

Feasibility Analysis *for the* **Eastern Panhandle Inland Port**

- Final Report -

Prepared for:

Eastern Panhandle Inland Port Coalition

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The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the Eastern Panhandle Inland Port Coalition



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ES

ES - EXECUTIVE SUMMARY

The Eastern Panhandle Inland Port (EPIP) Feasibility Study was completed for the Eastern Panhandle Inland Port Coalition and its stakeholders to analyze the feasibility of developing an inland port facility in the Eastern Panhandle of West Virginia.

This report examines several of the key trends affecting the transportation and logistics industry that are contributing to the increase in intermodal transportation and inland port development. The invention of the standardized shipping container has revolutionized how goods move internationally, as well as domestically. Because the box moves rather than the individual contents, it is possible to easily move product from one transportation mode to the next without the need to unpack or reload.

Globalization has also had a tremendous impact on the demand for intermodal transportation. The ability to easily transport goods across modes (ship to truck for example) has helped make it cost efficient for companies to seek out lower wages and manufacture goods overseas. As such, more companies find themselves managing a much more complex supply chain from raw goods to end consumer.

This added complexity in the process of goods manufacturing and distribution has led to companies focusing



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more resources on ensuring its efficiency. This practice of supply chain management creates a focus on the most efficient and reliable means of moving goods through the manufacturing cycle and on to the consumer. Intermodal transportation is increasingly playing a more significant role in those movements as companies seek out reliability while avoiding the nation's congested road network. In addition, the environmental benefit of moving goods via rail has been a contributing factor to the growth in the use intermodal transportation and the development of intermodal facilities.

This study also provides a discussion on the definition of an inland port and its variants. It briefly examines five classifications of an inland port, including:

1. Inland Waterway Port
2. Air Cargo Center
3. Satellite Marine Terminal
4. Intermodal and Multimodal Logistics Centers
5. Virtual Port (e-Port)

This report also identifies six specific characteristics that an inland port must possess in order to be successful. The study team derived these characteristics from an examination of existing global inland port facilities, previous academic research and opinions from logistics industry stakeholders. The six criteria are:

1. Sufficient Modal Capabilities
2. Existing, Unmet Demand
3. Locational Advantages
4. International Trade Facilitation
5. Local and Political Support
6. Phased Development Approach

The study team utilizes these six criteria as a benchmark to gauge the potential for a new intermodal facility at the EPIP location. In the course of this analysis, we provide a detailed discussion of each component of the EPIP location and its strengths and weaknesses. Finally, this report concludes by summarizing the key findings and by providing recommendations for the best path forward.

ES.1 - SIGNIFICANT FINDINGS

This study finds it is not feasible at this time to advance the project beyond the Preparation Phase until anchor tenants with suitable project demand can be identified and secured. Further, this study identifies three key conditions that could make the attraction of these anchor tenants difficult and affect the long term feasibility of this project.

First, the study location lies within the catchment areas of three competitive intermodal facilities. The Virginia Inland Port facility is approximately 40 miles to the south of the study location, while CSX's Chambersburg, PA and



Norfolk Southern's Greencastle, PA facilities are approximately 35-45 miles to the north. Each of these facilities would be directly competitive with the proposed EPIP facility. In addition, the Commonwealth of Virginia, CSX and Norfolk Southern have all made significant investment in their projects and would likely adjust their pricing and offerings to protect those investments. It is unlikely that a new facility would be able to compete against them without having an existing anchor tenant in hand.

Second, the study site's rail access is provided by the Winchester and Western shortline railroad. The utilization of the Winchester and Western shortline to connect back to the mainlines of the Class I rail networks would represent an additional cost to users of the EPIP facility. Intermodal transportation of goods is already a low margin business for the railroads due to their need to compete with over the road trucking. This additional link in the supply chain, and its corresponding costs, would put the study site at a significant disadvantage relative to other intermodal facilities that do not rely upon a shortline for connectivity.

Third, this study finds that the goods moving into and out of the potential catchment area for the new EPIP facility are generally not suitable for containerization and movement via intermodal means. The vast majority of these goods are heavy, bulk commodity type items. In order to make a new facility at the EPIP location feasible, a new source of captive demand would need to be identified and secured.

ES.2 - RECOMMENDATIONS

Despite these disadvantages, this study finds the subject site and surrounding area are excellent locations for transportation and logistics-based operations. As such, this report provides two key recommendations for options that would utilize the areas transportation and logistics benefits while leveraging the substantial investments in transportation infrastructure made in the region by others.

Recommendation #1: This study recommends that the EIPIC create a West Virginia Center for the Advancement of Natural Gas in Transportation at the study location. This research, development and education facility would combine one of West Virginia's abundant natural resources with the tremendous transportation potential and activity of the study location. By partnering with West Virginia University, Blue Ridge Community and Technical College and other public and private sector stakeholders, this location would offer the opportunity to advance the use of CNG and LNG in multiple transportation modes. In addition, by combining the necessary fueling infrastructure with warehouse and distribution center options, it expands the potential universe of companies that are able to utilize CNG/LNG in their supply chains.

Recommendation #2: This study recommends that the EIPIC create an economic development organization specifically focused on attracting transportation- and logistics-based companies to the study area. This new organization should be modeled after the Kansas City SmartPort concept and bring together stakeholders with



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significant transportation and logistics investments in the area and to advance the region as a hub for transportation- and logistics-based activities.

ES.3 - CONCLUSION - EXECUTIVE SUMMARY

The study area represents an excellent location for transportation and logistics based warehouse, distribution or manufacturing operations. Within the 75 mile catchment area there are several existing intermodal facilities that have the potential to be attractive transportation options for companies that locate in the study location. While these facilities are one of the key reasons why a new inland port at the study site is not feasible, they also represent a tremendous offering to use to attract new users to the study area. The study team has provided two tangible recommendations that work to leverage these existing assets to generate new economic development activity within the study area.



1

1.0 - INTRODUCTION

1.1 - PROJECT HISTORY

In the early 1990's US Senator Jay Rockefeller invited a group of citizens from Berkeley County, WV to Washington to meet with officials from the US Department of Commerce, Customs and Border Patrol and other Federal agencies to discuss the possibility of establishing an inland port in Berkeley County. All officials present agreed that Berkeley County, because of its unique location on interstate 81 (south of interstate 70) and its proximity to Washington, DC and Baltimore, MD, was ideally situated to benefit from the establishment of an inland port. After the meeting, an Intergovernmental Agreement was executed between the Berkeley County Commission, City of Martinsburg, Berkeley County Development Authority and the Eastern West Virginia Regional Airport Authority. This was the necessary first step to identify all the governmental entities that were stakeholders in the establishment of the inland port. The parties then entered into an agreement with each other to define their respective duties and responsibilities in such an establishment. At that time, the second step was for the parties to have a feasibility study conducted to evaluate the inland port and how it should be created and operated. Unfortunately, the parties were



Section 1 - Introduction

unable to secure funding for the study.

The Intergovernmental Agreement has since been modified to add the Berkeley County Roundhouse Authority, which is the owner of the Roundhouse property in downtown Martinsburg, WV. Later in the process, the Eastern Panhandle Inland Port Coalition (EPIPC) was established and approved by the West Virginia Public Port Authority, comprised of members from all of the previous stakeholder boards and authorities. EPIPC has proceeded to work on the establishment of the inland port including the development of an Inland Port Master Plan and the funding of this feasibility study. Meetings were held with the appropriate Federal and State agencies, along with all appropriate Federal and State representatives, with each pledging their support of the proposed development and offering assistance where needed to ensure the project's success.

In 2010, the West Virginia Public Port Authority, on behalf of Inland Port Coalition, publicly advertised for Letters of Interest from firms desiring consideration in developing and/or operating an inland port centered on the Eastern Regional Airport. Four companies responded, including Moreland Property Group of Richmond, VA, William H. Gordon Associates of Chantilly, VA, The Shockey Companies of Winchester, VA, and The LANE Construction Corp. of Chantilly, VA

In 2011, the Eastern Panhandle Inland Port Authority oversaw the preparation of a Master Plan for the Port and released a solicitation, Request for Proposal (RFP), to the four proposers who originally responded to the prior Expression of Interest. This RFP requested the responding firms provide an evaluation of the feasibility of an inland port facility in the Eastern Panhandle of West Virginia. Proposals were due on December 12, 2011. Moreland Property Group assembled a team of engineering, contracting and financial firms to respond to the RFP and was interviewed in January 2012.

EPIPC found the team qualified and then took the necessary steps to secure funding for the Feasibility Study. Once funding was secured, EPIPC entered into a contractual agreement with Moreland Property Group in March 2012. This contract specified that the Moreland Team ("study team") prepare this comprehensive study, business and financial plan for an area inland port.

1.2 - SCOPE AND OBJECTIVE

The objective of this report is to assess the feasibility of constructing the Eastern Panhandle Inland Port, a new inland port facility in the Eastern Panhandle region of West Virginia ("study area"). Specifically, the targeted site is approximately 291 acres of land currently owned by Berkeley County, WV ("subject site"). The site, located approximately 0.75 miles from Exit 8 on Interstate 81, is bisected by a rail line owned and operated by the Winchester and Western shortline railroad. In addition, less than one mile to the east of the site is the 1,005 acre Eastern West Virginia Regional Airport and the 211-acre John D. Rockefeller IV Science and Technology Center.

For the purposes of this analysis, the study team has assumed these sites are available to be incorporated into a new inland port development, should it be deemed feasible and appropriate to do so. In addition, the study



Figure 1.1: Subject Site Aerial



team also considered in its analysis the costs and practicality of acquiring additional land in the immediate area for inclusion into a new inland port project.

1.3 - PROJECT OUTLINE

This project is organized into a total of six sections, including this introduction. The next section, Section 2, will give a broad overview of some of the key trends and developments that are influencing the use of intermodal transportation. Section 3 seeks to define exactly what an inland port is and provide classifications for the various types of inland ports. Section 4 examines the requirements that any inland port needs to be successful. Section 5 continues that discussion, analyzing specifically how the EPIP project and subject site fit those requirements. Finally, in Section 6, the study team provides its conclusions as well as recommendations for the logical next steps in the project.

This research will assist the Eastern Panhandle Inland Port Coalition in understanding the particulars and requirements for a successful inland port facility, and the viability of locating such a facility in the Eastern Panhandle region of West Virginia.



2

2.0 - INDUSTRY BACKGROUND & CONTEXT

Freight and logistics are quickly changing, and the regions that succeed in the future will be those that can adapt to trends in regional growth, while fully leveraging changes in freight and logistics processes to offer firms a competitive advantage. The section below will frame the discussion of what makes a successful inland port by providing a brief overview of the trends shaping modern freight and logistics.

2.1 - CONTAINERIZATION

Containerization, like most major advancements in the shipment of goods, sprung out of a desire to improve the efficiencies of moving goods from one transportation mode to another. Prior to the advent of the modern shipping container, most goods were transported loose in the cargo hold of ships and required manual labor to load and unload. In 1956, Malcolm McLean, a frustrated trucking company owner, grew tired of waiting for his truck to be unloaded at the dock and conceived of a box that goods would be loaded into and then the entire box would be transferred and moved by the shipping lines. Thus, the concept for the modern shipping container was born.

Growth in the use of shipping containers was tepid until the 1960's, when purpose built container ships were



Section 2 - Industry Background & Context

constructed and utilized. After the adoption of standard container sizes and lashing systems in 1965, world container traffic gradually grew to reach 100 million twenty foot equivalent units (TEU) by 1992. Utilization of shipping containers skyrocketed in the later part of the 20th century, with containerized traffic reaching over 500 million TEUs by 2008. Over the next five years, annual containerized traffic is projected to reach over 725 million TEUs.

Much of the early growth in the use of shipping containers came from substituting shipping containers for break bulk and other shipping methods. Today, approximately 90% of the previously break bulk goods have been containerized. Finding new sources of container growth will become much more difficult, and moving forward, much of the growth in containerization will come from niche markets, including commodities (grains, wood products and chemicals) and temperature-sensitive cargo. Additionally, the repositioning of empty containers between unbalanced trade lanes will be a significant driver of future volume growth.

Innovative companies will continue to find new ways to utilize the standardized shipping container in the movement of goods. One of the key factors driving this innovation is the ability to easily move the container from one mode to another without unpacking and repacking the contents. This has allowed the shippers a greater range of freedom in selecting transportation modes, or combinations of modes, and created additional efficiencies in their global supply chains.

2.2 - GLOBALIZATION

Globalization is a natural by product of our economic shift from an agrarian to an industrial society. In an agrarian society, producers are tied to the geography and its ability to produce. In contrast, manufacturing capabilities can be established wherever there is a willing workforce, allowing new geographic regions to participate in the global economy. The increased competition for a significant component of the economy has driven companies overseas to capitalize on lower labor costs and our supply chains have become increasingly longer and more complex.

These new trends in consumption and production have substantially altered distribution patterns and contributed to an overall increase in transportation demand. They have also driven an increased demand for sophisticated management strategies over supply chains that now move in a dynamic international freight flow.

2.3 - SUPPLY CHAIN MANAGEMENT & JUST-IN-TIME LOGISTICS

While basic supply chains have existed since people began producing goods for the benefit of other people, the concept of Supply Chain Management has only recently emerged as globalization has stretched those supply chains across greater distances. When goods were sourced, manufactured, and consumed all within a close proximity, companies had the luxury of focusing only within their own internal operations. Few companies understood, much less managed, an entire set of connected activities that begins with the raw goods and extends through manufacturing and eventually ends with the consumer.

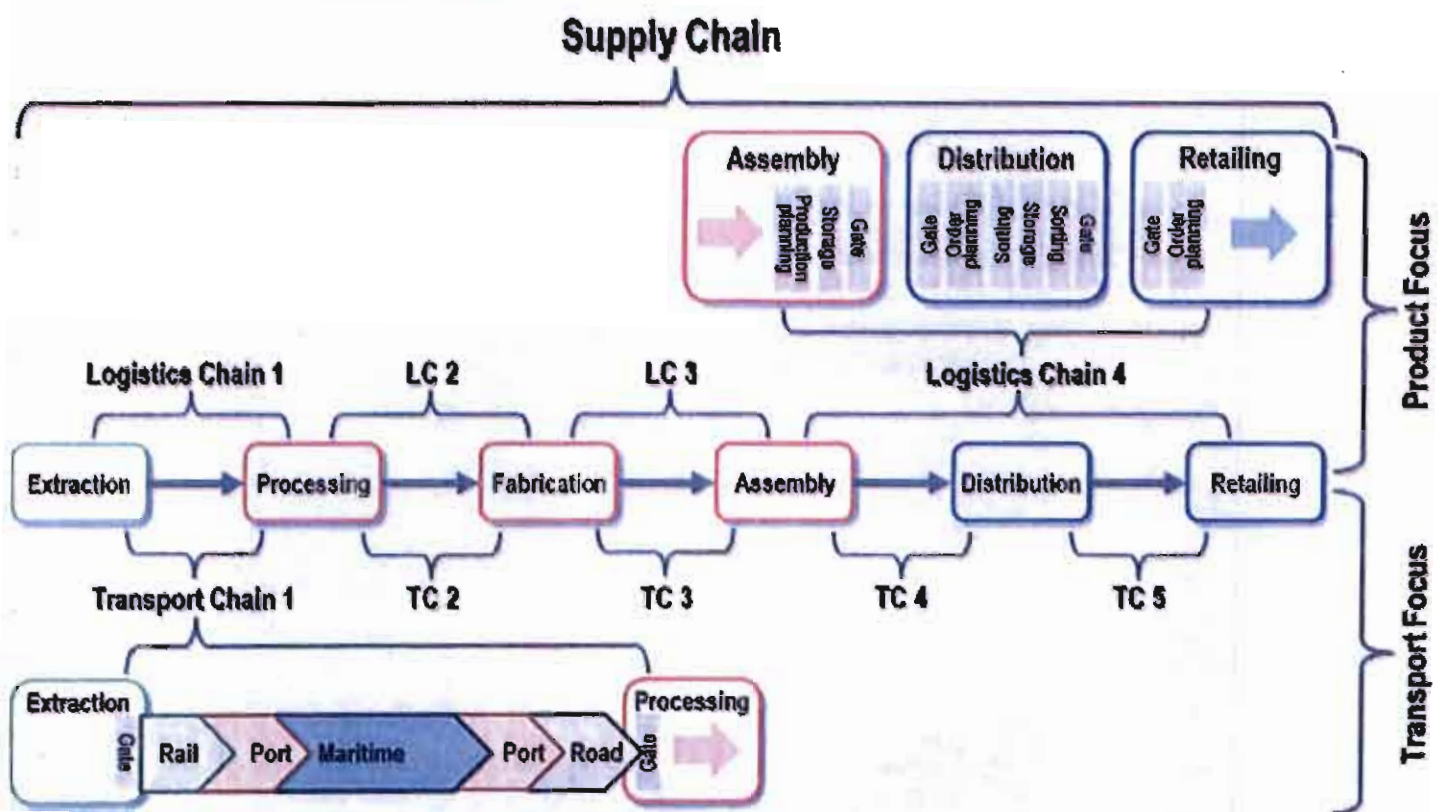


Supply Chain Management is defined by Simchi-Levi, et al (Simchi-Levi, 2003), “a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service levels.”

The practice of Supply Chain Management has led companies to focus on minimizing transportation costs and reducing inventory to achieve a competitive advantage in the marketplace. In the supply chain for even the simplest of products, raw goods are procured and transported to one or more manufacturing centers where they are processed into finished goods. Finished goods are then transported to warehouses and eventually on to retailers before being purchased by the end consumer. In a system such as this, transportation costs factor into the supply chain at multiple points. It is estimated that transportation costs can equal up to 15% of the cost of a finished product.

With transportation and the movement of goods accounting for such a significant portion of the finished

Figure 2.1: Supply Chain Schematic



Source: adapted from Woxenius, J. and J-P Rodrigue (2011) "Detours in Supply, Logistics and Freight Transport Chains"

goods price, companies have a strong incentive to manage their transportation costs and inventory levels closely. The focus on inventory level management has resulted in a trend towards Just-In-Time (JIT) and Time Definite



Section 2 - Industry Background & Context

delivery systems. These systems are designed so that the right goods reach the right place at the right time and require an unprecedented level of reliability within the supply chain. For companies who can successfully achieve that supply chain reliability, it means that they can now have fewer, but larger, distribution centers within their network. These distribution centers now must serve very large catchment areas, far in excess of what was previously possible. However, with fewer distribution centers in their network, the shipping distances are longer to reach customers and suppliers, leading to an increase in transportation costs and a continued focus on finding the most cost efficient shipping mode or modes.

2.4 - NETWORK CONGESTION

The US highway network is currently operating well beyond its design capacity. In 2007, the Federal Highway Authority estimated that approximately 4,000 miles of interstate were operating at 95% of capacity or above. By 2040, they project that figure to increase to over 20,000 miles operating at 95% capacity or above - a 400% increase.

While the demand for roadway use continues to increase, construction of new lane miles is not keeping pace. It is estimated that between 1980 and 2006, vehicle miles traveled grew by over 100% while highway lane miles increased by only 5%. During the ten year period between 1999 and 2009, the US built an average of 13,000 new lane miles of roads per year. Combined with widening projects, the US increased overall capacity by 39,000 lane miles per year - less than 1% of the overall system.

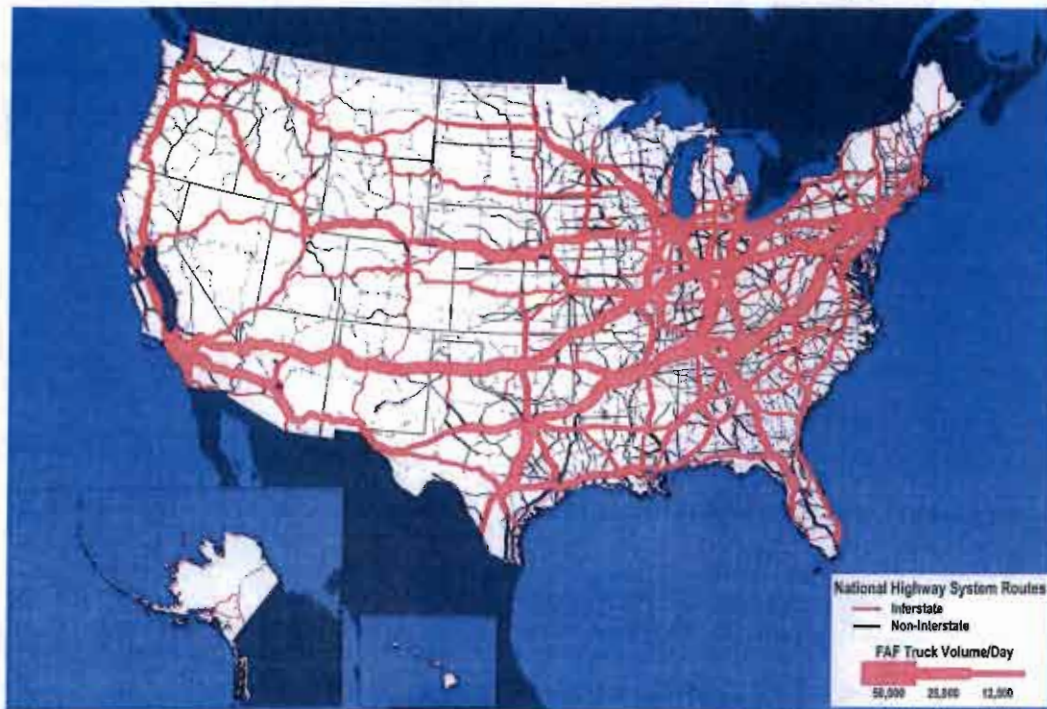
Figure 2.2: Average Daily Long-Haul Freight Truck Traffic on the National Highway System: 2007



Note: Long-haul freight trucks typically serve locations at least 50 miles apart, excluding trucks that are used in movements by multiple modes and mail.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.1, 2010.



Figure 2.3: Average Daily Long-Haul Freight Truck Traffic on the National Highway System: 2040



Note: Long-haul freight trucks typically serve locations at least 50 miles apart, excluding trucks that are used in movements by multiple modes and mail.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.1, 2010.

This ever increasing congestion takes a significant toll on economic productivity. When shipping takes longer, companies require more operators and equipment to make deliveries, maintain higher inventory levels to compensate for unreliable delivery times. In addition, they maintain a network of more distribution centers to be able to reach markets when the roads are slow. All of this is in direct opposition to the concepts of lean supply chain management where companies are trying to reduce inventory levels, reduce transportation costs and increase the reliability of deliveries. As a result, companies are looking for alternatives to the nation's highway system to efficiently move their products to market; intermodal transportation is one such alternative.

2.5 - INTERMODAL TRANSPORTATION

Intermodal transportation is defined as the movement of goods that involves more than one form of carrier in a single journey. The advent and adoption of containerization has made the transfer of goods between modes seamless and has allowed intermodal transportation to be a viable option in a modern supply chain. While intermodal can mean the transfer of goods between any two modes, for the purposes of this study, it is intended to refer to the transfer of goods between road, rail, and air only.

In the US, intermodal use has been growing steadily. Intermodal rail volume accounts for approximately 10 to 15 percent of all US surface transportation moves, and approximately 25% of all US rail volume. In 2Q12, domestic intermodal volumes increased 12.5% over the same period one year earlier. During that same period,



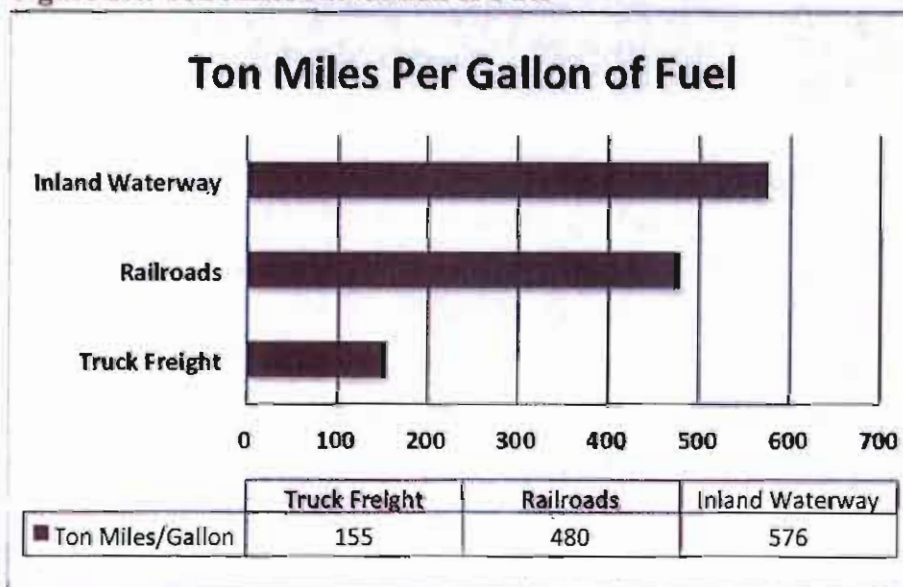
Section 2 - Industry Background & Context

International intermodal volumes increased 3.9%. Combined, the total intermodal volumes increased 5.2% from 2Q11 to 2Q12.

One of the key drivers of growth in intermodal transport has been the environmental benefits that can be obtained by using rail to move goods. According to the Association of American Railroads, railroads are the “greenest”, most fuel-efficient form of ground transportation. Specifically:

- A freight train can move one ton of freight an average of 480 miles on a single gallon of fuel - over 3 times as far as it could move by truck.
- A single train can take the load of 280 or more trucks off the road.
- On average, each ton-mile of freight moved by rail rather than highway reduces greenhouse gas emissions by 75 percent.
- If only 10 percent of the long-haul freight that is currently moved by highway switched to rail, national fuel savings would exceed one billion gallons a year and greenhouse emissions would fall by 12 million tons.

Figure 2.4: Ton Miles Per Gallon of Fuel



Source: American Association of Railroads

As shippers move more product via intermodal methods, they are giving up a measure of flexibility in their supply chain. The rail and intermodal terminal geography remains fixed and product can only travel via rail from one intermodal terminal to another. The first and last miles of the transport still need to be handled by truck, which adds scheduling complexity. Consequently, shippers have to realize an economic benefit in giving up this flexibility. The market has demonstrated that intermodal transport needs to be priced at a 20-25% discount to “over the road” travel costs to entice shippers to switch modes.

This pricing pressure makes intermodal a very low margin business for the railroads. It is estimated that intermodal transport generates a profit margin for the railroads that is roughly half that of coal. While margins have



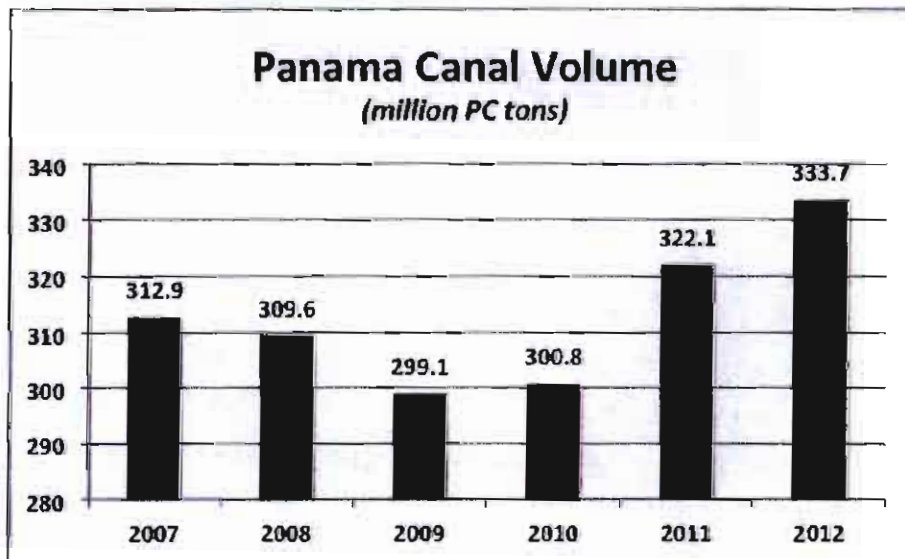
been improving, they are doing so by raising intermodal rates, which makes the mode less competitive with trucks. The high price of diesel and the corresponding fuel surcharges have helped the railroads keep that pricing delta in line. Overall, because of the lower margins involved, the Class I railroads are very cautious about where they add intermodal terminals to their network. They generally look for established trade corridors where a significant portion of goods moving via truck may be confidently captured.

2.6 - PANAMA CANAL EXPANSION

Approximately 5% of all of the world's trade crosses through the Canal each year. In the fiscal year 2012, the Panama Canal recorded a record year for volume with nearly 334 million tons crossing the Canal. This represents a 3.6% increase over the 322 million tons that crossed the Canal in fiscal 2011. In addition, the primary trading partner mix is changing with the Canal. The US is still the primary trading partner utilizing the canal with 144 million tons heading to, or originating from, US soil. However, an increasing amount of traffic is coming from smaller or emerging economies, with China responsible for 53 million tons, Chile responsible for 28 million tons, and Japan responsible for 22 million tons. According to a recent AP News article, Jorge Quijano, the Panama Canal Authority administrator, "the Canal was no longer solely dependent on the world's major economies as (...) the United States and Europe and is maintained with good tonnages due to the growth of the economies of Latin America."

In 2015, the Panama Canal Authority is expected to complete a \$5.25 billion expansion project that will double the capacity of the Panama Canal. As part of the expansion, two complete new lock systems will be built

Figure 2.5: Historical Panama Canal Volume



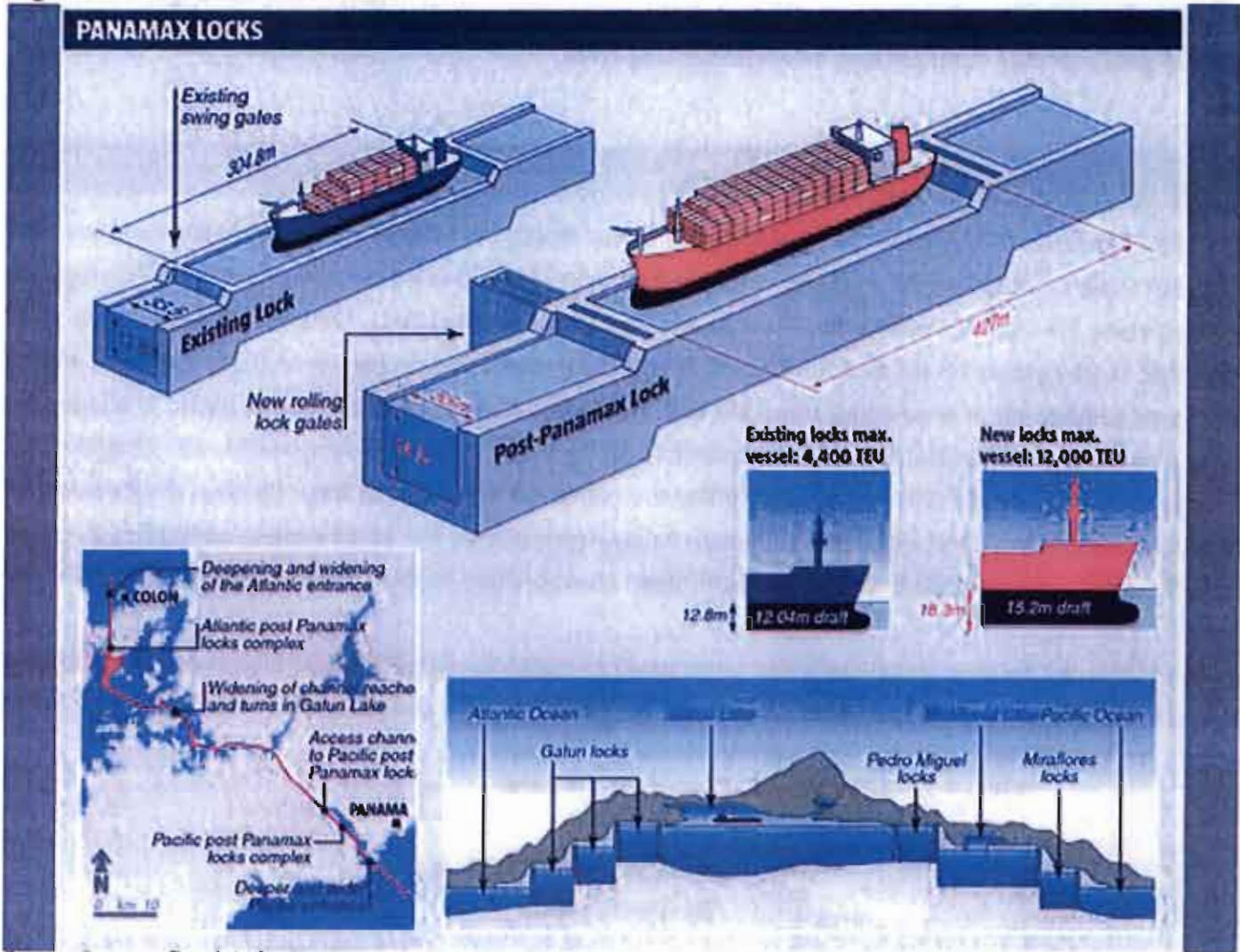
Source: Panama Canal Authority



Section 2 - Industry Background & Context

next to the existing locks. This means that once the Canal expansion project is complete, both old and new lock systems will be in place and operational. In addition, the Canal entrances will be dredged on both the Atlantic and

Figure 2.6: Panama Canal Locks



Source: Panama Canal Authority

Pacific sides to accommodate larger draft vessels. In the Canal itself, the Culebra Cut will be widened and deepened to allow deeper draft vessels as well as bidirectional traffic flow between the Pacific locks and Gatun Lake. The expansion will also be enlarged to increase the water supply available to the lock systems.

When completed, the Panama Canal expansion will allow for a new breed of container vessels to transit the locks. These new locks will accommodate the “post-panamax” class of container ships that are up to 1,200 feet long, 160 feet wide, draw 50 feet of depth and carry over 12,000 TEU’s. This is roughly three times the size of the vessels currently able to transverse the Canal. The ability for these new, larger vessels to call on US East Coast ports should bring tremendous economies of scale to supply chains servicing the populous in the Northeast and mid-Atlantic. It



is projected that by 2020, these post-panamax vessels could dominate the East Coast trade lanes.

While the expanded Panama Canal may be able to handle these new, larger vessels, not every East Coast port has the draft available to accommodate the ships. Only three ports on the US East Coast have the 50 foot channel depth necessary to handle these vessels. These ports are:

- Port of Virginia
- Port of Baltimore
- Port of New York/New Jersey

It is unclear just how the expanded canal and utilization of larger vessels will affect the East Coast ports. There is currently a significant portion of cargo that enters the US via the West Coast ports and is then transported via rail (land bridge) for consumption in the Northeast. If the economics make it profitable, that freight may shift to the all water route through the Canal and directly to the East Coast ports on post-panamax vessels.

It is expected that the republic of Panama will finance the \$5.25 billion project on the backs of the carriers who utilize the Canal. Panama has been steadily raising the rates it charges to make passage through the Canal and it is anticipated that those rate increases will continue. At some point, the additional Canal costs have the potential to outweigh the benefits of an all water route to the East Coast. This could either send goods back through the West Coast to be land bridged back to the East Coast, or through a longer all water route through the Suez Canal. In any case, the impact to the US' supply chain will be significant. Exactly how significant is yet to be seen.



3

3.0 - INLAND PORTS DEFINED

In the previous section, we outlined some of the major changes occurring in the transportation and logistics industry, and how those changes might affect an inland port. Section 3 seeks to provide a definition of an inland port and what characteristics they incorporate. Section 3 will also discuss the public benefits inland ports bring to a region once operational. This section concludes with case studies for several inland ports in the US.

3.1 - WHAT IS AN INLAND PORT?

The definition of a “port” has evolved as transportation advances have been made. At its root, a “port” is a location where international trade is processed and transportation facilities are provided for transported goods. Traditionally, this has meant a land based border crossing or coastal maritime facility. Product would arrive via ship and switch modes to truck or rail. For exports, that modal shift was reversed.

As air cargo gained market share, the definition of what was considered a port was redefined to include inland air hub facilities near major metropolitan areas. In these locations, products were arriving via airplane and



Section 3 - Inland Ports Defined

switching modes to leave via truck (or vice versa). With the growth in containerized intermodal traffic and facilities, the definition is again being expanded to include a new class of “inland port” operations.

While these new inland ports are performing many of the same functions as a maritime facility, border crossing, or an air hub location, these ports differ on many other characteristics. They provide a different basket of services and provide different economic benefits, attracting different users. However, defining exactly what does, and what does not, constitute an inland port is challenging.

An inland port shares at least two basic characteristics with rail ramps or intermodal terminals. First, to qualify as “inland”, it must be located away from the coast and national borders. Second, the inland port must have significant transportation infrastructure in place and provide the ability for goods to switch modes. Typically, this involves excellent highway and main line rail access that facilitates the transfer of goods between those two modes. In some cases, the modal shift is between barge and truck. Other facilities include road, rail and air cargo infrastructure that may be co-located at an inland port facility.

A key aspect of a true inland port (relative to an intermodal or air cargo terminal) is that an inland port goes well beyond just providing access to transportation infrastructure assets and transferring goods between them. An inland port combines manufacturing, warehousing, and distribution space along with the transportation assets. In addition, an inland port provides the assets and a basket of amenities that aide in the facilitation of international trade. Leitner and Harrison (2001) summed this up nicely by defining an inland port as, “a site located away from traditional land, air, and coastal borders containing a set of transportation assets (usually multimodal) and with the ability to allow international trade to be processed and altered by value-added services at the site as goods move through the supply chain”.

3.1.1 - Taxonomy

An inland port can take many forms and it is necessary and helpful to further define various classifications of inland port assets. This more granular approach is helpful as we analyze the feasibility of adding a new inland port at the subject site and to better understand what effect it will have on the transportation network and supply chains. By examining the modes and functions of various facilities, this study identifies five classifications of an inland port:

- Inland Waterway Port
- Air Cargo Center
- Satellite Marine Terminal
- Intermodal and Multimodal Logistics Centers
- Virtual Port (e-Port)

Inland Waterway Port - The US has over 25,000 miles of navigable waterways. Utilization of these marine highways served as the primary way to move all goods inland before the widespread implementation of rail. In



fact, the location of these transportation centers along the waterways has influenced the development of several of the major populations centers in the US. Today, most of these facilities deal with heavy, break bulk cargo such as grain, coal, petroleum and chemicals. They provide shippers with access to barge transportation, which is extremely efficient, and facilitate the transfer of goods between road, rail and/or water modes. This is a mature segment of the market, and there is a well established network of these facilities along the inland waterways of the US. Consequently, there is very little new development in this classification.

Air Cargo Centers - With over 60% of all air cargo moving in the belly of passenger aircraft, these freight oriented facilities have developed around airports that have traditionally been focused on the movement of people. Typical goods moved through an air cargo facility include those that are high value, low weight, and time sensitive. To address the freight needs, these facilities need to incorporate US Customs and distribution centers as well as manufacturing. Relatively few "all cargo" airports have been developed in the United States. The Base Realignment and Closure Act (BRAC) opened up several former military airports for redevelopment and some have become locations for these air cargo centers. More recent air cargo developments have been multimodal and would be considered a part of the Multimodal Logistics Centers classification.

Satellite Marine Terminals - A Satellite Marine Terminal seeks to replicate the operations of maritime port facility at an inland location. Typically, these are developed by, or aligned with, a single maritime facility and are located 50-250 miles from that facility and connected via rail. The specific location needs to be far enough away from the maritime facility to avoid the congestion of the maritime port city. However, it also needs to be located close enough to be able to provide timely service for the shippers. By moving a portion of the port operations off site, these facilities essentially act to increase the total acreage of the port while reducing dwell time for a portion of the containers. All of this leads to greater efficiency at the port and increased throughput capacity. Often times, these are developed with other social goals in mind such as driving economic development and reducing vehicle miles traveled (VMT) by shifting goods from road to rail. The Virginia Inland Port and New Zealand's Metroport are two examples of this classification.

Intermodal and Multimodal Logistics Centers - The Intermodal Logistics Center is the most integrated of the various classifications of an inland port, combining multiple modes of transportation and value-added services with warehousing, distribution, and manufacturing space. True to the definition of an inland port, these facilities combine either two modes (Intermodal) or more than two modes (Multimodal) of transportation in one location. Surrounding these transportation assets will be a master planned logistics park with warehouse, manufacturing and distribution center areas. In addition, they offer users a basket of services that add value to the goods in transport. These services can include the ability to clear US Customs, Foreign Trade Zone status, conference facilities, and other logistics services. While there have been some greenfield developments of these assets, the majority have



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been located at BRAC facilities. In either case, it takes a well structured public-private partnership to bring them to fruition. Some of the better known examples of this classification include the Alliance Texas Logistics Park in Texas and Rickenbacker Inland Port in Ohio.

Virtual Port (e-Port) - The virtual port is not a traditional asset based operation like the other classifications discussed above. Instead, it is an economic development organization dedicated to facilitating transportation and logistics activities within a certain geographic area. Within that geographic range, there will be significant transportation assets that the virtual port will promote and benefit. These assets are typically owned and operated by other, unrelated entities. As part of their role as an enabler of logistics within a region, many virtual ports will create or utilize technology-based solutions that add transparency to the market and help to increase supply chain efficiency. The best example of a virtual port in the United States is the Kansas City SmartPort.

3.2 - PUBLIC BENEFITS OF INLAND PORTS

In Section 2 of this report, a number of the factors within the logistics industry driving the private sector interest in inland ports were outlined. A desire to reduce inventory and wring new efficiencies out of supply chains has contributed to an increase demand for inland ports. However, most inland ports are developed as public-private partnerships between public and private actors. This is due in large part to the public sectors desire to realize unique social benefits generated by an inland port development.

The creation of an inland port can result in a number of social (non-financial) benefits. These include:

- Reduced congestion at maritime ports
- Increased capacity at maritime port terminals
- Emissions reduction
- Economic Development

Reduced congestion at maritime ports: In many maritime port locations, non-compatible uses have surrounded the port terminals. This has led to congestion around the facilities and conflict between the ports and the surrounding community. The ability to move a significant portion of the containers by rail to another location farther inland is very appealing to port operators. This has the benefit of reducing the number of trucks calling on the maritime port location to exchange containers, significantly reducing area congestion.

Increased capacity at maritime port terminals: In most cases, acreage at the maritime terminals is highly managed to maximize the efficiencies of the port location. With the addition of an inland port into their network, a maritime port can transfer some of the containers to the inland port location, freeing up valuable real estate at the coast. An



inland port can also be a part of a port operations dwell time and empty container strategy. By managing these assets closely, the port operator can likely increase its throughput capacity.

Emissions reductions: By transferring a portion of the containers handled by rail to an inland location, there can be a significant reduction in the emissions levels. As we outlined in Section I, rail is a much more environmentally friendly mode of transport than truck. An inland port, and intermodal use in general, can result in significant environmental benefits across supply chains.

Economic Development: Economic Development is frequently the primary driver of public sector participation in inland port development. Inland ports themselves are not substantial job generators. However, the warehouse, distribution, and manufacturing space that locates around them can require a large number of local workers. In addition, the facilities and their use can result in increases in a wide range of local, state and federal tariffs, including sales, income, inventory, and property taxes.

3.3 - INLAND PORT CASE STUDIES

Below, we have profiled several US located inland ports. Each is relevant to the EPIP project through its success and/or failures.

3.3.1 - Alliance Texas Logistics Park - Alliance, Texas

At over 17,000 acres, Alliance Texas Logistics Park is the largest example of an intermodal logistics center in the United States. Considered the “grandfather” of US intermodal facilities, the project has its roots in a 1964 study of the Dallas-Fort Worth Airport operations conducted by the Federal Aviation Administration. This study, as well as one conducted by the North Central Texas Council of Governments, identified a need for a new “reliever” airport in each of the Metroplex’s four corners.

In the 1970’s and early 1980’s, Ross Perot began acquiring large parcels of land outside of the Dallas-Fort Worth metroplex as investments. One of the areas where he had amassed large holdings was the area surrounding the former Fort Worth Stockyards. This area had been prone to foul smells when the stockyard was operational. While the stockyards closed in the 1960’s, the stigma remained and land was priced accordingly.

Perot keenly understood that a traditional general aviation facility would be too small to truly benefit his other land holdings, which led to his negotiation for the FAA to build the country’s first all cargo airport. Perot made a contribution of a suitably long, skinny piece of land to the city of Fort Worth. This land was used by the city as their 10% equity contribution to the FAA for the development of a new reliever airport. In return, the city of Fort Worth agreed to provide the water, sewer and other infrastructure for the project.



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It didn't take long for the project to land its anchor tenants. When the airport opened in 1989, Perot's company, Hillwood Properties, had already secured arrangements for a BNSF intermodal facility, as well as an American Airlines Maintenance and Engineering Center. They were well on their way to successfully implementing what was a 40 year development plan. Today, at 40% build out, the Alliance complex is home to over 300 quality companies, with 62 of them on the Fortune 500, Global 500 and Forbes List of Top Private Companies. These companies come from a diverse range of industry sectors including telecommunications, pharmaceuticals, financial services, aerospace, aviation and the automotive industry. As a group, they have invested over \$5 billion into their facilities and positioned themselves as long term corporate partners within the community.

Figure 3.1: Alliance, TX Trade Routes



Source: www.alliancetexas.com

Location

The Alliance project is located 15 miles north of downtown Fort Worth and 15 miles west of the Dallas/Fort Worth International Airport. This is within a 20-minute drive from the 6.4 million people in the Dallas/Fort Worth



Metroplex, and within a one day's drayage (10 hours) of 48 million people in other areas of the US.

Road access has always been critical to the success of the project. Hillwood completed another public-private partnership with the Texas Department of Transportation to bring State Highway 170 through Alliance. In addition, State Highway 114 also serves the project. Finally, the project also has excellent international connectivity with a direct connection to Interstate 35W, providing access to both the Canadian and Mexican international markets.

Economic Impact

In 1988, before the Alliance project began, the land encompassing the project generated approximately \$90,000 of property tax revenue for the locality. Today, the same land generates over \$100 million of property tax revenues. In all, it is estimated that the project has contributed approximately \$36.4 billion of positive economic impact for the North Texas Region. Much of that benefit has been driven by the development of 31.2 mSF of new product. Alliance is also responsible for the creation of over 31,000 jobs and has an ongoing annual contribution of \$2.5 billion in economic impacts.

When the project began, the citizens of the city of Fort Worth were initially hesitant to accept the Hillwood proposal and use public funds for a new facility that carried so much risk. However, as the project has demonstrated its success and contributed so much back to the local economies, public support has dramatically increased.

Project Funding

Alliance is very unique in that, while it is a public-private partnership, the vast majority of the funding has come from private sources. To date, over \$7 billion has been invested in the Alliance project to develop buildings and the surrounding infrastructure. Approximately 95% of those funds have come from private sources, namely Hillwood and its partners. Over time, Alliance has received approximately \$390 million from public sources for roads, infrastructure and schools.

Facilities

Alliance is much more than a single location. In fact, the 11,000-acre Alliance Global Hub ("Alliance") includes multiple sub-developments which offer everything from intermodal connectivity to workforce housing.

Alliance Center - Alliance Center is a 2,600-acre complex that surrounds the airport and is targeted towards aerospace and aviation enterprises. The location has excellent transportation connectivity with direct access to interstate 35W. Alliance Center also has BNSF Railway service throughout the park for those tenants that require rail service at their facility.



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Alliance Air Trade Center - Alliance Air Trade Center offers 52 acres for air cargo related development. This sub-development has sites with direct access to the Alliance Airport runway system. In total, over 250,000 SF of air cargo related space is available. On the land side, the project offers direct access to Interstate 35W.

Alliance Commerce Center - This is a 300-acre business park targeting manufacturing and high-tech firms. The project, in the northern section of Alliance, can accommodate up to 1.7 mSF of distribution, light manufacturing, and high-tech aviation related uses. It is located within one-half mile of the Alliance Airport and also has direct access to Interstate 35W.

Alliance Gateway - Alliance Gateway is a 2,400-acre project offering distribution, manufacturing, and office space for large corporate users. Located on the eastern section of Alliance, the sub-development has direct access to Highway 170, is less than two miles from Highway 114, less than 4 miles from US 377 and less than five miles from Interstate 35W. Union Pacific Corporation serves the project and several tenants have taken advantage of rail access to their building.

Westport at Alliance - This project is a 1,500-acre development located between BNSF's intermodal facility and the Alliance Airport along the western edge of Alliance. Westport targets industrial and distribution tenants with multi-modal requirements. This project provides tenants with direct access to the BNSF Alliance Intermodal Facility, the Alliance Airport and Interstate 35W. Expandable to approximately 3,500 acres, there are future plans to include a trainload facility and container yard within Westport to accommodate future growth.

Other developments in the Alliance complex include the 1,400-acre Alliance Advanced Technology Center, the Heritage Reserve at Alliance for research and development firms, and the Circle T Ranch, home to a charter school and 18-hole golf course.

Air Cargo Services

Alliance is best known as the first purely industrial airport in the Western Hemisphere. The 7,500-acre Alliance Fort Worth Airport (AFW) officially opened for business on December 14, 1989 with a singular goal of serving business and industrial users rather than commercial passenger traffic. AFW provides a full complement of flight services for air cargo, corporate aviation and military aircraft operations. The 24-hour flight operations



can handle aircraft of any size on two runways that, when the extension is complete, will measure 11,000 feet. The extension of these runways was funded with \$4.5 million of Airport Improvement Program funds.

AFW has attracted over 30 companies to the facility occupying over five mSF of space. As mentioned above, the very first tenant at AFW was the American Airlines Maintenance and Engineering facility that opened in 1992. This \$482 million facility serves as the primary maintenance facility for the Boeing 767 and 777 aircraft used by American airlines. In addition, this facility maintains the Rolls Royce engines on any aircraft that American operates.

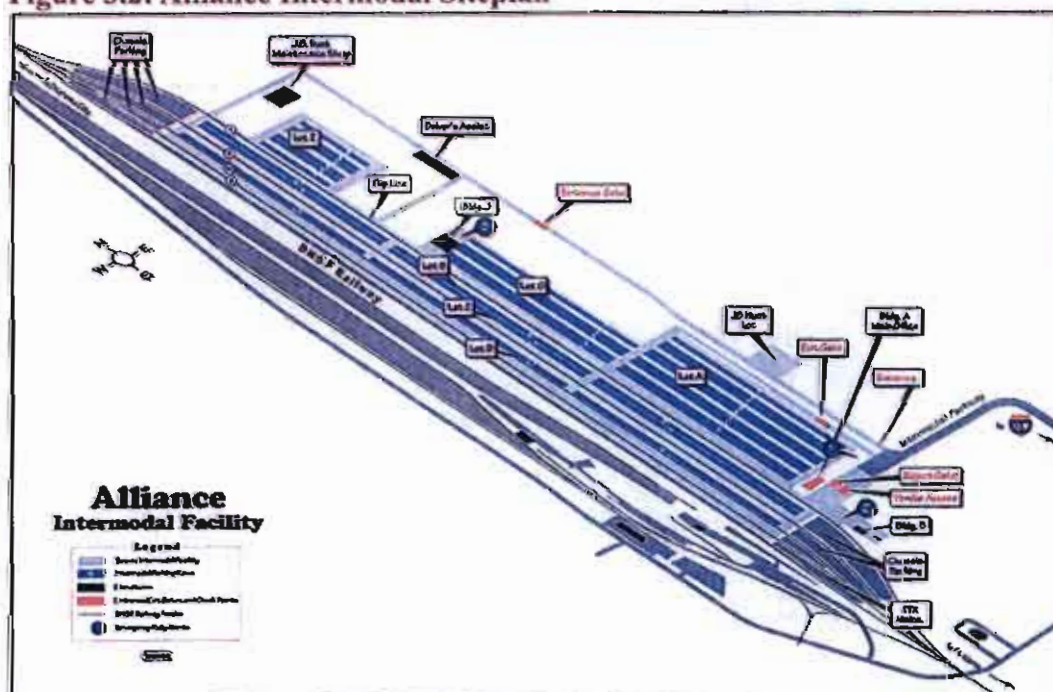
FedEx is also a major tenant at AFW, operating their 230,000 SF Southwest Regional Sorting Hub onsite. This facility processes over 175,000 packages a day and generates 32 flights arriving and departing nightly. The ability to operate on a 24-hour schedule, and specifically at night, was critical to FedEx's site selection decision.

Rail Intermodal

In the late 1980's the Dallas Area Rapid Transit system (DART) was conducting a site selection search to locate a maintenance yard. This search identified Santa Fe's Dallas Rail Intermodal Facility as the optimum location. Santa Fe agreed to relocate and combined the compensation from the city of Dallas with proceeds from the sale of other surplus properties and rail lines to fund its new intermodal yard at Alliance. BNSF selected their ideal site and purchased the land from Hillwood. While the \$100 million facility was funded by BNSF, the new intermodal facility was constructed by Hillwood Property and began operations in 1994.

The BNSF Alliance Intermodal Facility is located on the BNSF mainline on the western border of the Alliance project. The facility currently has 280 acres developed, with another 160 acres available for future development.

Figure 3.2: Alliance Intermodal Siteplan



Source: www.alliancetexas.com



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BNSF operates 12 trains daily at this location and generates over 600,000 lifts per year. That number is expected to increase to over one million lifts per year as the economy improves.

Hillwood and BNSF demonstrate the necessary symbiotic relationship between the intermodal yard and the surrounding development. Hillwood has designated 1,500 acres east of this facility for rail clients to establish distribution centers. These clients will, in turn, generate business for BNSF by using the intermodal yard. At the same time, Hillwood leverages the availability of the intermodal yard to attract new industrial users. Working together, they are able to generate more of their respective business than they could independently.

Auto Loading

In addition to the intermodal rail offerings, Alliance has a 55-acre traditional rail transfer facility for autos. This facility serves DaimlerChrysler, American Honda, Hyundai and other automotive manufacturers.

Amenities and Incentives

Hillwood has realized that in order to attract the highest quality tenants, it has to provide more than an excellent location and tremendous transportation access. Hillwood has worked with the state of Texas to offer Alliance tenants a number of economic incentives, including an Enterprise Zone designation and a Triple Freeport Inventory Tax Exemption, designed to encourage job creation and capital investment in the designated areas. These programs provide tenants with a significant financial incentive to locate within the Alliance complex.

In addition, Hillwood has worked to have the Alliance complex designated as a Foreign Trade Zone and provide foreign trade zone assistance through its own 3PL firm - Alliance Operating Services. Alliance's FTZ #196 has consistently ranked as the number one FTZ in the United States and allows duty deferment for manufacturers importing parts and/or exporting finished goods. Alliance also helps to facilitate international trade by having onsite US Customs Service facilities, allowing international flights to be cleared at the airport.

Lessons Learned

The Alliance Global Hub has been an innovator in integrating multiple transportation modes to facilitate trade. While there were some initial concerns from tenants about locating this far away from the Dallas metro area (20-minute drive), the access to multiple modes of transportation and its central US location has made Alliance a success. From its success, there are several key points which can be useful in our analysis of the EPIP project.

First, Alliance began as a concept to address an excess of unmet existing demand. The Dallas/Fort Worth Airport had a long history of serving the needs of the area and several reports projected out the future increases in that demand. One of the keys to Perot's success at Alliance was that he recognized there was a portion of the market that was growing and/or unserved and created a product to meet those needs. When the project opened in 1989, Perot's model had already been proven, with multiple tenants already lined up to take occupancy.

Second, scale has been one of the key drivers of the success at Alliance. At 17,000 acres, the project has



more than enough land to accommodate current and future needs. It has allowed Hillwood to add modality as needed, as well as give tenants the confidence that Alliance is a place where they can make a long term home. In addition, the available land has enabled Hillwood to branch out beyond warehouse and industrial space to address the workforce needs in the market.

This focus on addressing all of the needs of tenant companies, not just the warehouse and distribution space requirements, is one of the key aspects setting Alliance apart from other intermodal centers. Alliance has created a true community at its location by developing retail and housing options in conjunction with the intermodal park. Transportation and logistics operations require a wide range of employee levels and skills. The Alliance community can not only provide the suitable workforce, but can also educate and train them, as well as provide them with housing options.

Alliance continues to be the largest and most well respected example of an integrated inland port in the US. It serves a vibrant local market with a broad spectrum of modal options, while also providing easy access to the heart of the nation. In the absence of other constraints (land availability, transportation modes, capital constraints) it is an excellent example to be used as a model for future inland port developments.

3.3.2 - Virginia Inland Port - Front Royal, Virginia

The Virginia Inland Port (VIP) is a 161-acre intermodal satellite marine terminal located in Front Royal Virginia, 220 miles from the Port of Virginia in Hampton Roads. The concept for the VIP facility was first explored in the early 1980's, but planning did not begin in earnest until 1984 with a series of meetings between potential stakeholders. Although the railroad pushed for a longer haul than Front Royal provided, by January of 1987, an agreement had been reached between the Virginia Port Authority (VPA) and Norfolk Southern to service the facility. The 21-month construction cycle began in July of 1987, and the project was finished and operational in March of 1989.

At the time, Virginia had been losing much of the discretionary midwest cargo to the Port of Baltimore. The VIP facility was envisioned as a way to bring the Port of Virginia 220 miles inland and give shippers a shorter route to a maritime port. It was estimated that VIP could capture approximately 8-10% of that business, eventually representing 190,000 containers per year. VPA conducted a thorough site selection process, and eventually the site in Front Royal was selected for its proximity to interstates 66 and 81, as well as the availability of large, cheap tracts of rural land.

Facility

The VIP facility has 1,400 ft of common boundary with a main Norfolk Southern rail line. Onsite, the project has 17,280 feet of track distributed across five parallel tracks. These loading and unloading tracks are serviced by



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four straddle carrier cranes with 45 long ton capacities. Approximately 47 acres of the facility are paved, providing ample areas for loading, unloading, and onsite container storage. The project does contain room for future expansion within the 161 acre footprint, however expansion options outside the original acreage are extremely limited.

Project Funding

The Virginia Inland Port's funding structure has been one of its keys to success. The project was developed during a fortuitous political period with a willing governor, a successful special session of the General Assembly and broad public support through a favorable report from the citizen advisory Commission on Transportation. Because of this broad level of support, initial construction was 100% financed using funds from the Commonwealth. The construction and ongoing operations of the early years of the project were funded from a combination of user fees, transfers from Virginia International Terminals (VIT, its operator), and funds from the Virginia Transportation Trust Fund. This trust fund is comprised of set asides from certain taxes on gasoline, titling taxes, and sales and use taxes. The project did not utilize private financing and receives no funding from the local municipality.

The project was initially budgeted to cost \$7.3 million. During the construction of the facility the contractors hit substantial rock formations, and the final project cost escalated to \$13.3 million. Because the project was fully paid for and carrying no debt, it was able to absorb these initial cost increases, as well as the initial lean years of low demand. Without the pay-as-you-go funding from the Commonwealth, the VIP facility would likely not have survived.

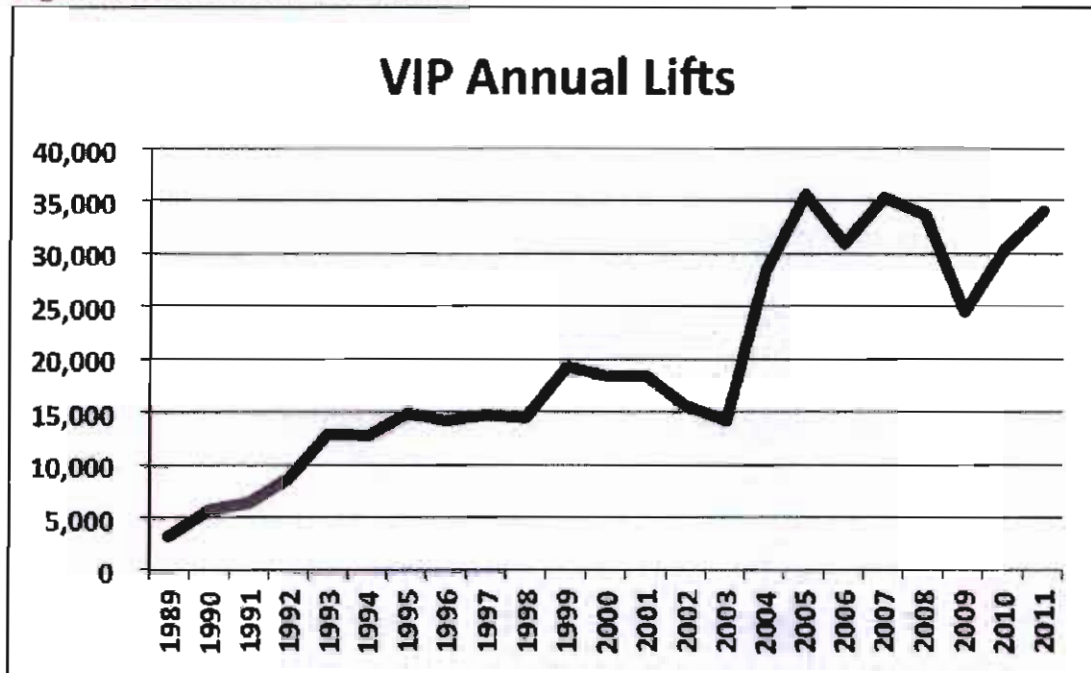
Operations

Figure 3.3: VIP Site Aerial





Figure 3.4: Historical VIP Volume



Source: Virginia Port Authority

The Virginia Inland Port is operated by Virginia International Terminals (VIT). VIT is a private organization established by the Virginia General Assembly for the express purpose of operating all of Virginia's port assets. Norfolk Southern is the Class I rail line servicing the facility and provides five trains per week service. VIP has supplemented its international intermodal service with domestic intermodal offerings. Norfolk Southern now provides full service domestic intermodal service to Atlanta, Chicago, Dallas, LA/Long Beach, Miami and New Orleans.

Users of the facility pay a flat fee of \$278 per load, regardless of size, to get a container from the maritime facilities in Hampton Roads, VA to the Front Royal facility. Given the 220 mile distance from Hampton Roads, this works out to \$1.26 per mile and is very competitive with road transportation options. The \$193 per container, \$0.88 per mile, repositioning charge for empty containers is much less than any motor carrier drayage rate.

As shown in Figure 3.4 above, the operations of the VIP facility were less than expected initially. While the Commonwealth had anticipated +/-20,000 lifts initially, in reality, it took them 10 years to achieve that volume. Once lift volumes reached the 20,000 mark, they declined slightly and remained at that level through 2003. When Home Depot opened their warehouse facility in 2004, the VIP project saw their volumes double. In 2007, when Ozburn Hesse opened its 500,000 SF facility, VIP saw another substantial jump in usage. Lift volumes have proven to be sensitive to the macro economic health of the economy and volume at the facility declined in the latest recession. Lift volumes are again increasing as the economy improves and should be approaching pre-recession levels in 2012.



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Amenities and Incentives

The VIP facility offers companies several important amenities that help to attract and retain users of the project. VIP is located within Foreign Trade Zone #185 (Culpepper County), allowing firms to defer import duty on parts and manufactured goods. In addition, the facility has onsite US Customs operations and is a US Customs dedicated port of entry for imported goods. Chassis are provided at the facility as an extension of the Commonwealth's VIT operated chassis pool, and reefer gensets are available for temperature controlled shipments. VIP can also provide USDA and SGS inspections, as needed.

In addition, the Commonwealth of Virginia has implemented several tax incentive programs targeted toward users of the maritime and inland port assets. The Port Volume Increase Tax Credit is a \$50 per TEU credit to any manufacturer or distributor of manufactured goods that increases volume through the port by 5% in a single year over a base year. The annual cap for this is generally \$250,000 per taxpayer and the Commonwealth has \$3.2 million available for the credit each year.

Through the Barge & Rail Usage Tax Credit the Commonwealth provides for a \$25 per TEU tax credit to companies that use barge or rail, instead of truck, to move cargo. To receive the credit, the tax payer must be able to demonstrate that the cargo would have otherwise traveled via truck over Virginia highways. This credit does not have an annual cap per code, and the Commonwealth provides \$1.5 million per year to this tax credit program. This credit is available through 2017.

The Commonwealth has also established the International Trade Facility Tax Credit to encourage new jobs or capital investment in an international trade facility. The credit is available to those companies moving 10% more cargo through a VPA port facility than the preceding tax year. The credit is either \$3,500 per qualified full time employee or 2% of qualified capital investment. In a Tobacco Dependent Locality, that benefit increases to \$7,000 per qualified full time employee or 4% of qualified capital investment.

Economic Impact

VIP has become an economic development success for the Commonwealth of Virginia. The Port of Virginia credits the VIP facility with attracting nearly \$750 million of private investment in the state. Approximately 40 major companies have located near the VIP facility including Home Depot, SYSCO Corp., Rubbermaid Commercial and Pilgrim's Pride Poultry. These companies and others have developed over eight mSF of new industrial product in the surrounding region. It is estimated that this has resulted in new business for the Port of Virginia in 95% of the cases.

Lessons Learned

VIP is one of the successful inland ports in the United States, but its path to success has been a long one, with anticipated volumes not materializing for many years. The lack of debt that needed to be serviced was one of the key reasons VIP was able to hang on through the lean years. The Commonwealth was also willing and able to commit



to a minimum level of service to attract users and a Class I railroad. Virginia agreed to a take-or-pay contract with Norfolk Southern to operate three trains per week at the facility in the early years, regardless of actual usage levels

Furthermore VIP has been successful because of its ability, and willingness, to be flexible in its business plan. This project was originally conceived to capture discretionary export business from the Ohio Valley that was heading to the Port of Baltimore. That business proved difficult to capture, and as trade patterns evolved, VIP was able to adjust and attract customers now importing cargo through the Port of Virginia. Even today the facility continues to be dynamic in its offerings and has added domestic intermodal options for its users. VIP's flexibility, enabling it to adapt to a rapidly changing logistics environment, will continue to be critical for its ongoing success.

While VIP has done many things correctly, there is at least one area where the facility would most likely do things differently, if given the chance. When the Commonwealth selected the location in Front Royal for the project, there were many large tracts of rural farmland available. In 1989, an inland port was a relatively new concept in the United States and the Commonwealth underestimated the potential for dramatic future expansion. In the 22 years since development, the area around VIP has developed into a bedroom community for Washington DC. High-end single family houses have developed around VIP, and a new golf course development has gone in directly across from the facility entrance. Land prices have increased dramatically and it is difficult for a new industrial user to find affordable land in close proximity. If they can find the land, rezoning it to industrial has become a Not In My Backyard (NIMBY) challenge.

If the Commonwealth had the ability to do the site selection over, they would likely target an intermodal facility of at least 1,000 acres to accommodate future expansion of onsite customers. In addition, more attention would be paid to zoning and land use planning in the surrounding area. This would proactively plan for the build up of freight and freight mobility related facilities from 3PL and distribution center users. It would also be important to buffer the residential uses from the freight and cargo related uses. This buffer is important for the residential and freight users, as it serves to protect the residential prices from being influenced by encroaching freight activities and protects the freight uses from NIMBY opposition.

3.3.3 - The Global TransPark - Kinston, North Carolina

The Global TransPark (GTP) in Kinston, North Carolina is an unfortunate example of an inland port project that has not been successful. This project began in 1990, when Governor Jim Martin requested a concept paper outlining the potential for a global air cargo industrial complex in the state of North Carolina. The concept outlined a world class facility that would integrate just-in-time manufacturing systems with freight systems, and the North Carolina Department of Transportation commissioned a study on the feasibility of creating such a complex.

This study concluded that a state-of-the-art airport would likely be surrounded by manufacturing, distribution and other support facilities. These interconnected facilities would leverage multiple modes of transportation to meet



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the efficiency demands of actively managed supply chains. The project was estimated to cost \$733 million, and would create 55,000 new jobs that would contribute \$2.8 billion annually to the North Carolina economy. The newly created Master Plan for the project called for a 15,300 acre facility with highway, rail and deepwater port access. The port access was from a planned intermodal facility that would offer users access to both Norfolk Southern and CSX rail lines. Using rail, users could import and export product through the ports in Morehead City and Port of Wilmington.

On the recommendations of the study, the state of North Carolina proceeded with the project and, in 1991, the General Assembly created the North Carolina Global TransPark Authority as an independent government agency located within the Department of Transportation. The new authority was independently governed by a 20-member Board of Directors. One of the first orders of business for the new authority was to select a site for the project, and 11 candidate sites were considered.

Kinston in Lenoir County was selected as the preferred site because it already had significant airport infrastructure in place. Surrounding this 2,500 acre site was a large amount of available, undeveloped, land to accommodate future expansion. The Kinston site also had the benefit of being located in close proximity to a number of military bases. Furthermore, the Kinston area was economically depressed and would benefit greatly from the economic development that this project was projected to bring. The Kinston site, however, was located 70 miles from the nearest major population center in Raleigh and did not have immediate interstate access.

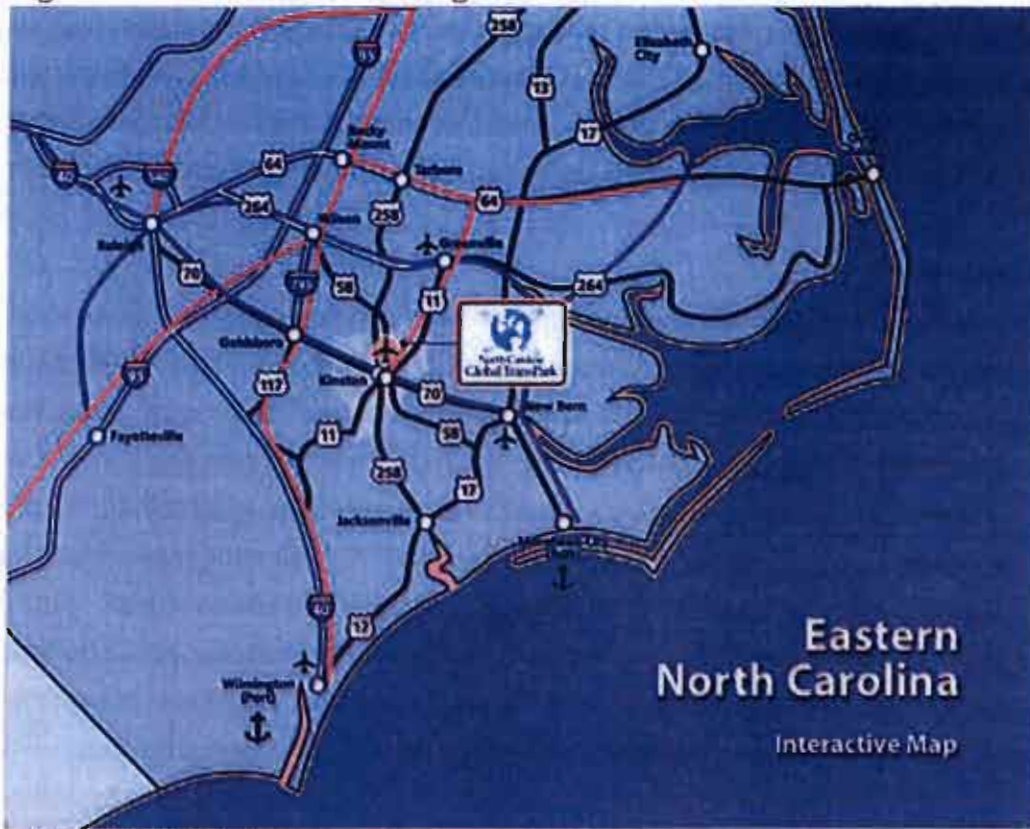
Funding

The Global TransPark is a state owned and operated facility. To date, the project has received nearly \$250 million in funding from local, state, federal and private sources. The state of North Carolina has provided the facility with \$42.3 million of state appropriated funds and an additional \$19.3 million in matching grants to be used for infrastructure within the park. The Department of Transportation contributed \$32.4 million for the construction of roads and the rail spur, while the FAA, DOD and Economic Development Association contributed an additional \$31.9 million. Lenoir County and the City of Kinston also contributed \$4.2 million for infrastructure and economic development incentives. The project has also received \$18 million in private capital financial support from the Global TransPark Foundation, a non-profit corporation chartered to support the business development efforts of the authority. Finally, North Carolina's tobacco settlement fund, the Golden LEAF Foundation, has contributed \$100 million as part of an incentive program to land a major tenant. The project has been fortunate in its ability to garner widespread financial support.

When the Global TransPark Authority was established by the General Assembly, the enabling legislation endowed the Authority with the right to take out a \$25 million loan from the North Carolina Escheat Fund. In 1993, the Authority exercised that right and borrowed \$25 million from the Escheat Fund. The Authority used \$22.5 million of the loan for buildings, land and environmental mitigation credits for the project. The remaining unused \$2.5 million was returned to the Escheat Fund along with an additional \$758,048. As of February 2011, the balance



Figure 3.5: Global TransPark Regional Access



Source: www.ncgtp.com

on the outstanding loan was \$39.9 million with a very near term maturity date.

A recent report to the General Assembly concluded that GTP has yet to make a profit or even come close to breaking even. In addition, the report concluded that GTP was unlikely to ever be self-sufficient and was unable to service the debt obligation to the Escheat Fund. Per the covenants of that loan, if/when the project is unable to meet its obligations, the responsibility falls to the state. The potential for this additional debt burden on the state has caused some to question whether the project should be abandoned. However, there is also the potential that if the project ceases operations, the FAA will require repayment of \$20.1 million in grant funds it provided. The future of this project remains unclear.

Facility

The Global TransPark project encompasses a total of 2,500 acres, with 604 of those having been developed. The focal point of the air cargo centered development in the JetKinston airport. In December of 2002, GTP extended their runway to 11,500 feet in an effort to enable Boeing 747-400 air freighters to utilize the park. GTP now has the longest runway in the state of North Carolina. JetKinston offers numerous sites with airfield access and has a 58,800 SF cargo building with both air and ground access.

When the project was conceived, a major component of its viability was access to multiple modes of



Section 3 - Inland Ports Defined

transportation. Despite a remarkable influx of funds, the project has not been able to offer tenants the projected multi-modal capabilities. For example, the project did not get rail access and the corresponding access to the ports, until 2011. The direct rail access to Morehead City was a requirement of one of the parks major tenants. SpiritAero needed to be able to export fuselage components it was manufacturing to France for incorporation into the Airbus 350. As of today, multi-lane access to the interstate highway system will not be complete until 2014.

Amenities and Incentives

The Global TransPark does offer its tenants a number of useful amenities and tax incentives. One of the most significant is the Spirit AeroSystems Composite Center located within the park. This 33,000 SF facility is a state-of-the-art conference center offering tenants access to an onsite conference, video conference, research, education and training center. In addition, the Authority coordinates workforce development programs with the local Lenoir Community College. These programs are custom designed to meet each company's specific needs.

The Global TransPark is also home to Foreign Trade Zone #214. This zone is comprised of three sub-zones in the Kinston and surrounding area. Site 1 is 1,170 acres onsite at the JetKinston airport. Site 2 is comprised of 35 acres at a 175,000 SF warehouse operated by Kanaban Logistics. The final site, Site 3, is located at a 500,000 SF warehouse in Rocky Mount, NC that is operated by Crown LSP Group. FTZ #214, like all FTZ's, allows users within its boundaries to defer duty on parts and manufactured goods until they leave the zone.

North Carolina has a number of economic incentives that it can offer companies who may be locating within the GTP project. At the project, it is possible for a company to have no inventory or intangibles tax. In addition, there is no sales tax on raw materials. Finally, because the land at GTP is owned by the Authority, there is no property tax on those parcels. All of these offerings, plus the fact that North Carolina is a right to work state, serve GTP well as they attract companies to their project.

Lessons Learned

The Global TransPark is an interesting case study in the development of inland ports. The North Carolina General Assembly and the Global TransPark Authority did much correctly. For example, GTP had tremendous public sector support and sought to provide multiple modes of transportation, they acquired enough acreage to accommodate future expansion and they even have provided their tenants with a sizable amenity and incentive base, as well as an FTZ to facility trade. Yet, the project still has not lived up to expectations and it is projected that the project has resulted in the creation of 372 jobs, far short of the 55,000 new jobs anticipated in the Master Plan.

The primary lesson to be learned from GTP experience is the importance of location, markets and existing customer demand. The location decision of GTP appears to have been driven more from a desire to help out a struggling locality than the selection of the ideal site. The chosen location in Kinston, NC is too far from a substantial population base to make GTP a reasonable hub for distribution and logistics companies. In addition, the lack of multi-lane access to the interstate system is non-competitive with other offerings in the market. While that



access is coming in 2014, it needed to be in place 24 years ago when the project began.

Because the improved road and rail access has been slow in materializing, the project has been forced to target predominately air cargo and aerospace related tenants. At best, this is an extremely narrow niche of the market to be reliant upon. Having in place road and rail access would allow GTP to target a much broader range of users.

It is doubtful GTP will ever be able to justify the development of an intermodal logistics park on the project site. While it does have access to both Norfolk Southern and CSX, the project is on the mainline of neither. This will necessitate either the inclusion of a short haul rail line into the supply chain, or a time consuming roundabout switching effort for the Class Is. Without a major rail intermodal operation onsite, GTP will continue to be an air focused industrial park. That is not necessarily bad, it is just a vast deviation from the original business plan.

One final lesson to be learned from GTP involves the connection to the port. With the help of SpiritAero's requirements, the project has been able to get rail service to the port in Morehead City. Morehead and the Port of Wilmington are both smaller, niche ports. They have not traditionally been major import/export centers for containerized cargo and are unlikely to generate the kind of import/export volumes to the project would need to justify a five-day-a-week rail service to GTP.

The surrounding area for the selected site did not have a strong enough market or existing customer demand to warrant the facility at the time it was developed. Developing an inland port like GTP is rarely, if ever, a "build it and they will come" type proposition. To be successful, there needs to be a latent, unmet demand that this project can address. GTP does not appear to have had that unmet demand in the market and, despite doing so many other things well, is struggling because of it.

3.3.4 - Kansas City SmartPort - Kansas City, Kansas

The Kansas City SmartPort is unlike any of the other inland ports that we have profiled in this report. Rather than being asset based, it is a virtual port or e-port. The Kansas City SmartPort is a non-profit economic development organization that is specifically dedicated to promoting and enhancing the Kansas City region as a leading North American Logistics Hub. It focuses its efforts on an area within an approximate 70-mile radius of downtown Kansas City. This area includes two states, 18 counties, and 50 cities. The non-profit is served by a 20 member Board of Directors, which is comprised of stakeholders from the public and private sectors, mostly related to logistics, commerce, and transportation. It is a very unique arrangement where members work together to promote the common good, even though they may directly compete in daily business. It is a testament to the commitment and professionalism of the members that the effort has been as successful as it has been.

The project began in 1999 with the completion of the Mid-Continent TradeWay Study. This report was commissioned jointly by the Mid-America Regional Council, the Greater Kansas City Chamber of Commerce, and the Kansas City Area Development Council. Its stated purpose was to "determine the feasibility and natural benefits

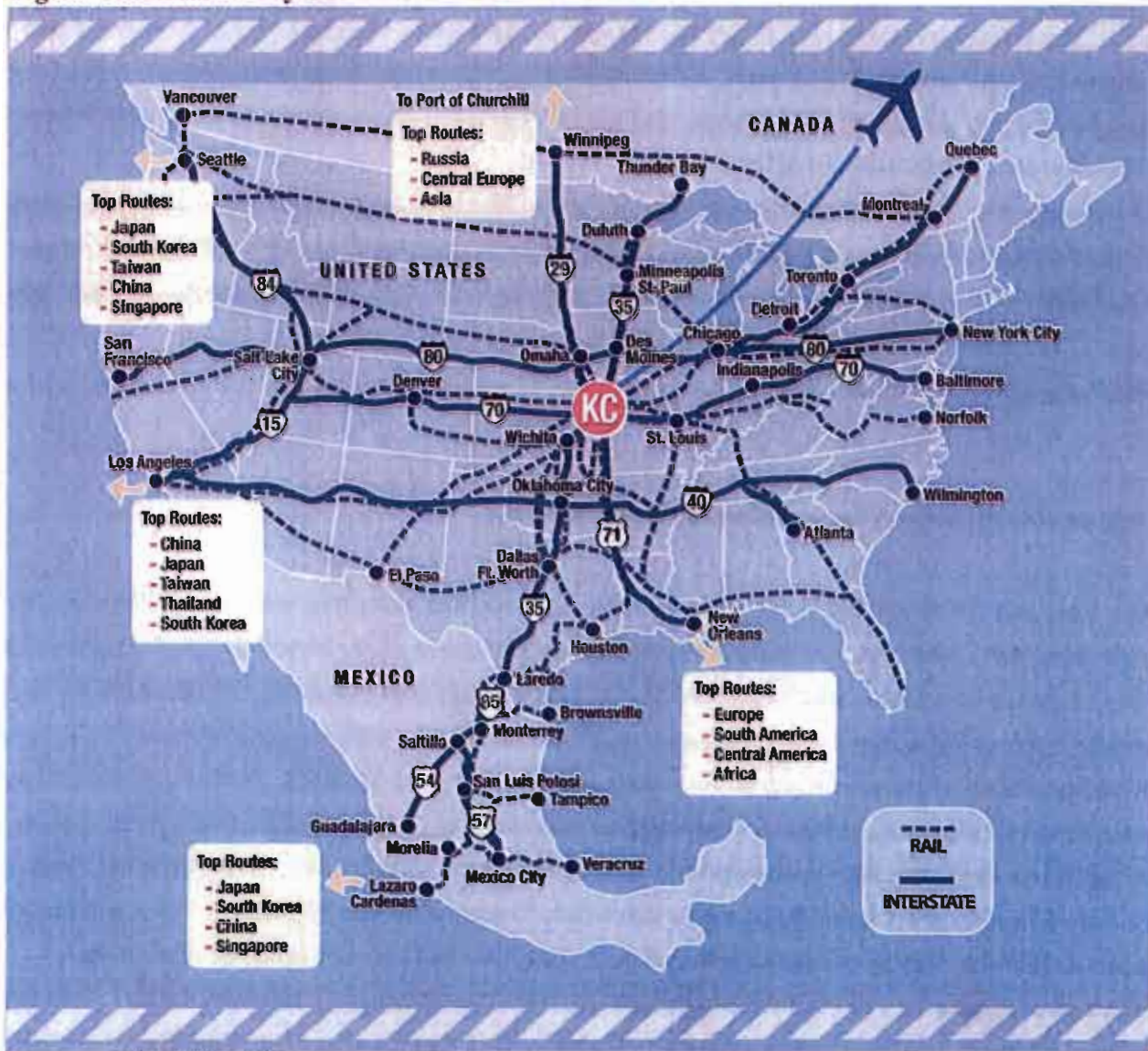


Section 3 - Inland Ports Defined

of establishing the Kansas City region as a place where international trade processing activities can be carried out". One of the key recommendations of the report was that the region should create an economic development group to serve as the facilitator of trade, leveraging technology wherever possible.

In 2001, the Kansas City SmartPort was founded with three key objectives. First, the SmartPort should serve an economic development function, working to attract distribution, warehousing, third-party logistics, and manufacturing private investment. Second, the SmartPort should facilitate trade data exchange by developing a form of freight community system to improve supply chain visibility through inventory and shipment tracking, reporting and invoicing. Third, the Smartport should work to bring logistics focused business service companies to the area such as those enabling customs and foreign trade zone activities. While the project began with initial funding

Figure 3.6: Kansas City SmartPort Trade Routes



Source: www.kcsmartport.com



from the Kansas Department of Transportation and the Missouri Department of Transportation, the SmartPort is now operating primarily on private funds. The SmartPort has received federal government grant funding for the development of Intelligent Transportation Systems (ITS).

The Kansas City location has historically been a transportation oriented location and it is estimated that freight and logistics were responsible for \$900 million of economic impact and over 40,000 jobs in the area before the creation of the SmartPort. The Kansas City region boasts:

- Interstate access to I-35, I-70, I-29 and I-49
- A location 2/3 of the way from LA to Chicago
- The highest volume of rail traffic, by tonnage, in the US
- 4 substantial intermodal facilities
- Logistics Park Kansas
- KCS Intermodal Center
- KCI Intermodal Business Center
- Northland Park
- Is the third largest trucking center in the US
- Largest underground warehouse space in the world
- Largest navigable inland waterway
- Largest air cargo facility, and
- Over 10,000 acres of Foreign Trade Zone - more than any other city

The market already had proven demand for logistics in the Kansas City area, and the SmartPort effort enables companies to realize additional efficiencies from within their supply chains. The SmartPort is brought into the site selection process when prospects are looking in the Kansas City region to provide them with transportation solutions. They maintain an extensive repository of available sites in the area and can help determine the critical elements of a transportation system needed for a tenant's new investment. In addition, the SmartPort coordinates with the area development council in all marketing and promotional events to present a cohesive message of Kansas City's logistics advantages.

The Kansas City SmartPort has been instrumental in the proactive promotion of supply chain education. It is responsible for bringing together a number of education institutions to create specialized training programs in critical sectors where there is the potential for labor shortages. Many of the transportation and logistics activities that the SmartPort promotes require a wide range of labor skills. When you have a high density of freight and logistics companies in one region, there is the potential for a rapid depletion of the available labor supply. The SmartPort, through its educational efforts, works to get ahead of those requirements and assure local companies that there will be qualified employee options across the entire spectrum of skill set requirements.



Section 3 - Inland Ports Defined

Lessons Learned

The SmartPort is unique among inland ports in that it is not asset based. The SmartPort does not own or operate any of the transportation and logistics infrastructures. It serves to promote the region, promote the logistics industry, and to promote the infrastructure assets that are in place, but controlled by others. At the same time, the Kansas City SmartPort has taken the initiative to create information technology based solutions that help area companies be more efficient in their goods movement. It is an innovator in the logistics market and potential companies recognize that benefit.

It is important to note that the SmartPort concept was not created to spur economic development in an area that previously had none. Instead, it was created to serve an area with a long history of transportation and logistics importance. Its creation was a vehicle to enhance the services to this sector and expand its importance to the region.

The SmartPort is an important model for regions that include multiple states, counties, cities and/or other actors. The Kansas City SmartPort has shown that coordinating efforts across such a wide range of groups can be successfully accomplished, as long as the overarching goal is clear and agreeable to all.

3.3.5 - Conclusion - Case Studies

The inland ports we have profiled above allow real world insights into how projects achieve success, and how they may struggle. Alliance Texas serves as the model facility that most new projects hope to emulate. They began with a source of pent up demand and have expanded beyond warehouse and distribution space to include workforce housing, office, and retail components. Their success continues to build upon itself as more world class companies locate in the facility. The VIP facility in Virginia struggled in its early years, but is now a vibrant, successful project. VIP demonstrates the importance of fiscal and physical planning. VIP's conservative funding structure allowed it to weather the early lean periods. As the project continues to grow its users, it is finding non-compatible uses have taken root around the facility and warehouse sites are increasingly difficult to find.

The Global TransPark facility in North Carolina provides a sobering reminder that inland ports are not "build it and they will come" proposition. After spending considerable sums of private and taxpayer money, the project is still in search of a source of demand for its facility. Finally, the Kansas City SmartPort example demonstrates that an inland port can exist without bricks and mortar. This economic development entity is vitally important to a broad geographic region, attracting transportation and logistics users to a number of intermodal facilities. It perhaps the most applicable of the examples to the EPIP project, and should be considered a model for the study location to leverage the intermodal assets that have been built in the immediate area.



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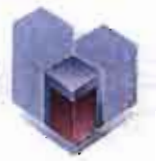
4.0 - KEYS TO INLAND PORT SUCCESS

In the previous section, we have identified five unique classifications for what is considered to be an inland port. When successful, projects within any of the identified classifications can provide benefits to the public and private stakeholders associated with it. It is important to understand what it is that makes an inland port successful. Specifically, what physical, market and political characteristics does it need to be successful? This section we will briefly review some of the available literature on this topic and then provide a discussion on the six keys to success that the study team has identified for an inland port.

4.1 - LITERATURE REVIEW

The professional and academic literature is replete with discussions and suggestions for what is necessary in order for an inland port to be successful. However, very few of the authors agree on exactly what those characteristics should be. It seems there are as many opinions on this subject as there are definitions of what exactly constitutes an inland port.

In a 1999 article in *Transportation Quarterly*, Harder (Harder, 1999) discusses strategies for developing new



Section 4 - Keys to Inland Port Success

inland ports. Harder provides communities with some insights into what site selection criteria the private sector uses when looking for locations to establish an inland port location. Harder suggests that private investors are targeting larger metropolitan areas for their presence of consumers and the expected higher financial return. For smaller communities, Harder suggests that strong public support and promotion will be required to attract private sector stakeholders. Harder provides four key needs that a smaller community should address and understand before beginning to market their location as a potential inland port location. Those needs are:

1. Sufficient demand for intermodal freight transportation
2. Local supply of competitive motor carrier service
3. Practical basis for successful community relationships
4. Adequate public/private capital to fund development

Gooley's 1998 article (Gooley, 1998) in *Logistics Management and Distribution Report* takes a slightly different approach and looks at the situation from the perspective of a company's need for strategic positioning. In today's sophisticated site selection environment, companies will locate only where they can derive the most economic benefit and operational efficiencies. While Gooley was primarily focused on manufacturing and distribution facilities, the same site selection considerations are applicable for inland port projects. After all, it is the manufacturing and distribution tenants that an inland port is seeking to attract to its location. Gooley's site selection factors include:

1. Physical infrastructure
2. Proximity to suppliers and customers
3. Political and tax considerations
4. International trade considerations

The IBI Group, a Canadian transportation consultancy, examined the potential for an inland container terminal to be located in British Columbia. Their technical report (IBI, 2006) looked at not only the viability of a facility given the market demand, but also what drives locational decisions. In their 2006 report, they outline five key characteristics as key success factors for an inland port:

1. Near the center of production/population for a catchment area which can generate sufficient demand to ensure terminal viability. Dependence on a single customer or shipping line can be a major risk.
2. Availability of suitable land for initial construction and expansion. This requires the adoption of appropriate land use policies by the responsible authorities.
3. Good mainline rail connections and competitive rail service. Dependence on a single rail line and/or



rail service provider can be a significant risk to terminal viability.

4. Direct connection to a major highway network.
5. A phased development approach which can limit initial capital requirements.

Private developers interested in developing inland ports have also put together lists of critical needs and requirements for inland port success for conference presentations and industry newsletters. One of the most notable comes from Hillwood, the developer of the Alliance project in Texas. Hillwood believes an inland port like Alliance can only succeed in four or five key locations in the United States. This is primarily because metropolitan areas that have a large enough population base frequently do not have large enough parcels of available industrial land to support such a large scale development. Hillwood's requirements for inland port development are:

1. Base population of 3 million
2. Multiple transportation modes
3. 5,000 to 10,000 acres
4. Tax and local incentives
5. Strong employment base
6. Telecommunications infrastructure
7. Foreign Trade Zone status

Finally, it is interesting to consider the criteria that Class I railroads require when they are looking to site a new intermodal facility. CSX has recently been in the market looking for a replacement location for their terminal currently located on dock at the Port of Baltimore. They have established five main criteria for a site to be considered:

1. Be on the mainline
2. Be rectangular in shape
3. Have a minimum size of 100 acres
4. Have compatible zoning in place
5. Have interstate access

4.2 - SIX KEY CRITERIA

From our review of the literature, other existing inland port facilities, and discussions with industry practitioners, the study team has distilled our own list of six key requirements for the success of an inland port. While these are universal to any inland port project, they are just as applicable for the EPIP inland port project. Our analysis shows that a project must possess these characteristics, or have a clear path to obtaining them, if it is to be



Section 4 - Keys to Inland Port Success

viable. Our established categories for a successful project are:

1. Sufficient modal capabilities
2. Existing, unmet demand
3. Locational advantages
4. International trade facilitation
5. Local and political support
6. Phased development approach

Sufficient Modal Capabilities: It should come as no surprise that the existence and availability of transportation assets tops the list of required items for an inland port development. By their very definition, inland ports are facilities where multiple transportation modes are available. Since approximately 75% of all freight travels via road, interstate highway access is a must. Beyond road access, it is important to have an additional mode of transportation available. This can be water, air, or rail, but rail is the most prevalent.

Existing, Unmet Demand: Transportation assets alone cannot ensure the success of an inland port project. It is critically important to have a good base of potential customers that will use the facility. There must be sufficient freight cargo moving into, out of, and through the potential catchment area. In addition, the area needs to have sufficient motor carriers, logistics firms and freight forwarders to generate and support the required inland port operations. Finally, this demand needs to be available to be captured by the new project and not satisfied elsewhere.

Locational Advantages: In practice, this requirement takes on a number of different forms. In order to be successful, an inland port must be located near a sufficient population base to generate the required demand. In addition, the inland port facility needs a specific site, of a suitable size and configuration, that has the necessary utility infrastructure in place. There also needs to be a suitable buffer in place between the facility and other non-compatible uses. At the same time, the population in the immediate area should provide a workforce with the required skills to satisfy the wide range of jobs required.

International Trade Facilitation: It is critical that a project have Foreign Trade Zone status and United States Customs onsite or nearby, or at a minimum have a clear path to get these services. One of the clear differentiators between an inland port and a traditional industrial park is the provision of value-added services to the international supply chain. FTZ's and Customs are a critical part of this. While most of the existing inland port developments have focused on imports, the growth in American manufacturing may bring this back in balance. FTZ's are especially beneficial for manufacturers that import components and re-export finished goods. As businesses and supply chains become more technology dependent, successful inland ports will need the appropriate IT infrastructure backbone



and resources to facilitate trade. Electronic Data Interchange (EDI) systems or other technologies are a necessary component of the international trade facilitation need.

Local and Political Support: In almost every case of an existing inland port project, it has taken a unique combination of public and private support to bring about success. Typically, the public procurement of suitable land has been a critical factor to success. In addition, willing and able local and political support is necessary to enact zoning changes and protect areas from non-compatible uses. In some cases, taxation and bonding privileges have been used to sustain the inland port before tenants locate and begin paying rent. Finally, it is critical to have the local and political support in addressing the inevitable not-in-my-backyard (NIMBY) opposition that arises.

Phased Development Approach: An inland port project is a long term project requiring a significant capital investment. It is important to plan ahead for the long term, but execute the project in reasonable phases. This helps to limit the initial capital investment as well as the debt obligations that the project will need to service in the early lean years. Historically, the most successful inland port projects are those that were prudent with the size of the initial phases and the corresponding debt loads. These projects progressed in such a way that capital outlays directly correlated with increases in tangible demand. While approaching the project in manageable chunks is advisable, it has to be balanced against the critical need to control future development land upfront.

4.3 - CONCLUSION - KEYS TO INLAND PORT SUCCESS

The six factors discussed above are those that the study team has identified as critical to the success of an inland port project. They represent the minimum that a project needs to be successful, though even with all six criteria in place, success is not guaranteed. In the next section, we will further examine each of these six criteria as they specifically relate to the EPIP project and its viability.



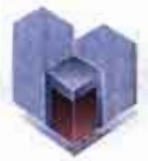
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5.0 - EPIP CAPABILITIES

The previous section outlined a number of the critical factors that are required for an inland port project to be successful. These represent the minimum qualifications necessary, but possessing them does not guarantee success. While each of the criteria are important individually, a project must include aspects of all of them to have the potential to be successful. Section 5 will examine each of these required criteria as they specifically relate to the EPIP project.

5.1 - EPIP MODAL CAPABILITIES

Integral to the feasibility of a multimodal inland port facility is the condition, capacity and proximity of the transportation network that is to serve the facility. Proximity and general condition of the three modes of product transportation were discussed at some length in the Eastern Panhandle Inland Port (EPIP) Master Plan (2002). This feasibility study examines the capacity and serviceability of these available modes, and identifies any known proposed improvements to the infrastructure network.



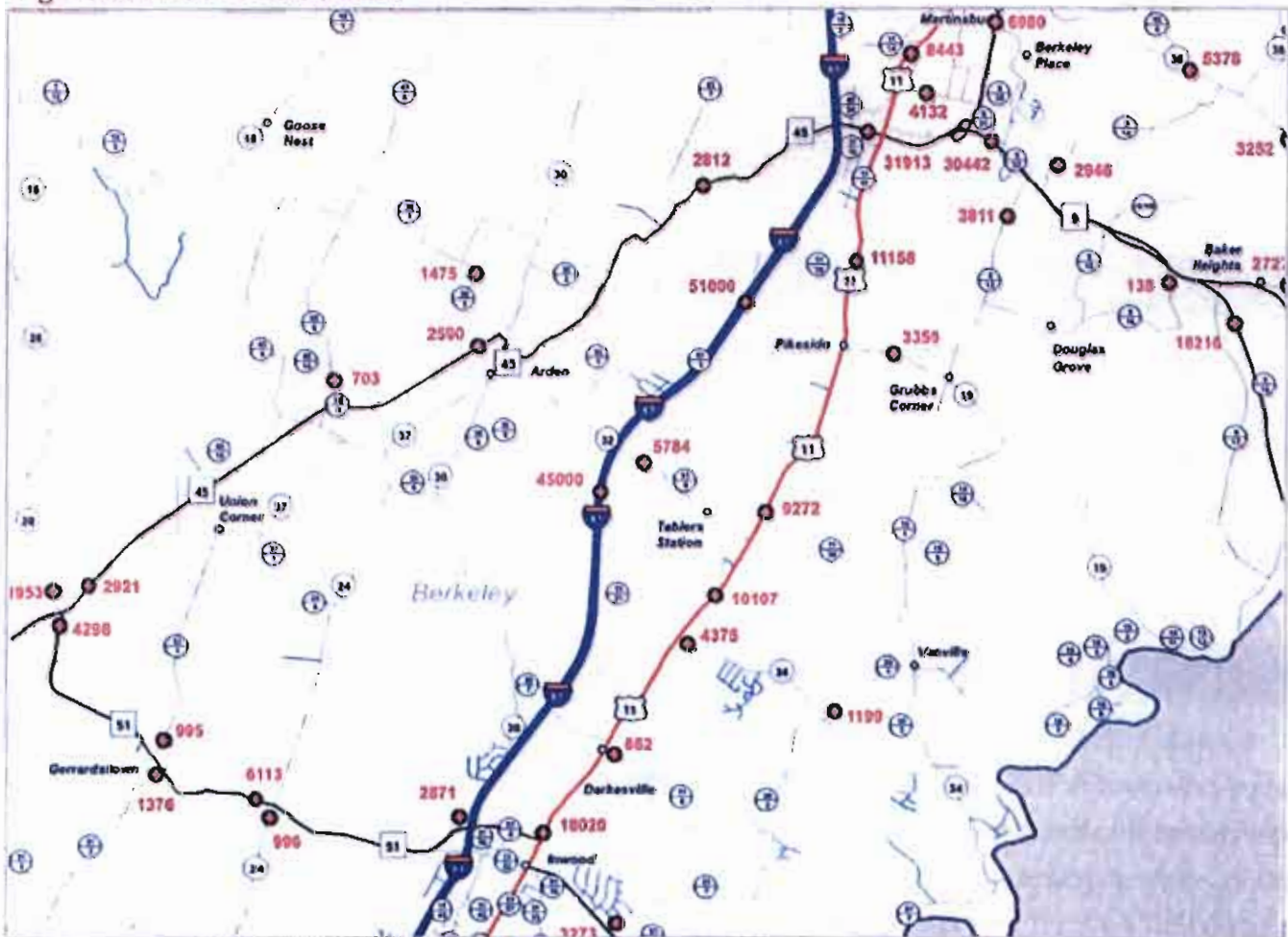
Section 5 - EPIP Capabilities

5.1.1 - Interstate 81

The subject site, as was noted in the EPIP Master Plan, has direct access to Interstate 81, which connects Berkeley County to Interstates 70 (to the north, 22 miles) and Interstate 66 (to the south, 33 miles). Interstate 81 is an essential national trade route, serving as one of the top eight truck routes in the US and providing a major alternative to congested Interstate 95. It has been estimated that approximately 12% of the US Gross Domestic Product travels on some portion of the I-81 corridor. The proposed inland port facility at the subject site will have access to I-81 via a relatively short (less than 1 mile) section of Business Park Drive and its presently high functioning interchange (Exit 8).

According to traffic counts compiled by WVDOH in 2011, the interstate segment just south of the Tabler Station Road interchange witnessed an average of 45,000 vehicles per day; the segment just north of this interchange witnessed an average of 51,000 vehicles per day. Truck traffic typically exceeds 30% of average daily traffic (ADT) on these sections. A schematic of 2011 ADT witnessed on the surrounding roadway network can be found below.

Figure 5.1: I-81 Traffic Counts



Source: www.transportation.wv.gov



These traffic loads, spread over four divided lanes (two in each direction in the project's immediate vicinity), greatly exceed the original design load when the interstate was first planned in the late 1950's and early 1960's. At that time, maximum load on 4-lane sections of I-81, such as the section in this area's study area, was designed to serve 30,000 vehicles per day with approximately 15% truck traffic (note: design load should not be confused with absolute capacity, which is a function of travel speed, peak hour loading and several other factors).

Due to the existing traffic loads and anticipated growth in the region, methods of increasing the interstate highway's capacity have been studied at considerable lengths and remain a priority focus of the state. The interstate is already six lanes in the vicinity of Martinsburg, and work to widen to six lanes between Martinsburg and the northern state line is nearing completion. Additionally, the West Virginia Multi-Modal Statewide Transportation Plan (2010) describes the widening of I-81 to six lanes between the Virginia state line and the southernmost exit at the City of Martinsburg as a "priority project" for its 2034 outlook, with a benefit-to-cost ratio of 1.29. This project, 11.6 miles in length, would add significant capacity and serviceability to the highway, but includes an approximated \$81.6 million dollar price tag. Securing of the necessary funds has not occurred to date, and the project has not been included in any of the state's five-year transportation improvement plans.

Business Park Drive would likely serve as the inland port facility's direct access to I-81. The existing interchange at Business Park Drive (Exit 8) is high functioning for the current traffic levels experienced. Both interstate highway exit ramps are of "taper" design, meaning they do not include any speed change (deceleration) lane length prior to vehicles entering the interchange ramp. Both entrance ramps are of "parallel" design, meaning that they do have a length of speed change (acceleration) lane prior to vehicles merging with highway traffic. These designs are more than adequate for the volume and type of traffic that the interchange presently serves. The possibility exists, however, that some modifications may be warranted should an inland port facility be developed with primary access via this interchange. Interchange ramps with heavy truck traffic percentages are often best served with speed change lanes, typically of length greater than what presently exists at the Tabler Station entrance ramps. Warrants for implementation and/or lengthening of speed change lanes at these locations is a matter that should be studied if and when design of an inland port at this location is further developed.

Business Park Drive is suitable for heavy loads such as those associated with an inland port, as it has been designated as an "80,000 lb Route" (applicable gross vehicle weight limit) by the West Virginia Department of Highways. However, it should be noted that pavement design may need to be evaluated once a traffic analysis for a proposed development has been completed. An internal WVDOH memorandum dated June 10, 2011 referencing pavement design of Tabler Station Access Road (later renamed Business Park Drive) indicated anticipated truck traffic percentages in the range of 4-6% for the design year of 2031; these percentages, as well as overall AADT, would be much higher if an inland port facility were developed in this vicinity.

Nearby weigh stations are located at mile marker 304 (northbound and southbound, south of Stephens City) in Virginia, and at mile markers 2 (northbound, south of Inwood) and 28 (southbound, north of Marlowe) in West



Section 5 - EPIP Capabilities

Virginia. In Pennsylvania, a weigh station is located at mile marker 7 (northbound, north of Greencastle). There are no weigh stations along I-81 in Maryland.

5.1.2 - Eastern West Virginia Regional Airport

The Eastern West Virginia Regional Airport (airport code MRB) is located adjacent to the subject site (1/2 mile to industrial railroad spur), on approximately 1,005 acres. MRB is owned by the Eastern West Virginia Regional Airport Authority, and is categorized as a “reliever airport” by the National Plan of Integrated Airport Systems for the years 2011-2015. As stated in the EPIP Master Plan, MRB utilizes an 8,800’x150’ (gross length) fully instrumented (ILS and VOR Alpha) runway capable of launching and landing C-5 A military and 747 civilian aircraft (maximum weight capacity in excess of 600,000 lbs). The MRB also includes a 200’x2000’ civilian parking ramp, capable of handling all corporate aircraft, to include light to medium airfreight aircraft. The primary runway at MRB is the longest in the state; only ten others in West Virginia are more than 5,000’ long.

The airport is equipped with an Instrument Landing System (ILS) and High Intensity Runway Lights (HIRL), enabling safe landings during instrument meteorological conditions (IMC) and low visibility scenarios (night, fog,

Figure 5.2: 24 Hours of Air Traffic Over North America



Source: Google Maps



rain, blowing snow, etc). The airport is also equipped with an Automated Surface Observation System (ASOS), providing minute-by-minute weather condition observations and generating Aviation Routine Weather Reports (METARs) and Aviation Selected Special Weather (SPECI) reports.

As evident in Figure 5.2 above, MRB is located near the epicenter of eastern-US air traffic, providing a central hub to existing dominant shipping routes.

In 2007, there were 52,750 listed aircraft operations out of MRB. More current data is not readily available, but operations are somewhat lower due to lack of C-130 flight traffic.

There are currently 87 light aircraft based at the general aviation facilities; 35 of these are based at the civilian terminal. Excess capacity exists primarily in tie-down space.

MRB's runway 26/08 creates an approach bearing of 259-degrees. As can be seen in the schematic above, this approach angle is non-encroaching on the proposed site. As such, there are no expected conflicts between approach/takeoff flight paths and the height of intermodal cranes to be utilized onsite. Berkeley County has designated and maintains restrictions on several variations of Airport Zones, which restrict the use and building types within the airports area of influence, but none of these zones affect the proposed site. These Airport Zones can be found as part of the EWVRA Protection Map, and are detailed in the County ordinances.

Landing and hangar rental fees at MRB generally fall in the middle realm of West Virginia airports, but are lowest in the immediate tri-state area. As described below:

Figure 5.3: Area Landing Fees

Landing Fees	MRB	PIT (Pittsburgh)	IAD (Dulles)	BWI (Baltimore)
6,500 lbs. and less	no fee			
6,501 - 12,499 lbs.	\$10.00			
12,500 - 19,999 lbs.	\$15.00			
20,000 - 39,999 lbs.	\$22.50	\$3.51 per 1,000 lbs.	\$3.70 per 1,000 lbs.	\$3.80 per 1,000 lbs.
40,000 - 59,999 lbs.	\$30.00			
60,000 - 79,999 lbs.	\$37.50			
80,000 - 99,999 lbs.	\$45.00			
100,000 lbs. or more	\$52.50			

The runway is expandable to 9,000', though this expansion would require the acquisition of additional properties for relocation of the ILS and middle marker. This expansion would also require the relocation of an adjacent secondary road. No formal plans for such expansion have been developed to date.

Prior to the West Virginia Air National Guard, a longtime tenant of MRB, converting from C-130 aircraft to the much larger C-5's in 2004, MRB was home to a crosswind runway (17/35). This runway was removed as part of the conversion project, in order to lengthen runway 26/08 and provide additional ramp areas and service buildings for the C-5 aircraft. Since that time, plans have been discussed for replacement of the crosswind runway. To date, plans have been partially developed (estimated at 85% complete), but no funding has been secured for construction. The replacement runway construction is estimated at approximately \$4 million.



Section 5 - EPIP Capabilities

The Authority maintains a Five Year Capital Improvement Plan (CIP), a list of proposed development projects planned for the airport. These projects are contingent upon funds available from federal, state, and local governments, and are subject to change annually according to priority and finance availability. Historically, approximately 90% of projects designated by the CIP are brought to fruition. The current CIP (revised April 4, 2012) designates the following projects:

Figure 5.4: Airport CIP Projects

Year	Project Description	Federal Share	
2012	Acquire Misc. Land	90%	\$150,000
2013	Acquire Misc. Land		\$150,000
2014	Acquire Misc. Land		\$150,000
2015	Update Airport Master Plan		\$250,000
2016	Noise Mitigation Measures for Residences within 65-69 DNL	50%	\$1,500,000

5.1.3 - Winchester & Western

An active industrial spur of the Winchester & Western Railroad is located immediately adjacent to the project site in question. The W&W line is exclusive to freight, with a majority of such freight supplied by the quarry owned by its parent company, Unimin (Gore, Virginia). As stated in the EPIP Master Plan, this spur traverses in a north-south alignment, connecting the site to the City of Martinsburg, as well as CSX and Norfolk Southern rail lines. The spur is capable of handling freight loads of up to 286,000 lbs and is in a state of good repair.

Presently, the line serves one train per day, traveling from south of the site northward to Hagerstown in the morning, with a return trip southward in the afternoon. Trains, on average, carry an approximate forty cars. According to W&W, the line is operating at approximately 33% capacity; the existing train has potential to service additional trips, or additional trains could be added to the line.

Capital improvements vary by year. A total in excess of \$6 million was invested over the past two years, in the form of additional siding and spur south of the site. Looking forward, W&W anticipates the investment of

**Figure 5.5: Winchester & Western Route Map
Winchester & Western Railroad Co.**





approximately \$1 million annually over the next five years, in the form of side storage lines.

5.1.4 - EPIP Intermodal Capabilities

Currently, there is no intermodal infrastructure located at the subject site. However, in close proximate location to the subject site are three existing intermodal facilities. Combined, these facilities have a capacity to handle over 350,000 lifts per year. At present, they are only utilizing less than 40% of their projected capacity.

CSX - Chambersburg, PA - In September of 2007, CSX opened its Chambersburg Intermodal Terminal in Chambersburg, Pennsylvania. This 85 acre facility is located directly off exit 14 of Interstate 81, approximately 45 miles north of the subject site. CSX employs 35 full time employees at the project, which is projected to do 100,000 lifts per year. The facility receives one train in the morning which is loaded that day and then leaves in the evening with rail service to Chicago, Buffalo and Nashville. Schneider Logistics is a major customer of the project and has been since the project was conceptualized.

The facility was developed as part of CSX's National Gateway Corridor project and was funded from a portion of the \$98 million grant that CSX received for the National Gateway Corridor project.

Norfolk Southern - Greencastle, PA - Norfolk Southern is currently under construction with a new 200 acre intermodal facility in Greencastle, PA. The project, part of NS' Crescent Corridor, began construction in 2010 and is projected to be complete in early 2013. It is located 35 miles north of the EPIP subject site and is anticipated, by Norfolk Southern, to have a 50 mile catchment area radius. Initially, the project is projected to result in 100 new jobs. That number is expected to grow to 600 jobs by 2016. Over the next ten years, the project is anticipated to create 26,000 jobs in Pennsylvania and divert over 700,000 long haul trucks to rail.

Norfolk Southern estimates that the project will cost \$96.9 million to complete and the state of Pennsylvania has contributed approximately \$45 million to these efforts. The Greencastle facility will have an initial capacity for 85,000 annual lifts utilizing two loading tracks, 670 paved trailer spaces and running four intermodal trains daily.

There are several existing industrial facilities in the area as well as master planned industrial park developments. Current land prices in the area average \$50,000 per acre for bulk, undeveloped land. Rental rates in the area range from \$3.75 to \$4.25 PSF, both on a triple net basis.

Virginia Inland Port - Front Royal, VA - The Virginia Inland Port (VIP) is a 161 acre intermodal satellite marine terminal. This project has been profiled in greater detail in the case studies provided in Section II above. VIP serves to extend the reach of the Port of Virginia approximately 220 miles inland and capture a portion of the discretionary cargo from the Ohio Valley.

VIP currently executes approximately 35,000 annual lifts, with a capacity for over 100,000 lifts on their



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17,280 linear feet of loading track. The project is served by Norfolk Southern who provides one train daily, 5 days a week.

5.1.5 - Conclusion - Modal Capabilities

The EPIP subject site and surrounding area enjoy excellent modal connectivity. Interstate 81 is a critical artery for moving goods from the southern manufacturing centers to the northern consumption and population bases. While it is currently over capacity and handling far more trucks than its design load, the direct access to I-81 remains a significant amenity to the project.

The close proximity to the Eastern West Virginia Regional Airport is also seen as a significant amenity and would potentially allow the project to offer limited air cargo service, were the right users identified. The runway length at the facility is adequate for regional air cargo service and landing fees are reasonable.

The study team has found that access to the Winchester & Western rail line is both a positive and negative for the subject site. On the positive side, having shortline rail access is far better than having no rail access at all. Having this rail line serves to meet one of the critical determinants of inland port success - modal access. In addition, the ability of Winchester & Western to service both Norfolk Southern and CSX is also a benefit.

On the negative side, having a project that is served by a shortline railroad adds an additional "link" in the supply chains of the companies who would potentially locate at the project. This new "link" would not be without cost as Winchester & Western would, rightfully, need to be compensated for moving the cargo to and from the project site and the CSX or Norfolk Southern mainlines. This switching fee would be reflected in the total transportation cost, by rail, to and from the project and would create a significant cost disadvantage for the EPIP project as an intermodal center.

Our review of inland port projects across the United States only identified one project that was serviced by a shortline railroad. In this case, the shortline railroad has track rights directly to the maritime port it serves and there is no switching between the Class I railroads and the shortline. As such, there is not an additional cost associated with being served by a shortline that would be borne by the end users.

With that being said, market dynamics may change in the future to where the cost savings of using intermodal transportation are so significant that a project at the subject site can overcome the additional switching costs associated with being dependent on a short line railroad.

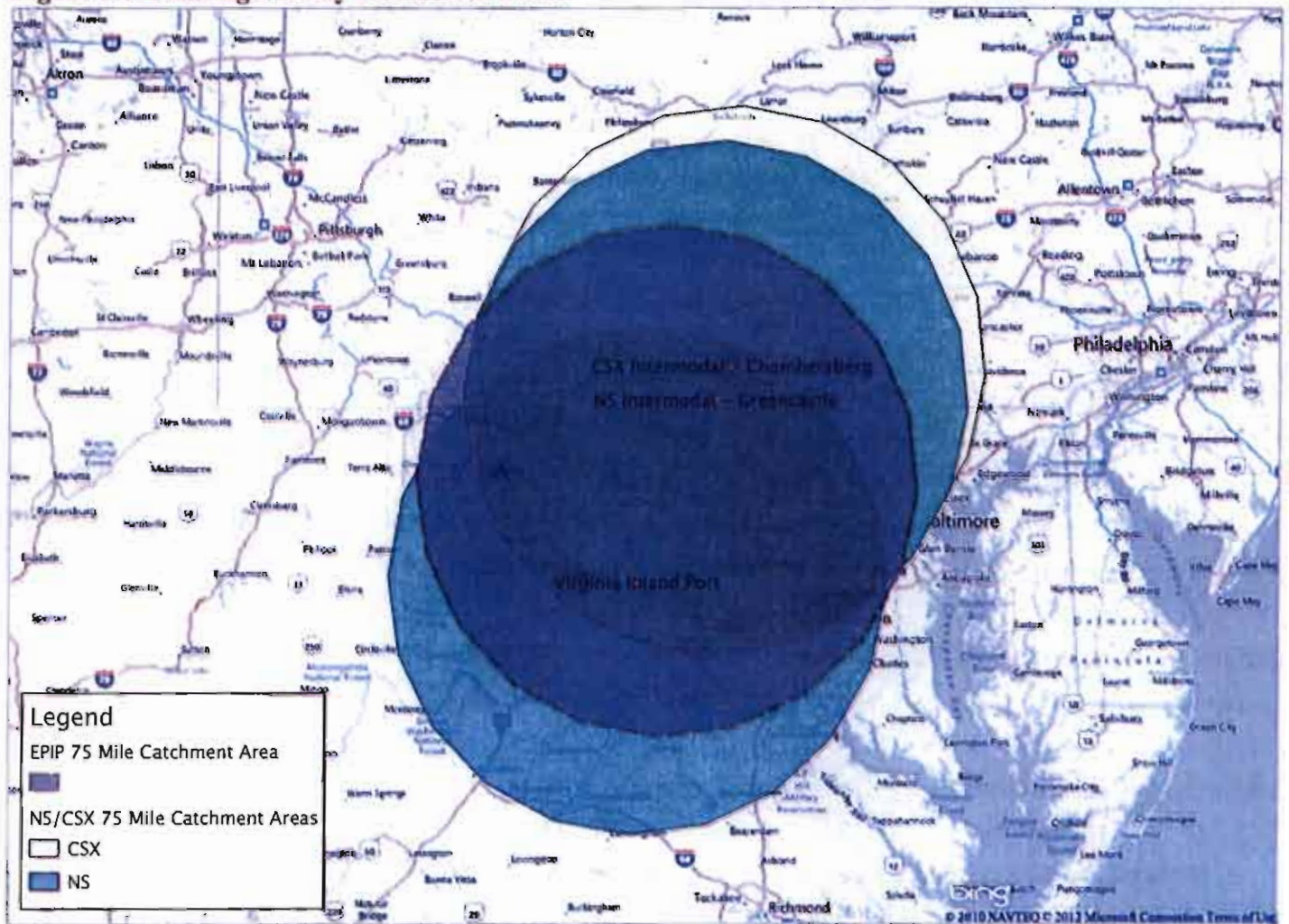
Finally, the study team found that the preponderance of existing intermodal facilities in the immediate area represents both a positive and negative for the EPIP project. We do not believe it is feasible at this time to construct an additional intermodal facility at the subject site. With three existing facilities, all containing ample unused capacity, the addition of a fourth intermodal terminal would not be financially sustainable. The intermodal demand that is in the market (see following section) is being adequately served.

On the positive side, the EPIP subject site is in an extremely favorable position relative to the intermodal



opportunities in the market. Its location almost equidistant from all three intermodal facilities allows it the potential to develop into an ideal logistics “hub” for the region. EPIP has the ability to offer tenants reasonable access to three separate intermodal terminals, including VIP with a direct rail link to an exceptional marine terminal. In essence, EPIP has the potential to leverage the almost \$200 million investment that has already been made by Virginia, CSX and Norfolk Southern.

Figure 5.6: Existing Facility Catchment Areas



The following subsection will examine the demand characteristics of the market to better understand what opportunities may exist in the surrounding area.



5.2 - DEMAND ANALYSIS

The act of quantifying commodity movements in the US and around the globe is certainly equal parts art and science. Its importance in determining the base of demand that may exist for a project like EPIP is undeniable. Moreland has worked with leading economists, transportation experts, and members of the academic community to create our HYDRA database, a proprietary model of the freight movements into, out of, and within the United States.

One of the key concerns with the data sets that are publicly available is that they are not very geographically granular. That is to say, they aggregate their origin and destination reporting at the metropolitan statistical area (MSA), Bureau of Economic Analysis (BEA) economic areas, or other large analysis zone level. These work well if you are concerned with the movement of goods from one macro region to another macro region. However, in practice, that is rarely the case.

Moreland's HYDRA model begins by combining the regional level data from numerous publicly available sources, commercial data sets, and industry databases. These sources include the Freight Analysis Framework (FAF3), US Commodity Survey, PIERS forecast data, and other sources of socioeconomic data. From there, our model disaggregates that data, using a proprietary regression algorithm, down to the US county level. After the disaggregation, we are left with tens of millions of origin and destination pairs for commodities moving from one US county to another. We can then recombine the data based upon any number of county combinations to construct a regional goods movement commodity flow profile for a specific subset of counties - our catchment area.

The numbers, facts and figures presented below are useful and relevant for comparisons within the HYDRA database. Caution should be exercised in any attempt to compare these numbers to other data sets.

5.2.1 - Catchment Area

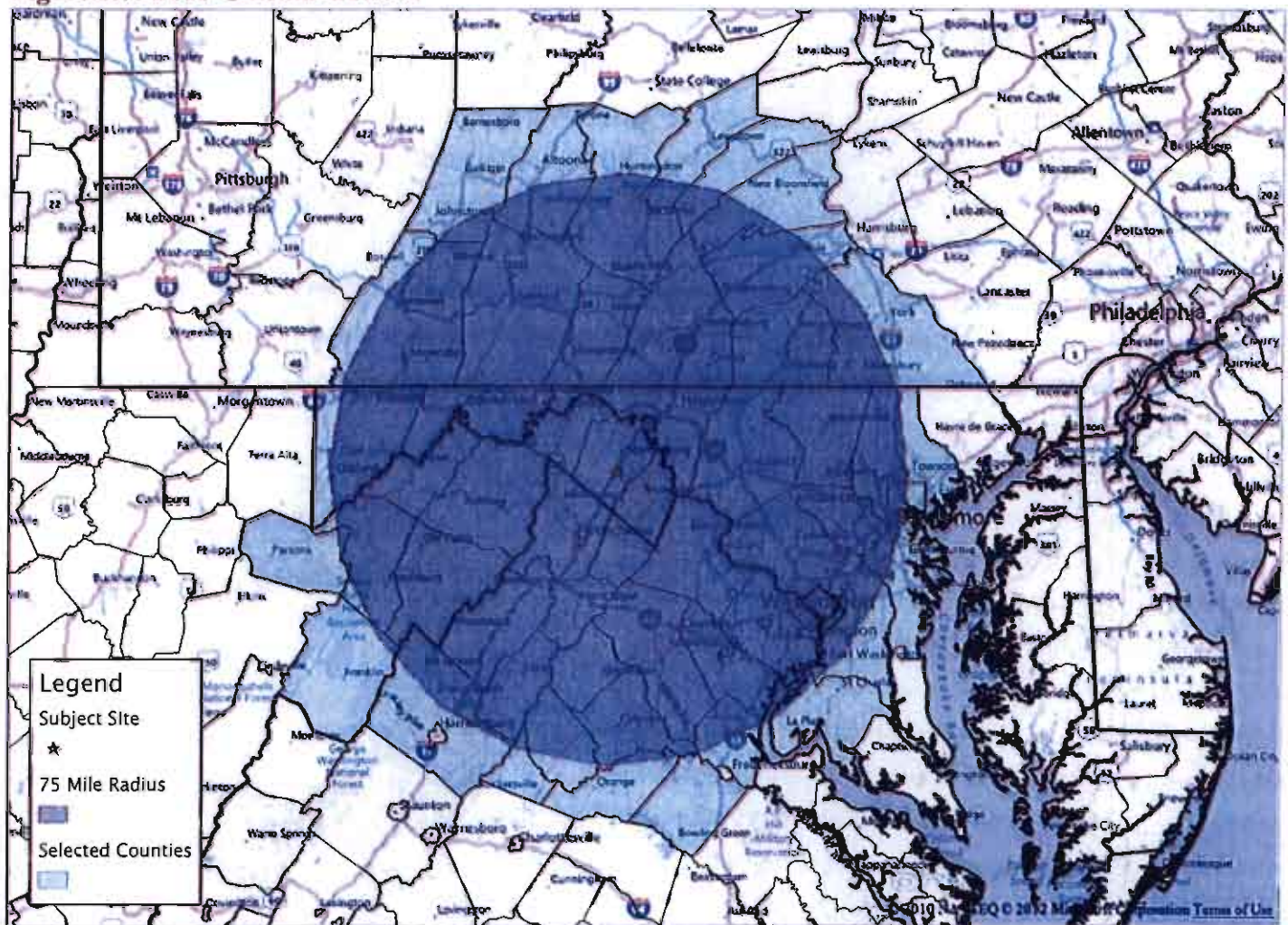
The catchment area is defined as the geographic range from which this project could reasonably expect to attract potential users. A review of the literature reveals there is no commonly accepted standard for how large or small this catchment area should be. Typically, the range falls between a 50 and 125 mile radius around the analysis area or specific site, if known. The benefit of using a larger catchment area is that you include more localities that contain potential users of the project. However, in more densely populated areas of the country, such as the mid-Atlantic, a broad catchment area tends to include areas that may already be self-servicing and have a low probability of relying on the analysis facility. In any analysis your goal is to find the right balance between capturing all the potential customers possible, but not capturing those that have a higher probability of using another market.

For the purposes of this analysis, the study team concluded that a 75 mile radius around the subject site best represents the universe of potential users for the project. If this radius touched some portion of a county, even if by



just a little, we included the entire county in our analysis. In all, the 75 mile catchment area includes 59 counties in four states and the District of Columbia, with a total area of approximately 19,783 square miles. This selection gives us an analysis area that is suitable enough to potentially draw a substantial number of users. It is comprised of both rural and urban areas, including Washington, DC and the City of Baltimore, MD. At the same time, the analysis area avoids other metropolitan areas such as Pittsburg, PA, Harrisonburg, PA and Richmond, VA that might otherwise skew the results. It is important to note that although these cities are not specifically included in the analysis area, it is highly probable their catchment areas and ours will overlap at the margins.

Figure 5.7: EPIP Catchment Area



5.2.2 - Overall Flow of Goods

Our HYDRA model shows the catchment area had approximately 710 million tons of goods move into and out of it in 2010, valued at \$825 billion. Both weight and value of the goods moved declined from the 2007 values, falling 8% and 5% respectively. Moving forward, both value and weight of goods moved are projected to increase



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over the next 20-30 years.

It is interesting to note that the value and weight of goods moving into and out of the region do not grow at the same rate. The projected value of goods moving into and out of the area grows at 2.14% annually over a 30 year period, while the weight grows at only 0.67% over the same period. This suggests that the mix of goods will change over time away from heavier bulk items (coal, sand, etc.) and towards higher valued manufactured goods. In fact, the commodity level projections bear this out with the most significant increases coming from Pharmaceutical Product and Precision Instruments, while the largest decreases come from Tobacco and Fertilizer.

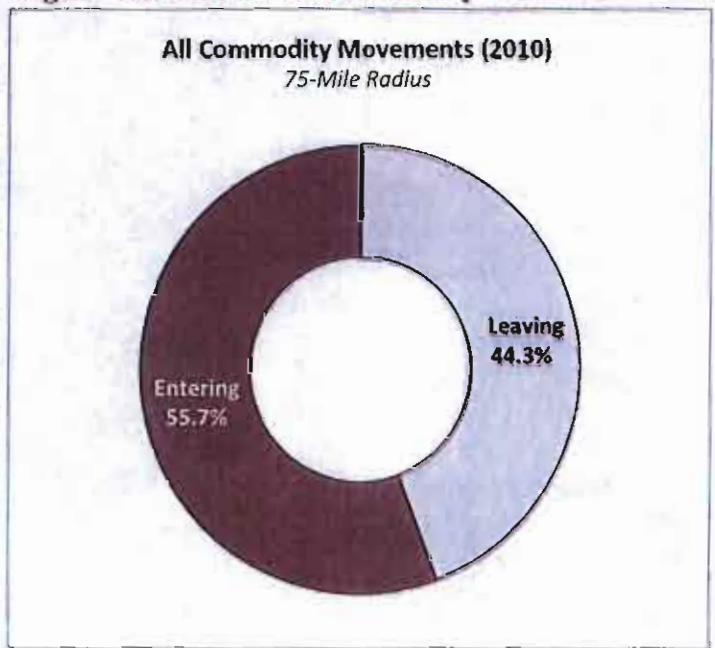
5.2.3 - Balance of Goods

In order to understand whether there is sufficient unmet demand for a project such as this, it is important to analyze the movement of goods into and out of the subject area. For an inland intermodal facility such as this, one of the most critical aspects is the balance of trade within the area. This requires an area to have both a manufacturing/production base (export generator) and suitably large enough consumer base (import generator).

In an ideal scenario every truck, train, or plane that leaves the area carrying product would return to the area with product as well. The flow of goods into and out of the area would be “balanced”. If the flow of goods within an area is not balanced, carriers will compensate for the empty backhaul by charging shippers a higher rate. While this serves the carriers’ immediate profitability needs, it increases the transportation costs within the area making it less competitive with other, more balanced areas.

Fortunately for EPIP, the analysis has shown the area to be reasonably well balanced. As shown in Figure 5.8, the analysis area has approximately 44% of the total tons moved leaving the area, while 56% of the total tons moved are entering the area. On the surface, this indicates there is the potential for a reasonably balanced trade pattern within this area. Looking forward, the projections show that the flow of goods will remain roughly in balance, maintaining that balance within 1 to 2 percentage points.

Figure 5.8: Balance of Commodity Movements



Source: HYDRA

5.2.4 - What Goods Are Moving?

Balance, however, is only part of the commodity story. To better understand the potential demand, we must



get a better feel for what types of goods are moving. Our HYDRA database of goods movements categorizes each origin and destination pair with a Standard Classification of Transported Goods (SCTG) code. SCTG is the result of a Canada-US initiative to create a classification system for the flow of goods in North America. It is designed to be comparable to the Harmonized Commodity Description and Coding System (HS) which is widely used for international classification of goods

In Figure 5.9 we have shown the top commodities, by weight, that our HYDRA model shows as entering and leaving the catchment area. The Top 10 Commodities represent a substantial portion of the total goods movements of the catchment area (65.3% - Leaving, 69.6% - Entering). Since these do reflect such a dominant portion of the moved goods, an analysis of their transportation characteristics can give us some good insights into the potential demand for an inland port facility at the subject site.

Figure 5.9: Top 10 Commodities, by Tons

Top 10 Commodities, By Tons (2010)			
Leaving		Entering	
Goods	% of All Goods	Goods	% of All Goods
Gravel and Crushed Stone	14.4%	Gravel and Crushed Stone	17.1%
Waste and Scrap	14.2%	Waste and Scrap	10.8%
Non-Metallic Mineral Products	10.5%	Coal	9.0%
Other Prepared Foodstuffs, and Fats and Oils	6.8%	Non-Metallic Mineral Products	7.9%
Cereal Grains (including seed)	4.1%	Coal and Petroleum Products, n.e.c.	5.8%
Coal	3.6%	Non-Metallic Minerals, n.e.c.	5.0%
Wood Products	3.1%	Natural Sands	4.1%
Non-Metallic Minerals, n.e.c.	3.0%	Other Prepared Foodstuffs, and Fats and Oils	4.1%
Coal and Petroleum Products, n.e.c.	2.8%	Wood Products	2.9%
Natural Sands	2.8%	Mixed Freight	2.9%

Source: HYDRA

When we examine the Top 10 Commodities moved, what is striking is that the goods being moved are predominantly bulk commodities. It is only Prepared Foodstuffs and Mixed Freight on either list that would generally not be considered bulk transport items. Other than those two categories, the majority of the goods moving are heavier items that would traditionally not be candidates for intermodal containerized transportation. There is, however, a growing trend in the containerization of commodities and the use of intermodal transportation options.

For these goods, intermodal transportation would offer them an additional layer of flexibility in their commodity supply chains. Bulk, non-containerized, transport will still be the most cost efficient manner in moving these goods. However, some shippers have found that the imbalance in cargo (more imported than exported) provides a good supply of available empty shipping containers and favorable export container shipping rates. In addition, the ability to containerize product and utilize intermodal routes provides shippers with somewhat of a hedge against the fluctuations in bulk shipping rates.

It is important to note that the containerization of commodities currently represents a very small niche market. While its use is projected to grow, it is likely to continue to be a very, very small portion of the market for the foreseeable future.



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5.2.5 - Modality of Goods Movement

If we are going to fully understand the potential market for a new intermodal inland port, it is important to analyze how the goods are moving into and out of our catchment area. Our HYDRA database looks at seven different classifications for how goods can move.

Truck: Goods classified as using this mode were transported using either public or private for hire trucks. This does not include the truck movement portion of either intermodal moves classified as Multiple Modes and Mail or in conjunction with Air Cargo.

Rail: This includes any common carrier and/or private railroad movements. It does not include the rail portion of intermodal moves classified as Multiple Modes and Mail.

Water: This includes shallow draft, deep draft, Great Lakes and intra-port shipments. It does not include the water portion of intermodal moves classified as Multiple Modes and Mail.

Air: This includes goods that move by air or a combination of truck and air in commercial or private aircraft. These goods are typically weighing more than 100 pounds. Those weighing less than 100 pounds are classified in Multiple Modes and Mail.

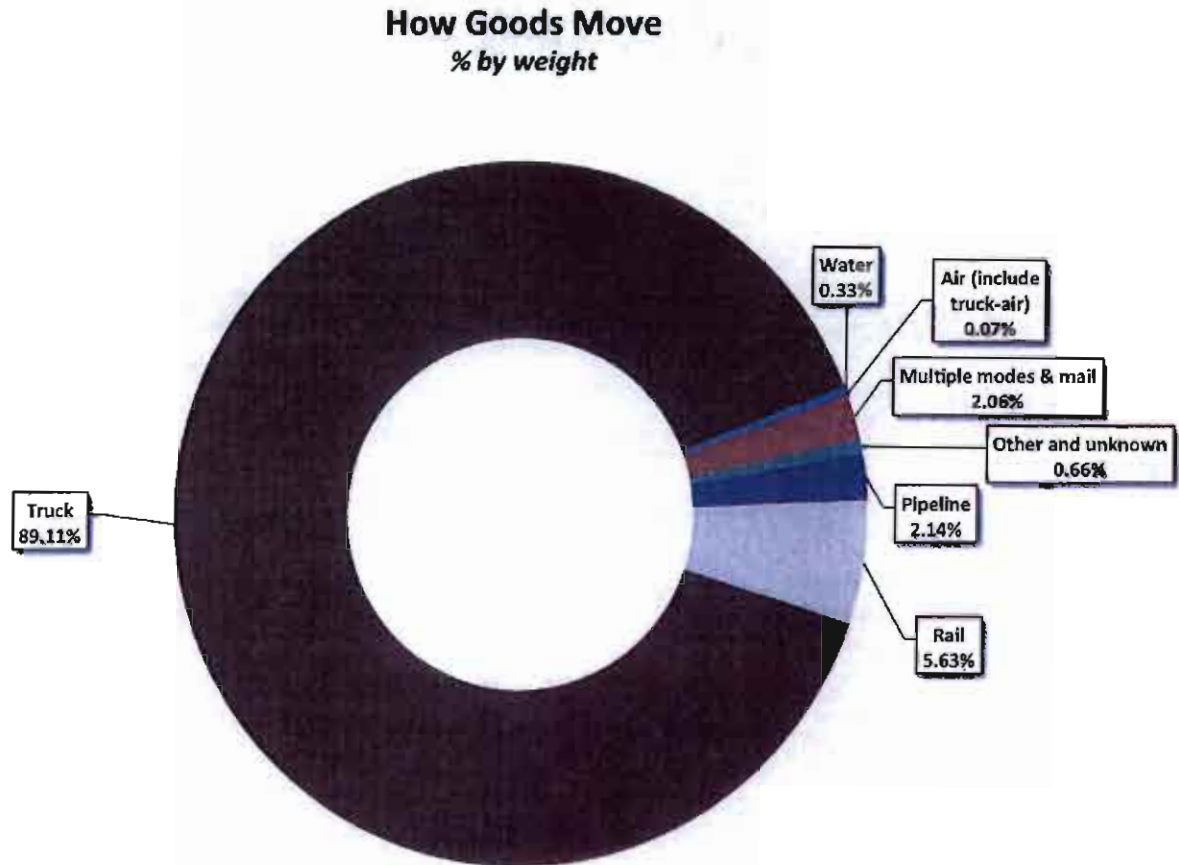
Multiple Modes and Mail: This includes intermodal shipments, which by definition utilize a variety of shipment modes. It also includes parcel delivery services, US Postal Service and couriers. It is not limited to containerized product or trailer-on-flatcar movements.

Pipeline: This includes crude petroleum, natural gas and product pipelines. This does not include any pipeline movements that are part of an intermodal movement and included as part of Multiple Modes and Mail.

Other and Unknown: This includes movements that are not otherwise classified.



Figure 5.10: Goods Movement by Mode



Source: HYDRA

As Figure 5.10 demonstrates, the vast majority of goods enter and leave the catchment area via truck, accounting for 89% of the movements, by weight. Rail represents the next largest modal segment for goods movement at 5.6%, and only 1% of the goods move via more than one mode, ie intermodal.

Coal transport makes up almost 62% of the rail volume in the catchment area. It is interesting to note that if you remove coal from the analysis the percentage of goods transported via truck moves to 92.4%. The movement of goods via rail, excluding coal, then drops to 2.3%, yet intermodal increases to 2.1%.



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Figure 5.11: Modality of Top 10 Commodities

Truck (89.1% Overall)		Rail (5.6% Overall)		Air (0.1% Overall)	
Goods	%	Goods	%	Goods	%
Gravel and Crushed Stone	17.1%	Coal	61.7%	Machinery	19.3%
Waste and Scrap	13.5%	Basic Chemicals	4.8%	Electronic and Other Electrical Equipment and Components	12.3%
Non-Metallic Mineral Products	9.9%	Cereal Grains (including seed)	4.7%	Textiles, Leather, and Articles of Textiles or Leather	7.9%
Other Prepared Foodstuffs, and Fats and Oils	5.7%	Waste and Scrap	4.6%	Precision Instruments and Apparatus	6.4%
Non-Metallic Minerals, n.e.c.	4.4%	Coal and Petroleum Products, n.e.c.	3.3%	Other Agricultural Products, except for Animal Feed	6.3%
Natural Sands	3.8%	Non-Metallic Mineral Products	2.5%	Miscellaneous Manufactured Products	5.9%
Wood Products	3.2%	Base Metal in Primary or Semi-Finished Forms	2.5%	Plastics and Rubber	5.2%
Coal	3.2%	Plastics and Rubber	2.2%	Articles of Base Metal	4.7%
Cereal Grains (including seed)	3.2%	Other Prepared Foodstuffs, and Fats and Oils	1.6%	Motorized and Other Vehicles (including parts)	4.0%
Mixed Freight	3.0%	Non-Metallic Minerals, n.e.c.	1.3%	Printed Products	4.0%
Multiple Modes (2.1% Overall)		Pipeline (2.1% Overall)		(0.3% Overall)	
Goods	%	Goods	%	Goods	%
Gravel and Crushed Stone	28.0%	Coal and Petroleum Products, n.e.c.	84.9%	Coal	62.8%
Cereal Grains (including seed)	7.4%	Crude Petroleum Oil	5.6%	Gravel and Crushed Stone	14.0%
Chemical Products and Preparations, n.e.c.	6.2%	Fuel Oils	5.5%	Basic Chemicals	8.6%
Other Prepared Foodstuffs, and Fats and Oils	5.5%	Basic Chemicals	2.9%	Coal and Petroleum Products, n.e.c.	8.4%
Fuel Oils	5.2%	Gasoline and Aviation Turbine Fuel	1.0%	Crude Petroleum Oil	3.7%
Pulp, Newsprint, Paper, and Paperboard	3.3%			Fuel Oils	1.5%
Coal	3.3%			Non-Metallic Mineral Products	0.6%
Plastics and Rubber	3.2%			Non-Metallic Minerals, n.e.c.	0.2%
Base Metal in Primary or Semi-Finished Forms	2.7%			Mixed freight	0.1%
Non-Metallic Minerals, n.e.c.	2.6%			Natural Sands	0.1%
Other & Unknown (0.7% Overall)					
Goods	%				
Motorized and Other Vehicles (including parts)	15.0%				
Non-Metallic Mineral Products	8.6%				
Other Prepared Foodstuffs, and Fats and Oils	8.1%				
Printed Products	7.7%				
Coal and Petroleum Products, n.e.c.	6.2%				
Base Metal in Primary or Semi-Finished Forms	5.6%				
Natural Sands	5.6%				
Coal	5.4%				
Wood Products	4.3%				
Plastics and Rubber	4.0%				

Source: HYDRA

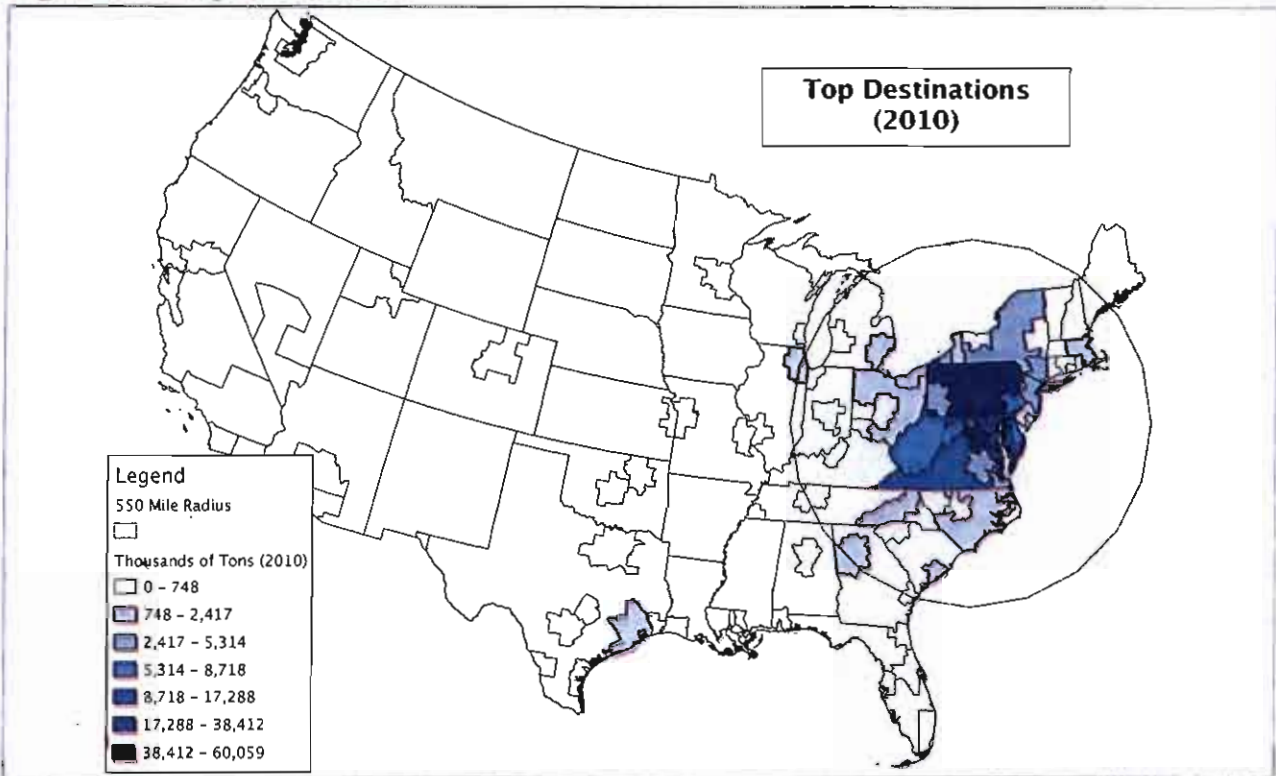
Figure 5.11 takes the analysis one step further and looks at each of the seven modes of transportation to understand what specific commodities are moving via each mode. As would be expected, the dominant commodities for each mode are predominantly bulk type commodities that have a low utilization of containerization.

5.2.6 - Origins and Destinations

Our analysis of the movement of goods into and out of our designated catchment area indicates that the goods generally do not move very far. The top 10 destinations for goods leaving the catchment area are shown in Figure 5.12 and the top ten originating locations are shown in Figure 5.13. Combined, the top ten locations in each scenario represent approximately 80% of the total goods movements, both domestic and international. In both cases, the top ten origins and destinations are either within the catchment area itself, or just outside its boundaries. Intermodal transport, like the kind an EPIP facility would be promoting, is more cost efficient and beneficial when the transportation distances are greater than 550 miles. Many of the Class I rail lines are working on strategies to reduce that distance and increase intermodal opportunities. However, for now the 550 mile criteria still seems to be a reasonable working metric. Unfortunately, none of the top ten origins or destinations for our catchment area fall outside of that 550 mile boundary.

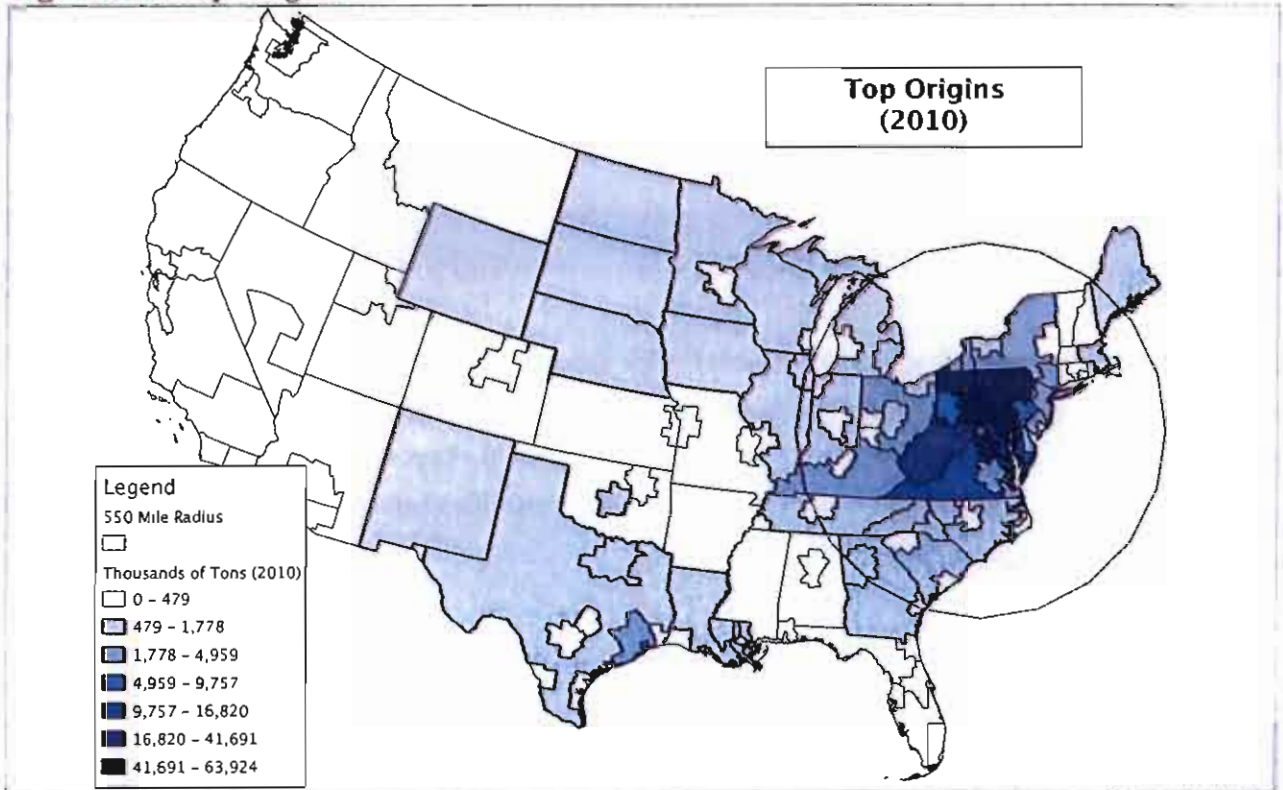


Figure 5.12: Top Destinations



Source: HYDRA

Figure 5.13: Top Origins



Source: HYDRA



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The next segment we looked at was international goods movements and whether there was enough volume there to support the EPIP facility. Overall, 95.6% of the goods leaving the catchment area and 93.3% of the goods entering the catchment area are domestic movements. When goods do move internationally, Canada is the predominate trading partner capturing 25.2% of the exports from our catchment area and providing 36.3% of the imports into our catchment area. Capturing business to and from Canada would satisfy the 500 mile requirement, but represent a very small amount of freight, only 1.1% of all of the goods movements by weight.

5.2.7 - Conclusion - Demand Analysis

Our analysis of the existing commodity movements within the designated catchment area do not support the construction of an intermodal facility at the subject site. While the area does generate a healthy, balanced flow of goods into and out of the region, much of those goods are bulk commodities and not suitable for containerized intermodal movement. In addition, the catchment area appears to distribute to and receive goods from a very small geographic area inside and outside of the catchment area boundaries. The short transport distances would not provide enough economic efficiencies to make intermodal transport viable. Furthermore, the volume of goods imported into and exported out of our catchment area would be insufficient to justify a new facility.

However, the study team continues to believe that the subject site location does offer numerous locational and modal advantages. The area has already seen where these advantages can be successfully leveraged to attract quality companies to the area with the recent investment made by Macy's. We believe there is the very real potential and opportunity for the EPIP location to attract other quality companies to the area and to create new demand that isn't reflected in our analysis above.

5.3 - LOCATIONAL ADVANTAGES

The subject site location in Berkeley County, WV (specifically the area along Tabler Station Rd.) has many of the key characteristics that potential manufacturing, distribution, and industrial developers value when considering relocation and/or new investment. The sites that will have the highest success in attracting new business will complement the company's business models and not restrict them. The following is a list of the some of the key advantages of the Berkeley County Area.



Figure 5.14: Study Location Aerial



5.3.1 - Close Proximity to Markets/Customers

As companies are faced with increasing fuel cost and customer demand for same-day/ JIT delivery, they will need to be in a location that allows them to reach the most customers quickly and economically.

- 1. Catchment Area** - The catchment area described in this report has a population of 9,114,691 +/- people in a 75 mile radius of the target site. If the radius is expanded to a 550 mile radius, over 200 million people are reachable in one driving day. To put this in geographic context, the markets/customers in



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every major city on the east coast (excluding locations in Florida) are reachable in one driving day.

2. **Road Logistics** - Tabler Station Rd. offers direct access through Exit 8 to Interstate 81. As the congestion and tolling on Interstate 95 increases, I-81 is the preferred method of truck traffic to move product in the mid-Atlantic. Additionally, either I-70 or I-66 can be reached via I-81 in less than 40 minutes driving time from the subject site.
3. **Other forms of Transportation** – The subject site is served by Winchester and Western Railroad, which is connected to both CSX and Norfolk Southern. The Eastern West Virginia Regional Airport is located adjacent to Tabler Station Rd. By end of 2013, there will be 3 different inland ports within a one hour drive of the site.

5.3.2 - Utilities

Prospective users of the proposed site are looking to locate in areas that can meet their current needs without the potential delay of large utility improvement projects. The subject site is serviced by all necessary standard utilities, including water, sanitary sewer, and natural gas. Sanitary sewer is provided by means of an 8" main that extends into the site and feeds an existing pump station. Preliminary analysis of the proposed site has indicated that there may not be a need for any modifications or additions to this pump station, depending upon final end users. Water is provided by way of a 10" line extending into the site, derived from a 16" main that runs along Business Park Drive. This main extends from the site westward to Route 11, where it tees into and is fed by another length of 16" main (narrows to 10" north and south of the intersection). The Business Park Drive main also loops to a 6" & 8" main located along Tabler Station Road. Available water pressure and flow rates are both understood to be adequate for the nature of the proposed project. Both water and sanitary sewer are provided and governed by Berkeley County Public Service Districts. Natural Gas (Mountaineer Gas Company), 3-phase electric (Allegheny Power), and telephone / broadband (Verizon) round out the available utilities.

5.3.3 - Available Land

Large businesses require large pieces of contiguous acreage to facilitate their current needs and future building needs. Some of the larger distribution and manufacturing facilities may require as much as 100 to 200 acres for their facility. As the population on the East Coast grows, it is becoming increasingly difficult to find large parcels of land that can be developed economically and are in close easily navigable proximity to a major interstate highway. Many large sites, both north and south along the I-81 corridor, are either located on small rural roads that would



require costly infrastructure improvements for industrial access or the sites are cost prohibitive to business because of the excessive land development cost. The subject site and other areas in Berkeley County have large developable tracts of land with good to excellent access to I-81. Listed below are some examples of sites with large tracts of land (some tracts have developed portions of their available acreage):

1. Tabler Station Business Park – 290 +/- acres
2. John D. Rockefeller IV Science and Technology Park – 211 acres
3. Eastern West Virginia Regional Airport – 1,005 acres (mostly used for airport related functions)
4. Berkeley Business Park – available 50+/- acres
5. Cumbo Yard Industrial Park – available 202 acres
6. Shockey Commerce Center – available 100+/- acres
7. Undeveloped tracts:
 - 70+/- acres southwest of Berkeley Business Park
 - 174 acres at the I-81 Industrial Park
 - 300 +/- acres of farmland north of TSBP

5.3.4 - Other Notable Advantages

1. Large and well trained workforce in and around the targeted area.
2. Home prices and the cost of living are some of the most affordable in the mid-Atlantic region.
3. Existing Foreign Trade Zone.
4. Existing warehouses with competitive lease rates. (Large spaces available \$3.00 to \$4.24 PSF NNN).
5. Large companies have already chosen this location because of the advantages, setting an example for other companies.



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Figure 5.15: Companies Located Near Study Area

Company	Sector
Aker by MAAX Plastic Bathroom	Fiberglass bathtubs, shower stalls, whirlpools and spas
Brentwood Industries, Inc.	Plastic filter elements
Macy's	Retail
Ecolab, Inc.	Cleaning and sanitizing products
Essroc	Cement
DSI/Fasloc	Fasloc-Resin
FedEx Smartpost	Parcel distribution facility
General Motors, Corp.	Parts distribution
Guardian Fiberglass, Inc.	Fiberglass Insulation
ITW Sexton Can Company, Inc.	Seamless metal containers
Orgill, Inc.	Hardware Distribution
Quad/Graphics, Inc.	Magazines, catalogs, color inserts
Quad/Baker Road	Book printing
Royce Too, LLC	Hosiery
Plygem	Vinyl building products

The aforementioned advantages are compelling reasons for new businesses to locate in Berkeley County and specifically the subject site. However, they alone may not be enticing enough when other counties along interstates are offering developable land for close to free of charge. Fortunately Berkeley County has some other advantages over other competing localities in the same catchment area that may have similar land and infrastructure available.

5.3.5 - Low Cost of Power

It is becoming much more common now for companies to perform a life-cycle cost analysis of their buildings and operations. The result of this analysis will force companies to realize that their current and future energy cost play a huge role in the economic success of the company. Manufacturing operations increasingly need to be in areas where their energy needs are not only dependable, but affordable. West Virginia is a major producer of coal, natural gas, and electricity. Specifically, the low cost of electric power is a competitive advantage that other areas in the mid-Atlantic will not be able to undercut. When manufacturing starts to make a comeback in the United States, low energy cost will become a huge factor in the site selection analysis performed by businesses.

5.3.6 - Zoning and Permitting

Rezoning land from agricultural to industrial has become an increasingly expensive and time consuming process. Depending on the size of the land in question, a rezoning can cost hundreds of thousands of dollars and take years to accomplish. Additionally, the rezoning process is not without risk. Private developers and businesses may spend



the time and resources on the rezoning process only to find out that the proposed rezoning failed due to changes in regulations or political climates. Until the recent economic downturn, many counties in Maryland and Virginia became very adversarial toward industrial rezoning as the NIMBY (Not In My Backyard) movement gained a strong political foothold. In addition to the rezoning process, industrial developments were viewed by some in the public as a socioeconomic burden on the surrounding areas. The result of this perception caused many developers to take on costly development proffers and cost prohibitive transportation improvements that eventually stifled the amount of new industrial rezoning. In some competing areas it would not be uncommon for the rezoning and permitting to take longer to accomplish than the construction of the new facility.

Berkeley County does not currently suffer from this problem or competitive disadvantage. There is currently no rezoning process to stifle the development of these proposed sites. Additionally, as demonstrated by the speed to construction of the Macy's project at Cumbo Yard, Berkeley County has proven to be able to fast track a valuable project through the review and permitting process. As these local government practices in other counties are very slow to change, Berkeley County is closer to "shovel ready" than most competing counties in the same catchment area. Additionally the added cost of rezoning land and the accompanying proffers is not passed on to the potential new business, helping make the land cost in Berkeley County more price competitive with other areas.

5.4 - INTERNATIONAL TRADE FACILITATION

One of the most important services an inland port provides its tenants is the ability to facilitate international trade. Typically, this means the processing of imports. However, increasingly, exports are becoming a key consideration for inland port tenants. The ability to provide these services for both imports and exports is critical and establishing new FTZ's or Customs ports of entry can be difficult and time consuming. Below we examine the amenities the EPIP subject site offers and discuss what would be required to expand those services.

5.4.1 - Foreign Trade Zone

The EPIP subject site location is currently home to general purpose Foreign Trade Zone #240. This represents the second general purpose FTZ location in the Front Royal Customs port of entry area. The other existing FTZ is FTZ #185 serving sites in Culpeper County and the Virginia Inland Port facility.

FTZ #240 is designated as 317 acres at the Eastern West Virginia Regional Airport. The site includes the "John D. Rockefeller, IV" Science and Technology Center business and industrial park. Application for this FTZ was made in 1999 citing the need for foreign trade zone services in the Martinsburg area to service the auto parts, aeronautics, medical products, inorganic chemicals, machinery and wood products industry. Approval for the facility was granted in February 2000 and the zone is currently administered by the West Virginia Economic Development Authority.



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Following enactment of the FTZ, the FTZ has 5 years to have its operations inspected by customs and become “active”. Shortly following enactment of the FTZ, Schwab, Inc. applied for and received sub-zone status for its facility where it handled imports for Ralph Lauren Polo. This activated FTZ #240 and it remains active today.

While FTZ #240 is designated as “active” by the Import Administration of the US International Trade Administration (ITAIA), it is currently unused. As part of this report, the study team consulted with members of the ITAIA on what would be required to expand the current FTZ to include the subject site. Such an expansion would be possible with the consent and cooperation of the existing FTZ and would take approximately 18 months to complete, including a 10+ month public review period.

However, a significant aspect of the application process would be to justify the need for such an expansion. The ITAIA has received numerous requests for new zones and expansion of existing zones. They have also seen numerous zones be established or expanded without the international trade component materializing. Consequently, it would be unrealistic to assume the EPIP site could be expanded without a specific user identified. In the words of the ITAIA representative, “If you build it they will come is not working. A user in hand is a very good thing.”

5.4.2 - Customs Port of Entry

At the time that application was made to establish Foreign Trade Zone #240, the Eastern West Virginia Regional Airport justified its creation as tangential to the Front Royal Customs Port of Entry. Front Royal remains the designated POE for the FTZ and its potential users. Any international goods brought into the EPIP subject site can clear customs utilizing an agent from this office.

The study team conducted interviews with US customs officials to determine the likelihood of the EPIP site obtaining status as its own Port of Entry. Customs has indicated the process for obtaining a new Port of Entry status is extremely expensive and time consuming process, requiring Congressional support. Their suggestion is to, when demand warrants, apply for designation as a User Fee Airport at the Eastern West Virginia Regional Airport.

According to the US Customs and Border Patrol information, a User Fee Airport is “an airport which has been approved by the Commissioner of CBP to receive, for a fee, the services of a CBP officer for the processing of aircraft entering the United States and their passengers and cargo”. The criteria that must be met for consideration as a User Fee Airport include:

- The volume or value of business at the airport is insufficient to justify the availability of inspectional services at such airport on a non-reimbursable basis.
- The current Governor of the State in which such airport is located supports such designation in writing to the Commissioner of CBP.
- The requestor (e.g. Airport authority) agrees to reimburse CBP for all costs associated with the services, including all expenses of staffing a minimum of one full-time inspector.



- The requestor completes an Agriculture Compliance Agreement (ACA) with fixed base operators and garbage haulers for handling the international garbage.

The basic steps required in considering an application for designation as an UFA include:

- Receipt of a letter from the current Governor of the state supporting the user fee airport designation addressed to the Commissioner.
- An initial site visit in which CBP officials discuss workload and services
- A final site visit in which CBP officials verify that facilities are 85% complete and adequate for inspectional services to be provided.
- A successful site visit in which CBP officials discuss workload and services and verify that facilities are adequate for inspectional services to be provided.
- Completing a Memorandum of Agreement (MOA) with CBP, which states the responsibilities, fees and hours of service.
- Completing an ACA with CBP for handling international garbage.

An approved UFA receiving CBP services is responsible for payment of the following fees:

- Per Inspector - \$140,874 for the first year and \$123,438 for succeeding years.
- ADP costs per inspector - \$17,042 to \$21,062 (1st year) and \$13,620 to \$17,640 for succeeding years depending on the location.
- Other associated costs such as overtime.

In all cases regarding requests for new service, it must be understood that before CBP approves requests to establish new Ports of Entry or User Fee Airports, CBP must have the available staffing or the authorization and appropriations to hire additional staffing. This is and will continue to be one of the most important considerations and has the potential to be a challenge given the current federal funding environment.

A change in the CBP designation for the Eastern West Virginia Regional Airport has the potential to effect its Foreign Trade Zone status. As outlined above, when the application was made to receive FTZ status, a key criteria was its proximate location to the Front Royal Port of Entry. If the associated POE is changed for the FTZ, it may hinder the ability to expand the zone. Conversely, an expansion of the FTZ may hinder the ability to change the CBP designation. What is clear is that any action involving the FTZ or status or designation of the Customs Port of Entry will need to be closely coordinated between the two agencies.



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5.4.3 - IT Infrastructure

Another significant requirement of a successful inland port is the ability to provide the IT infrastructure necessary to support international trade. Where previously paper manifests and waybills were stored in envelopes that were affixed to the outside of the container, modern trade is processed electronically. In the future, technology will play an even greater role in supply chains and the IT infrastructure will continue to gain in importance for an inland port.

The EPIP subject site and surrounding area is fortunate in that it already possesses the necessary IT infrastructure. The study team has identified that there is fiber optic cabling located in a utility easement on the west side of Route 11, which transverses the subject area.

5.4.4 - Conclusion - International Trade

This section has examined some of the necessary items that an inland port must possess to support international trade, a key requirement for project success. The study team has found that the EPIP subject site and the surrounding area have many of these requirements in place and operational.

FTZ #240 currently serves 317 acres at the Eastern West Virginia Regional Airport. Within this acreage, there are existing buildings and available sites for new tenants who might require FTZ services. In addition, there is a path available to expand the FTZ if and when it is required by a potential user. While this process could take +/-18 months, the current permitting and development timeline for a new facility would mean that an expanded FTZ would come online shortly after building completion.

The study area is also currently served by the Front Royal Port of Entry. As demand warrants at the project, it would be possible to have the project designated a User Fee Airport and clear customs onsite. There is a substantial ongoing cost associated with providing this service and we would want to be sure that the volume of goods being cleared justified the cost. The study team feels that having the ability to clear customs now (through Front Royal) and having a clear path to obtaining designation as a User Fee Airport meets the requirements for near term inland port success.

Finally, the project has the IT infrastructure in place to support any of today or tomorrow's electronic trade facilitation platforms.



5.5 - LOCAL AND POLITICAL SUPPORT

As we have shown throughout this report, the successful inland port projects are ones that are true public-private partnerships. The importance of having strong local and political support for a project cannot be understated. The development of an inland port is an extremely complex and expensive undertaking that carries significant impacts, positive and negative, to the community where it locates. It is critical that the community is in favor of the project, as well as the various political bodies.

Members of the Berkeley County community have been actively working towards improving their area through responsible development since the early 1990's when Senator Rockefeller began discussions on the possibility of an inland port. The consistent vision for the area has not been one founded on quick remedies, but one of establishing a long term plan for reasonable and productive growth. EIPIC, state and local officials, and the Berkeley County Development Authority are promoting an emergent business community that creates stable opportunities for employment in the area and a secure tax base to provide quality services to their community. Throughout its history, this project has generated tremendous local and political support. Certainly some members of the community would be more impacted than others. However, overall, we believe that there will be continued community support for a project that carries with it significant economic development benefits, like an inland port would.

The establishment of EIPIC and its continued efforts is a testament to the local support that surrounds the prospect of an inland port being established in the target area. While other communities in the past decade have been adamant about halting growth, particularly industrial, Berkeley County has not followed in the steps of either the NIMBY or BANANA (Build Absolutely Nothing Near Anything) movements. Rather, Berkeley County and its constituents seem apt to support planned growth that has long term benefits to its surrounding stakeholders. There are currently many counties now that have realized that they suddenly need to reverse course and work to attract and encourage businesses to locate and expand in their area. By EIPIC, with assistants from the state of West Virginia and local governing officials, establishing the Inland Port Master Plan and conducting a feasibility study, they have demonstrated their steady and unwavering proactive approach to cultivate a sensible and beneficial growth strategy for the betterment of the area.



5.6 - PHASED DEVELOPMENT APPROACH

Phasing an inland port project is an important component to its success. As we have shown in the case studies, a successful project will effectively manage divergent capital and timeline requirements through a phased approach. As we have shown in the case studies, it is important for an inland port project to control enough land to accommodate future expansions. It is also necessary for a project to have enough current capacity built out to attract revenue generating users. However, acquiring land and building facilities require significant capital outlays and ongoing debt service. Do too much, too fast and the debt service can quickly become unmanageable. Striking the right balance between current capacity, future expansion options and debt service obligations is critical to a projects success.

The phasing of an inland port project is roughly analogous to the product lifecycle seen in consumer products. Those phases, as adapted for an inland port, include:



These phases are broad macro level categorizations and an inland port project may not always neatly fit into just one phase. During the early stages or transitional periods, it may exhibit characteristics of multiple phases.

5.6.1 - Preparation Phase

In this initial stage of an inland port development the concept is created and the feasibility is analyzed. During this phase of the project the needs of the market are surveyed and understood. Specific user companies are identified and their needs are incorporated into the planning stages. It is also during this phase where community and political outreach efforts are conducted to garner project support from the various stakeholders. This phase can be an exceptionally long one as the political and community support can sometimes take a long time to develop.

The preparation phase is the current stage of the EPIP inland port project. The concept for the EPIP project has been under development since the early 1990's when US Senator Jay Rockefeller brought the US Department of Commerce, Customs and Border Patrol, and citizens from Berkeley County, WV together to discuss the projects potential. Since that time, officials have been working to secure funding to advance the project analysis and understand the potential for the project.

This feasibility report represents the next critical step in the preparation phase of this project as it provides an analysis of the current market conditions and demand characteristics. The conclusions and recommendations



provided herein (Section V), will help guide the project as it moves to the next phase of its development.

One key component of this phase is the identification and establishment of the initial companies that will locate at the facility. These are the anchor tenants that will provide the initial facility demand that makes the project financially stable. At the time of this report, one or more of these initial anchor tenants has not been identified and it is unclear where the facility demand will come from.

5.6.2 - Establishment Phase

It is in the establishment phase of an inland port project that the facilities begin to take shape. The market analysis has been completed and the specific initial project offerings are planned and constructed. It is also here that the anchor tenants that were secured during the preparation phase begin their operations at the project.

While the EPIP project is not currently in the establishment phase of its lifecycle, it is important to have an accurate estimate of what costs will be associated with this next phase. Having a clear understanding of these costs will assist in project planning and future scope development.

Project Cost Analysis

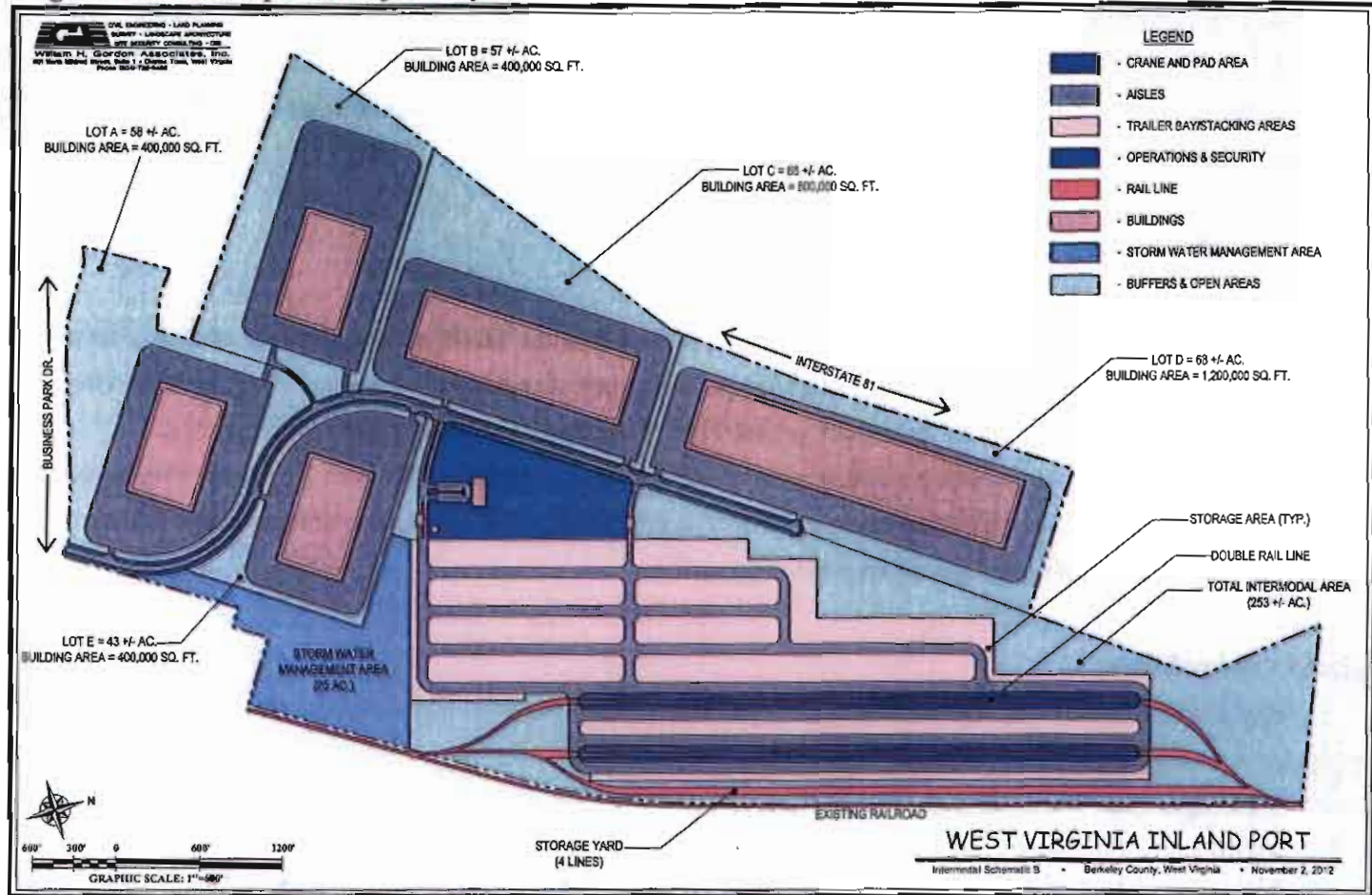
Based upon a review of similar inland port projects around the world, discussions with current inland port users, previous team member intermodal experience and current industry best practices, the study team created a conceptual layout for the EPIP project. This layout includes four working tracks of 4,100 feet each, for a total track length of 16,400 feet. If future demand warranted, an additional three tracks could be added at a later time. The layout also provides for multiple locomotive escape tracks (5,100 feet) and enables loaded trains to easily enter and exit the facility from the north or south.

This conceptual layout features 2,350 stalls of 45-foot length on the west side of the intermodal terminal to provide direct transfer between trailers and railcars. In total, there are 1,800 twenty-foot ground slots (TGSs) for containers. Ingress and egress to the facility are controlled by a single gated entrance on the south side of the project. This entrance has been designed to conform to all current US Customs and Homeland Security requirements.



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Figure 5.16: Conceptual Project Layout



The final annual lift capacity of this design will ultimately be determined by a number of future operational considerations including work hours per day, the number of cranes utilized, their specifications and the efficiency of their operators. In addition, dwell time allowances will have a significant impact in facility performance. Dwell time is the period that a shipper is allowed to leave a container on the project site before shipment, or prior to taking delivery, without incurring an additional charge. A longer dwell time allowance reduces the efficiency of the project because more space is consumed by inactive containers, but may attract additional users due to the increased flexibility it provides them. With conservative assumptions, the study team believes this facility design layout has the capacity to handle approximately 135,000 lifts per year.

This design also includes the provision to develop over 3 mSF of industrial product. The buildings contemplated in the conceptual layout are designed to be flexible and somewhat modular in their layout. That is to say that what is shown as a 1.2 mSF facility could easily be redesigned into three separate 400,000 SF facilities if that is what the market dictates. As shown in Figure 5.16, the buildings are designed as cross dock facilities with minimum 32' clear heights, 200' truck courts, 5% office build out and full building circulation for trucks.



Project Estimates and Methodology

Once the conceptual designs were complete, the study team conducted a thorough estimating exercise to derive likely construction costs. Working with conceptual designs presents a unique challenge for estimators. By virtue of being conceptual, not all of the potential engineering and design hurdles have been explored, tested and resolved. Consequently, the estimating team must make a number of assumptions throughout the process. If these assumptions are too conservative, the final project budget may be prohibitively high and the project won't move forward. If they are too aggressive, the final costs may far exceed the budgeted estimates.

In order to mitigate these problems, the estimating approach utilized in this report consists of analyzing the designs by two different methods. One method utilizes unit costs for specific items of work such as waterline pipe, aggregate bedding, and rock excavations. The second method utilizes composite costs for complete systems such as roads, utilities, and track work. These methods, used in combination, allow the study team to more accurately calculate the costs of an incomplete design.

The first method looks at specific items of work and utilizes a conceptual design program called SITEOPS. SITEOPS is site design software that allows civil engineers to evaluate more information in the early stages of a project, design more efficiently and minimize site development costs.

After our engineering team established design parameters in SITEOPS, quantities of construction materials and earth work were calculated by the program and itemized. The construction materials and earth work are priced using cost data from RS Means and actual unit cost data from recent projects of similar scope and magnitude that have been recently completed by the study team's contractor team members. The comparison allows the team to identify discrepancies in regional market rates and specific contractor efficiencies not reflected in RS Means data. These discrepancies were analyzed by the team and a composite budget number was calculated for each design option.

The second method utilized looked at general items of work and consists of analyzing the conceptual designs in an earthwork estimating program called AGTEK. The designs developed by SITEOPS were directly imported into AGTEK. The estimating team then reviewed the quantities calculated by AGTEK and applied composite cost data from recent team member projects that are similar in scope and size to the EPIP project concept.

Figure 5.17: Project Cost Estimates

General Site	
Mobilization & Permitting	\$470,865
Clearing & Grubbing	\$1,421,131
Excavation & Grading	\$9,293,691
Utilities	\$8,735,300
Asphalt Paving	\$2,177,159
Curb & Gutter	\$783,736
Lighting	\$1,457,296
Undercut Rock Allowance	\$1,862,362
General Site Total	\$26,201,539
Intermodal Facility	
Erosion Control	\$2,172,464
Storm Sewer	\$7,311,792
Concrete Work	\$31,796,211
Electrical Package	\$10,994,913
Air System	\$302,287
Sanitary Sewer	\$433,686
Water Line	\$724,825
Oil Water Separator	\$391,804
Security	\$1,126,664
Fencing	\$434,057
Fuel Tanks & Equipment P:	\$1,121,827
Automatic Gate System	\$1,623,989
Track Work	\$7,073,700
Intermodal Facility Total	\$65,508,219
Subtotal	\$91,709,759
QC/QA	\$9,170,976
Contingency	\$9,170,976
Project Grand Total	\$110,051,710



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The cost data used for this proposal are a combination of RS Means data, historical data from Phillips and Jordan, Inc., one of our contractor team members, and recent cost data for an intermodal facility constructed for Norfolk Southern in West Tennessee in 2012. In addition, cost data was used from a large retail site with similar geological issues and design considerations as the study site. Both of these projects were constructed by Phillips and Jordan in 2012 and providing accurate, real time benchmarks for time and materials.

Based upon the conceptual design layout and current pricing in the market (Summer 2012), the study team estimates that the intermodal portion of the EPIP facility will cost approximately \$110.1 million to construct, exclusive of land acquisition costs. Included in that estimate are all of the onsite road, infrastructure and utility improvements needed for an intermodal facility and industrial park of this size.

In addition to providing an estimate of the costs to develop the intermodal facility, the study team has provided order of magnitude estimates for the construction of the industrial facilities shown in the conceptual layout. These estimates are based upon the study teams detailed sitework analysis on the subject site conducted for the intermodal facility pricing analysis, as well as current pricing for similar buildings constructed by the study team in the market. For all five buildings shown on the layout, the total construction costs would be approximately \$180.5 million. This estimate is an all-in number, inclusive of land acquisition costs, utility infrastructure and lease up costs. The breakout for each individual building is shown below and in Figure 5.18.

- 400,000 SF - \$24.1 million (\$60.34 PSF)
- 800,000 SF - \$44.8 million (\$56.01 PSF)
- 1,200,000 SF - \$63.3 million (52.72 PSF)

Figure 5.18: Building Cost Estimates

	SF	400,000		800,000		1,200,000 ¹	
		Total	PSF	Total	PSF	Total	PSF
HARD COSTS							
Land Acquisition Costs	\$	1,500,000	\$3.75	\$ 3,000,000	\$3.75	\$ 4,500,000	\$3.75
Sitework	\$	2,181,644	\$5.45	\$ 4,821,433	\$6.03	\$ 6,544,932	\$5.45
Building Shell	\$	19,358,600	\$48.40	\$ 34,848,000	\$43.56	\$ 49,308,000	\$41.09
Total Hard Costs	\$	23,040,244	\$57.60	\$ 42,669,433	\$53.34	\$ 60,352,932	\$50.29
SOFT COSTS							
Government Fees & Permits	\$	345,604	\$0.86	\$ 640,041	\$0.80	\$ 905,294	\$0.75
Soft Cost Contingency	\$	250,000	\$0.63	\$ 500,000	\$0.63	\$ 700,000	\$0.58
Total Soft Costs	\$	595,604	\$1.49	\$ 1,140,041	\$1.43	\$ 1,605,294	\$1.34
LEASE UP COSTS							
Leasing Commissions	\$	500,000	\$1.25	\$ 1,000,000	\$1.25	\$ 1,300,000	\$1.08
Total Lease Up Costs	\$	500,000	\$1.25	\$ 1,000,000	\$1.25	\$ 1,300,000	\$1.08
Total Cost:	\$	24,135,848	\$60.34	\$ 44,809,475	\$56.01	\$ 63,258,226	\$52.72



5.6.3 - Expansion Phase

When the project reaches the expansion phase the majority of the major capital investment has already been made. It is during this phase that additional companies locate at the facility, as they begin to realize synergies of locating near similar industries. The diversification of tenants beyond the initial anchor tenants helps grow the facility, not only in users, but also in the full range of services that are provided. During this phase, it may be necessary to reevaluate the original business plan and project concept to see where offering may be expanded or new offerings provided.

When the EPIP project enters this phase, it may consider additional services and amenities beyond the intermodal terminal and adjoining warehousing. Some items to consider might be enhancing workforce housing options (like Alliance, TX) or providing communal conference facilities (like Global TransPark). This would also be an excellent time to consider expanding the existing FTZ, if it hasn't already been expanded and demand warrants.

5.6.4 - Stabilization Phase

By this phase in a project's lifecycle, the rapid growth is beginning to subside and fewer new tenants are locating at the facility. Growth comes from existing users expanding operations and additional new non-logistics related offerings (similar to the workforce housing and conference center mentioned above). Additional growth can also be obtained through expansion of the existing intermodal operations, if that options exists.

Typically, it is during this phase that the project will reach trade volumes that warrant its own US Customs Port of Entry designation. This is an option the EPIP project should consider when it reaches this phase.

5.6.5 - Decline Phase

Typically in this phase of a projects lifecycle there are private sector forces at work that will require the inland port project to reconsider whether it is meeting their needs. These may be technological changes that favor alternative transportation modes, advancing supply chain strategies that move manufacturing onshore and closer to the consumption base, or any number of other options. During this phase, it is likely that tenants may begin to leave the facility for better offerings elsewhere. The project should do what it can to address the changing needs of its tenants, but ultimately every project will pass through this phase as the latest and greatest options takes over.

5.6.6 - Conclusion - Phased Development Approach

The EPIP project is currently in the Preparation Phase of its lifecycle. EPIPC is doing the appropriate analysis (this report) to determine the feasibility of moving to the next phase. As we have shown in this section, the costs



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associated with moving ahead to the Establishment Phase are substantial. The study team estimates it would cost approximately \$110.1 million to develop a world class intermodal facility at the subject site. The conceptual layout provided could support an additional \$180.5 million of investment in warehouse, distribution and manufacturing facilities.

Given the substantial costs of moving forward to the next phase, the study team does not find it feasible to do so until one or more anchor tenants with suitable project demand can be secured.



6

6.0 - CONCLUSIONS & RECOMMENDATIONS

Throughout this report, the study team has examined the feasibility of developing an inland port facility at the subject site in Berkeley County, WV. We began by reviewing some of the major trends affecting the logistics industry and defined the taxonomy of the various inland port concepts. The study team also outlined six key characteristics deemed critical to a successful inland port development and compared the subject site against those.

6.1 - CONCLUSIONS

Sufficient Modal Capabilities: The study team found the subject location to possess excellent modal capabilities that make it an ideal location for logistics based activity, including an inland port. The study area is located immediately adjacent to Interstate 81, providing excellent north/south truck access. In addition, both I-70 and I-66 are located in close proximity, providing excellent east/west road connectivity. The study area also includes access to the Winchester & Western sbortline railroad which connects to both Norfolk Southern and CSX Class I railroads. CSX and Norfolk Southern both offer nearby intermodal facilities that serve the study area. Finally, the study area offers access to the Eastern West Virginia Regional Airport to support air cargo and/or corporate aircraft needs.



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Existing, Unmet Demand: The analysis conducted by the study team found there is not sufficient unmet demand in the market to support the development of an inland port facility. The predominance of goods that move into and out of the area are bulk commodity goods that are not containerized and would not utilize an intermodal facility. In addition, the study team found that the goods being moved did not travel a far enough distance to efficiently utilize intermodal service. Finally, and most importantly, the study team found that three existing intermodal facilities within the catchment area have more than enough capacity to service the probable current and future demand.

International Trade Facilitation: The study team found the study area to offer sufficient amenities that would help potential users facilitate international trade. The study area is already home to Foreign Trade Zone #240, located on 317 acres around the Eastern West Virginia Regional Airport. Through conversations with FTZ officials the study team determined this zone could be expanded to include other nearby sites if required by a new user. The study area also has a dedicated US Customs Port of Entry through the Front Royal, VA Port of Entry. Finally, the study area has a sufficient IT infrastructure backbone to would support modern electronic trade facilitation efforts.

Locational Advantages: The subject area is found to be an excellent site for transportation and logistics activities. It is located approximately halfway along the Eastern seaboard and within a one day's drive of 63% of the US population. Within a more immediate area, the study area provides excellent access to the population and growth centers of Washington, DC and Baltimore, MD. Overall, this location provides users with an ideal combination of lower priced land, access to an excellent transportation network, as well as a substantial consumer base. Additionally, the subject area is attractive to companies operationally. The subject area has a dedicated workforce, low cost of living, and advantageous utility cost.

Local and Political Support: The EPIP project has garnered demonstrated support from a wide variety of state and local governmental departments. They have all expressed their interest in seeing an inland port facility locate within the study area and been willing to provide any assistance they can. In addition, the concept for the EPIP inland port project appears to have substantial community support. While certainly not a representative sample size, the community members that the study team interviewed held favorable opinions of the project. Some inland port development projects meet resistance at the political and community levels, the study team would not envision that being an issue in this location.

Phased Development Approach: The study team determined that the EPIP project is currently conducting activities that are appropriate for its phase of development. This report is a significant part of the Preparation Phase. Given the considerable costs associated with moving the project to the Establishment Phase, one or more anchor tenants with suitable project demand need to be identified and secured.



The EPIP inland port project meets five of the six success criteria outlined by the study team. However, inland ports are not “build it and they will come projects”, as demonstrated by North Carolina’s Global TransPark. There absolutely must be sufficient demand in place to justify such a substantial capital investment.

Until such time as sufficient, specific user demand can be identified and captured, the study team does not find it feasible to advance the development of an inland port at this location.

6.2 - RECOMMENDATIONS

The decision on when, where and how to develop an inland port is complex and is uniquely specific to each project. However, in every case there is some identified “need” that the development of an inland port project will address. In the case of the Alliance, TX project completed by Hillwood Properties, there was a need for a reliever airport to service the Dallas/Fort-Worth metroplex. Hillwood met that need with the nation’s first all industrial airport and the project has successfully grown to include additional road and rail connections. For the Kansas City SmartPort concept, the need was to coordinate and enhance a number of existing independent assets in a broad geographic region. They have not only met that need, but have brought additional companies to the area who have a transportation or logistics need.

Sometimes projects are developed to meet a need that changes, or doesn’t materialize at all. Virginia conceived the VIP facility as a way to divert business away from the Port of Baltimore. Along the course of the project, that need evolved into a need to service companies importing goods into the US through the Port of Virginia. The project adapted and has been very successful. The Global TransPark in North Carolina was not so lucky. That project was developed to meet a need for an air cargo airport and logistics center that has been slow to materialize. As we have shown, that project has not performed well because of this.

The question then becomes what is the need that the EPIP inland port project is trying to address? As we have demonstrated in this report, the market does not have an oversupply of unmet demand for intermodal transportation options. There are already three facilities adequately meeting that need.

The real underlying need for the EPIP inland port project does not appear to the study team to be external. The driver for this project is an internal need for increased economic development activity within the region. This report has shown that in this location, with its market and demand characteristics, an inland port project will not generate the desired economic development opportunities.

However, many of the study area characteristics that made the inland port concept attractive can also be leveraged to generate economic development activity. This report has shown the study area represents an excellent location for transportation and logistics activities. It has an abundant, skilled workforce and is located within close proximity to over nine million people. It also has supportive, proactive political leaders at the local, state and



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national levels.

Given these positive attributes and a need for economic development activity, the study team spent a considerable amount of time identifying recommendations that could leverage the transportation and logistics investments that have already been made in the region by Virginia, CSX, Norfolk Southern and others, while capitalizing on the study areas ability to serve transportation and logistics needs.

The study team believes the recommendations presented below are actionable items that can be completed in the near term to create significant economic development opportunities in the region.

6.2.1 - Recommendation #1 - Develop an innovation center for the advancement of natural gas in transportation

West Virginia has over 200 years of history of being a significant energy producing state with its vast oil and natural gas resources. Recent developments in horizontal drilling techniques have discovered an abundance of natural gas resources to carry the state through the twenty-first century. West Virginia ranks second, behind Texas, for the number of producing gas and gas condensate wells in the United States. The study team recommends that Berkeley County work with the Governor of West Virginia, West Virginia University, and Blue Ridge Community and Technical College to create a innovation center specializing in advancing the use of natural gas in transportation and logistics.

Overall Concept:

This new research and development campus would be located on the subject site, and would be anchored by a compressed natural gas (CNG) and liquefied natural gas (LNG) fueling station. In addition, lab, classroom, conference facilities and office space would be available for education and private sector research uses. Education would be a critical component of the center with a WVU partnership advancing the engineering required to increase utilization of natural gas. Blue Ridge Community and Technical College would also be integral to train workers on the conversion of traditional petroleum engines to natural gas engines, as well as any unique maintenance techniques that may be needed for these engines.

It is anticipated that two distinct types of private sector business would be attracted to locate near a center such as this. First would be the companies that are engaged in the research activities. These could be a research division of an engine manufacturer or a related type company. The second type of private sector company would be the users of the natural gas for transportation. These could be any company that would benefit from being located near a natural gas refueling station.



Cost Estimates (Order of Magnitude):

- Fueling Station - \$2.0 million
- Research and Development Center - \$16.25 million
- Annual Facilities Costs - \$900,000

Current Sector Conditions:

- **Increasing Supply** - Horizontal drilling and hydraulic fracking technology have unlocked shale gas and light tight oil (LTO), with its associated gas
- **Favorable Pricing** - Natural gas prices in North America are forecast to remain low for the foreseeable future
- **New Source of Demand** - Transportation represents the largest remaining high-value market segment for demand growth
- **Competitive Advantage** - Low natural gas prices and rising oil prices are creating a widening price gap between natural gas and diesel. There is the potential for heavy diesel users to save +/- \$1 billion per year in fuel costs.
- **Regulatory Pressure** - Tightening emissions regulations are making diesel engines more expensive with their required scrubber technologies. CNG and LNG are clean burning and can help fleet operators meet these standards.
- **Lack of Infrastructure** - Lack of fueling infrastructure has contributed to limited demand from fleet operators, which has kept the engine and conversion markets small.

Locational Advantages:

The study location is unique in that it offers research opportunities on multiple modes of transportation. It is anticipated that the initial research efforts would focus on over the road transportation vehicles. As use and acceptance of natural gas increases, it is conceivable that this location could utilize its rail access to conduct and support research on LNG powered locomotives. Boeing, in its N+4 study, also conceives of using LNG to power subsonic aircraft in the next 30 years. This location, with its access to the Eastern West Virginia Regional Airport could facilitate aeronautical LNG research as well when that time comes.

The presence of the existing intermodal and transportation assets in the region also present a compelling locational advantage for this center. One of the areas where utilization of natural gas is most viable is in "closed loop" distribution systems. A closed loop system is one where the trucks return back to a central location at the end of the day. A trucking or drayage company could locate at the study location and move containers between the intermodal facilities and warehouses located within the study region during the day, only to return back home at night. Natural gas would be an excellent alternative fuel for them because they could refuel at night. Given the current range of NG vehicles, those same trucking companies could easily distribute to and from the study area and



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locations within the Baltimore-Washington corridor.

Finally, the number of current fueling stations in the area east of the Mississippi River is minimal. According to the US Department of Energy website, the three LNG fueling stations in closest proximity to the study area are in Seville, OH (235 miles), Bridgeport, CT (277 miles) and Birmingham, AL (639 miles). Adding fueling infrastructure at the study location could prove significant in expanding the ability for companies to utilize LNG on longer haul routes. It would certainly be advantageous for companies locating within the study area to utilize LNG on long haul routes and refuel at the turn around point.

Natural Gas benefits as a Vehicle Fuel:

Natural Gas, and LNG in particular, provides several benefits when it is used as a long range transportation fuel. One of the primary benefits is a significant cost savings over diesel. A similar quantity of natural gas does not produce as much energy as diesel and, consequently, natural gas prices are quoted on a Diesel Gallon Equivalent (DGE) basis. As of 10/15/2012, the US national average price for a gallon of diesel fuel was \$4.15/gal. For the same period, a DGE of natural gas was \$1.19/DGE. For a long haul driver that averages 75,000 miles per year, a conversion to LNG can represent a significant savings. There is a price premium of LNG trucks over diesel and that costs needs to be incorporated into the savings calculation. The study team has calculated a conservative estimate of the Total Cost of Ownership (TCO) for an LNG vehicle of \$2.36 per gallon, including \$0.83 per gallon of incremental equipment costs. This still represents a 43% savings over diesel, and equates to a incremental conversion/replacement payback period of less than three years.

The second primary benefit of natural gas as a transportation fuel is the reduced emissions. Natural gas, both CNG and LNG, are extremely clean burning fuels. In recent trials, LNG and CNG usage resulted in an 85% reduction of particulate matter, an 80% reduction in carbon monoxide, and a 15% reduction of carbon dioxide emissions. In fact, the emissions levels are so low that they fall well within the Tier 4 2015 US Clean Air Act requirements. It is highly likely that these emission numbers will decrease substantially as technology advances, similar to what has been seen with traditional diesel engines.

Concept Funding:

Because of the unique nature of the proposed project, it has the potential to draw from a number of different funding sources, including those designated for transportation, alternative fuels, and air quality standards projects. In addition, it is anticipated that the project will attract a significant level of private investment from companies who locate at or near the center and/or participate in the research efforts. Below we have profiled some of the potential sources of capital for a project such as the recommended concept.

Transportation Investment Generating Economic recovery (TIGER) Grants: The Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grant program, is administered by the US Department of



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Transportation Infrastructure Finance and Innovation Act (TIFIA): The Transportation Infrastructure Finance and Innovation Act (TIFIA) is a federal program administered by the Federal Highway Authority Office of Innovative Program Delivery. The TIFIA program provides federal credit assistance for selected projects in the form of direct loans, loan guarantees and standby letters of credit. These credit facilities only fund a portion of the project cost and are required to be paired with additional private funds. The recent passage of the Moving Ahead for Progress in the 21st Century Act (MAP-21) significantly increased funding for the TIFIA program, authorizing \$750 million of funding in FY2013. Like TIGER grants, application for TIFIA funding is very competitive. We believe a project such as this, with significant environmental benefits, would fare well in the competitive process. However, the \$50 million minimum project size may prove problematic unless the project scope is expanded.

Other Funding Sources: In addition to the federal sources outlined above, there may be other grant opportunities available to this project. Also, the Eastern Panhandle Inland Port Coalition has been awarded bonding authorization which could be used for the recommended project. This would most likely be used in conjunction with a Tax Increment Financing (TIF) District, or similar overlay area, that would be established around the subject site. A TIF District allows the project to leverage future increases in property taxes to service debt issued for the improvement project. Finally, it is anticipated that private sector participants in the project would finance and develop their own facilities that are co-located on and around the research campus.

6.2.2 - Recommendation #2 - Create a transportation and logistics focused economic development entity

In addition, and in conjunction with, recommendation #1 above, the study team recommends that the Eastern Panhandle Inland Port Coalition members establish an economic development entity solely focused on attracting transportation and logistics businesses to the study area. This would be similar to the Kansas City SmartPort entity that was profiled in Section II of this report. This new entity would partner with key regional transportation stakeholders to cross market the subject location as the warehouse, distribution and manufacturing hub for the existing intermodal assets. This location in West Virginia has the potential to become a vibrant logistics hub serving the populous Northeast markets and the ports of Virginia and Baltimore. With the abundance of transportation assets in the region and the recent success in attracting the new 1.3 mSF Macy's fulfillment center, there is a very compelling story to be told.

Competition for the Macy's type facilities is fierce between states and localities and this location needs to clearly articulate the unique attributes of this location within the context of the market.



Unique Offerings to Leverage:

- Natural Gas Science & Technology Center (See recommendation #1 above)
- Eastern West Virginia Regional Airport
- Virginia Inland Port
- Chambersburg Intermodal Terminal
- Greencastle Intermodal Facility
- Direct Access to I-81 with I-66, I-68, and I-70 nearby
- Low cost power

Annual Operating Cost Estimates (Order of Magnitude):

\$137,500 - Employee and benefits
\$15,000 - Part time administrative assistance
\$24,000 - Office rental
\$60,000 - Travel and entertainment
\$18,000 - Supplies and Misc.
<u>\$254,500 - Annual Total</u>

Key Partners:

The following organizations have been identified by the study team as key stakeholders in the area who would benefit from the establishment of such an economic development organization. The study team recommends these organizations be invited to be a part of the creation, execution and oversight of this new economic development organization.

Eastern West Virginia Regional Airport Authority - As noted above, the ability to provide air cargo opportunities as a complement to the existing intermodal facilities is a unique offering in the market. The study team has closely examined the potential for air cargo business to operate at the study location. While we believe the existing airport infrastructure is suitable and the facility could reasonably handle an air cargo tenant, we continue to believe that a pure air cargo user will choose to locate at one of the major international airports located in close proximity. The vast majority of all air cargo freight travels in the belly of passenger aircraft and, accordingly, pure air cargo users tend to locate near airports with high volumes of passenger movements. However, the airport at the study area is a unique amenity and could be an ideal solution for the right user who may need access to other modes of transportation.

CSX - The CSX railroad has made a major investment in both the Chambersburg Intermodal Terminal and its National Gateway Corridor. The company has a vested interest in seeing the area grow as a hub for transportation and logistics companies, as it would likely lead to more rail customers for them.



The study team recognizes that such coordination on incentives will be a challenge. However, the Kansas City SmartPort model has shown it is possible for groups with sometimes divergent competitive interests to work together to promote and advance a greater regional effort.

“Certified Sites”

The newly formed economic development agency should work to catalog detailed information on all of the sites within the study region that could potentially support transportation and logistics type uses. These would include existing buildings, raw land and those sites that are developer controlled and entitled. Speed to market is frequently critical to companies engaged in a site selection process. To address this time sensitivity, the study team recommends creating a formal “fast track” permitting process for projects meeting specific criteria. This will allow developers to submit their sites and building concepts to have a certain level of permitting pre-approval and be classified as a “certified site”. When a prospective company considers a “certified site”, they could be reasonably assured of an expedited approval process given minor changes to the building envelope and site layout. This could be a significant competitive advantage over other locations where the permitting process is a major timeline consideration.

Education

The availability of a suitable workforce with the required skills necessary for transportation and logistics jobs is a major site selection criteria as companies compare potential locations for new operations. The study team recommends working with West Virginia University and Blue Ridge Community and Technical College to develop generalized supply chain management and logistics type educational offerings. In addition, the economic development entity should work to coordinate with prospective companies and the Blue Ridge Community and Technical College to address any specific workforce needs of the company.

Funding

The study team recommends funding the new economic development authority through a combination of contributions by the key partner organizations outlined above and Berkeley County, WV.

The study team has considered a wide range of ideas in conceptualizing the above recommendations. We believe the recommendations presented above are the two best options for the study area given the current demand characteristics and the proximity to three existing intermodal facilities. In executing these recommendations, we believe the potential for study location is exceptional and believe it is in an excellent position to leverage the investment of others to create a world class transportation and logistics hub location.



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