehouse) traffic is predominantly short haul lanes into the Northeast and also into Mid-Atlantic but has a broad freight distribution pattern with secondary market presence in the Ohio River Valley, Midwest, Texas and Southern California.

Table 3-8 lists the top ten secondary (warehouse) traffic freight lanes used in conjunction with heat map in Figure 3-12. The top ten tonnage freight lanes account for 17,380,000 tons or 33 percent of total secondary (warehouse) traffic and comprise a mixture of regionalized inbound and outbound truck movements. The key freight lanes are in and out of the Washington D.C., Harrisburg, PA and New York City areas.

FIGURE 3-12: MARTINSBURG HEAT MAP – SECONDARY TRAFFIC



Source: Global Insight

TABLE 3-8: MARTINSBURG CARGO TONNAGE – SECONDARY TRAFFIC

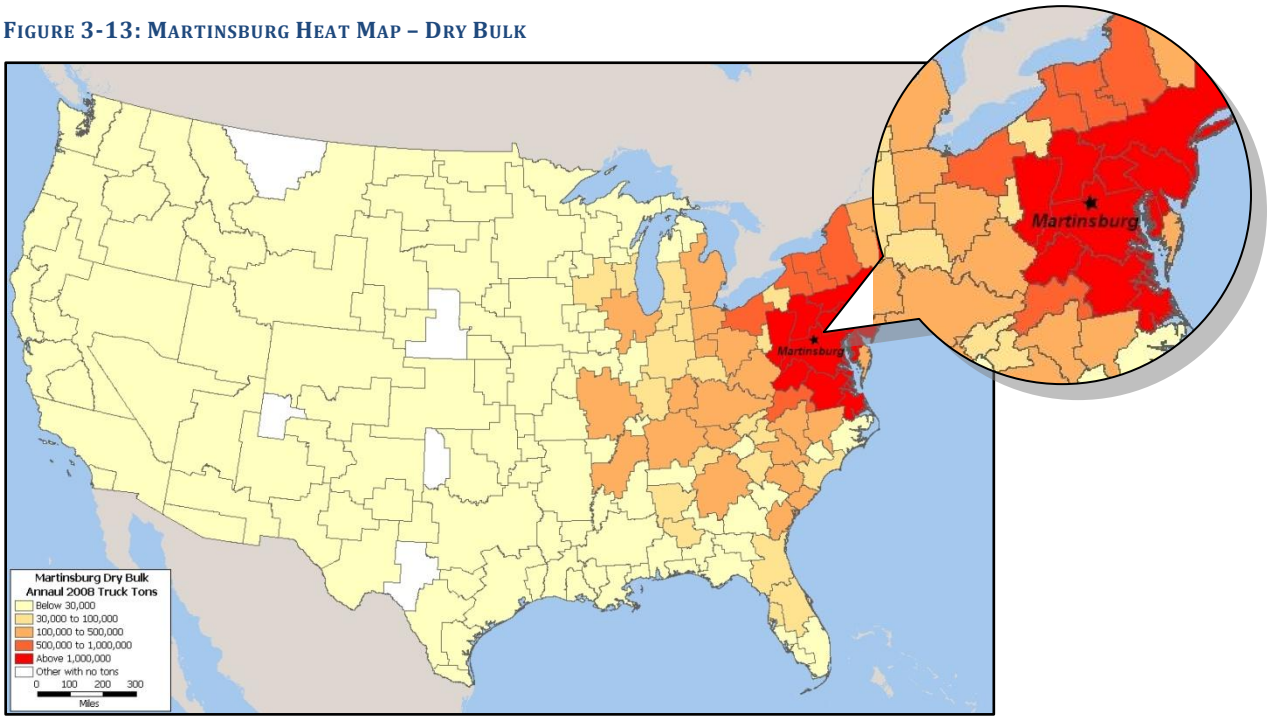
Direction	Origin BEA	Destination BEA	Tons (in 000s)	Percent
Outbound	Harrisburg, PA	Philadelphia, PA	2,835	5%
Inbound	Washington, DC	Washington, DC	2,828	5%
Outbound	Washington, DC	Washington, DC	2,328	4%
Outbound	Harrisburg, PA	New York, NY	2,240	4%
Outbound	Harrisburg, PA	Pittsburgh, PA	1,869	4%
Outbound	Washington, DC	Richmond, VA	1,265	2%
Inbound	Washington, DC	Washington, DC	1,077	2%
Outbound	Washington, DC	Washington, DC	1,063	2%
Outbound	Washington, DC	Roanoke, VA	947	2%
Inbound	New York, NY	Washington, DC	928	2%
Total Top Ten			17,380	33%
All Others			35,746	67%
Sum Secondary Traffic			53,126	

Source: Global Insight

Figure 3-13 identifies the dry bulk annual truck tonnage in and out of the catchment area (100-mile radius of Martinsburg). The dry bulk traffic is predominantly short haul lanes into the Northeast and also into Mid-Atlantic with secondary market presence in the Ohio River Valley, Great Lakes, Upstate New York and the Southeast. This distribution pattern affirms that dry bulk shipments are prone to short hauls due to load weight and regional distribution facilities.

Table 3-9 lists the top ten dry bulk freight lanes used in conjunction with heat map in Figure 3-13. The top ten tonnage freight lanes account for 37,357,000 tons or 57 percent of total dry bulk traffic and are comprised of a mixture of regionalized inbound and outbound truck movements. The key freight lanes are in and out of the Washington D.C., Harrisburg, PA and Philadelphia, PA areas.

FIGURE 3-13: MARTINSBURG HEAT MAP – DRY BULK



Source: Global Insight

TABLE 3-9: MARTINSBURG CARGO TONNAGE – DRY BULK

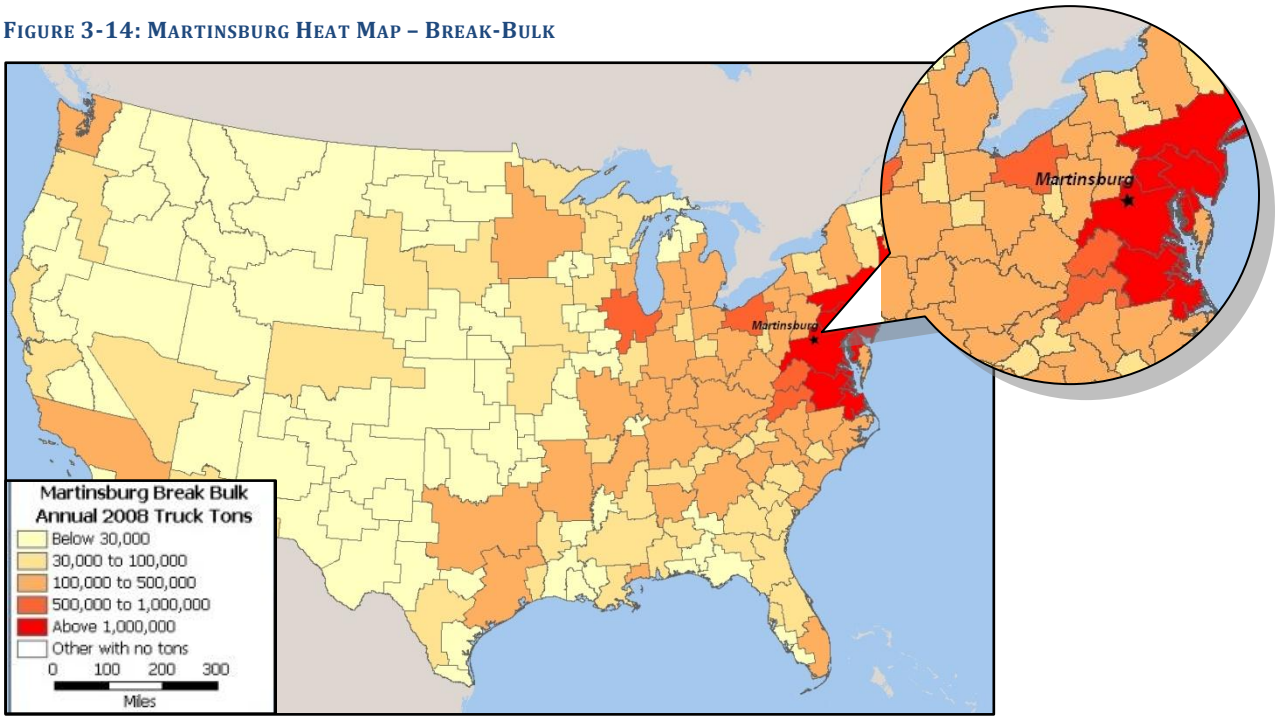
Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Outbound	Washington, DC	Washington, DC	Nonmetallic Minerals	9,229	14%
Inbound	Washington, DC	Washington, DC	Nonmetallic Minerals	6,731	10%
Inbound	Washington, DC	Washington, DC	Clay, Concrete, Glass or Stone	4,803	7%
Outbound	Washington, DC	Washington, DC	Clay, Concrete, Glass or Stone	4,536	7%
Outbound	Harrisburg, PA	Washington, DC	Nonmetallic Minerals	3,976	6%
Inbound	Philadelphia, PA	Washington, DC	Clay, Concrete, Glass or Stone	2,187	3%
Inbound	New York, NY	Washington, DC	Clay, Concrete, Glass or Stone	1,873	3%
Outbound	Richmond, VA	Richmond, VA	Nonmetallic Minerals	1,670	3%
Outbound	Washington, DC	Pittsburgh, PA	Nonmetallic Minerals	1,201	2%
Outbound	Harrisburg, PA	Philadelphia, PA	Clay, Concrete, Glass or Stone	1,151	2%
Total Top Ten				37,357	57%
All Others				28,094	43%
Sum Dry Bulk				65,451	

Source: Global Insight

Figure 3-14 identifies the break-bulk annual truck tonnage in and out of the catchment area (100-mile radius of Martinsburg). The break-bulk traffic is concentrated heavily in the catchment area and the I-95 corridor with secondary markets in the Ohio River Valley, Great Lakes, Midwest, Texas and the Southwest.

Table 3-10 lists the top ten break-bulk freight lanes used in conjunction with heat map in Figure 3-14. The top ten tonnage freight lanes account for 2,949,000 tons or 11 percent of total break-bulk traffic and are a mix of regionalized inbound and outbound truck movements. The key lanes are various commodities going into the Washington D.C. area.

FIGURE 3-14: MARTINSBURG HEAT MAP – BREAK-BULK



Source: Global Insight

TABLE 3-10: MARTINSBURG CARGO TONNAGE – BREAK-BULK

Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Inbound	Richmond, VA	Washington, DC	Lumber or Wood Products	515	2%
Outbound	Washington, DC	Washington, DC	Lumber or Wood Products	359	1%
Outbound	Washington, DC	Washington, DC	Printed Matter	308	1%
Inbound	Washington, DC	Washington, DC	Lumber or Wood Products	293	1%
Outbound	Washington, DC	New York, NY	Lumber or Wood Products	272	1%
Inbound	Norfolk, VA	Washington, DC	Lumber or Wood Products	265	1%
Inbound	Washington, DC	Washington, DC	Printed Matter	241	1%
Inbound	Washington, DC	Washington, DC	Pulp, Paper or Allied Products	238	1%
Inbound	Norfolk, VA	Washington, DC	Machinery	234	1%
Inbound	Biloxi, MS	Washington, DC	Rubber or Misc Plastics	224	1%
Total Top Ten				2,949	11%
All Others				23,465	89%
Sum Break-Bulk				26,414	

Source: Global Insight

3.3. WEIRTON

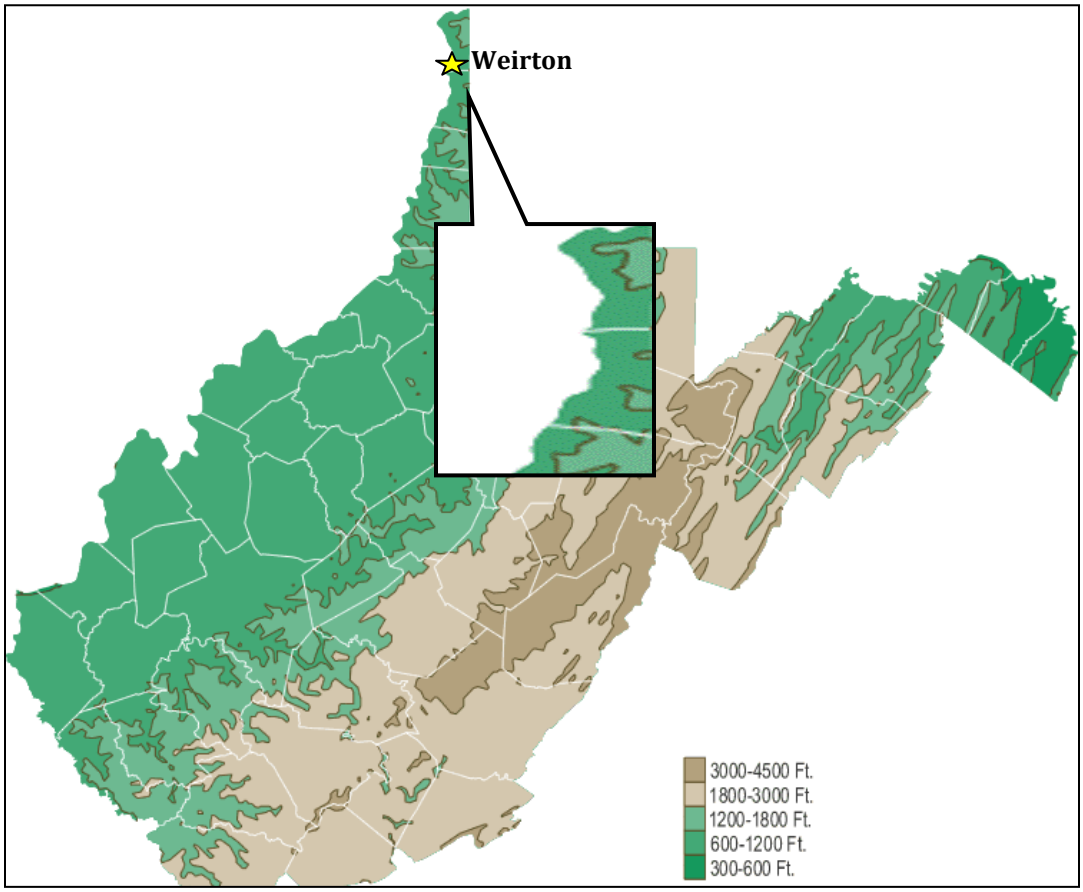
Weirton is the largest municipality located in the Northern Panhandle of West Virginia. Weirton's proximity to the metropolitan areas of Pittsburgh, Cleveland and Columbus provides a centralized location for freight distribution. Weirton's freight infrastructure comprises components that could support various types of freight distribution. It is located directly on the Ohio River (designated as a Marine Highway by MARAD), is approximately 30 miles from the Pittsburgh International Airport and has direct access to U.S. Highway 22 and OH Route 7 that connect to the Interstate Highway system.

Weirton is home to the Weirton Area Port Authority (WAPA). Currently WAPA is positioning itself as a logistics village and information link for enterprises and shippers utilizing inland transportation systems. Next generation communication systems will be utilized for security, safety and commerce providing supply chain savings to companies within WAPA.

3.3.1 PHYSICAL CHARACTERISTICS

Weirton is a part of Weirton-Steubenville Metropolitan Statistical Area consisting of three counties; Brooke, Hancock (in West Virginia) and Jefferson (in Ohio). The city is located at an elevation of 755 feet above sea-level. Weirton covers about 19 square miles of area with seven percent of the area covered with water. Figure 3-15 shows the location of Weirton with its topographical condition.

FIGURE 3-15: WEIRTON TOPOGRAPHIC MAP



Source: Parsons Brinckerhoff Analysis

3.3.2 ROAD

Weirton's major roadways are U.S. Highway 22, West Virginia Highways 105 and 2. U.S. 22 is a 4-lane corridor that runs through Weirton, Steubenville, and Wintersville, towards Pittsburgh to the east. There are on-going discussions regarding the possibility of extending and 4-laning this corridor from Hopedale, Ohio directly to Columbus. This would place the Steubenville-Weirton area on the only 4-lane corridor connecting these two major economic centers[54]. Weirton is located approximately 35 miles from Interstate 70.

3.3.3 RAIL

Weirton's rail network is supported by one Class I rail line, NS, and a short line which interchanges with CSXT.

3.3.4 WATERWAYS

Weirton is located on the Ohio River, which is navigable to commercial traffic throughout the state. There is about 40 miles of navigable waterway in Ohio River under Weirton Area Port Authority's jurisdiction, which also covers the New Cumberland Lock and Dam. More than 80 terminals service the region's waterways including private terminals.

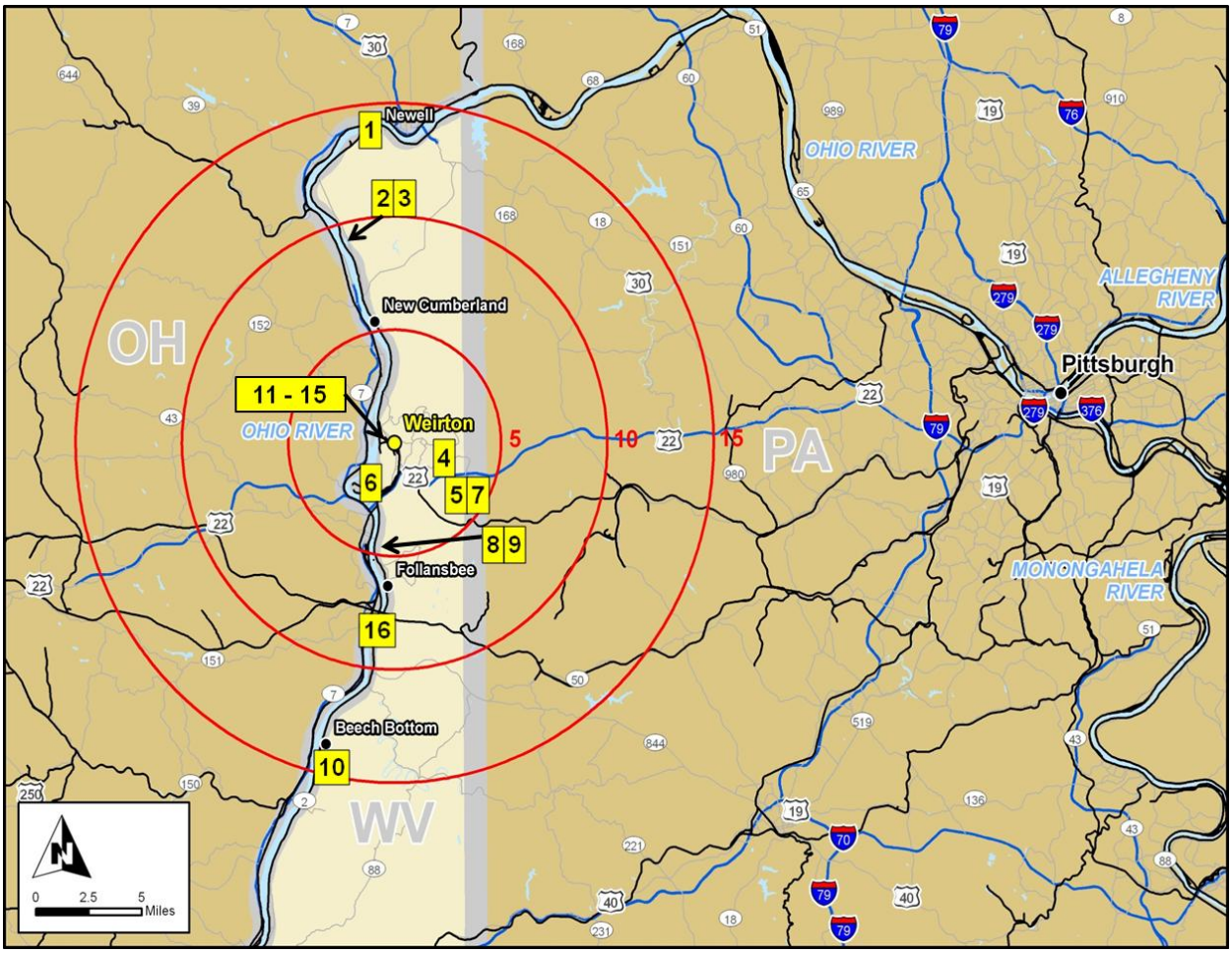
3.3.5 FACILITY PROFILES

Sixteen potential sites located in the greater Weirton area were profiled in the WVDO Data Disc and are shown in Figure 3-16. The sites are numbered and their corresponding attributes are listed in Table 3-11. All of the identified sites are located within a fifteen mile radius of Weirton (identified by the red circles in Figure 3-16).

Of the sixteen sites, six have access to three modes of transportation, four have access to two modes of transportation and six have only highway access. The region's transportation infrastructure provides multimodal access in numerous locations within a relative close distance to Weirton.

[54] Brooke-Hancock-Jefferson Freight Study, Cambridge Systematics

FIGURE 3-16: WEIRTON & SURROUNDING VICINITY



Source: Parsons Brinckerhoff Analysis

The site information in the WVDO Data Disc is listed in Table 3-11.

TABLE 3-11: WEIRTON SITES

Site #	Site Name	Miles from Weirton	Total Area (acres/sf)	4-Lane Highway Access	Rail	Rail Siding	Nav. River	On-Site Barge	Utilities				
									Power	Gas	Water	Sewer	Comm.
1	Hofstetter Site	17	36	40 miles to I-70; 6 miles to US 30	NS	None	Ohio River	Yes	Yes	Yes	Yes (1/4 mile)	Yes (1/4 mile)	N/A
2	Cargill Site	6	183	35 miles to I-70	NS	None	Ohio River	None	Yes	None	N/A	N/A	Yes
3	Hutson Estate Site	6	408	12 miles to US 22	NS	None	Ohio River	None	N/A	None	None	None	N/A
4	Castelli Site	-	38	2 miles to US 22	None	None	None	None	N/A	N/A	N/A	N/A	N/A
5	Colliers Way Site	-	700+	26 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
6	Half Moon Industrial Park	-	200	25 miles to I-70	NS	Yes	Ohio River	None	Yes	Yes	Yes	Yes	Yes
7	Three Springs Business Park	-	124	25 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
8	HFS, LLC Site	7	492	10 miles to US 22	NS	None	Ohio River	None	None	None	None	None	None
9	1500 East Site	7	11	3 miles to US 22	NS	None	None	None	Yes	Yes	Yes	Yes	Yes
10	Brooke Industrial Park	15	37	12 miles to I-70	None	None	Ohio River	None	Yes	Yes	Yes	Yes	Yes
11	Central Machine Shop Building	-	103,000 ft²	3 miles to US 22	NS	None	None	None	Yes	Yes	Yes	Yes	Yes
12	Colliers Steel Building	-	132,000 ft²	25 miles to I-70; 2 miles to US 22	None	None	None	None	Yes	Yes	Yes	Yes	Yes
13	R&D Building	-	77,000 ft²	0.5 mile to US 22	None	None	None	None	Yes	Yes	Yes	Yes	Yes
14	R. Castelli Building	-	11,000 ft²	1.5 mile to US 22	None	None	None	None	Yes	Yes	Yes	Yes	N/A
15	USG/HK Building	-	35,000 ft²	2 miles to US 22	NS	Yes	Ohio River	1/2 mile	Yes	Yes	Yes	Yes	Yes
16	Vie-Con Building	11	112,000 ft²	16 miles to I-70	NS	Yes	None	None	Yes	Yes	Yes	Yes	Yes

Source: WV Development Office

3.3.6 FREIGHT DEMOGRAPHICS

Freight movements originating from or destined to Weirton within a 100-mile radius by truck totaled 168 million tons in 2008 according to data obtained from Global Insight. As previously mentioned, this data excluded petroleum and coal because it is non-divertible freight. Only high volume cargo groups were considered such as dry bulk, break-bulk and secondary traffic due to the planning process of the facility type. Secondary traffic is defined as freight flows to and from distribution centers/warehouses.

These freight movements in and out of Weirton comprise the following cargo classification types:

- 41% dry bulk products
- 35% secondary traffic
- 15% break-bulk products
- 6% liquid bulk products
- 2% farm products
- 1% other

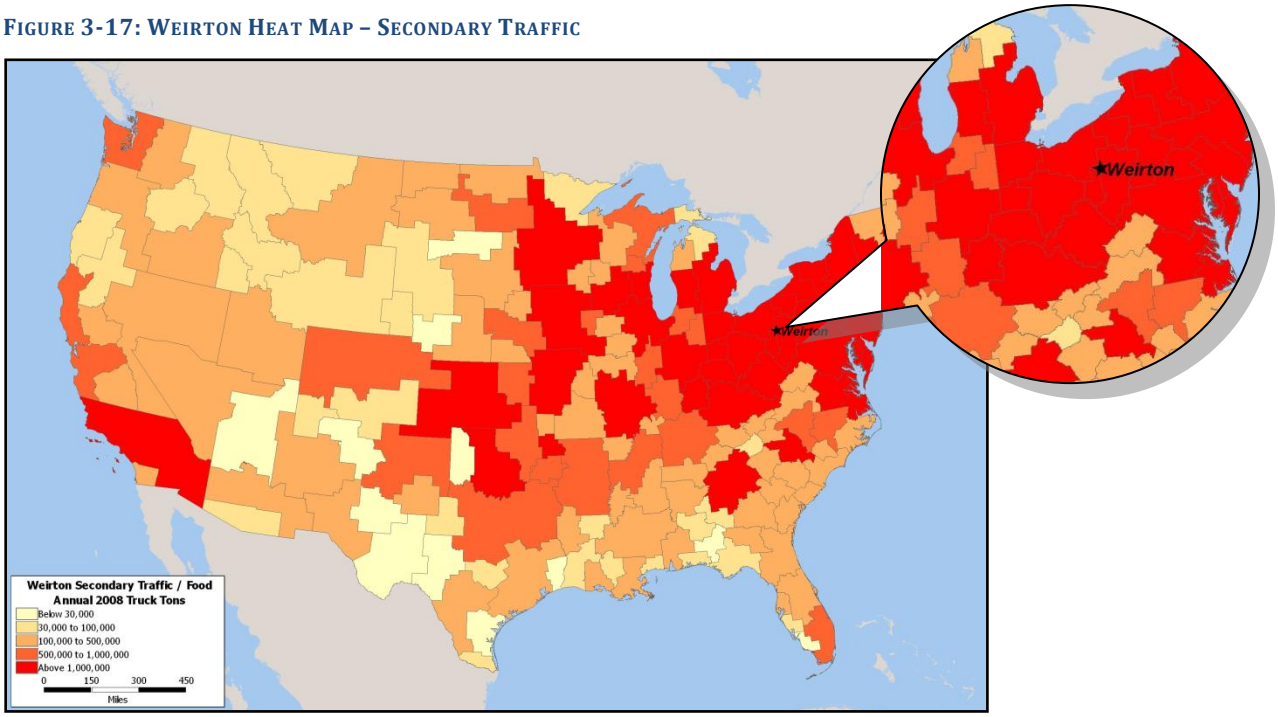
The top commodities being shipped in and out of Weirton are:

- Secondary (Warehouse) traffic/food
- Non-metallic minerals (bulk)
- Clay, concrete, glass or stone (bulk)
- Primary metal products (break-bulk)

Figure 3-17 identifies the secondary (warehouse) traffic annual truck tonnage in and out of the catchment area (100-mile radius of Weirton). The secondary (warehouse) traffic is densely distributed and has a national market reach. The top-ten routes are mainly short hauls into the Northeast. The national market reach gives this area presence in many areas throughout the U.S. including the Mid-Atlantic, Ohio River Valley, Great Lakes, Midwest and Southern California.

Table 3-12 lists the top ten secondary (warehouse) traffic freight lanes used in conjunction with heat map in Figure 3-17. The top ten tonnage freight lanes account for 22,182,000 tons or 26 percent of total secondary (warehouse) traffic and comprise a mixture of regionalized inbound and outbound truck movements. The key freight lanes are in and out of the Pittsburgh, Philadelphia, Harrisburg and New York City areas.

FIGURE 3-17: WEIRTON HEAT MAP – SECONDARY TRAFFIC



Source: Global Insight

TABLE 3-12: WEIRTON CARGO TONNAGE – SECONDARY TRAFFIC

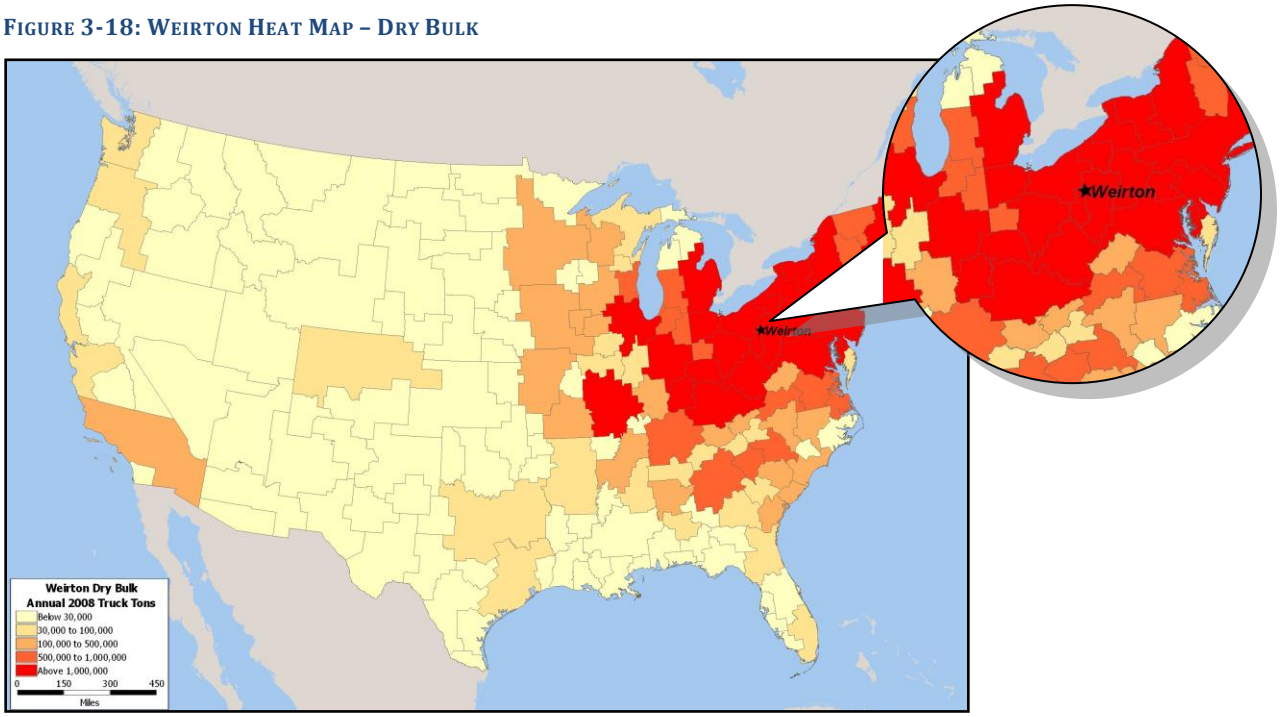
Direction	Origin BEA	Destination BEA	Tons (in 000s)	Percent
Inbound	New York, NY	Pittsburgh, PA	3,955	5%
Outbound	Pittsburgh, PA	New York, NY	3,212	4%
Inbound	Philadelphia, PA	Pittsburgh, PA	3,123	4%
Inbound	Harrisburg, PA	Pittsburgh, PA	2,222	3%
Outbound	Pittsburgh, PA	Washington, DC	1,820	2%
Inbound	Columbus, OH	Cleveland, OH	1,780	2%
Inbound	Toledo, OH	Cleveland, OH	1,729	2%
Outbound	Pittsburgh, PA	Philadelphia, PA	1,617	2%
Outbound	Pittsburgh, PA	Philadelphia, PA	1,509	2%
Outbound	Pittsburgh, PA	New York, NY	1,215	1%
Total Top Ten			22,182	26%
All Others			63,535	74%
Sum Secondary Traffic			85,717	

Source: Global Insight

Figure 3-18 identifies the dry bulk annual truck tonnage in and out of the catchment area (100-mile radius of Weirton). The dry bulk traffic is predominantly short haul lanes into the Northeast, Great Lakes and Ohio River Valley with secondary market presence in Mid-Atlantic, Midwest and Southwest.

Table 3-13 lists the top ten dry bulk freight lanes used in conjunction with heat map in Figure 3-18. The top ten tonnage freight lanes account for 16,204,000 tons or 27 percent of total dry bulk traffic and are comprised of a mixture of regionalized inbound and outbound truck movements. The key freight lanes are in and out of the Pittsburgh and Cleveland areas.

FIGURE 3-18: WEIRTON HEAT MAP – DRY BULK



Source: Global Insight

TABLE 3-13: WEIRTON CARGO TONNAGE – DRY BULK

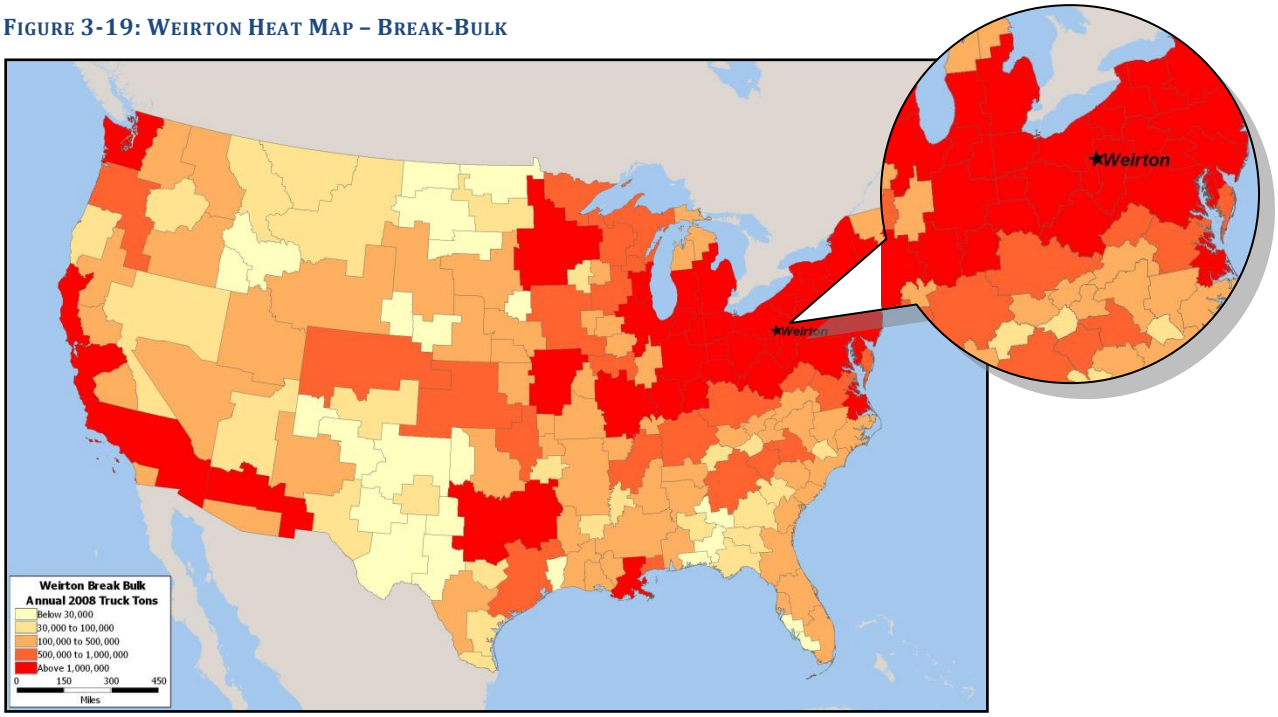
Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Outbound	Cleveland, OH	Cleveland, OH	Nonmetallic Minerals	3,962	7%
Inbound	Cleveland, OH	Cleveland, OH	Clay, Concrete, Glass or Stone	2,716	4%
Outbound	Cleveland, OH	Cleveland, OH	Clay, Concrete, Glass or Stone	2,622	2%
Inbound	Erie, PA	Pittsburgh, PA	Nonmetallic Minerals	1,279	2%
Outbound	Pittsburgh, PA	New York, NY	Clay, Concrete, Glass or Stone	1,271	2%
Outbound	Pittsburgh, PA	Washington, DC	Clay, Concrete, Glass or Stone	1,129	1%
Inbound	Pittsburgh, PA	Pittsburgh, PA	Nonmetallic Minerals	849	1%
Inbound	State College, PA	Pittsburgh, PA	Nonmetallic Minerals	836	1%
Inbound	Washington, DC	Pittsburgh, PA	Nonmetallic Minerals	824	1%
Inbound	Cleveland, OH	Pittsburgh, PA	Clay, Concrete, Glass or Stone	718	1%
Total Top Ten				16,204	27%
All Others				44,410	73%
Sum Dry Bulk				60,614	

Source: Global Insight

Figure 3-19 identifies the break-bulk annual truck tonnage in and out of the catchment area (100-mile radius of Weirton). The break-bulk traffic is comprised predominantly of outbound metal products with primary markets in the catchment area, Northeast, Mid-Atlantic, Great Lakes, Midwest, Southwest and the Pacific Coast giving it national market reach.

Table 3-14 lists the top ten break-bulk freight lanes used in conjunction with heat map in Figure 3-19. The top ten tonnage freight lanes account for 2,898,000 tons or 13 percent of total break-bulk traffic and of regionalized outbound truck movements. The key lanes are in Cleveland area and the Northeast.

FIGURE 3-19: WEIRTON HEAT MAP – BREAK-BULK



Source: Global Insight

TABLE 3-14: WEIRTON CARGO TONNAGE – BREAK-BULK

Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Outbound	Pittsburgh, PA	Philadelphia, PA	Primary Metal Products	470	2%
Outbound	Pittsburgh, PA	New York, NY	Primary Metal Products	420	2%
Outbound	Pittsburgh, PA	Washington, DC	Primary Metal Products	344	1%
Outbound	Cleveland, OH	New York, NY	Primary Metal Products	310	1%
Outbound	Cleveland, OH	Detroit, MI	Primary Metal Products	273	1%
Outbound	Cleveland, OH	Cleveland, OH	Fabricated Metal Products	257	1%
Outbound	Cleveland, OH	Cleveland, OH	Primary Metal Products	253	1%
Outbound	Wheeling, WV	Charleston, WV	Pulp, Paper or Allied Products	201	1%
Outbound	Cleveland, OH	Washington, DC	Primary Metal Products	185	1%
Outbound	Pittsburgh, PA	New York, NY	Lumber or Wood Products	184	1%
Total Top Ten				2,898	13%
All Others				20,084	87%
Sum Break-Bulk				22,982	

Source: Global Insight

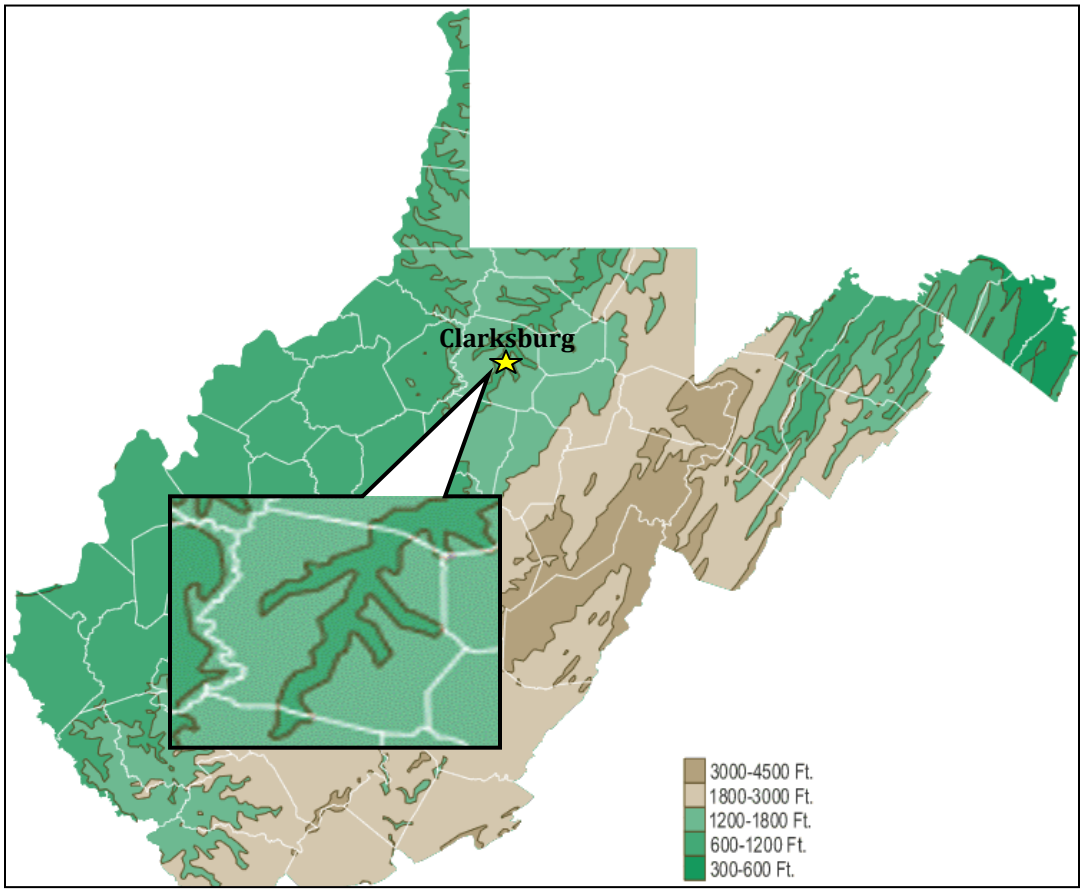
3.4. CLARKSBURG

Clarksburg is located in the North-Central region of West Virginia along Interstate-79 and along West Fork River and Elk Creek. Clarksburg has current rail infrastructure and the North Central West Virginia Airport is situated approximately eight miles to the east. The area has an established infrastructure to support freight movements, centralized location for marketability and multiple sites for development. The North Central West Virginia Trade Development Association comprises local businesses and leaders seeking to obtain state and regional approval for a port-of-entry status for the local airport.

3.4.1 PHYSICAL CHARACTERISTICS

Clarksburg is a principal city of Clarksburg Micropolitan Area consisting of three counties; Doddridge, Harrison and Taylor, in North-Central West Virginia. The city is located at an elevation of 994 feet above sea-level. Compared to other three regions described above, Clarksburg is at a higher altitude. However, it is lower than the South-East region of West Virginia. Figure 3-20 shows the location of Clarksburg with its topographical condition.

FIGURE 3-20: CLARKSBURG TOPOGRAPHIC MAP



Source: Parsons Brinckerhoff Analysis

3.4.2 ROAD

Clarksburg is located at the intersection of Interstate 79 and U.S. Highway 50. Other major highways include U.S. Highway 19, West Virginia Highway 20, West Virginia Highway 58 and West Virginia Highway 98. Its centralized location enables shippers to easily access various markets in and out of West Virginia by highway.

3.4.3 RAIL

Clarksburg's rail network is supported by one Class I rail line, CSXT, and various short lines (mainly to the south of Clarksburg) that provide access to the various regional coal mines. CSXT operates a TRANSFLO terminal in Clarksburg, providing bulk commodity transfer capabilities between rail and truck.

3.4.4 WATERWAYS

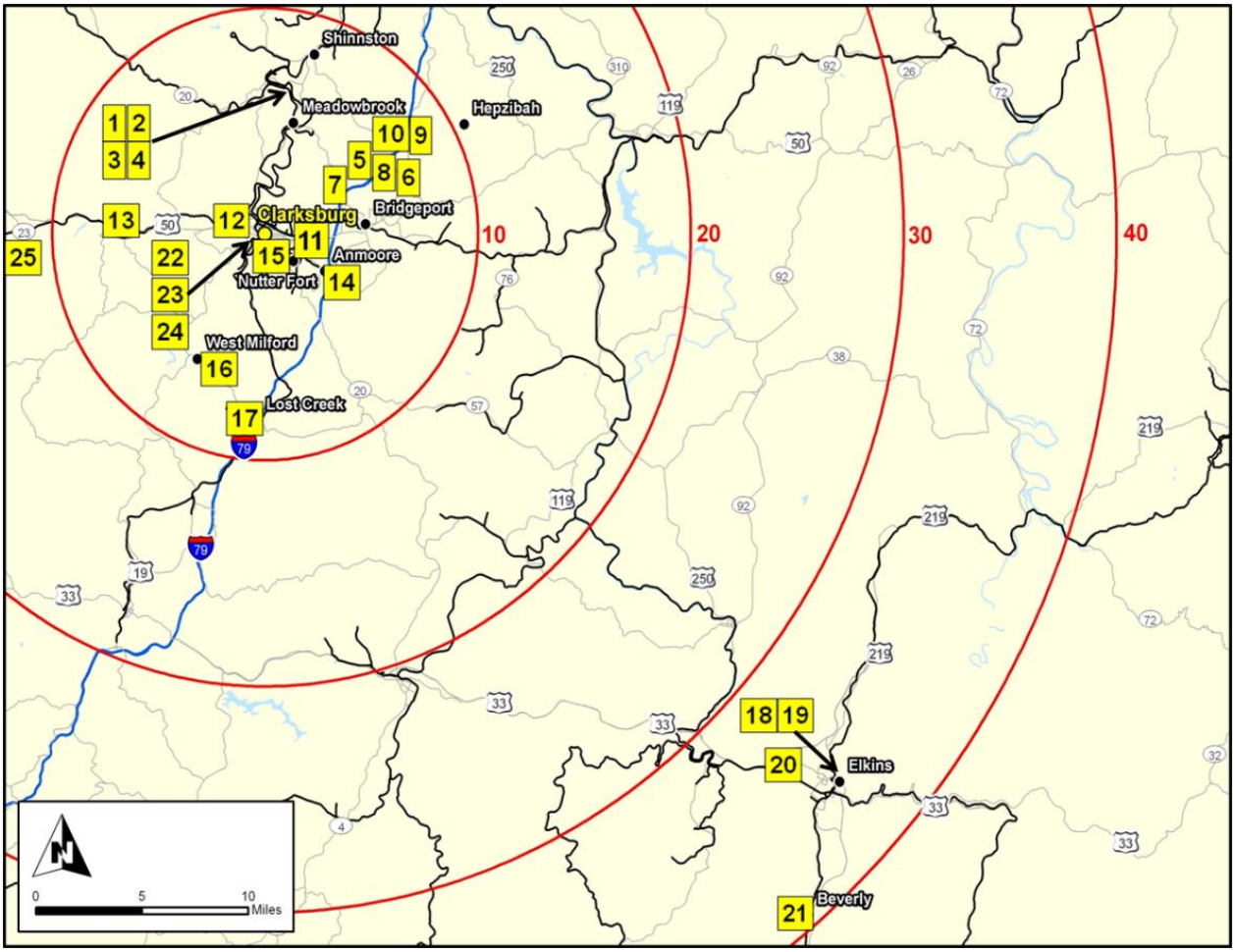
Clarksburg's modal access is limited to rail and truck because there is not a navigable river in the vicinity.

3.4.5 FACILITY PROFILES

Twenty-five potential sites located in the greater Clarksburg area were profiled in the WVDO Data Disc and are shown in Figure 3-21. The sites are numbered and their corresponding attributes are listed in Table 3-15. The majority of the identified sites are located within a ten mile radius of Clarksburg (identified by the red circles in Figure 3-21). This proximity to Clarksburg provides shippers shorter distances to access CSXT's transloading facility or Interstate 79.

Of the twenty-five sites, nine have access to two modes of transportation (rail and highway) and sixteen have only highway access. Seventeen sites are located along Interstate 79 or U.S. Highway 50 providing adequate truck access.

FIGURE 3-21: CLARKSBURG & SURROUNDING VICINITY



Source: Parsons Brinckerhoff Analysis

The site information in the WVDO Data Disc is listed in Table 3-15.

TABLE 3-15: CLARKSBURG SITES

Site #	Site Name	Miles from Clarksburg	Total Area (acres/sf)	4-Lane Highway Access	Rail	Rail Siding	Nav. River	On-Site Barge	Utilities				
									Power	Gas	Water	Sewer	Comm.
1	Spelter Site	11	106	5 miles to I-79	Abandoned	Abandoned	None	None	Yes	Yes	Yes	Yes	Yes
2	Anchor Hocking Site	15	21	4 miles to I-79	CSX	None	None	None	Yes	Yes	Yes	Yes	N/A
3	Secret Site No. 1	15	24	8 miles to I-79; 3.6 to US 50	CSX	Yes	None	None	Yes	Yes	Yes	Yes	Yes
4	Meadowbrook Business Park		55	3.5 miles to I-77	None	None	None	None	Yes	Yes	Yes	Yes	Yes
5	Bonasso Site	6	25	1 mile to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
6	Mid-Atlantic Aerospace Complex	6	160	On I-279	None	None	None	None	Yes	Yes	Yes	Yes	Yes
7	OCRI LLC Site	6	15	½ mile to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
8	Route 2, Box 136 Site	6	55	1 mile to I-79	None	None	None	None	Yes	Yes	Yes	None	Yes
9	Saltwell Road Site	6	220	On I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
10	White Oaks	6	255	On I-70	None	None	None	None	Yes	Yes	Yes	Yes	Yes
11	Harrison County Business & Technology	-	750	1/3 mile to I-79	CSX	Yes	None	None	Yes	Yes	Yes	Yes	Yes
12	Old Anchor Hocking Site	-	22	4 miles to I-79; ¼ mile to US 50	CSX	None	None	None	Yes	Yes	Yes	Yes	Yes
13	Porter Farm Site	-	195	7 miles to I-79; on US 50	None	None	None	None	Yes	Yes	Yes	Yes	Yes
14	Goots Site	6	67	1 mile to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
15	CBC Acres Site	4	11	4 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
16	Cecil Highland Farm Site	9	136	5 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
17	Barcinas Site No. 1	14	58	½ mile to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
18	CSX Yard Site	61	10	3 miles to US 33	CSX	Yes	None	None	Yes	Yes	Yes	Yes	Yes
19	Randolph County Commerce Park	61	49	2 miles to US 33	WV Rail Authority	Yes	None	None	Yes	Yes	Yes	Yes	Yes
20	Tarantelli Site	61	102	On US 33	WV Central	None	None	None	Yes	None	Yes	None	Yes
21	Laurel Lands Site	68	100	10 miles to US 33	CSX	None	None	None	Yes	Yes	Yes	None	Yes
22	Clarksburg Building Units 1 & 2	-	84,000 ft²	6 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	N/A
23	Clarksburg Building Units 3 & 4	-	104,000 ft²	6 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	N/A
24	American Vending Building	10	77,000 ft²	6 miles to I-79	None	None	None	None	Yes	Yes	Yes	Yes	Yes
25	Judel Buildings	13	36,000 ft²	1 mile to US-50	None	None	None	None	Yes	Yes	Yes	Yes	N/A

Source: WV Development Office

3.4.6 FREIGHT DEMOGRAPHICS

Freight movements originating from or destined to Clarksburg within a 100-mile radius by truck totaled 22.9 million tons in 2008 according to data obtained from Global Insight. These freight movements in and out of Clarksburg comprise the following cargo classification types:

- 50% dry bulk products
- 28% secondary traffic
- 15% break-bulk products
- 4% liquid bulk products
- 2% farm products
- 1% other

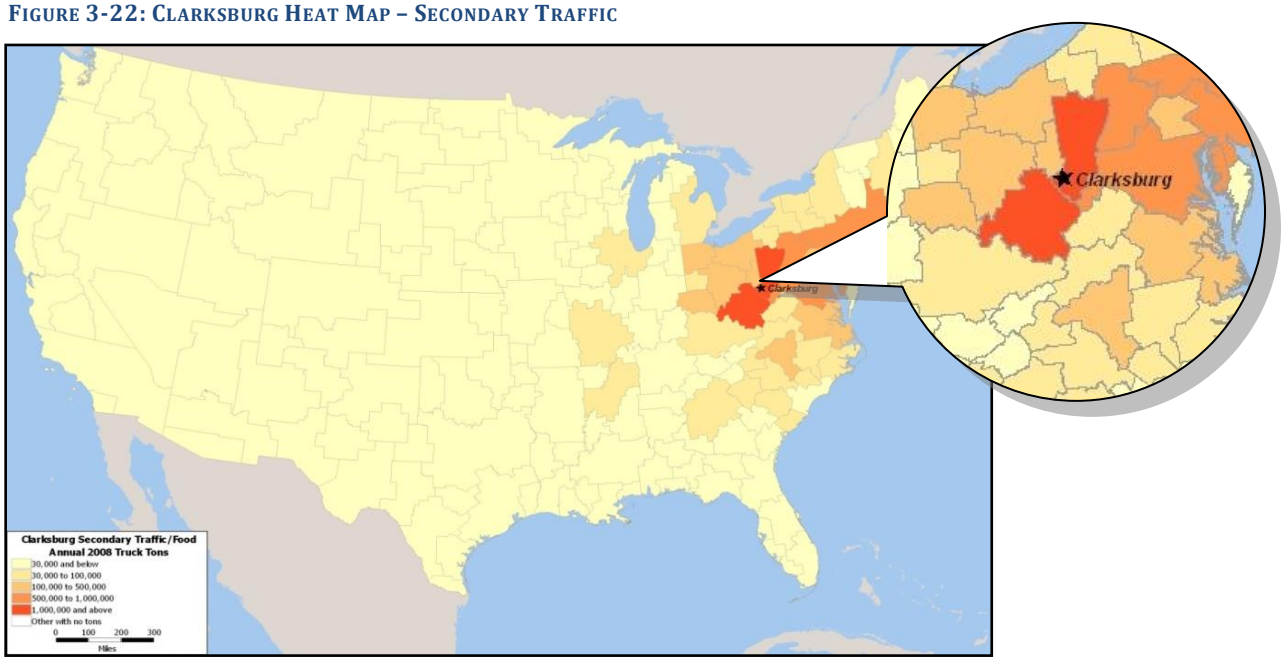
The top commodities being shipped in and out of Clarksburg are:

- Non-metallic minerals (bulk)
- Clay, concrete, glass or stone (bulk)
- Wood and lumber products (break-bulk)
- Secondary (Warehouse) traffic/food

Figure 3-22 identifies the secondary (warehouse) traffic annual truck tonnage in and out of the catchment area (100-mile radius of Clarksburg). The secondary (warehouse) traffic is principally short haul lanes primarily into the Northeast and also into Mid-Atlantic.

Table 3-16 lists the top ten secondary (warehouse) traffic freight lanes used in conjunction with heat map in Figure 3-22. The top ten tonnage freight lanes account for 2,339,000 tons or 34 percent of total secondary (warehouse) traffic and comprise a mixture of regionalized inbound and outbound truck movements. The two key freight lanes are in and out of the Pittsburgh and New York City areas.

FIGURE 3-22: CLARKSBURG HEAT MAP – SECONDARY TRAFFIC



Source: Global Insight

TABLE 3-16: CLARKSBURG CARGO TONNAGE – SECONDARY TRAFFIC

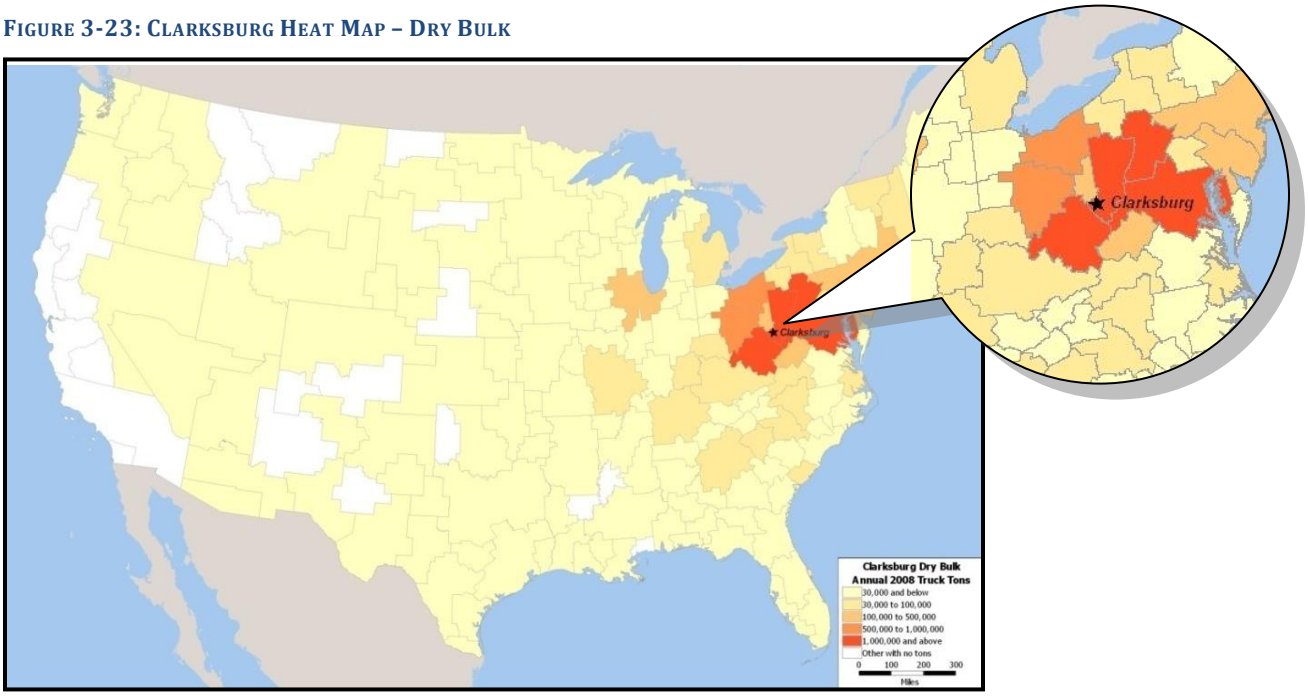
Direction	Origin BEA	Destination BEA	Tons (in 000s)	Percent
Outbound	Pittsburgh, PA	Charleston, WV	612	9%
Outbound	Charleston, WV	Charleston, WV	300	4%
Inbound	New York, NY	Pittsburgh, PA	233	3%
Outbound	Pittsburgh, PA	Washington, DC	206	3%
Outbound	Pittsburgh, PA	New York, NY	197	3%
Inbound	Philadelphia, PA	Pittsburgh, PA	189	3%
Inbound	Charleston, WV	Pittsburgh, PA	174	3%
Outbound	Pittsburgh, PA	Philadelphia, PA	169	2%
Inbound	Harrisburg, PA	Pittsburgh, PA	135	2%
Outbound	Pittsburgh, PA	Wheeling, WV	123	2%
Total Top Ten			2,339	34%
All Others			4,498	66%
Sum Secondary Traffic			6,837	

Source: Global Insight

Figure 3-23 identifies the dry bulk annual truck tonnage in and out of the 100-mile radius of Clarksburg. The dry bulk traffic is principally comprises short hauls and concentrated in the catchment area. Additional freight lanes are found in and out of the Northeast and Chicago areas.

Table 3-17 lists the top ten dry bulk traffic freight lanes used in conjunction with heat map in Figure 3-23. The top ten tonnage freight lanes account for 6,514,000 tons or 53 percent of total dry bulk and are comprised of a mixture of regionalized inbound and outbound nonmetallic minerals and clay, concrete, glass or stone movements.

FIGURE 3-23: CLARKSBURG HEAT MAP – DRY BULK



Source: Global Insight

TABLE 3-17: CLARKSBURG CARGO TONNAGE – DRY BULK

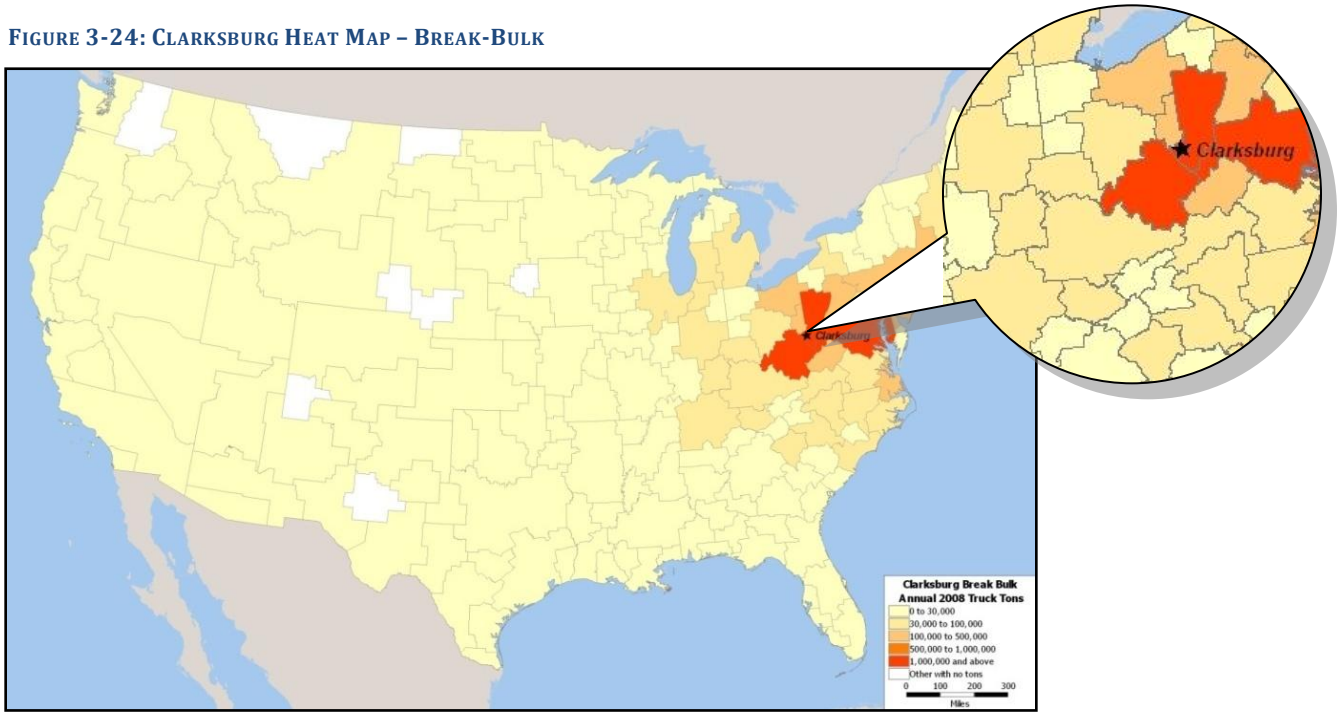
Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Outbound	Pittsburgh, PA	Pittsburgh, PA	Nonmetallic Minerals	1,725	14%
Outbound	Pittsburgh, PA	Pittsburgh, PA	Clay, Concrete, Glass or Stone	860	7%
Inbound	Washington, DC	Pittsburgh, PA	Nonmetallic Minerals	700	6%
Outbound	State, College, PA	Pittsburgh, PA	Nonmetallic Minerals	631	5%
Outbound	State, College, PA	Washington, DC	Nonmetallic Minerals	500	4%
Outbound	Pittsburgh, PA	Washington, DC	Clay, Concrete, Glass or Stone	491	4%
Inbound	Charleston, WV	Pittsburgh, PA	Nonmetallic Minerals	442	4%
Inbound	Columbus, OH	Charleston, WV	Nonmetallic Minerals	426	3%
Inbound	Washington, DC	Washington, DC	Nonmetallic Minerals	376	3%
Inbound	Pittsburgh, PA	Pittsburgh, PA	Clay, Concrete, Glass or Stone	363	3%
Total Top Ten				6,514	53%
All Others				5,832	47%
Sum Dry Bulk				12,346	

Source: Global Insight

Figure 3-24 identifies the break-bulk annual truck tonnage in and out of the catchment area (100-mile radius of Clarksburg). The break-bulk traffic is principally comprises short hauls and concentrated in the catchment area. Additional freight lanes are found in and out of the Northeast.
Source: Global Insight

Table 3-18 lists the top ten break-bulk traffic freight lanes used in conjunction with heat map in Figure 3-24. The top ten tonnage freight lanes account for 661,000 tons or 18 percent of total break-bulk and are comprised predominantly of outbound lumber movements.

FIGURE 3-24: CLARKSBURG HEAT MAP – BREAK-BULK



Source: Global Insight

TABLE 3-18: CLARKSBURG CARGO TONNAGE – BREAK-BULK

Direction	Origin BEA	Destination BEA	Commodity	Tons (in 000s)	Percent
Outbound	Pittsburgh, PA	Washington, DC	Lumber or Wood Products	124	3%
Outbound	Pittsburgh, PA	New York, NY	Lumber or Wood Products	100	3%
Outbound	Pittsburgh, PA	Charleston, WV	Lumber or Wood Products	70	2%
Outbound	Washington, DC	Washington, DC	Lumber or Wood Products	68	2%
Outbound	Pittsburgh, PA	Philadelphia, PA	Lumber or Wood Products	60	2%
Outbound	Charleston, WV	Washington, DC	Lumber or Wood Products	59	2%
Outbound	Washington, DC	New York, NY	Lumber or Wood Products	57	2%
Outbound	Washington, DC	Charleston, WV	Lumber or Wood Products	46	1%
Outbound	Pittsburgh, PA	Cleveland, OH	Lumber or Wood Products	39	1%
Outbound	Pittsburgh, PA	Norfolk, VA	Lumber or Wood Products	39	1%
Total Top Ten				661	18%
All Others				3,048	82%
Sum Break-Bulk				3,709	

Source: Global Insight

SECTION 4: OUTREACH PROGRAM

This section describes the public outreach activities undertaken to date by the consultant team in the development of the West Virginia Strategic Plan and summarizes the key points. Logistics issues were discussed and evaluated through collaborative effort between the consultant team and industry stakeholders. In assessing the viability of potential regional initiatives, discussions centered on existing challenges, proximity to key markets, and the current global market forces and emerging industry trends. The following are the main components of the public outreach program:

- Initial Stakeholder Conferences – The team held conference calls with key regional representatives to develop an understanding of local issues and opportunities. These provided background and context for the SWOT analyses.

- Shipper Survey – The consultant surveyed current and potential customers to determine their use of existing logistics services West Virginia and identify their needs.

- Regional Meetings – Regional stakeholder workshops were held to solicit input on the SWOT analysis and discuss strategic direction. These meetings (Table 4-1) provided a way for industry stakeholders to receive information about the project, to provide their opinions and to contribute to the ongoing decision-making process.

TABLE 4-1: SUMMARY OF STAKEHOLDER OUTREACH ACTIVITIES

Date	Organization/Meeting
April 12, 2011	Martinsburg: Eastern Panhandle Inland Port Coalition (EPIPC)
April 27, 2011	Weirton: Weirton Area Port Authority (WAPA)
May 11, 2011	Huntington/Prichard: Cabell-Wayne Port District
May 27, 2011	Clarksburg: North Central West Virginia Trade Association
TBD	Charleston: Public Outreach Meeting

4.1. STAKEHOLDER SESSIONS

The consultant team conducted four outreach sessions in West Virginia with key stakeholders in the region. The sessions gave stakeholders an opportunity to contribute to identifying opportunities for each region and also to better understand the drivers of infrastructure investment.

4.1.1 SESSION STRUCTURE

A presentation by the consultant team provided the attendees with a general understanding of the strategic planning process, reviewed background information on the project, and presented the initial findings of the study. After the presentation segment, the meetings were open to general discussion providing an opportunity for individual comments and questions.

4.1.2 SESSION COMMENTS

Attendees were encouraged to comment on various initiatives presented by the consultant team and previously discussed during the brainstorming session. The following outlines the discussions from each region. Meeting minutes for each session are provided in Appendix E.

HUNTINGTON/PRICHARD/HIGHWAY 35

MULTI-MODAL FREIGHT MOVEMENTS

- Discussions focused on several global issues: Is there an opportunity to investigate rail to barge freight movements? What kind of effect will the Panama Canal expansion have on this type of freight service in the West Virginia area? What is the opportunity to grow new markets and how will the success of South Point, OH affect the Huntington area?

- MARAD's Marine Highway Initiative (shipping containers by rivers) could produce potential terminal sites but need to be on the main corridor (Ohio River, Huntington). Prichard is located on the Big Sandy River, a tributary of the Ohio River, which has a limited channel width and would possibly need Army Corps of Engineers funding for channel dredging. Prichard is viewed as more of a truck/rail facility because of the issues with river navigation. The area also has a lack of river equipment for container-on-barge operations (i.e. specialized container barges).

TRANSPORTATION INFRASTRUCTURE

- Highway access into the Prichard site could be problematic because U.S. Highway 52 is two lanes. There can be bottlenecks on the on U.S. 52 at the airport entrance/exit due to Fed-Ex airport hub traffic. Exit 1 on I-64 is not adequate because it was built to a certain point and was stopped. Truck access is a critical success factor and needs to be conveyed to West Virginia officials.

- Huntington officials need to reach out to state colleagues to agree on an infrastructure improvement process. The planned corridors of Interstates 73 and 74 are critical to Huntington's freight transportation access. What happens to inland ports that do not have good infrastructure? Currently, local/regional infrastructure is being developed.

- How does the area's topography affect future projects/growth? Transportation access is not a problem. Growth needs to occur to get to the value-added services stages where transportation infrastructure and development sites could become a more prominent issue.

REGIONAL AGENCIES

- Huntington envisions a more regional port authority (OH, KY) to include the South Point, OH facility, Tri-State Airport, etc. Currently the Tri-State Airport has representatives from three states. This will bring more attention and recognition to the Huntington area. Do other national mandated authorities for freight transportation have regional or state representative? How are they setup and how do they function? Kansas City has multijurisdictional elements that make it work.

- How can Huntington/Prichard drive the collaborative process between the Tri-State Airport Board to engage in the region's freight transportation issues? How does the area bring federal representatives into conversations so regional cooperation can begin? The area needs a stronger, unified voice to develop assets and leverage the FedEx Tri-State Airport presence and the Prichard intermodal facility.

MARTINSBURG

MARKETABILITY/ FUTURE DEVELOPMENT

- Martinsburg needs an anchor company (i.e. Macy's) to establish a local warehouse or distribution center. An anchor company could give the Martinsburg area credibility in the supply chain industry and ultimately be responsible for multiple businesses establishing a distribution presence. The project team would like to understand the Macy's decision making process from a logistical standpoint and its relationship with the railroad companies, trucking companies and regional ports.

- EPIPC has been told that the Ports of Baltimore and Virginia, as well as Dulles International Airport (airports and seaports) are too congested with freight and cannot handle it all. There is a report indicating Martinsburg would not help clear various ports' excess cargo because these ports are making capital investments to expand capacity and would ultimately recover any lost market share. The Port of Baltimore is a viable port for the Martinsburg area but not a major container source due to double stack container clearance restrictions (CSXT is currently addressing this issue) and voyage time in the Chesapeake Bay. The Panama Canal expansion project will have an effect on the Port of Baltimore (in addition to other East Coast ports), but the true impact is yet to be determined.

- The WVPPA brings value to Martinsburg because the local port authorities are an extension of WVPPA. The region needs to develop and grow 3PL's using local transportation assets and knowing the market to develop business. Also, Martinsburg needs to determine how to attract more business.

- Martinsburg should make sure it is included in the West Virginia State Rail Plan for improved rail service. There are certain criteria to meet to get funding for future investments and to study the area's economic development. The West Virginia Rail Study should have a significant multi-modal component and the region needs to figure out how all transportation modes interact.

MARTINSBURG'S STRENGTHS

- Martinsburg has a number of strengths such as a large unconstrained airport; vacant land for commercial development; ample space for growth; public support for logistics operations; advanced communication services and infrastructure (i.e. security on packages); and the I-81 corridor.

AIR FREIGHT

- Martinsburg received interest in March 2011 from Mexican officials regarding the San Luis Potosi air freight service which would involve multiple ports in Mexico.

- Possible anchor tenants for air freight service include: flower distributor or an emergency relief management company.

- There has been no discussion or information regarding if regional air freight hubs are under or over capacity.

- The larger airports have an advantage because air freight continues to move in the bellies of larger aircraft. The air freight companies are consolidating larger cargo because some hubs are becoming more regionalized and primarily ship parcels due to airplane size.

- It is difficult to break or change an existing air cargo operation. However, if a new air cargo market or need was identified, Martinsburg could attract the service using a new or existing carrier.
- Martinsburg could follow a similar business plan/model to Huntsville, AL regarding air freight intermodal connectivity would be limited as in Huntsville.

WEIRTON

MARKET ANALYSIS

- Currently West Virginia is a pass through state for rail freight. How can it position itself to capture market share? Phoenix is trying to capture long haul domestic container traffic that originates in California. What role can it play? Value-added services could be a possibility.

- Large shippers are the strongest participants in freight movements and Weirton could capitalize by taking advantage of its proximity to Pittsburgh.

WAPA 'S VISION AND ROLE

- WAPA looks to be a self-sustaining port by initially providing services shippers can use (e.g. tracking services) that produce revenues/profits and in the future could have to funds to justify building a port facility.

- The locks and dams beyond Weirton on the Ohio River are in dire need of infrastructure improvement. Improving these structures would give Weirton a strategic advantage in the market because it is located on the Ohio River and is the last area with marine infrastructure before Pittsburgh. Additionally a tow of barges has to be broken apart before heading north to for safe navigation and this service could be performed in Weirton.

- The shipping industry needs to be educated in river shipping. Many people do not know how to get a product from New Orleans to Weirton. Education combined with marketability could be used a foundation to make businesses aware and produce alternative shipping options. If fuel prices continue to escalate, shippers will want multiple options.

- Initially WAPA looked at building a port facility. Now WAPA is considering the technology/virtual port aspect (e.g. tracking, providing data measures, etc.) for revenue generation. WAPA would charge a fee for technology services and could track data from the Army Corp of Engineers, Coast Guard, DHS, NOAA, Oak Ridge, etc. (have databases). Once a system is functional, then an ecosystem could branch out and grow into infrastructure.

- WAPA would like to capitalize on connecting fiber optics to anchors. For example, it could track produce from Mexico in real time by monitoring temperatures. If a problem arose, the system would produce an alert and the load could be diverted and saved. Currently shippers do not know if their produce is fresh/ripe or spoiled upon arrival.

- WAPA has to continue to apply and receive approval for various designations, regulations, etc. to be federally legitimate.

- State workers are trying to understand WAPA's strategic model. WAPA currently needs a champion at the state level to validate its strategic plan. Currently a qualification foundation is being created to make it easier for WAPA to receive state or federal funding.

Logistics and Transportation Trends

- How can Weirton position itself within the regional logistics/supply chain networks? benefits of multi-modal transportation for shippers, 3PL's, etc.; country has seen significant intermodalism over the past decade; railroads continue to make capital investments in infrastructure for domestic traffic (containers); marine highways initiative continues to be pushed (has pros and cons) and the verdict is still out there; current truck driver shortages, changes to DOT work rules (i.e. safety regulations)

Clarksburg

CSXT Rail Line / Intermodal Service

- Will the east/west CSXT mainline be used to haul containers? Currently it is used to haul bulk commodities because of clearance issues. Double-stack containers are hauled on a CSXT line north of Clarksburg. CSXT is not a major participant in the container market Clarksburg area.

- CSXT improved its track infrastructure from Baltimore, MD to Clarksburg. However it is lacking clearance for double stack containers at 3 tunnels. Clarksburg is located on CSXT's coal line which is very lucrative for CSXT and would be difficult to incorporate containers into that line, and CSXT made investment in ramps in Parkersburg.

- What are the prospects for the high speed trains (i.e. passenger rail)? West Virginia would most likely become a pass through line.

- Is there a "sweet spot" for Clarksburg in multi-modal transportation? Clarksburg's main play would be to leverage outside facilities (i.e. value-added services).

- As coal output diminishes in the future in the northern part of West Virginia, will CSXT keep the rail line dedicated to coal shipments? What is strategy on this assumption?

North Central West Virginia Airport

- Clarksburg should focus its freight transportation strategy on the airport to try and leverage its proximity to Pittsburgh and U.S. interstate system.

- West Virginia has a nature of anti-competitiveness among the intrastate airports. Central West Virginia needs a true regional airport to include freight service.

- Currently the West Virginia Legislature is exploring an intrastate airline service. Clarksburg would be an ideal airport to use due to its centralized location in the state.

Local Business

- Clarksburg has a diverse base of commerce. The FBI has local offices with approximately 5,000 employees. Many FBI employees travel to Washington D.C. and other locales but use Pittsburgh's airport.

- There is a possibility that a Homeland Security Office could move into the vacant UHC hospital.

- Add services to the current federal government workers in Clarksburg. Companies could operate in an area that is not highly populated.

- Clarksburg has the land/facilities (vacant land and airport) for a military base. West Virginia has very little military presence (except Sugar Grove).

- Currently the price of metallurgical coal (coking coal) is high which is profitable for West Virginia. Can use the money to develop various terminals.

- How will the Marcellus Shale (natural gas) industry play into freight transportation in the future? It is a newly indentified strength with no historic information. The residual products would move from central West Virginia. How does Clarksburg factor into the Marcellus Shale supply chain? Dominion proposed its Marcellus 404 Project to transport natural gas by pipelines through northern West Virginia (Tioga).

4.2. SHIPPER REQUIREMENTS ASSESSMENT

Global Insight provided the Nick J. Rahall II Appalachian Transportation Institute (RTI) with a database of over 2,600 shippers that have direct impact upon the State of West Virginia. RTI geo-coded the linear database into a GIS Database and segregated the data into four potential inland intermodal marketplaces: Eastern Panhandle (Martinsburg), Northern Panhandle (Weirton), North Central West Virginia (Clarksburg), Charleston and Huntington/Prichard areas. Each of the 2,600 shippers mailing address and contact information were independently verified. Appendix F includes a complete list of the shippers contacted. An on-line shipper survey was developed and launched. Over 2,600 letters were mailed inviting the identified shippers to participate in the on-line survey. An independent outbound call center was employed to contact each shipper independently to provide them with the on-line survey's web address. Thirty-eight companies participated in the on-line survey (see Appendix G for call outcomes, shipper survey and results).

Telephone interviews were conducted to complement the electronic survey. Logistics managers of five of the top performing companies, based upon value of product shipped from each of the four geographic regions, were selected for a telephone interview.

4.2.1 SURVEY FINDINGS

The survey was designed to capture data that was specific to this phase of the study. The questions reflect the need to fully understanding shippers' behavior as it relates to commodity types, both domestic and international origins and destinations of products being shipped, modal choices and general questions about shippers' potential needs to enhance future transportation.

COMMODITY TYPE DISTRIBUTION

Forty-three of the companies that participated in the survey ship or receive bulk products. Break-bulk shippers represented 26 percent of the respondents. Thirty one percent of the respondents reported that they ship containers.

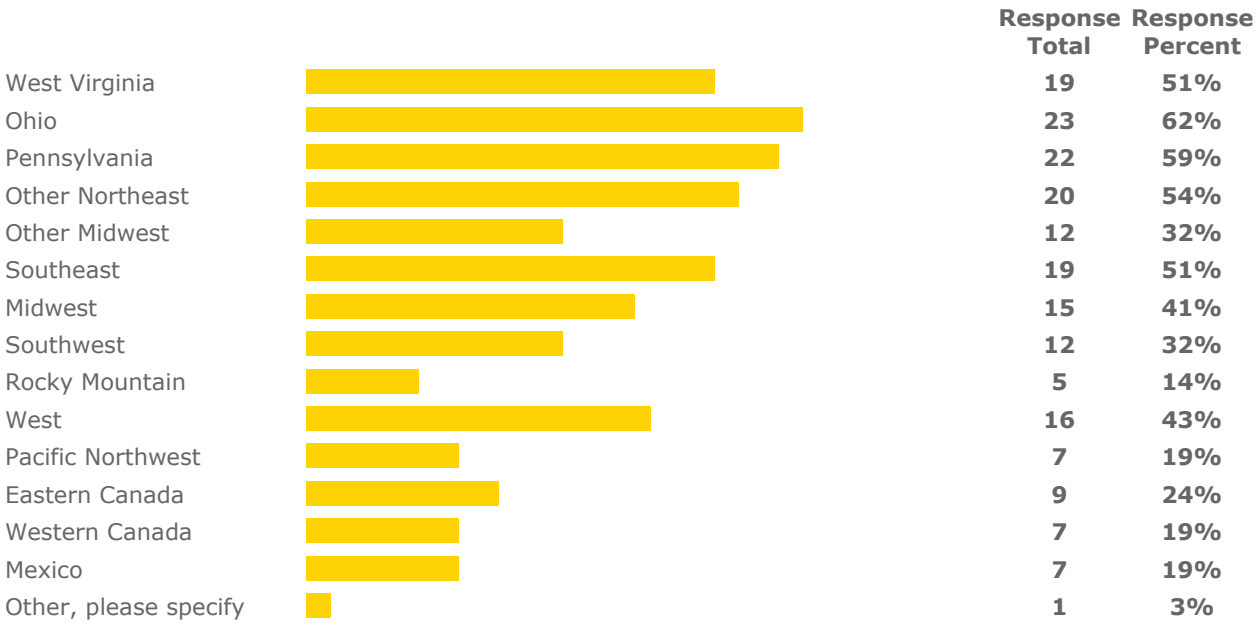
Monthly shipping volumes were broken down into 10,000 ton increments. Twenty-four percent of respondents ship less than 10,000 pounds per month while 26 percent of the respondents shipped over 50,000 tons per month.

The survey findings show that 24 percent of companies that are engaged in using containers employ a mix of 20 foot and 40 foot containers. Five percent of the respondents used only 20 foot intermodal containers and 13 percent used 40 foot containers only.

NORTH AMERICAN SHIPPING AND RECEIVING LOCATIONS

Figure 4-1 below shows the geographic distribution of shipper locations for respondents shipping from West Virginia. Fifty-one percent of the respondents engage in intrastate commerce. Sixty-two percent of the respondents ship nearby to Ohio while 59 percent ship to Pennsylvania. The Southeast (51%), West (43%) and the Midwest (41%) are also principle destinations.

FIGURE 4-1: SHIPPER LOCATIONS FOR RESPONDENTS SHIPPING FROM WEST VIRGINIA

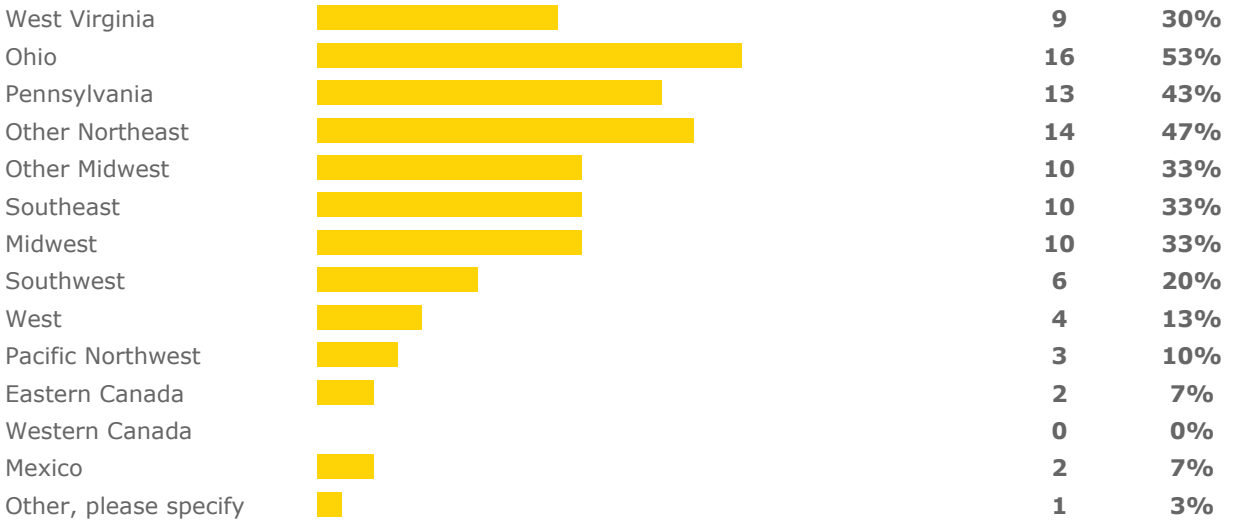


	Response Total	Response Percent
West Virginia	19	51%
Ohio	23	62%
Pennsylvania	22	59%
Other Northeast	20	54%
Other Midwest	12	32%
Southeast	19	51%
Midwest	15	41%
Southwest	12	32%
Rocky Mountain	5	14%
West	16	43%
Pacific Northwest	7	19%
Eastern Canada	9	24%
Western Canada	7	19%
Mexico	7	19%
Other, please specify	1	3%

Source: RTI

Figure 4-2 describes the originating states of shipments that terminate in West Virginia. Not unexpectedly, the origins are clustered in neighboring states and the Northeast.

FIGURE 4-2: SHIPMENT ORIGIN TO WEST VIRGINIA



	Response Total	Response Percent
West Virginia	9	30%
Ohio	16	53%
Pennsylvania	13	43%
Other Northeast	14	47%
Other Midwest	10	33%
Southeast	10	33%
Midwest	10	33%
Southwest	6	20%
West	4	13%
Pacific Northwest	3	10%
Eastern Canada	2	7%
Western Canada	0	0%
Mexico	2	7%
Other, please specify	1	3%

Source: RTI

INTERNATIONAL DESTINATIONS AND ORIGINS AND SHIPPING PORT OF CHOICE

China and Europe represent the largest percentage of survey responses. Thirty nine percent of survey respondents are shipping to China with similar percentage shipping to Europe. Thirty percent of the survey respondents are currently shipping product into South America.

FIGURE 4-3: INTERNATIONAL DESTINATION FOR WEST VIRGINIA EXPORTS

	Response Total	Response Percent
China	9	39%
India	5	22%
Other Asia	6	26%
Europe	9	39%
South America	7	30%
Other, please specify	12	52%

Source: RTI

The combined Ports of Virginia represent the ports of choice for shippers with 44 percent of the respondents shipping through either port. The Port of Baltimore (16%) and the Port of LA/Long Beach (12%) are the next choices of shippers.

Figure 4-4 describes the origin countries for imports to the state. Not surprisingly, China is leading source of imports. Fifty percent of the respondents import products from China. Europe is a source of 30 percent of the imports flowing into the region.

FIGURE 4-4: CARGO ORIGIN COUNTRIES FOR WEST VIRGINIA

	Response Total	Response Percent
China	10	50%
India	2	10%
Other Asia	1	5%
Europe	6	30%
South America	2	10%
Other, please specify	10	50%

Source: RTI

Thirty-seven percent of the survey respondents received shipments through the Port of Baltimore. Collectively the Ports of Virginia represent 27 percent of the survey respondents import commodity traffic port activity, while the Port of New York/New Jersey handles about 21 percent of the respondents' cargo.

MODES OF CHOICE

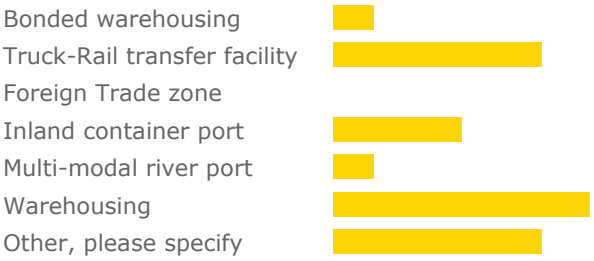
Survey findings suggest that survey participates are still very much tied to trucking as their primary mode of transportation into and out of both North American markets and as the primary mode of choice to move products to the ports. Fifty-five percent of the survey respondents ship by truck. Where rail is used, CSXT is the primary carrier, selected by 16 percent of the respondents; NS is used by 8 percent of the survey respondents. Less than five percent used barge transportation, nearly all through a private terminal. When asked what are the primary considerations in making modal choices 34 percent of the survey respondents indicated they had no choices. Thirty-four

percent of the survey respondents' mode choice decisions are driven by price, although both time in transit and reliability continue to be a concern of survey participates.

IMPROVEMENTS

Figure 4-5 below describes the needed improvements for outbound shipments.

FIGURE 4-5: IMPROVEMENTS REQUIRED FOR OUTBOUND SHIPMENT FROM WEST VIRGINIA

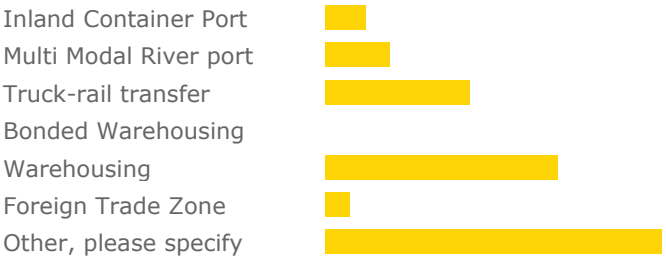


	Response Total	Response Percent
Bonded warehousing	1	5%
Truck-Rail transfer facility	5	26%
Foreign Trade zone	0	0%
Inland container port	3	16%
Multi-modal river port	1	5%
Warehousing	6	32%
Other, please specify	5	26%

Source: RTI

Figure 4-6 outlines the needed improvements suggested by the respondents. For both types of shipments, warehouse capacity is the biggest need. Following this is the need for additional truck-rail transfer facilities.

FIGURE 4-6: IMPROVEMENT SUGGESTIONS BY RESPONDENTS



	Response Total	Response Percent
Inland Container Port	2	5%
Multi Modal River port	3	8%
Truck-rail transfer	7	18%
Bonded Warehousing	0	0%
Warehousing	11	29%
Foreign Trade Zone	1	3%
Other, please specify	16	42%

Source: RTI

The survey findings suggest that this region is still heavily dependent upon the trucking industry to move their products. Improvements are needed in both warehousing opportunities and truck/rail transfer facilities. Pricing continues to be a major factor in modal decision making, as well as time in transit and reliability.

An issue that surfaced during the telephone interviews with the logistic managers of their respective companies was the fact that these individuals clearly understood the "how" of their individual company commodities moves. However, they did not understand "why" the products were moving in the fashion that they were moving through the logistic supply chain. The majority of the companies contacted outsourced their logistic supply chain management to third party logistic providers (3PLs) or Freight Forwarders.

After further investigation it was determined that there are less than five West Virginia-based freight forwarders and/or 3PL's based in West Virginia. The overwhelming majority of these companies were based in areas outside of the State of West Virginia (see Appendix H for a list of regional Freight Forwarders).

SECTION 5: STRATEGIC ASSESSMENT

The consultant team used a sequential planning process to identify and evaluate strategic opportunities for each targeted region in West Virginia. This process involved (1) developing an inventory of each region's strengths and weaknesses, (2) determining the opportunities for each region given its strengths and weaknesses, (3) reviewing those with regional stakeholders, and (4) assessing the opportunities in the context of the competitive environment.

5.1. SWOT ANALYSIS

A strengths, weaknesses, opportunities and threats (SWOT) analysis is a strategic planning tool that was used to identify and evaluate each area's overall position in WVPPA's freight transportation profile. The intent of the SWOT analysis is to leverage the strengths and opportunities to mitigate the weaknesses and threats.

5.1.1 HUNTINGTON

STRENGTHS/OPPORTUNITIES

Huntington has three main factors that contribute towards the area's freight transportation strengths and opportunities:

1. Location: Huntington is located on I-64 with four interchanges that serve the city, providing good access for truck traffic and the ability to move freight quickly using the U.S. Interstate Highway system. Huntington is also located on NS's Heartland Corridor and a principal CSX line providing it with access to the proposed Prichard Intermodal Terminal and the South Point, OH terminal, approximately 10 miles from Huntington.

2. Infrastructure: The Port of Huntington is a collection of public and private terminals on the Ohio River and the largest U.S. inland river port in terms of tonnage. This combined with the I-64, two Class I railroads and an airport provide Huntington with four components (air, road, rail and water) of a multi-modal infrastructure system.

3. Future Development: In addition to Prichard, MARAD's Marine Highway Initiative seeks to divert truck traffic on certain Interstate corridors to parallel rivers by utilizing container-on-barge services. Huntington has the potential to become a future economic hub for West Virginia's freight traffic. This is dependent upon the success of the Marine Highway Initiative and how the marine traffic can tie in with the area's established rail and highway infrastructure.

WEAKNESSES/THREATS

Huntington has two principal weaknesses:

1. Competition: Although the South Point terminal is complementary to Huntington's potential logistics role, it can also be a competitor.

2. Infrastructure: There are few public terminals on the Ohio River that provide waterside access for discretionary cargo and very limited container transfer capability to supports the Marine Highway. Also, multi-modal connectivity is currently constrained. The infrastructure is in place but connectivity by rail ramp, transfer terminal or cross-dock needs to be improved to encourage more traffic from hinterland markets.

TABLE 5-1: HUNTINGTON SWOT ANALYSIS

Strengths/Opportunities	Weaknesses/Threats

• **Location**
  ○ Huntington is located along I-64 with four interchanges that serve the city (U.S.-52, WV 152/527, WV 10, U.S. 60)
  ○ Huntington is located on a principal CSXT rail line, as well as NS's Heartland Corridor
  ○ Excellent proximity to future intermodal yards in Prichard, WV and South Point, OH
• **Infrastructure**
  ○ The Port of Huntington is the largest U.S. inland river port (Ohio River) in terms of throughput tonnage
• **Future Development**
  ○ Logical location for Marine Highway facility
  ○ Potential to be an economic center for freight movement
	• **Competition**
	  ○ South Point (due to duplicated Huntington facilities)
	• **Infrastructure**
	  ○ Limited amount of public terminals in the Huntington area
	  ○ Constrained local multi-modal connectivity

Source: Parsons Brinckerhoff Analysis

5.1.2 PRICHARD INTERMODAL TERMINAL

Although the Prichard Intermodal Terminal is strategic logistics asset of the Huntington region, it warrants its own assessment.

STRENGTHS/OPPORTUNITIES

Prichard has four main logistics strengths:

1. Location: The Prichard intermodal site is located directly on NS's Heartland Corridor servicing double-stack containers from the East Coast to the Midwest. This location will support transportation markets within southwestern West Virginia, southeastern Ohio and northeastern Kentucky. Also the site is located on U.S. Highway 52, which provides adequate truck access and is scheduled to be upgraded to a four-lane highway in the future.

2. Value Added Services: The Prichard site is primarily zoned for industrial use providing for potential on-site warehouse opportunities. Coupling intermodal transportation with on-site value added services, such as warehouses or equipment repair, makes the site more regionally competitive to potential shippers.

3. Demand: Data gathered in interviews suggest there is a significant demand for the proposed intermodal facility.

4. Immediate Opportunity: Toyota's assembly plant in Buffalo, WV is currently importing vehicle parts through the West Coast and moving them by rail to Louisville, KY with a final truck move to Buffalo. The future Prichard intermodal terminal would provide closer rail access, shortening the drayage distance and potentially resulting in lower transportation costs. An intermodal terminal in Southwest West Virginia would benefit other businesses importing or exporting goods in the Huntington area.

WEAKNESSES/THREATS

Prichard has three deficiencies:

1. Lack of Support Services: Currently there are no intermodal container facilities in West Virginia. The supporting services (i.e. warehouses, equipment repair, chassis pool, etc.) associated with an intermodal facility are important to its overall success. The lack of supporting services could initially hinder its growth.

2. Competition: NS has planned another intermodal container terminal in the Roanoke, VA area, approximately 250 miles east, which has the potential to penetrate the Prichard market. NS, however, would be expected to mitigate that risk because of its interest in Prichard.

3. Financial: The financial return on investment in a new intermodal facility is typically modest. Larger financial returns are generally seen in the value-added services associated with an intermodal terminal, which would accrue to Prichard and the region as a whole.

TABLE 5-2: PRICHARD SWOT ANALYSIS

Strengths/Opportunities	Weaknesses/Threats

• **Location**
  ○ Situated along the Heartland Corridor – favored by NS
  ○ Located to support transportation markets within southwestern West Virginia, southeastern Ohio and northeastern Kentucky
  ○ Accessed by U.S. 52, which will be upgraded to a 4-lane highway
• **Value Added Services**
  ○ Prichard is primarily industrial space, which coupled with intermodal transportation access will make the site more competitive
  ○ Potential warehousing space
• **Demand**
  ○ Shipper interviews suggest significant demand for proposed intermodal facility
• **Current Businesses**
  ○ Toyota Buffalo Plant
  ▪ Intermodal moves (inbound and outbound) via Prichard
	• **Lack of Support Services**
	  ○ Currently, no intermodal container facilities are located at all in West Virginia – need to develop supporting services
	• **Market Competition**
	  ○ NS Roanoke intermodal facility may encroach on Prichard's market
	• **Financial**
	  ○ Economic return on investment in a new intermodal facility is modest

Source: Parsons Brinckerhoff Analysis

5.1.3 MARTINSBURG

STRENGTHS/OPPORTUNITIES

Three main strengths contribute towards the area becoming a logistics center:

1. Location: Martinsburg is located in northeastern West Virginia on I-81 and the CSX National Gateway Corridor line. Its location provides access to several existing or planned intermodal facilities: Chambersburg (CSX), Greencastle (NS), and Virginia Inland Port (NS), which can be leveraged to deliver value-added services (i.e. warehousing, truck maintenance) for various shippers and transportation users. Also, Martinsburg's proximity to the East Coast, Western Pennsylvania and Ohio give it considerable exposure to multiple markets with significant populations.

2. Traffic: Martinsburg has minimal traffic congestion enabling more reliable and less costly freight service.

3. Air Freight: There has been interest from Mexican officials to establish air cargo service between Martinsburg and locations in Mexico. Martinsburg offers lower landing fees and congestion free access. It could position itself as a hub for parcel shipments or high tech products if the appropriate relationship was developed with an international partner.

WEAKNESSES/THREATS

Martinsburg also has four principle deficiencies:

1. Location: Martinsburg's location is a detriment, as it is located near large metropolitan airports (i.e. Cleveland, Detroit and Dulles) that have an established support structure and services. Air cargo operators place a high priority on the availability of services – diverting air cargo to Martinsburg will be difficult.

2. Infrastructure: Martinsburg's rail infrastructure is in place but there is no existing truck-rail container transfer facility. Martinsburg would need the support of a Class I railroad to develop a viable intermodal terminal.

3. Competition: CSX and NS have already invested or plan to invest in intermodal container terminals in the region. Martinsburg's proximity to these intermodal terminals limits the support for a container terminal by the Class I railroads. With respect to air cargo, the established airports will resist giving up market share.

4. Air Freight Requirements: Mexican companies have indicated they prefer large hubs for air freight that puts Martinsburg at a disadvantage. The U.S. and Mexico are improving cross-border highway and rail corridor access that provides shippers less costly transportation alternatives.

TABLE 5-3: MARTINSBURG SWOT ANALYSIS

Strengths/Opportunities	Weaknesses/Threats

• **Location**
  ○ Proximity to Washington D.C., Philadelphia and I-95 corridor
  ○ Proximity to Western PA, Ohio
• **Traffic**
  ○ Low traffic congestion on highway corridors in the Martinsburg area
• **Air Freight**
  ○ Potential interest in Mexico-U.S. air service
  ▪ Parcel shipping hub
  ▪ Technology cargo focused
  ▪ Up to four flights per day are possible with development of international partnerships
	• **Location**
	  ○ Nearby large city airports with existing infrastructure: Pittsburgh, Cleveland, Detroit, Dulles
	• **Infrastructure**
	  ○ Lack of intermodal rail access
	• **Competition**
	  ○ Institutional friction with existing supply chain models
	• **Air Freight**
	  ○ Mexican companies indicate they prefer large hubs for air freight
	  ○ Freight leaving San Luis Potosi tends to be low-value, large and heavy which are not ideal characteristics for air freight
	  ○ Improved highway and rail corridor access between U.S. and Mexico

Source: Parsons Brinckerhoff Analysis

5.1.4 WEIRTON

STRENGTHS/OPPORTUNITIES

Weirton has three main factors that contribute to the area's freight transportation strengths and opportunities:

1. Location: Weirton is a favorable logistics location due to (1) its proximity to three metropolitan areas, (2) highway access provided by U.S. 22 as well as I-70, I-79 and I-376, (3) access to the Pittsburgh Airport and (4) access to the Ohio River. In addition, larger barges can effectively navigate the Ohio River locks north beyond Weirton.

2. Traffic: Weirton experiences minimal traffic congestion, although low capacity local streets could become access bottlenecks to any logistics terminal as truck traffic increases.

3. Future Land Development: Arcelor Mittal owns a considerable amount of land (former steel plant) adjacent to the Ohio River in Weirton proper. This land would be highly suitable for marine related development because it is riverfront, flat, and has available backland space.

WEAKNESSES/THREATS

Three additional considerations contribute towards the area's freight transportation weaknesses and threats:

1. Regional Cooperation: The greater Weirton area comprises various municipalities from Ohio and West Virginia. These agencies have difficultly coordinating freight transportation planning in the area.

2. Infrastructure: Weirton's rail infrastructure has deteriorated due to the steel plant closure. In addition, the direct rail connection to Pittsburgh has been abandoned. Multi-modal connections among the highways, rail and water are inadequate to support a modern logistics operation.

3. Competition: Pittsburgh, as a large metropolitan area, has significant freight logistics assets including marine terminals, warehouses, and an intermodal terminal, with a new modern terminal planned.

TABLE 5-4: WEIRTON SWOT ANALYSIS

Strengths/Opportunities	Weaknesses/Threats

• **Location**
  ○ Highway network with access to U.S. 22 and I-70
  ○ Proximity to Pittsburgh Airport
  ○ Proximity and access to the Ohio River
  ○ Proximity to large metropolitan centers: Pittsburgh, Columbus and Cleveland
  ○ Most northerly location on the Ohio River that can accommodate larger vessels
• **Traffic**
  ○ Limited congestion and few chokepoints
• **Future Development**
  ○ Arcelor Mittal properties offer developable land
	• **Regional Cooperation**
	  ○ Weirton region lacks coordinated freight planning between adjacent municipalities
	• **Infrastructure**
	  ○ Rail abandonments (i.e. Panhandle line between Weirton and Pittsburgh)
	  ○ Inadequate multi-modal connections between highways and rail or water and rail
	• **Competition**
	  ○ Pittsburgh offers significant logistics and transportation services

Source: Parsons Brinckerhoff Analysis

5.1.5 CLARKSBURG

STRENGTHS/OPPORTUNITIES

Two main factors contribute towards the area's freight transportation strengths and opportunities.

1. Location: Clarksburg is centrally located, on I-79 and U.S. Highway 50, and on one of CSX's mainlines. Although not on the Ohio River, it is only 73 miles from Parkersburg.

2. Infrastructure: CSX's mainline runs east/west through Clarksburg providing rail service throughout the area with CSX operating a bulk transload facility in the city. The North Central West Virginia Airport is located just northeast of Clarksburg.

WEAKNESSES/THREATS

Three attributes of the area can be considered as its main weaknesses:

1. Location: The closest intermodal container access to Clarksburg is in Pittsburgh with a one-way transit time of two hours.

2. Strategic: CSX's strategic National Gateway intermodal route does not pass through Clarksburg. Instead the CSX mainline running through Clarksburg is dedicated to coal and other bulk commodity traffic. With respect to providing value-added services to waterborne container traffic, Clarksburg is at a severe competitive disadvantage to riverside locations.

3. Infrastructure: CSX's rail infrastructure in north central West Virginia cannot support expeditious double-stack trains because of line clearances (i.e. height restrictions at tunnels) and lines with tight curvatures.

TABLE 5-5: CLARKSBURG SWOT ANALYSIS

Strengths/Opportunities	Weaknesses/Threats

• **Location**
  ○ North Central West Virginia economic center
  ○ Located on a CSX mainline
  ○ 73 miles from Ohio River in Parkersburg
  ○ Located on Interstate 79 and U.S. Highway 50
• **Infrastructure**
  ○ Existing operational rail-served logistics facility
  ○ North Central West Virginia Airport
	• **Location**
	  ○ Two hour drive to Pittsburgh intermodal facilities
	• **Strategic**
	  ○ CSX National Gateway strategy
	  ○ CSX line dedicated to coal traffic and other bulk materials
	  ○ Marine Highway Initiative
	  ▪ Clarksburg competing with river-side locations
	• **Infrastructure**
	  ○ Line clearances and curves do not permit double-stack train service

Source: Parsons Brinckerhoff Analysis

5.2. EVALUATION CRITERIA

In identifying opportunities and developing strategies, significant focus has been placed on the logistics of containerized freight. The high value of the product, the complexity of supply chains, the need for value added services, and the expected growth results in containerized goods movement offering the greatest potential for economic development.

At the same time, the attributes of rail intermodal transportation preclude the arbitrary development of container transfer terminals. Terminals need to be located to maximize service while minimizing costs. Railroads have established guidelines for terminal location [as described in the following section].

The efficiencies offered by railroad intermodal transportation (container and trailer on flat cars) and the economic benefits related to industrial and commercial growth associated with the availability of intermodal service have stimulated significant interest in intermodal terminal development. The success of intermodal centered logistics parks such as Alliance Texas or the economic growth that has been a result of the Virginia Inland Port in Front Royal, Virginia has encouraged this interest.

Interest alone, however, does not ensure success, as there are a number of factors that contribute to the viability of a terminal facility. These factors, in effect, serve as criteria for siting terminals and for securing cooperation of the railroads in terminal development.

5.2.1 LOCATION

Terminals must be located on the Class I railroad intermodal network. In the last two decades, the North American railroads have invested heavily in the development of their respective intermodal networks. The railroads improved key routes to support high-speed container trains by eliminating track curves, reducing grades, and increasing the number of tracks, thus expanding capacity as well as raising speeds. Railroads also invested in "clearing" the intermodal routes to permit the operation of double-stack trains. The introduction of double-stack capability more than anything has contributed to the profitably of intermodal transportation and its significant expansion.

Setting aside the cost of an intermodal terminal, the need for speed and the capability to support double-stack operations have precluded short line railroads from any meaningful participation in intermodal transportation. A truck can deliver a container to an intermodal terminal in far shorter time than required to drive to a short line intermodal terminal, to move the container on an intermodal flat car at a slow speed on the short line railroad, and then to hand-off the flat car to the connecting Class I railroad.

5.2.2 VOLUME

Terminal volumes must be sufficient to support frequent, long trains. The profitability of an intermodal train service is directly correlated with the number of containers that are transported on the trains – with some exceptions, the longer the train the more profitable it is. Train crews are paid the same irrespective of the number of cars; given the current train dispatching technology, a short train consumes nearly the same track capacity as a long train. Consequently, railroads are continually seeking to operate longer trains. Double-stack trains transporting 240 forty-foot containers (equivalent to 120 freight cars) have become the norm.

Large volumes are also required for cost-effective terminal operations. Railroad terminals are capital intensive. Large container volumes are required to offset the fixed costs of the terminals. Although each terminal is a specific situation, typically a minimum annual volume of 100,000-150,000 containers is required for a terminal to be viable.

5.2.3 PROXIMITY

A third factor in the feasibility of an intermodal container terminal is its proximity to the other similar terminals and the marketplace. There are several considerations in regard to optimal spacing. First, from a market perspective, terminals should avoid having overlapping geographic catchment areas except in locations with a large population or significant economic activity. One rule of thumb, to which exceptions exist, is that terminals should be no closer than 250 miles. It reasonable to assume that a trucker can make two round trips per day within a radius of 125 miles providing for time to pick up and drop off a container. A second factor is the corridors to be served. With the distance that intermodal train service is competitive with motor carriers being on the order of 500 to 1,000 miles, consideration should be given to the origins and destinations of the intermodal service.

5.2.4 BALANCE

Balance contributes significantly to the viability of intermodal service. Outbound container demand should be supported by unloaded inbound containers. Where the demand for containers exceeds their availability from prior loads, railroads will pass on the cost of repositioning empty containers to the shipper. In many instances this incremental cost will eliminate the competiveness of the intermodal service. During economic booms, ocean carriers, which own the containers used in international services, will require their containers to be expeditiously returned to the ports, not allowing the containers to be used for a load in the U.S.

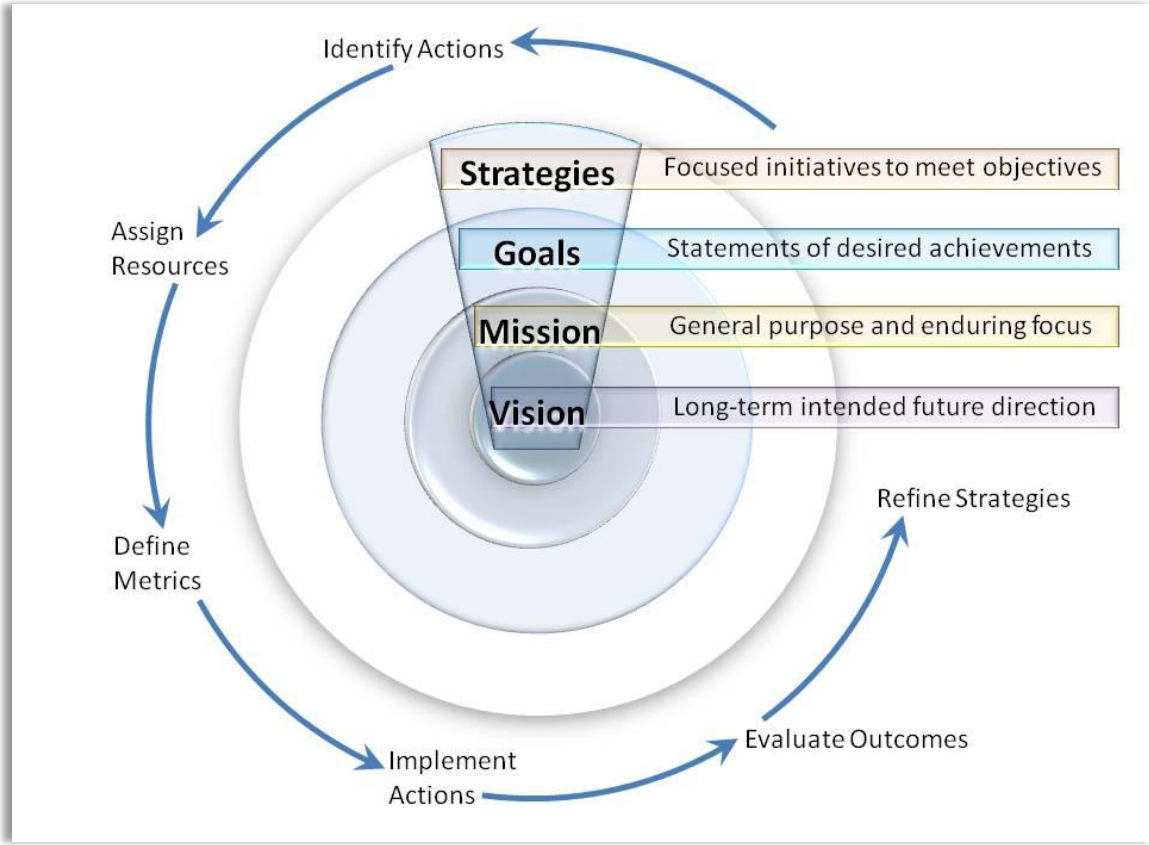
These same criteria have been used in identifying opportunities and developing logistic strategies for West Virginia.

SECTION 6: RECOMMENDED STRATEGIES

West Virginia's air, rail, road and marine infrastructure is an integral component of a broader regional network and even larger continental and global transportation system. As such, the WVPPA must be guided by strategies that reflect the importance of the transportation system's role in improving the state's economy and environment. This guidance will assist the WVPPA in recognizing where to allocate limited resources to those improvements having the greatest public benefit.

The WVPPA's vision and mission serve as guiding principles, and its goals of economic prosperity; efficient, competitive transportation network; public-private collaboration; and service excellence and stewardship, were the primary focus considered while identifying strategic initiatives for this Statewide Strategic Plan. Figure 6-1 explains the relationship between vision, mission, goals and strategies and how they relate to the efforts needed to achieve them.

FIGURE 6-1: STRATEGIC PLANNING FRAMEWORK



Source: Parsons Brinckerhoff

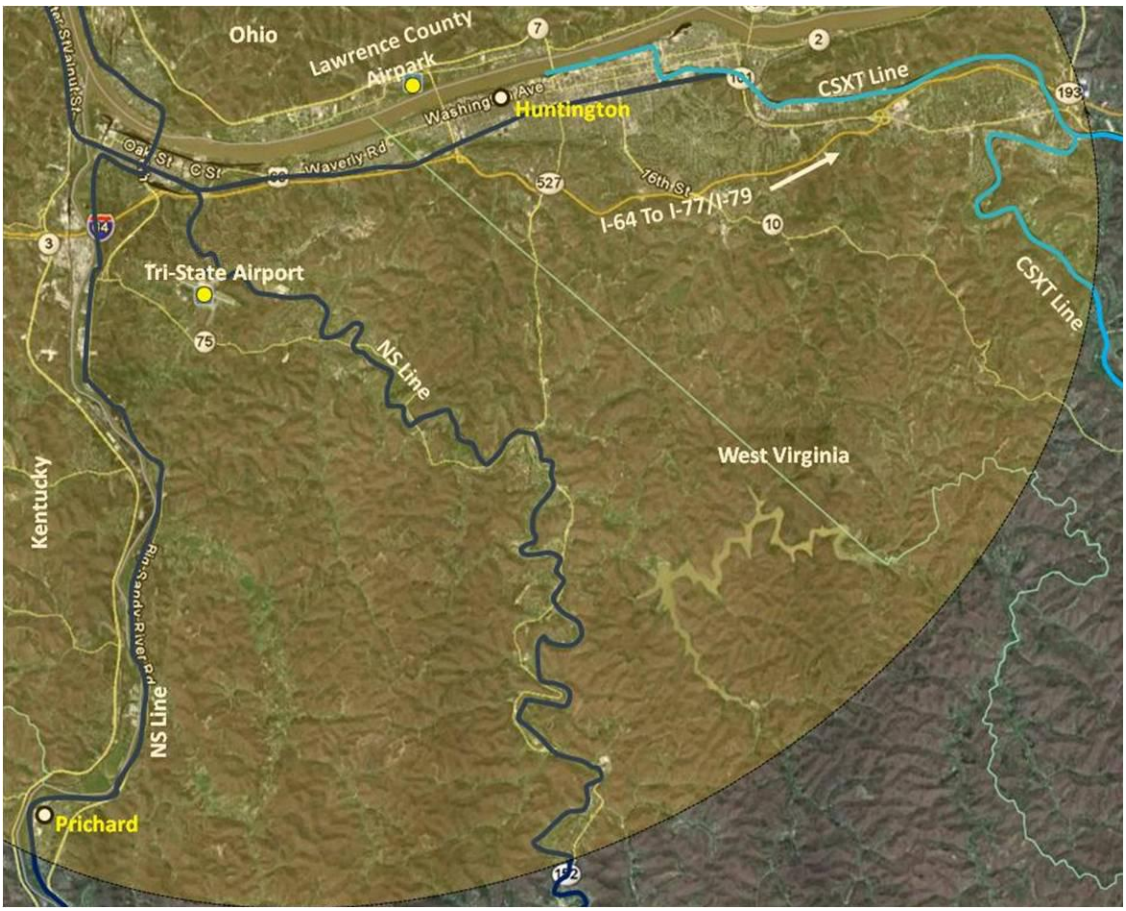
Taken together, the vision, mission, goals, and strategies, reflect the desires of the WVPPA and its constituents to partner together to preserve and enhance the state's transportation system, while recognizing the challenges and opportunities that exist in a rapidly changing economy. As the WVPPA executes the strategic plan, the recommended strategies should periodically be reviewed to maintain the intent of the WVPPA's vision, mission and goals in view of evolving priorities.

At present, the growing importance of multi-modal freight transportation and the economic benefits associated with freight logistics activity have led to significant interest in the development of logistics infrastructure. State and many local government agencies are exploring the feasibility of establishing logistics parks and inland ports. This section of the Plan defines the potential role that each location can play in the logistics chain and the strategies to gain that role.

6.1. HUNTINGTON-PRICHARD

Of the four locations under study, the Huntington region has the broadest existing logistics services base from which to build. The Huntington region is the nexus of two Class I railroad rail routes – one the major intermodal route between the Port of Virginia and Midwest markets – major highways including an interstate, and the proposed M70 corridor of the marine highway system (and its confluence with the Big Sandy River). Moreover, with the location of the planned Prichard intermodal terminal less than 20 miles away, the region will have excellent access to the intermodal rail network. The surrounding counties are also some of the more active economies in Appalachia.

FIGURE 6-2: HUNTINGTON/PRICHARD



Source: Google Earth and Parsons Brinckerhoff Analysis

6.1.1 STRATEGIC ASSESSMENT

While the region will always be a producer of bulk commodities, the opening of the Prichard Intermodal Terminal will create opportunities related to the movement of "boxable" freight. Huntington's geographic location and its existing and future transportation assets place it in a strong competitive position as a multimodal transportation and logistics center. Leveraging these assets is a strategic opportunity for the region, and will serve to attract economic development.

PRICHARD INTERMODAL TERMINAL

The Prichard Intermodal Terminal will provide a central building block for a freight transportation hub in Central Appalachia. Moreover, its catchment area could become even greater should the planned terminal in Roanoke not materialize due to continued local resistance. Montgomery County is seeking to prevent the Commonwealth of Virginia from funding the project. A lower court ruled against the County, and the Virginia Supreme Court is hearing the case in the fall.

Prior studies have estimated that the Prichard terminal is expected process 45,000 containers per year. Its catchment area would include 63 counties in four states: West Virginia, Virginia, Kentucky, and Ohio.

The location of the terminal on the Heartland Corridor will provide the Huntington area with efficient intermodal rail access to international markets as well as U.S. markets. The Port of Virginia, served by NS and the Heartland Corridor, is one of the better-positioned ports in the U.S. to take advantage of both international trade and logistics trends. The port is well positioned to capture traffic originating in Asia moving through either the Panama Canal or the Suez Canal.

The Port of Virginia is centrally located on the eastern seaboard and is made even more attractive as ship call for container vessels because of the rail service that can be provided on the Heartland Corridor and the enhanced access to inland markets.

HUNTINGTON LOCATION

The Huntington region benefits by being served by two railroads. The NS and the Prichard terminal will offer container train service to the East Coast and Midwest and beyond through connections with other railroads providing direct competition with motor carriers. Both NS and CSXT, which passes through Huntington, provide general merchandise and bulk cargo train services to markets throughout North America.

Huntington's location on the proposed Marine Highway will also provide the region with strategic opportunities. The M70 Marine Highway will provide the region north south connectivity with potential South American markets through the ports of Mobile and New Orleans. Once completed it will provide a competitive alternative to rail and truck transportation for certain types of cargoes that are shipped between markets located on inland waterway system.

The cargoes will typically be low value freight that is not time sensitive. The Marine Highway will also benefit from its being able to transport containers that are too heavy to move on the highway network. Containers can be delivered to locations on the marine highway to be unstuffed for the further distribution of their contents by local truck. In some locations designated truck routes that will permit the transport of heavy containers will be developed to provide on-shore access to customers.

TRI-STATE AIRPORT

The Tri-State Airport is another logistics asset; however, limited opportunities exist to leverage the asset. Smaller airports have difficulty in attracting freight operations and, due to the size of the passenger airplanes, transport no belly cargo other than small parcels. In addition, very few synergies exist between air cargo operations and freight modes of transportation other than truck, even at large logistics complexes with extensive air cargo services.

SOUTH POINT MULTIMODAL FACILITY

The proposed multimodal facility in South Point, Ohio will also be a resource that could benefit the Huntington region. It will provide rail-water and-truck water transfer capabilities for containers, bulk, and beak bulk products. This capability will stimulate the need for support activities in the region such as warehousing and other forms of product storage.

6.1.2 STRATEGIC INITIATIVES

Capitalizing on the region's logistic assets requires several strategic initiatives, some of which are already under development or in the planning stages.

- ***Develop required highway access to the Prichard Intermodal Terminal***
  With Prichard as a potentially significant economic engine for the region, developing congestion-free access to the facility should be a priority. Old US 52 will need to be improved to provide congestion-free direct access to the facility. US 52 will need to be widened north of the terminal to improve connectivity with I-64 and the Huntington metropolitan area.

- ***Develop logistics clusters centered on the Prichard Intermodal Terminal***
  The development of the Prichard terminal positions the Huntington region to be a remote logistics center for the Port of Virginia. Should the intermodal terminal in the Roanoke area not materialize, the Huntington region will play an even more important role. A logistics cluster would provide value added services such as chassis storage, warehousing, shipment deconsolidation and re-consolidation, and advance inventory storage. The latter is becoming increasingly important to compensate for supply chain reliability failures due to lengthened logistics chains.

- ***Develop logistics infrastructure and services to support extraction and processing of natural gas***
  The extraction and processing of the Marcellus Shale gas will place a significant strain on existing transportation infrastructure, especially in rural areas. The preliminary stages of drilling require transport of heavy equipment and pipes for the rig, well pad, etc. Many rigs require large amounts of water, sand and chemicals, most of which would be transported by truck. This could result in the deterioration of existing roadways, since they were not designed for the transport of heavy loads or large dimension cargo[55]. Transporting these supplies and commodities by rail could alleviate some of the infrastructure problems, but many sites are located in rural areas that only allow truck access. If the commodities are hauled by rail, capacity has to exist on the lines to provide reliable service.

[55] http://www.ruraltransportation.org/uploads/naturalgas.pdf

West Virginia localities could negotiate with energy companies to offset roadway maintenance costs or impose weight restrictions and issue overweight permits for roadway use. These actions could be used to generate revenue to mitigate roadway maintenance.

- ***Improve waterside modal transfer capacity***
  Planning should begin for the development of a public port terminal complex on the Ohio River to accommodate various types of cargo, including containers. The planning process should be integrated with the development of the M70 segment of the marine highway. Planning should focus on both terminal and access requirements.

- ***Adopt the Kansas City Smart Port model to coordinate the region's logistics activities***
  Kansas City Smart Port was created to coordinate the activity among numerous logistics and transportation facilities in the Kansas City area through information technology. In addition, it serves in a marketing function. A similar concept should be implemented in the KYOVA MPO region involving the railroads, terminal operators, drayage companies, as well as manufacturing facilities, assembly plants, distribution centers, warehouses, and other potential services.

- ***Develop information technology capability***
  As the tri-state region develops as a center for container traffic, it should initiate the application of information technologies currently being developed. These include:
  - The Electronic Freight Management System – collection of web-based technologies to link supply chain partners
  - Cross-town Improvement Program – technology for managing local and regional empty movements
  - Coordinated Freight Congestion Mitigation Program - technology for managing local and regional container movements

6.2. MARTINSBURG

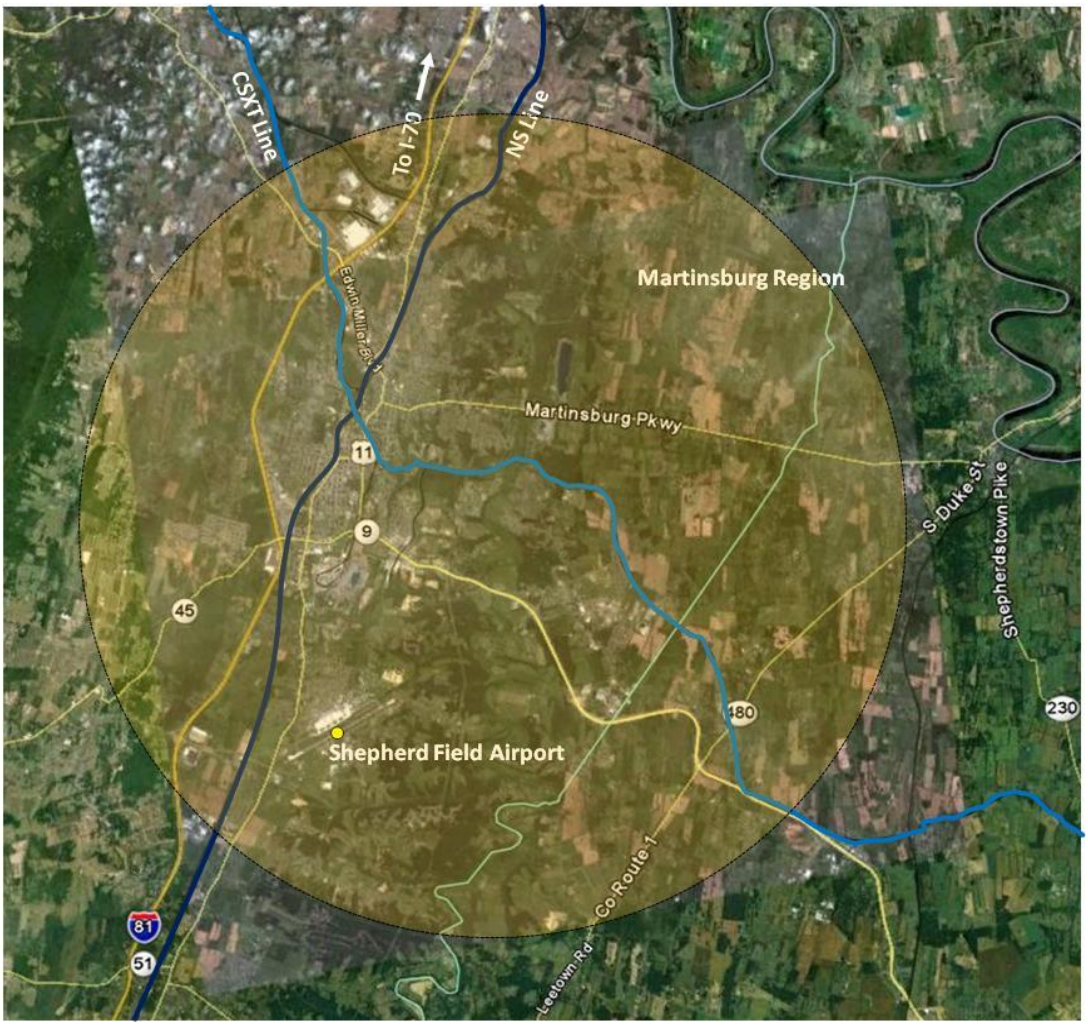
Like Huntington, Martinsburg also benefits from a broad base of assets that can provide a foundation for logistics development. Figure 6-3 provides locations of multi-modal transportation in Martinsburg region.

Martinsburg is located in one the more prosperous regions of West Virginia. According to data from the Appalachia Regional Commission index measuring projected economic prosperity, Jefferson County is the leader in the state with Berkeley County ranked fourth. The Martinsburg region also benefits from the economic activity and population growth in bordering Maryland. With the explosive growth of the metropolitan Washington, DC area, Martinsburg has become a suburb of the megapolis.

MARTINSBURG'S INLAND PORT INITIATIVE

The Eastern Panhandle Inland Port Commission (EPIPC) drafted a Master Plan for an inland port in Martinsburg, the Eastern Panhandle Inland Port (EPIP). The overall objective is to stimulate economic development and job growth opportunities. Martinsburg views inland port development to be the best option to produce economic benefits because it provides an additional level of benefits by offering ancillary port facilities and services that need to be developed to make the overall development successful. Also a fully developed inland port requires an FTZ and U.S. Customs presence. This will target trade-based businesses that focus on lean supply chains for operational efficiency.

FIGURE 6-3: MARTINSBURG REGION



Source: Google Earth and Parsons Brinckerhoff Analysis

The following elements, all of which are present in the Martinsburg area, are critical for establishing an inland port:

- Multi-modal transportation infrastructure (air, road, rail)
- Significant catchment area (100 mile radius) that, in this case, includes Washington D.C. and Baltimore
- Proximity to metropolitan areas such as Washington D.C., Baltimore, Philadelphia and New York
- Access to marine terminals and an inland port (Port of Baltimore, Port of Philadelphia, Port of Virginia, Virginia Inland Port (VIP))
    - EPIP will differentiate itself from VIP by offering air cargo services
- U.S. Customs Port of Entry
    - Cost savings measure by allowing the shipper to move freight "in bond" to a modern, efficient Customs Point of Entry
    - The 167th Airlift Wing is a military support element for the transport of personnel, equipment and resources to various global locales. Currently the aircraft lands at Dover AFB to clear U.S. Customs and then departs for Martinsburg. The placement of a U.S. Customs facility in Martinsburg could result in significant transportation cost savings.

- Foreign-Trade Zone
    - Effective tool in attracting businesses to an inland port due to the advantages importers receive
- Available real estate
    - The study identifies four potential sites, Shockey Commerce Center, Cumbo Industrial Park, Berkeley Business Park and Tabler Station Business Park, which are identified in the Martinsburg sites table.
- Advanced utility infrastructure
    - Many companies rely on state-of-the-art communication methods and need an area with superior utility infrastructure to meet their needs.

6.2.1 STRATEGIC ASSESSMENT

MARTINSBURG LOCATION

Martinsburg is centrally located within the locus of recent and planned intermodal terminal development in the northeast. In addition to its proximity to the CSXT Chambersburg container terminal, the proposed Baltimore-Washington intermodal facility would only be approximately 90 miles from Martinsburg.

The interstate highway network serving the region provides Martinsburg with competitive access to major population centers in the Northeast. Congestion-free driving time to New York City markets from Martinsburg is 4:30. This compares favorably to a congestion-free driving time of driving time of 4:15 from Washington, DC. The Washington, DC travel time advantage disappears when congestion is considered. Highway travel times to population centers west of Martinsburg favor it over all East Coast locations.

CLASS I RAILROAD NETWORK

CSXT has adopted a new intermodal operating strategy that will benefit Chambersburg, as well as its other smaller terminals. Intermodal train service is typically a point-to-point service with trains being operated in high volume corridors that can support this type service. CSXT has implemented a hub and spoke operation centered on a new state of the art terminal in northwest Ohio. Container shipments originating at several intermodal terminals will be consolidated into a train for each destination terminal. Origin-destination terminal pairs that once did not have sufficient container volume to warrant train service will now have service through the northwest Ohio terminal.

Martinsburg also has comparable accessibility to NS's intermodal network. The VIP intermodal terminal in Front Royal, VA — one of NS's principal intermodal terminals — is located 47 miles from Martinsburg, a short truck drayage movement. Access to VIP provides Martinsburg with a direct link to the Port of Virginia, and to international markets.

The NS line in Martinsburg is part of its Crescent Corridor. NS and several states are investing heavily in the Corridor to improve intermodal service in the North-South domestic market. These improvements are intended to support rail services that will divert current domestic truck shipments to rail intermodal and expand commerce in the areas surrounding the Corridor.

SHEPHERD FIELD

Shepherd Field has capacity and runway length to accommodate large commercial aircraft. Its runway is 7,815 feet and has the capability of landing C-5 Galaxy aircraft.

6.2.2 STRATEGIC INITIATIVES

Martinsburg is well located to establish itself as a logistics center, initially leveraging the significant existing assets in the region and its proximity to the Baltimore-Washington metropolitan complex. Recommended strategic initiatives include:

- ***Continue to promote its industrial parks, the regional assets and position itself as a warehousing and distribution center complex for the Baltimore-Washington region***
  As one of a very few locations outside of urban areas that has access to several intermodal facilities operated by competing railroads and in close proximity to one of the largest and wealthiest metropolitan areas in the country, Martinsburg should develop itself as a logistics center.

- ***Adopt the Kansas City Smart Port model to coordinate the region's logistics activities through information technology***
  As with Huntington, a Kansas City Smart Port concept should be evaluated and potentially adopted. The Kansas City Smart Port is a virtual inland port and area-wide business initiative that is working to increase trade within the region by promoting the entire international commerce infrastructure in the Greater Kansas City area.

- ***Develop information technology capability***
  As the tri-state region develops as a center for container traffic, it should initiate the application of information technologies currently being developed. These include:
  a. The Electronic Freight Management System – collection of web-based technologies to link supply chain partners
  b. Cross-town Improvement Program – technology for managing local and regional empty movements
  c. Coordinated Freight Congestion Mitigation Program - technology for managing local and regional container movements

- ***Explore the need for and development of an intermodal container terminal***
  Currently, the Martinsburg region is saturated with intermodal terminal capacity. CSXT has publicly stated that it has no plans for new terminal development other than already planned. CSXT's recently adopted hub and spoke operating mode, however, could open opportunities for additional terminal development as traffic densities grow. An assessment should be made between the cost of infrastructure development and the level of economic activity in Martinsburg incremental to that attributable to existing network of terminals.

- ***Continue to explore niche air cargo markets***
  Although air cargo tends to move through established networks driven by density and on-ground support services, niche market opportunities exist. These opportunities are typically afforded by new market entrants without the resources or interest in using existing major facilities such as Dulles or BWI. EPIPC should continue to solicit services for the airport leveraging its location and the expected future growth in the region logistics services and infrastructure. While the intermodal terminals in nearby Pennsylvania and Virginia will not necessarily directly benefit the airport, the logistics activities spawned by those terminals will benefit air freight transportation.

6.3. WEIRTON

Although both the Huntington and Martinsburg areas are more strategically located than Weirton, Weirton does have assets that support development as a logistics center. Weirton's location on the Ohio River, its being served by NS, and its proximity to I-70 provide access to water, truck, and rail transportation. More important, Weirton is located close to the Pittsburgh metropolitan area.

FIGURE 6-4: WEIRTON REGION

Source: Google Earth and Parsons Brinckerhoff Analysis

6.3.1 STRATEGIC ASSESSMENT

- Weirton has significant acreage of available waterside land that can be developed as terminal and multi-modal transfer capacity for various types of commodities: bulk, break-bulk, or containers. Weirton is in a position to develop a small container port as part of the marine highway system.

- With navigation of the Ohio River more difficult north of Weirton, Weirton can play a significant role in the transloading of containers from barges operating on the Marine Highway to trucks (or rail) for Pittsburgh and other market areas.

- Although not located on CSXT's National Gateway Corridor or on any CSXT line, Weirton is in the catchment area for CSXT's proposed National Gateway Terminal in Pittsburgh.

- NS provides conventional, non-intermodal train service to Weirton. At present, the line has limited train service.

- With the Western Panhandle at the center of Marcellus Shale gas extraction, opportunities exist for Weirton to participate in the supply activity.

6.3.2 STRATEGIC INITIATIVES

The proximity of Pittsburgh, less than a one hour drive away from Weirton, is both an advantage and disadvantage to Weirton. On the one hand, the significant economic activity in the area can be supported by logistics services provided in Weirton. On the other, Pittsburgh itself has numerous logistics and transportation companies that provide competition for Weirton. Recommended strategies for Weirton include:

- ***Develop as a staging and transshipment point for supplying the Marcellus Shale extraction industry***
  Extraction of natural gas in the Western Panhandle is a near-term and growing opportunity. Weirton should use the availability of water, rail, and highway transportation to participate in the delivery of frac sand, pipe, and other drilling materials.

- ***As the M70 corridor of the Marine Highway emerges, Weirton should consider developing a container transfer facility for the Pittsburgh metropolitan area***
  A container terminal on the Ohio River in Weirton would avoid the less than efficient upstream move to the greater Pittsburgh area. Containers could be transferred to truck for drayage to Pittsburgh – the haul is too short for a railroad to provide a cost-effective alternative. As the Marine Highway develops, Weirton could become the lynchpin of any scheduled liner-type service.

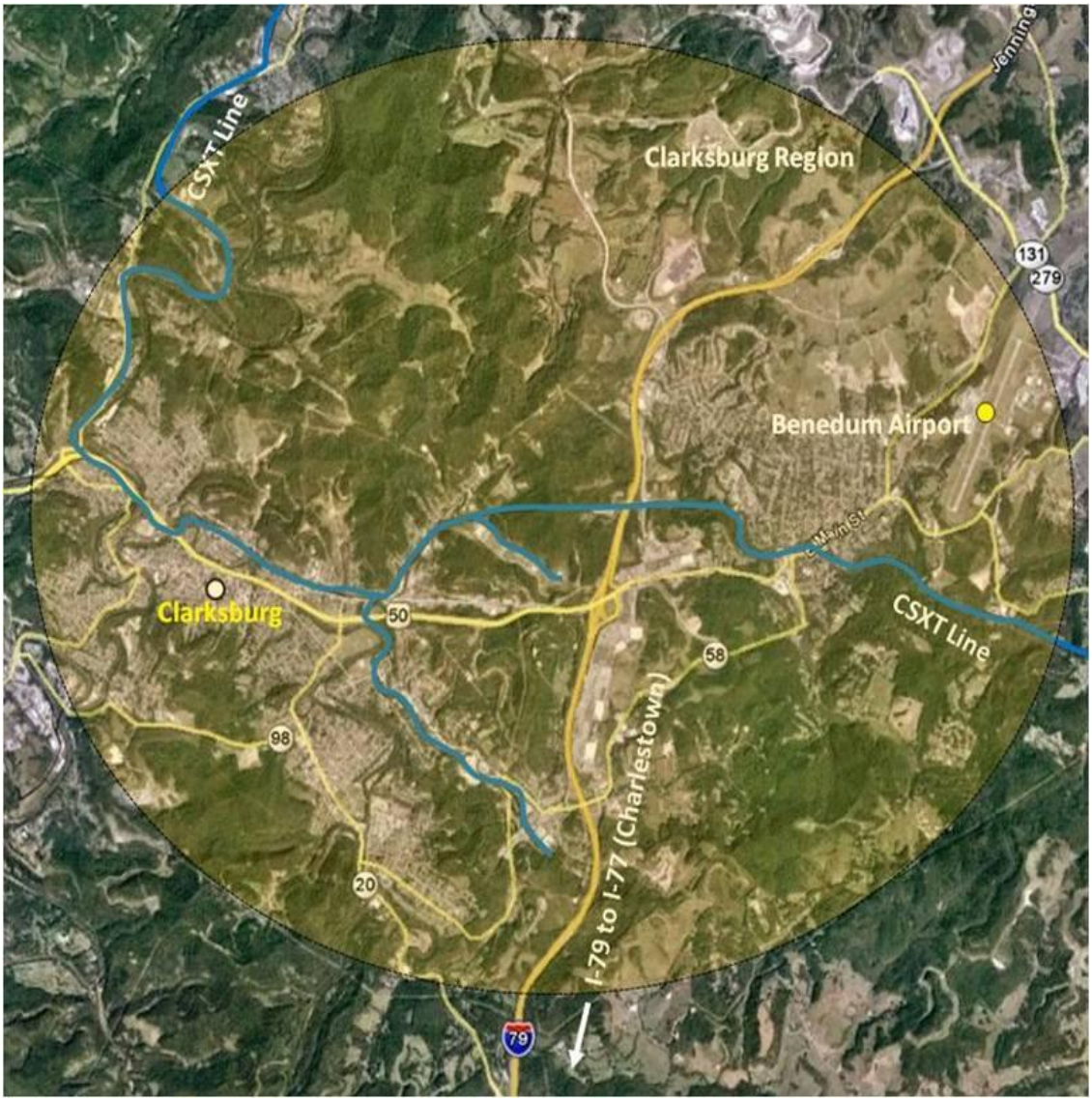
- ***Develop as a western logistics center for Greater Pittsburgh***
  The development of CSXT's proposed National Gateway intermodal terminal in Pittsburgh, along with the existing NS terminal as well as the Marine Highway, will require additional logistics facilities on the west side of the metropolitan area.

- ***Develop information technology capability***
  As the tri-state region develops as a center for container traffic, it should initiate the application of information technologies currently being developed. These include:
  a. The Electronic Freight Management System – collection of web-based technologies to link supply chain partners
  b. Cross-town Improvement Program – technology for managing local and regional empty movements
  c. Coordinated Freight Congestion Mitigation Program - technology for managing local and regional container movements

6.4. CLARKSBURG

Clarksburg's central location provides it with some logistics advantages; however, its logistics assets are more limited than other locations in the state. It can play a role in the distribution of bulk products and participate in the Marcellus Shale natural gas extraction activity.

FIGURE 6-5: CLARKSBURG REGION



Source: Google Earth and Parsons Brinckerhoff Analysis

6.4.1 STRATEGIC ASSESSMENT

- Clarksburg's central location and access to I-79 provides it with strategic advantage.

- Clarksburg is located on one of CSXT's main rail lines in the state. The line, however, is not part of the railroad's high-speed intermodal network. Development of a container terminal serving north central West Virginia, thus, is not feasible.

- A CSXT truck-rail bulk transfer facility with capacity for 15 cars is currently located in Clarksburg, handling primarily minerals and other dry bulk products.

6.4.2 STRATEGIC INITIATIVES

- ***Use its CSXT terminal capacity to participate in the emerging natural gas industry*** Clarksburg is a favorable location for the transloading of inbound materials for the extraction industry from long-haul rail movements to distribution by truck throughout most of the state.

- ***Establish a partnership with CSXT to market its bulk transfer capability*** Clarksburg should work with CSXT to identify ways to expand the bulk transfer business including promoting the service and identifying the requirements of potential shippers.

6.5. MARKET POTENTIAL/DEMAND FORECASTS

Prior studies have projected that the Prichard Intermodal Terminal will capture approximately 45,000 containers per year. The consultant team believes that is a conservative estimate. As the region develops the logistics infrastructure supporting containerized freight transportation, that estimate will be exceeded. In addition, failure to develop the Roanoke terminal would also increase that projection.

The demand for logistics services and facilities is difficult to estimate, as a wide range of services can be offered and few relevant metrics exist. One benchmark that is available in the Multi County Goods Movement Action Plan shows that the contents of 12 percent of international containers are transferred to domestic containers for further shipping, suggesting that 5,400 international containers per year arriving at Prichard would be converted to domestic containers at local facilities.

No market studies of either the Chambersburg or Greencastle intermodal terminals have been conducted, and the railroads have provided no estimates of potential demand. Press releases by CSXT and NS have indicated that Chambersburg will be handling 100,000 containers/trailers per year and Greencastle would operate at the 85,000 container volume level. This suggests significant demand for warehouse capacity in the Martinsburg area.

Activity for the Pittsburgh terminal, which could stimulate demand for logistics services in Weirton, has not been made public. However, it is expected that it too would process in the range of 85,000 to 100,000 containers per year.

6.6. Action Plans

6.6.1 Huntington-Prichard

Strategy: Improve highway access to the Prichard Intermodal Terminal

Action	Responsibility	Time Frame
Conduct Prichard Intermodal Terminal Connectivity Study • Review and re-evaluate projected container volumes • Determine truck activity: Inbound/outbound containers; Inbound/outbound trucks w/o containers • Determine temporal/spatial truck movement patterns • Evaluate highway capacity • Identify improvements • Funding analysis	WVPPA WVDOT Highway Department KYOVA	Near Term
Implement required connectivity Improvements • Funding • Engineering • Construction	WVDOT Highway Department	Medium Term

Develop logistics clusters centered on Prichard Intermodal Terminal

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Determine specific site requirements • Determine access requirements • Identify candidate sites	WVPPA	Immediate
Implement cluster development • Solicit developers • Secure financing • Engineering • Construction	KYOVA/Selected Developer/Local governments	Medium Term

Adopt Kansas City Smart Port Concept

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Benchmark KC Smart Port • Evaluate requirements • Develop KC Smart Port Implementation Plan	WVPPA	Immediate

Expand waterside modal transfer capacity

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Determine specific site requirements • Determine access requirements • Identify candidate sites	WVPPA	Immediate
Implement waterside facility development • Solicit developers • Secure financing • Engineering • Construction	WVPPA/KYOVA/Selected Developer	Long Term

Develop information technology capability

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Review technologies • Determine applicable technologies	WVPPA	Immediate
Develop Technology Plan	WVPPA/KYOVA/Logistics Service Providers/Logistics Service Users/IT Advisors	Mid-Term

6.6.2 MARTINSBURG

Adopt Kansas City Smart Port Concept

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Benchmark KC Smart Port • Evaluate requirements • Develop KC Smart Port Implementation Plan	WVPPA	Immediate

Develop information technology capability

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Review technologies • Determine applicable technologies	WVPPA	Immediate
Develop Technology Plan	Martinsburg PA/Logistics Service Providers/Logistics Service Users/IT Advisors	Near-Term

Explore the need for and development of an intermodal container terminal

Action	Responsibility	Time Frame
Conduct Feasibility Study (as currently planned) • Market analysis • Rail service plan • Competitive analysis • Infrastructure and O&M cost analysis • Public benefits analysis • Funding source identification	Martinsburg PA	Immediate
Develop Railroad Partnerships	Martinsburg PA	Near-Term

6.6.3 WEIRTON

Develop as a staging and transshipment point for supplying the Marcellus Shale extraction industry

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Determine extraction industry logistics needs • Determine specific site requirements • Determine access requirements • Identify candidate sites	WVPPA/Weirton PA	Immediate
Implement waterside facility development • Solicit developers • Secure financing • Engineering • Construction	Weirton PA	Mid-Term

As the M 70 corridor of the Marine Highway emerges, consider developing a container transfer facility for the Pittsburgh metropolitan area

Action	Responsibility	Time Frame
Conduct Feasibility Study (as currently planned) • Market analysis • Rail service plan • Competitive analysis • Infrastructure and O&M cost analysis • Public benefits analysis • Funding source identification	Weirton, PA	Mid-Term

Develop as a western logistics center for the Pittsburgh region

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Determine specific site requirements • Determine access requirements • Identify candidate sites	WVPPA/Weirton PA	Immediate
Implement waterside facility development • Solicit developers • Secure financing • Engineering • Construction	Weirton PA	Mid-Term

Develop information technology capability

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Review technologies • Determine applicable technologies	WVPPA	Immediate
Develop Technology Plan	Weirton PA/Logistics Service Providers/Logistics Service Users/IT Advisor	Near-Term

6.6.4 CLARKSBURG

Use its CSXT terminal capacity to participate in the emerging natural gas industry

Action	Responsibility	Time Frame
Complete Phase II – Strategic Master Plan • Determine extraction industry logistics needs in North Central WVA • Determine potential role and targeted services • Determine specific site requirements • Determine access requirements • Identify candidate sites	WVPPA/Clarksburg	Immediate
Develop and Execute a Solicitation Plan • Develop plan to meet the needs • Identify potential users • Establish relationships with users	Clarksburg	Near Term

Establish a partnership with CSXT to market its bulk transfer capability

Action	Responsibility	Time Frame
Build CSXT Partnership • Work with CSXT business development/industrial development staff to identify opportunities • Define respective roles in soliciting opportunities • Conduct sales effort	Clarksburg	Near Term