

**SUPPLY CHAIN  
LOGISTICS  
AND TRANSPORTATION  
INDICATOR STUDY**



**December 2005**

# HEART OF ILLINOIS REGIONAL PORT DISTRICT

## SUPPLY CHAIN LOGISTICS AND TRANSPORTATION INDICATOR STUDY

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## EXECUTIVE SUMMARY

In the summer of 2003, local leaders came together to discuss ways in which to increase the use of the Illinois River as an economic development tool for the central Illinois region. The result was the establishment of the Heart of Illinois Regional Port District (HOIRPD).

The overall goal of the HOIRPD is to promote the creation of transportation and industrial employment opportunities for the region. The Port District will seek to enhance the utilization of the Illinois River for freight, and will also seek to enhance the development of intermodal freight facilities within the District.

The Heart of Illinois Regional Port District covers six counties in central Illinois. They are: Fulton, Marshall, Mason (with the exception of Havana Township, which has its own Port District), Peoria, Tazewell and Woodford Counties. The Port District encompasses over one hundred miles of the Illinois River as it traverses these six counties.

A three-part study was undertaken. Part I is an inventory and capacity analysis of four modes of transportation: river, highway, rail, and air. Part II is a market analysis that will identify the industries that have the highest potential for increased employment opportunities, with an emphasis on river transportation. Part III is a study of locations along the Illinois River where new port facilities can be developed.

The inventory and capacity analysis (Part I) indicates that the Heart of Illinois Regional Port District is well-served by the four modes of transportation studied – river, highway, rail, and air. Each mode of transportation is well-represented within the region. Further, there appears to be adequate capacity for the next twenty years in each of the modes.

River transportation on the Illinois River is by shallow-draft barge. The capacity of the river is directly related to the capacity of the locks and dams that make the river navigable. There is currently capacity in the locks and dams on the Illinois River, although there can be significant delays. Delays are due to the fact that barges must be divided into two sections in order to pass through the locks, which were built fifty years ago when barges were shorter. Plans are underway to improve the locks but construction may not be completed for many years.

Highway transportation is the most widely used form of the four modes of transportation for freight. The Heart of Illinois Regional Port District has an interstate system that allows freight to be shipped into and out of the region efficiently. While the interstate system is adequate, there is concern that the lack of a direct interstate connection to the Chicago area via interstate negatively impacts the region.

There is adequate capacity for the next twenty years in the local highway system. There are a few segments of roadway that are at or near capacity; however, improvements to most of these roadways are already in the planning stages.

The region is well-served by rail transportation. Three Class I railroads (out of seven in the nation) are represented in the Port District. Both east/west and north/south rail connections are available by Class I railroads. The region also has an adequate supply of regional, linehaul, and switching & terminal railroads to support Class I rail.

Air freight transportation is very different than water, highway, or rail transportation. While water, highway, and rail transportation is focused on moving heavy or bulky goods, air transportation is focused on moving lightweight, high value goods and materials. Thus, there is little or no competition between air freight and the other three modes of freight transportation.

In the Heart of Illinois Regional Port District, the Greater Peoria Regional Airport is the only air facility with the size and capacity necessary to support major air freight transportation.

The Market Analysis (Part II) was undertaken by the Heartland Partnership, a regional economic development organization. The market analysis looked at trends on the national and international level, and also studied freight activity on a local level.

The trends in freight on the national and international levels can be used as a gauge for what to expect in the six counties that encompass the Heart of Illinois Regional Port District. An examination of freight activity at the local level will identify potential areas of opportunity for the region.

Overall, heavy, low-value commodities are transported at lower unit costs by rail and water transportation, while lighter, high-value, time-sensitive commodities often move by truck and air-truck or rail-truck intermodal combinations

The Heart of Illinois Regional Port District is in an advantageous position regarding freight movement. With local and short-haul shipments continuing to dominate the market, it would seem logical that HOIRPD would be able to capitalize on its proximity to the major markets of Chicago, St. Louis, and Indianapolis. In addition, with long haul shipments also showing significant growth, the region will be able to capitalize on those shipments as well, especially when one considers the HOIRPD's location on the inland waterway system. The Port District can capitalize on both long- and short-haul growth by engaging in a marketing campaign to boost shipments from ports along the Gulf Coast, such as New Orleans, for distribution in short-haul shipments throughout the Midwest.

Although looking at national trends in freight is important, it is equally, if not more important to examine what is occurring in the local freight industry. The local freight industry was examined by comparing freight statistics of the region from the years 2000 and 2004. Based on the data, some general conclusions can be made along with recommendations on how to capitalize on the trends.

As part of the Market Analysis, the Heartland Partnership undertook a survey of local manufacturers and their freight needs. Results of this Central Illinois Freight Strategies

Study illustrate the tremendous dependence of local industries on trucking transportation. As a result of this reliance on trucks for the majority of regional freight transportation, it will be difficult to significantly increase the use of other modes of transportation for businesses currently located in central Illinois. Instead, the expansion of alternative transportation, specifically river transportation, will most likely come through external marketing and new business recruitment.

In order to fully capitalize on the region's potential, it is important to focus on areas of potential growth. One of the primary areas for growth for river transportation is that of the container-on-barge (COB) industry. The growth of container traffic being shipped into the United States, the congestion of east and west coast ports, the congestion on highways in major metropolitan hubs, and the congestion of rail lines in major metropolitan hubs coupled with the availability and efficiency of barge travel make COB an important emerging market.

Another potential industry that could offer development opportunities is value-added manufacturing. Value-added manufacturing is the difference between the final value of finished products and the value of the inputs that were used to manufacture the end products. Value is added to the inputs (raw materials) by processing, refining, manufacturing, transporting, grading, assembling, packaging, and delivering products in a form that satisfies consumers' preferences.

The third and final part of the study focused on barge and intermodal transportation. Specifically, potential locations for new or expanded port facilities were examined. A total of thirteen sites along the 100 miles of Illinois River in the Port District have been identified.

Potential port locations were determined using three sets of criteria. The first, and undoubtedly the most important, is the transportation network that will serve a particular location. Access to a regional highway network is key. Access to rail is a secondary factor.

A second set of criteria related to land use issues. The existence of utility infrastructure (e.g., public water and sewer) already in place is an advantage to the location of new facilities.

Finally, a third set of criteria used to determine potential facility locations were environmental in nature. A balance must be struck between industrial maritime uses and impact to the natural environment. While flood plains, wetlands, and levees do not eliminate a site from further consideration, they do indicate a challenge that must be weighed against the economic benefits of that location.

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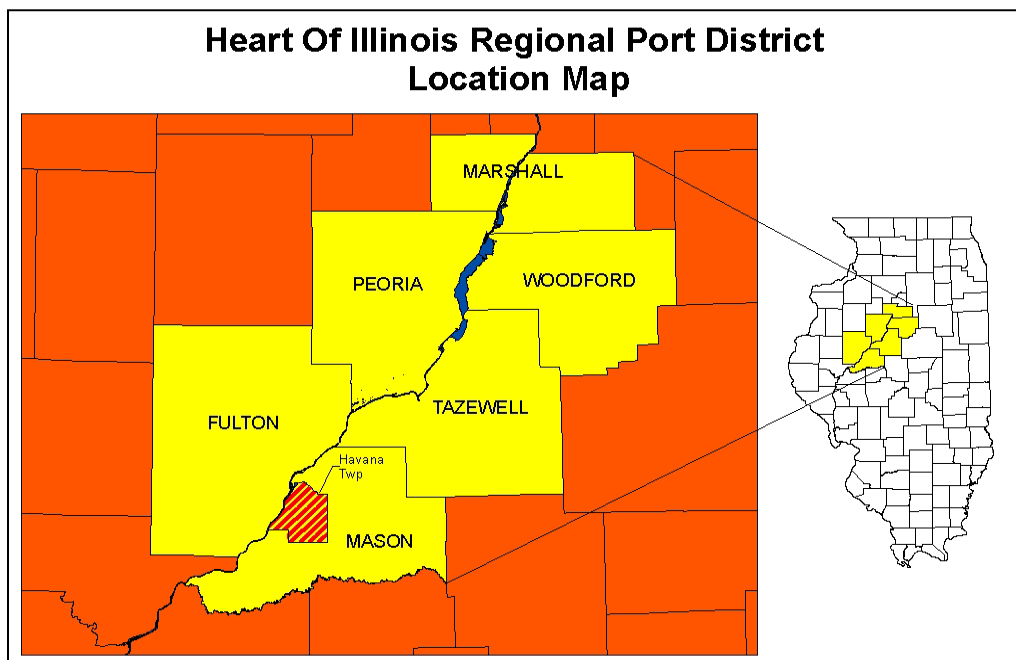
## PURPOSE OF THE STUDY

### Introduction

The Illinois River has long been the signature landmark for the central Illinois region with its beautiful landscapes and magnificent views. The river has also provided the area with the ability to create business and distribute products around the globe, serving as a major link for the transport of goods into and out of the Illinois heartland. From the whiskey brewing era to the growth of manufacturing in central Illinois, the Illinois River has indeed been a working river.

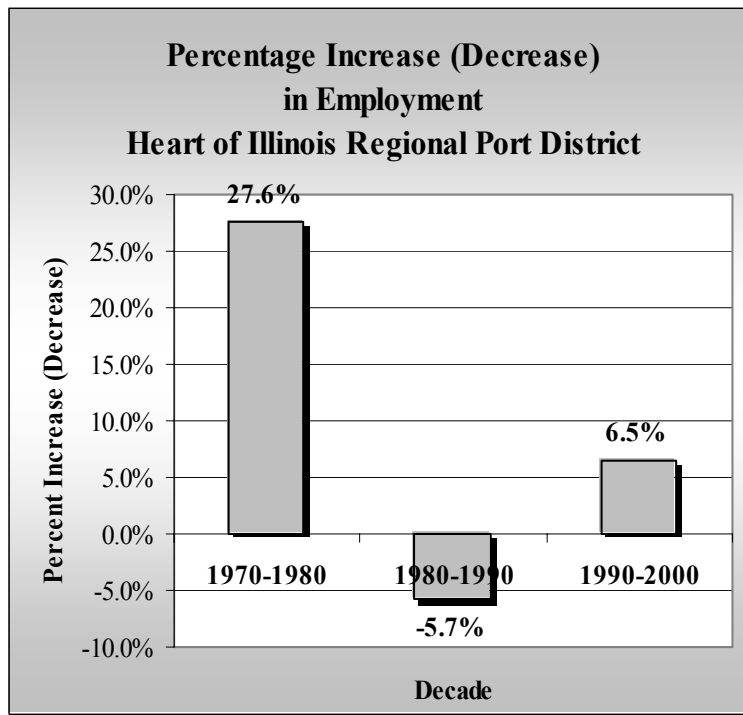
In the summer of 2003, local leaders came together to discuss ways in which to increase the use of the Illinois River as an economic development tool for the central Illinois region. The result was the establishment of the Heart of Illinois Regional Port District.

The overall goal of the Heart of Illinois Regional Port District is the creation of transportation and industrial employment opportunities for the region. To meet this goal, the HOIRPD will seek to enhance the utilization of the Illinois River for freight, and will also seek to enhance the development of intermodal freight facilities within the District.



The Heart of Illinois Regional Port District covers six counties in central Illinois. They are: Fulton, Marshall, Mason (with the exception of Havana Township, which has its own Port District), Peoria, Tazewell and Woodford Counties. The Port District encompasses over one hundred miles of the Illinois River as it traverses these six counties.

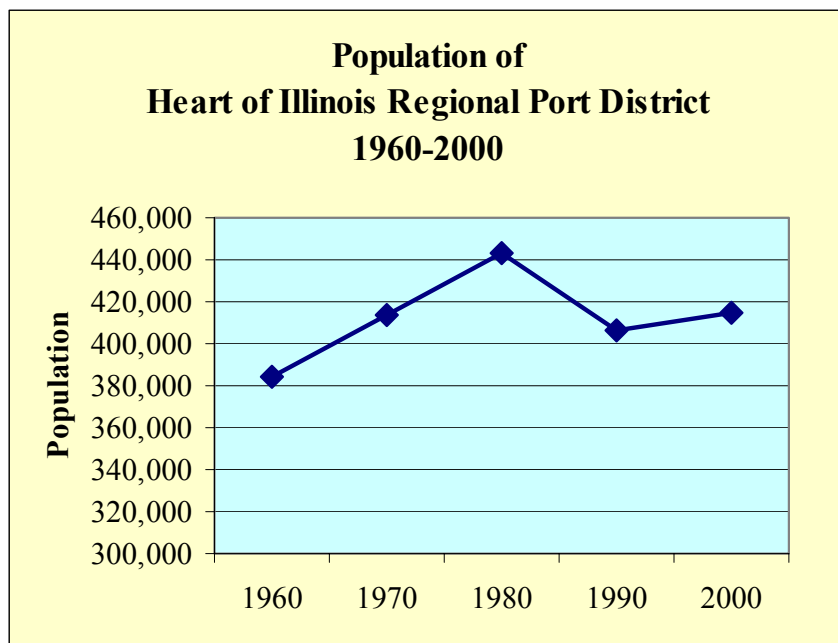
**Economic Development**



The employment situation of the region over the past thirty-five years has been volatile. A recession that hit the area in the 1980's caused unemployment to rise significantly. Many of these lost jobs were in the manufacturing sector. The total number of jobs in the region dropped over 5% between 1980 and 1990, after enjoying a 27% rise in the preceding decade. The years since 1990 have seen a modest recovery in the number of job opportunities available to residents of the region.

Source: U.S. Bureau of the Census

All six counties that comprise the Heart of Illinois Regional Port District were affected by the loss of employment opportunities. The loss of jobs forced many families to relocate to other parts of the nation to find employment. A popular bumper sticker of the time said "Will the last person to leave Peoria please turn out the lights." From 1980 to 1990, the population of the region fell almost ten percent. Since that time, the population has begun to recover, but relatively slowly.



Source: U.S. Bureau of the Census

## **Methodology**

The newly formed Heart of Illinois Regional Port District is in need of a comprehensive, long-range strategic plan in order to promote utilization of the region's existing infrastructure for freight. No such plan exists at the present time to assist the Port District in achieving its objectives. This study is a critical step the region must make to promote intermodalism in the six county Port District. The result will be a blueprint that will transform the Port District from an idea into a distinct and powerful mode for transportation facilitation and improvement.

The study was broken down into three parts. The first part is an inventory and capacity analysis of four modes of freight transportation: river, highway, rail, and air. The inventory and analysis charted existing conditions, and also looked twenty years into the future. The first party of the study is vital to the overall strategy in that current conditions must be known before studying alternative solutions.

The second part of the study is a Market Analysis. The market analysis examined trends in the freight industry on the local, national, and international levels. The information gathered defines growth and development opportunities for the Port District.

The third and final area of the study is to use the information gathered in the first two phases of the study and identify sites which would be ideal in accommodating the growth of manufacturing and port facilities. It will also identify industries that may potentially locate within the Heart of Illinois Regional Port District.

## **Regional Partnership**

The study is being undertaken by a partnership of two organizations – the Tri-County Regional Planning Commission and the Heartland Partnership. The Tri-County Regional Planning Commission is a regional planning agency that promotes intergovernmental cooperation to develop a vision for the future of the region, define regional issues, set goals, and implement plans. The mission of the Heartland Partnership is to promote economic development initiatives in the region in order to develop, nurture and grow the central Illinois economy.

Tri-County Regional Planning Commission completed Parts I and III of the study. The Heartland Partnership completed Part II, Market Analysis.

# **SUPPLY CHAIN LOGISTICS AND TRANSPORTATION INDICATOR STUDY**

## **PART I OF III**

### **TRANSPORTATION INVENTORY AND CAPACITY**



## **CHAPTER 1.**

### **INTRODUCTION**

The first part of this study analyzed four modes of transportation: river, highway, rail, and air. The first step was an inventory of each mode of transportation.

The second step was to analyze the capacity of each mode of transportation to handle freight. The analysis looked at the current capacity of each mode, and an attempt was made to forecast freight capacity into the future.

Until the capacity of the infrastructure of these four forms of transportation are understood, increasing river transportation and promoting intermodalism cannot take place. The study will address issues such as how much growth our region's waterways, rail lines, highways, and airport can support. The study will produce critical information about regional transportation capacity that will in turn guide the Port District in its planning objectives.

## CHAPTER 2.

# INVENTORY AND CAPACITY OF RIVER TRANSPORTATION

### INTRODUCTION

The six county Heart of Illinois Regional Port District is located in central Illinois and is bisected by the Illinois River. The Illinois River flows into the Mississippi River and from there into the Gulf of Mexico. The fertile Illinois River valley is known for its prime farmland that produces high yields of corn, soy, and wheat crops. It is also known for its history as a major manufacturer of earth-moving equipment.



The Illinois River is used for the transportation of goods into and out of the region. To the south of the region, it

connects with the Mississippi River and from there to deep drafts ports in New Orleans to allow for international trade. To the north, the river connects with Lake Michigan and from there to the Atlantic Ocean (via the St. Lawrence Seaway), again allowing for international trade.

**Figure 2.1**



*Number of miles one ton of freight can be carried per gallon of fuel*

Why is freight moved by water? One reason is cost. It is estimated that large quantities of cargo can be moved by barge for one-third the cost of railroad and one-fifth the cost of truck. Secondly, cargo that is too big or too heavy to be transported over the highways or by railroad can be efficiently moved by water. See Figure 2.1.

River freight is moved by barge, which is a shallow-draft container

pushed by a towboat. Barges have plied the Illinois River since the 1930's carrying freight into and out of the region. One of the goals of the Heart of Illinois Regional Port District is to increase the amount of river transportation and therefore increase non-exportable employment opportunities in the region.

What kind of freight is moved by barge? Freight that is moved by barge have three things in common. They are high in bulk, low in value compared to their weight, and are not time-sensitive. See the Table 2.1 for a listing of commodities moved by barge on the Illinois River.

**Table 2.1**

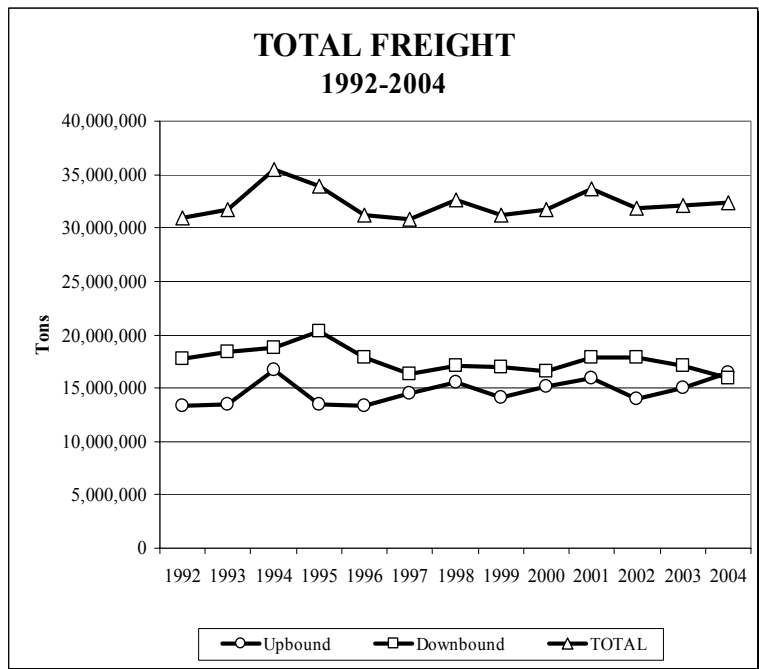
COMMODITY GROUP	
Name	Examples
Coal	Coal, lignite, coke
Petroleum	Petroleum, petroleum products
Chemicals	Chemicals, fertilizer
Crude Materials	Sand, gravel, stone, iron ore
Manufactured Goods	Paper, concrete, iron
Farm Products	Corn, soybeans

**RIVER TRANSPORTATION IN THE HEART OF ILLINOIS REGIONAL PORT DISTRICT**

Approximately thirty to thirty-five million tons of freight pass through the region on an annual basis. This tonnage has remained relatively constant for at least the past twelve years. See Figure 2.2.

Freight travels both upriver and downriver. For example, grain from central Illinois is shipped downriver to New Orleans, and from there to international markets. Coal, on the other hand, is shipped upriver from its place of origin. The amount of freight going in each direction on the Illinois River has remained relatively constant over the years.

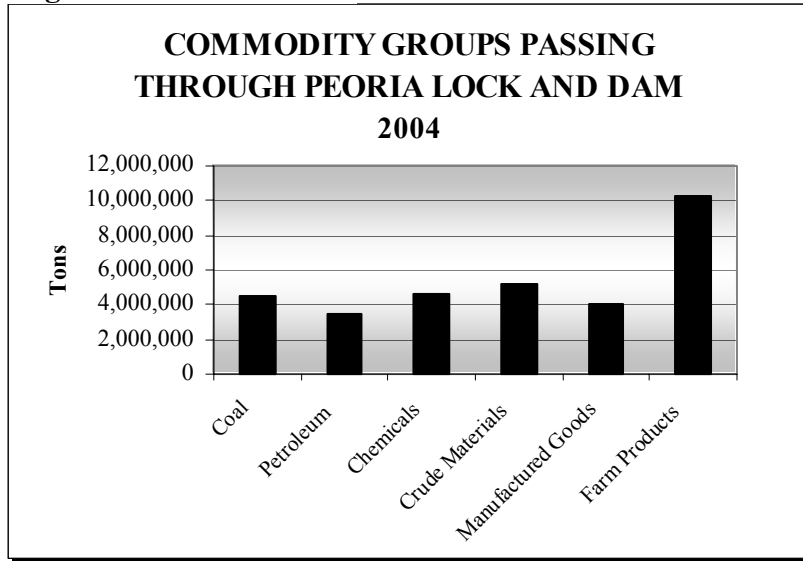
**Figure 2.2**



Source: U.S. Army Corps of Engineers

Figure 2.3 indicates the major commodity groups that pass through the Peoria Lock and Dam. Of these commodity groups, farm products are the most common cargo transported by barge through the study region. In central Illinois, the two primary farm products are corn and soybeans. Nationally, fifty percent of the nation's corn and forty percent of the nation's soybeans are transported by barge.

**Figure 2.3**



***Amount of Inbound and Outbound Freight in the Study Area***

The information so far indicates the amount and types of freight that pass through the Peoria Lock and Dam, located in the heart of the Port District. While Figure 2.3 indicates the types and tonnage of freight that passes through the lock and dam, it does not tell us how much freight is being shipped into or out of the Port District.

To determine the amount of freight that is generated or delivered to the Port District, information from other locks and dams was utilized. The study region, fortunately, has a lock and dam very close to its northern and southern boundaries. Just north of the study area is the Starved Rock Lock and Dam, and just south of the study area is the LaGrange Lock and Dam.

In order to determine how much freight is leaving the study region, the amount of freight that passed through the Starved Rock Lock and Dam was compared to the amount of freight that passed through LaGrange Lock and Dam. The difference is the amount of freight that was shipped into or out of the Port District. This analysis was possible because the LaGrange and Starved Rock locks are close to the boundaries of the HOIRPD.



For example, for downbound river traffic, if the amount of freight of a particular commodity is greater at the LaGrange Lock than at the Starved Rock Lock, it was assumed that the freight was picked up within the Port District. If, on the other hand, the amount of freight that passed through the LaGrange Lock is less than the freight that passed through the Starved Rock Lock, it was assumed that the freight was delivered to a site within the Port District. The reverse is true for upbound river traffic. For purposes of this analysis, it was assumed that no freight is both picked up and dropped off within the Port District.

**Figure 2.4**

**Heart of Illinois Regional Port District  
Location of Locks and Dams In and Adjacent to the Port District**



Figure 2.5 (on the top of the next page) indicates the amount of inbound and outbound freight to the study area in 2004. Of the approximately 32M tons of freight that passed through the Peoria Lock & Dam in 2004 (Figure 2.2), forty percent, or 13M tons, either came into or was shipped out of docks and terminals within the Port District. The chart also shows that there is a vast difference between the amounts of inbound and outbound freight. Over 80% of the freight is *outbound*. A large part of this outbound freight is agriculturally related, which will be discussed later in this chapter.

**Figure 2.5**

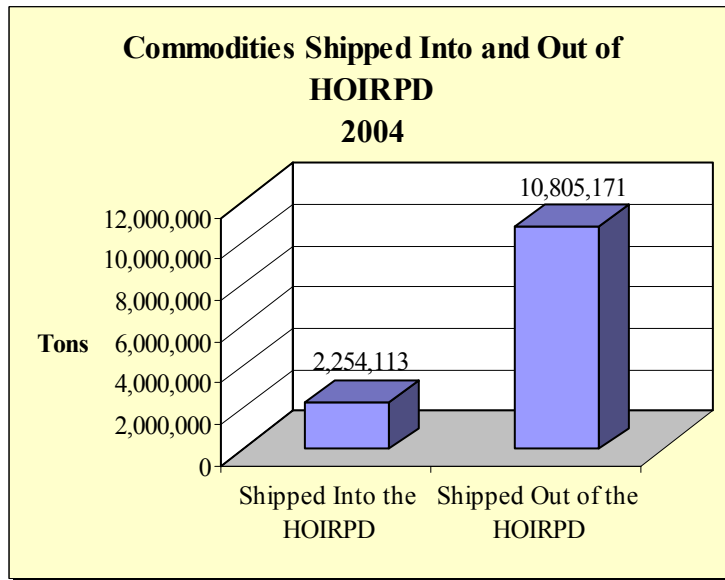


Figure 2.6 shows the types of freight that are being shipped *into* the region. There is a wide selection of freight being shipped into the region, with chemicals, coal, and manufactured goods being the most common.

**Figure 2.6**

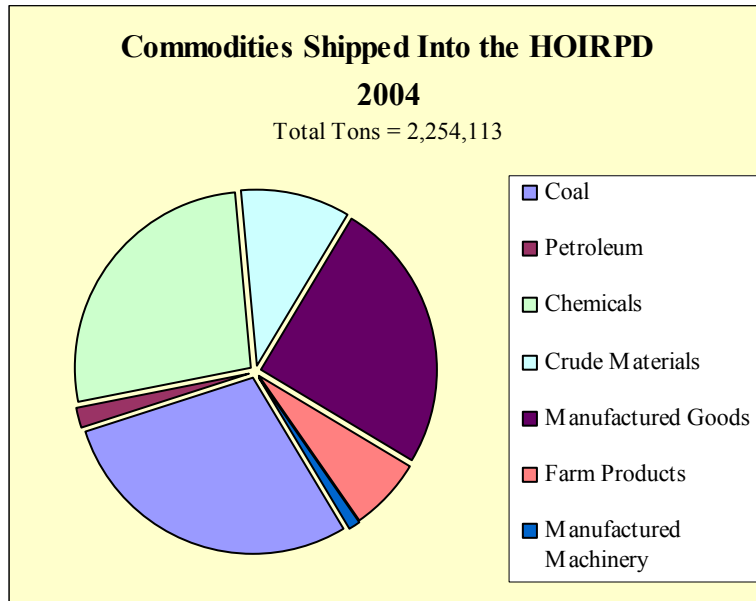
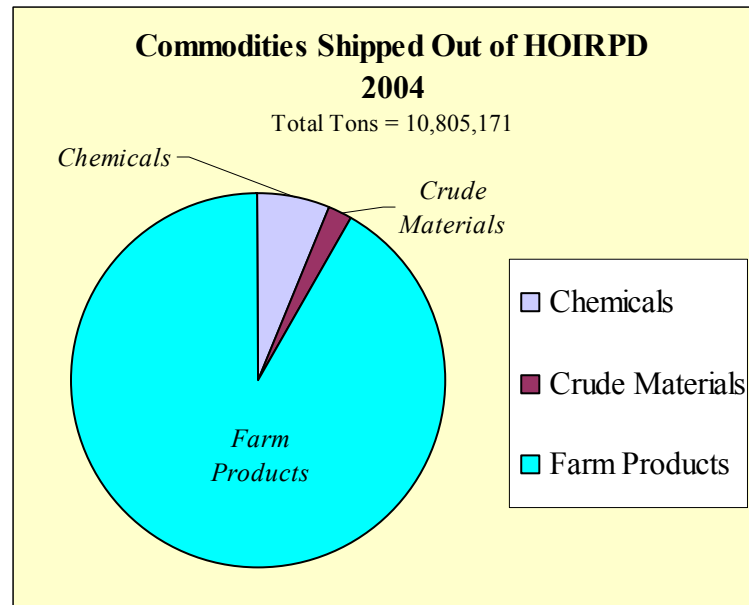


Figure 2.7 shows the amounts and types of freight being shipped *out of* the Port District. This graph is vastly different from the one above. Of the approximately 10.8M tons of

freight being shipped out of the study area, 9.9M tons, over 90%, are farm products. In addition, most of this freight is shipped only during certain months of the year, specifically in the late fall and early spring.

**Figure 2.7**



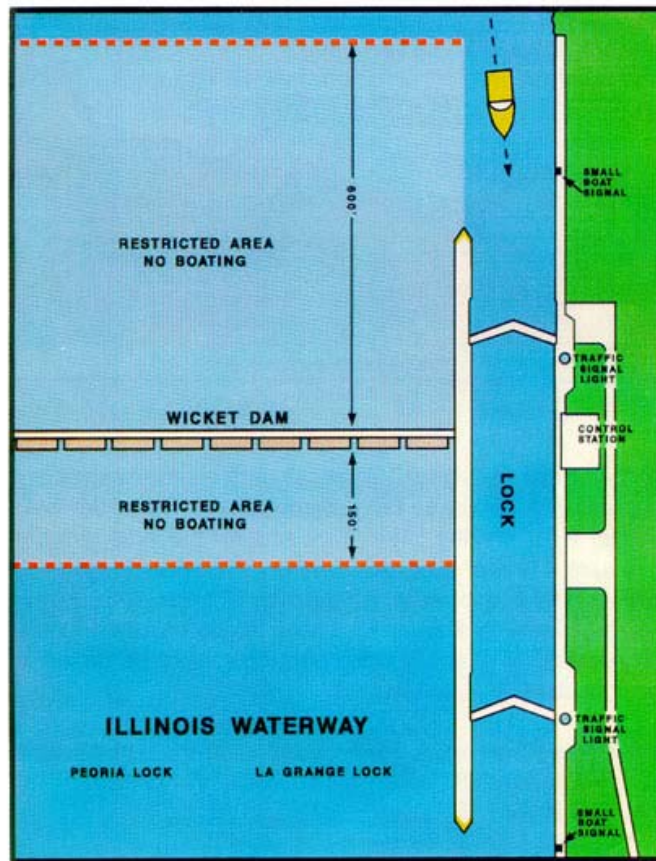
### **CAPACITY OF RIVER TRANSPORTATION**

River transportation on the Illinois River is possible only because of locks and dams. Locks and dams are constructed to overcome the natural fall of the river from its headwaters to its mouth. There are eight locks & dams on the Illinois River from Lake Michigan to the Mississippi River that assist boats with the 163' drop in elevation. There is one lock and dam in the six county study area, centrally located in the heart of the region. See Figure 2.4 on Page 8 for a map showing the location of the Peoria Lock and Dam.

The capacity of river transportation is directly related to the capacity of locks and dams. The lock and dam located in the study area is typical of locks on the Illinois River. It is a 600' feet in length and can handle one towboat with up to nine barges. Most towboats, however, push up to fifteen barges at a time on the Illinois River. In order to navigate the lock and dam, the barges must be divided into two sections, with each section passing through the lock separately.

Figure 2.8 is a schematic of the Peoria Lock and Dam.

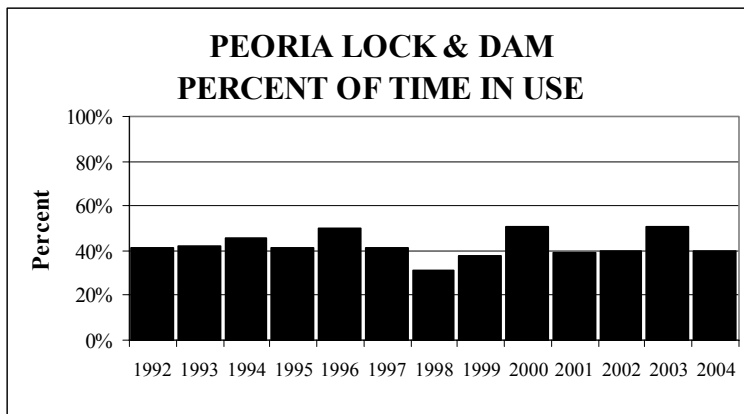
**Figure 2.8**



*Source: U.S. Army Corps of Engineers*

Locks and dams operate twenty-four hours a day, seven days a week. The Peoria Lock & Dam is in use from 40% to 50% of the time. This percentage has remained constant over the last twelve years. The amount of time the lock and dam is in use is a function of the amount of barge traffic AND the amount of rainfall. In years where there has been much rain and the river level is high, barges bypass the lock and dam, thus saving travel time.

**Figure 2.9**



*Source: U.S. Army Corps of Engineers*

A statistic that indicates that the lock and dam is at fifty percent capacity does not mean that fifty percent of the capacity remains. Due to inefficiencies in the system, there will be somewhat less than fifty percent capacity remaining.

A plan has been developed by the U.S Army Corps of

Engineers (USACE) to improve the locks and dams on the Illinois, Mississippi and Ohio Rivers. The Peoria Lock and Dam is one of two locks – the other being LaGrange – on the Illinois River that will get a new 1,200 foot lock. This new lock will be in addition to the 600 foot dock already in existence. The new, longer lock will be put into service after 2020. The new 1200 foot lock will allow a 15 barge tow to navigate the lock and dam in approximately thirty minutes, compared to the two hours it takes now.

The amount of freight shipped by barge on the Illinois River has not changed significantly in the last twelve years (Figure 2.2). Even so, the USACE has projected that barge traffic will increase approximately twenty-five percent in the next twenty years, necessitating the need for expansions to the locks and dams. With the improvements to the locks and dams, there will be adequate capacity for river transportation for the foreseeable future.

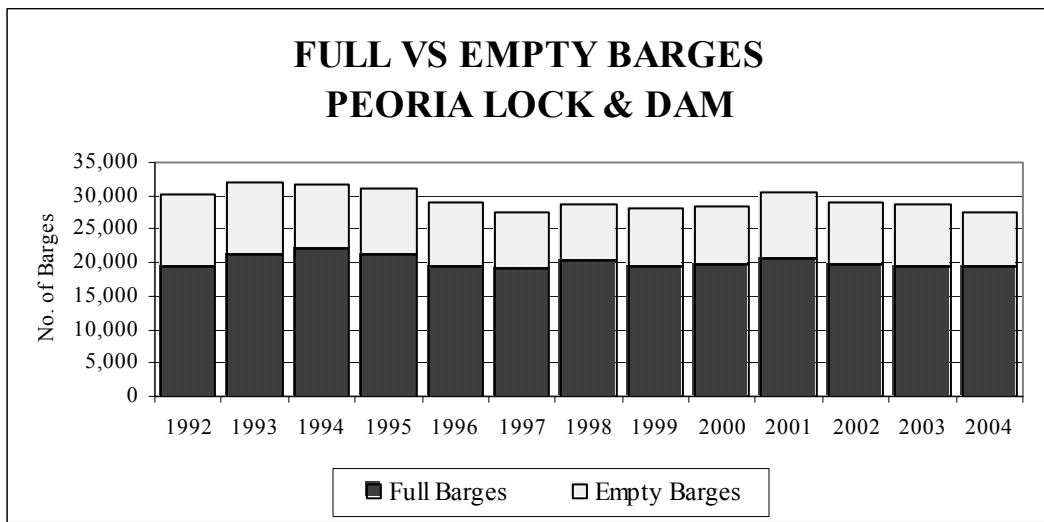
***Full vs. Empty Barges***

In addition to the types and amounts of freight that pass through the Peoria Lock and Dam, the U.S. Army Corps of Engineers also records the number of empty barges that pass through the locks.

Approximately 30,000 barges pass through the Peoria Lock and Dam on an annual basis. This amount has remained steady for many years. Also remaining steady is the proportion of full barges vs. empty barges. In any given year, about one-third of the barges plying the Illinois River are empty. See Figure 2.10 below.

The proportion of empty barges may be a benefit for the Port District. If commodities can be found to fill the empty barges, it would mean more freight can be shipped into or out of the Port District without increasing the usage of the locks and dams.

**Figure 2.10**



**EXISTING BARGE TERMINALS**

There are forty active barge docks/terminals in the Heart of Illinois Regional Port District. (See Appendix IA at the end of this chapter for a complete listing.) Each County in the Port District has at least one, as follows:

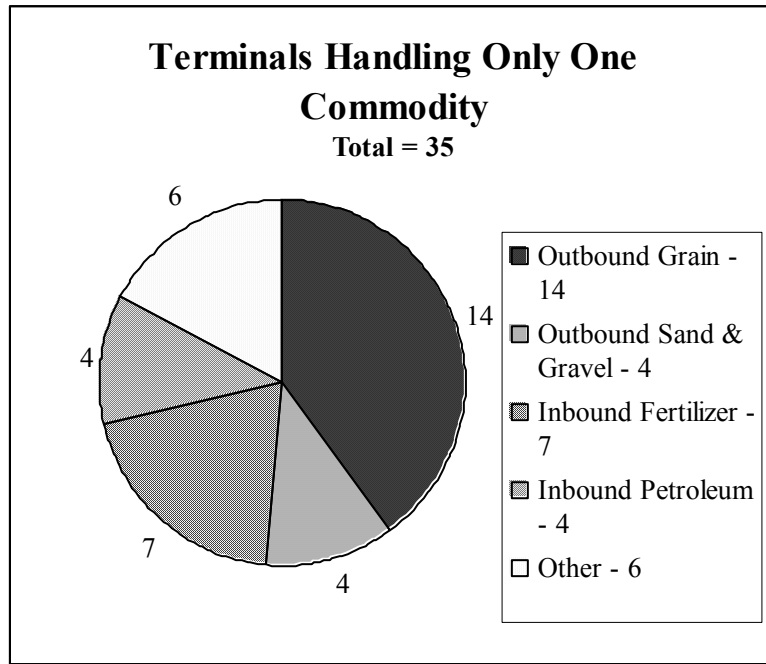
**Table 2.11**

COUNTY	NUMBER OF BARGE DOCKS/TERMINALS
Fulton	1
Marshall	6
Mason	7
Peoria	14
Tazewell	11
Woodford	1

In addition to the forty terminals, there are an additional eight docks that are used exclusively for fleeting services.

Most terminals handle one product. Of the forty terminals, thirty-five, or 88%, handle only one commodity, such as outbound sand and gravel, or inbound petroleum. The chart below indicates the number of terminals and the products they handle.

**Figure 2.12**



The five remaining terminals handle various commodities and handle both inbound and outbound freight. The largest of these five terminals is the Peoria Barge Terminal, located at the foot of Darst Street in the city of Peoria.

### **CONTAINER-ON-BARGE TRANSPORTATION**

Container-On-Barge shipping is the most recent development in river transportation. While most of the bulk freight moved by barge is experiencing modest or flat growth, the numbers of containers needing to be moved is steadily and rapidly increasing.

Most of the facilities and infrastructure needed for Container-On-Barge (COB) shipping are already in place. Generally, no deepening of navigation channels would be needed. Further, existing barges could be modified to carry containers, eliminating the need for a large investment in new barges. COB could use existing jumbo barges capable of holding 72 TEU (twenty foot equivalent units) containers (stacked 3-high), thus taking at least 36 trucks off the road for each fully loaded barge.

Major inland river terminal construction is not necessary to initiate COB service. Basic requirements are: ground storage, cranes, container forklifts, good highway connections, and a weigh station for trucks.

COB barge shipping is currently in existence on the Mississippi River, carrying containers that come into the Port of New Orleans. Over the last few years, COB has moved up the Mississippi River to Memphis, Tennessee, and from there to Louisville, Kentucky, on the Ohio river.

Container-On-Barge is by its very nature intermodal. The containers can be off-loaded to either truck or rail, depending on their final destination

## APPENDIX IA

### Existing Docks/Wharfs

NAME OF FACILITY	CITY	COUNTY	INBOUND/ OUTBOUND	PRIMARY PRODUCT	RAIL CONNECTION
Delmar Marine, Inc., Barge Unloading Dock.	Liverpool	Fulton	Outbound	Sand & gravel	
Jack Tanner Towing Co., Coggeshall Fleet Mooring.	Liverpool	Fulton	*		
Trumbull River Services Dock.	Lacon	Marshall	*		
Continental Grain Co., Lacon Grain Elevator Dock.	Lacon	Marshall	Outbound	Grain	
Midwest Foundation Corp., Lacon Dock.	Lacon	Marshall	*		
ADM/Growmark River System, Lacon Grain Elevator	Lacon	Marshall	Outbound	Grain	
Mid-West Sand and Gravel, Salt Dock.	Lacon	Marshall	Inbound	Salt	
Midwest Sand & Gravel, Aggregates Dock.	Lacon	Marshall	Outbound	Sand & gravel	
Farmland Industries, Henry Terminal Dock.	Henry	Marshall	Inbound	Fertilizer	CSX
ADM, Henry Grain Elevator Dock.	Henry	Marshall	Outbound	Grain	
Trumbull River Services, Lacon Fleet Mooring.	Lacon	Marshall	*		
Imperial Valley Terminal, Havana Dock.	Havana	Mason	Inbound	Fertilizer	
Tabor Grain Co., Havana Terminal Dock.	Havana	Mason	Both	Grain;misc dry bulk	
ADM/Growmark River System, Havana Grain Elevator	Havana	Mason	Outbound	Grain	
Continental Grain Co., Havana Grain Elevator Dock.	Havana	Mason	Outbound	Grain	
Cargill, Havana Grain Elevator Dock.	Havana	Mason	Outbound	Grain	
SCH Terminal (formerly Commonwealth Edison dock)	Havana	Mason	Outbound	Coal	Chicago & Illinois Midland
Illinois Power Co., Havana Power Station Wharf.	Havana	Mason	Inbound	Coal	Chicago & Illinois Midland
Lafarge Corp., Great Lakes Region, Peoria Terminal Dock.	Bartonville	Peoria			
Cargo Carriers Pekin Terminal Dock.	Bartonville	Peoria	Inbound	Various dry bulk	P&PU
Shell Oil Co., Pekin Asphalt Plant Dock.	Pekin	Peoria	Inbound	Asphalt	
ADM, Mapleton Plant Dock.	Mapleton	Peoria	Inbound	Vegetable Oil	Yes
CF Industries, Peoria Warehouse Coal Dock.	Mapleton	Peoria	Inbound	Coal	
CF Industries, Peoria Warehouse No. 1 Dock.	Mapleton	Peoria	Inbound	Fertilizer	TP&W
CF Industries, Peoria Warehouse No. 2 Dock.	Mapleton	Peoria	Inbound	Fertilizer	Yes
CF Industries, Inc., Kingston Mines Terminal Dock.	Kingston Mines	Peoria	Inbound	Fertilizer	



Clark Oil & Refining Corp., Bartonville Terminal Dock.	Bartonville	Peoria	Inbound	Petroleum	
Chillicothe Terminal Barge Dock.	Chillicothe	Peoria	Outbound	Grain	
Galena Road Gravel Co.	Chillicothe	Peoria	Outbound	Sand & gravel	
Hamm's Harbor Service	Chillicothe	Peoria	Both	Various dry bulk	
ADM/Growmark River System, Inc., Peoria Wharf.	Peoria	Peoria	Outbound	Grain	AT&SF
Jubilee Materials Dock.	Peoria	Peoria			
Peoria Barge Terminal Wharf.	Peoria	Peoria	Both	Various dry bulk	Yes
Martin Oil Marketing Dock.	Peoria	Peoria	Inbound	Fertilizer	
Keystone Steel & Wire	Peoria	Bartonville			
Hicks Oil & Hicks Gas Dock.	Creve Coeur	Tazewell	Inbound	Petroleum	
Central Illinois Dock Co., Upper Dock.	Creve Coeur	Tazewell	Both	Various dry bulk	P&PU
Keller's Peoria Harbor & Fleeting Service	Creve Coeur	Tazewell	*		
Midwest Foundation Corp., Wharf.	Creve Coeur	Tazewell	*		
Caterpillar Tractor Co., East Peoria Dock.	East Peoria	Tazewell	**		
Demeter, East Peoria Grain Elevator Dock.	East Peoria	Tazewell	Outbound	Grain	AT&SF
Central Illinois Dock Co., Lower Dock.	Creve Coeur	Tazewell	Both	Steel, Grain	P&PU
Garvey Marine, Kingston Mines Fleet Mooring.	Kingston Mines	Tazewell	*		
American Milling Co., Pekin Grain Elevator Dock.	Pekin	Tazewell	Outbound	Grain	Chicago & Illinois Midland
Midwest Grain Products of Illinois, Pekin Wharf.	Pekin	Tazewell	Outbound	Grain	P&PU
Sours Grain Co., Pekin Grain Elevator Dock.	Pekin	Tazewell	Outbound	Grain	P&PU
Garvey Marine, Pekin Left Bank Fleet Mooring.	Pekin	Tazewell	*		
ADM, Pekin Grain Elevator South Dock.	Pekin	Tazewell	Outbound	Grain	
Mississippi River Grain, Pekin Grain Elevator Dock.	Pekin	Tazewell	**		
ADM, Pekin Grain Elevator North Dock.	Pekin	Tazewell	Outbound	Grain	P&PU
Agricultural Minerals Corp., North Pekin Terminal Dock.	Pekin	Tazewell	Inbound	Fertilizer	P&PU
Amoco Oil Co., North Pekin Terminal Barge Dock.	Pekin	Tazewell	Inbound	Petroleum	
Powley Sand and Gravel Co. Dock.	Spring Bay	Woodford	Outbound	Sand & gravel	

\* Fleeting Service

\*\* Not in Service

## CHAPTER 3.

# INVENTORY AND CAPACITY OF HIGHWAY TRANSPORTATION

### INTRODUCTION

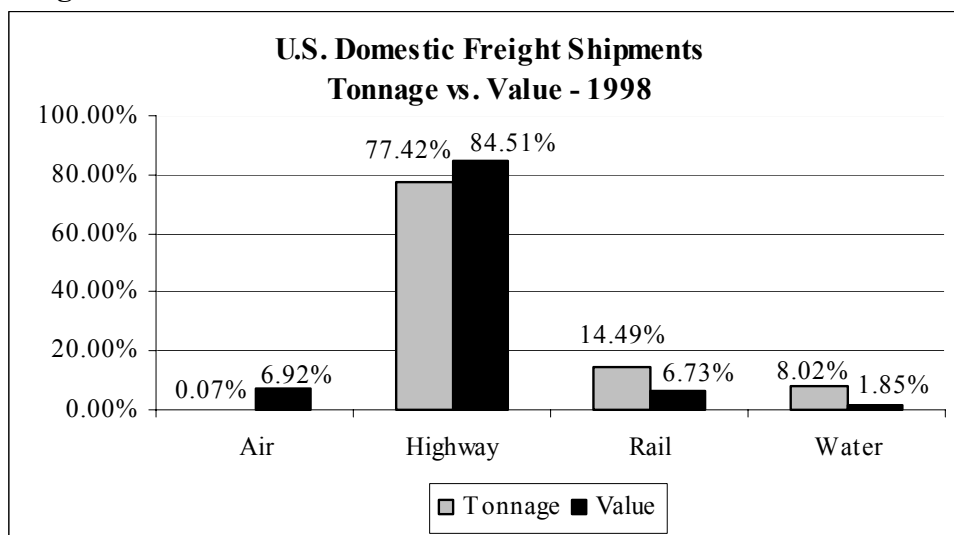
The second mode of transportation studied as part of this report is highway transportation. Highways are used for both personal and commercial transportation and provide the predominant mode of freight transportation in the United States.



Traffic has been steadily increasing on our nation's highways for the past thirty years. Both the amount of passenger vehicles and the amount of commercial vehicles are increasing; however, the amount of commercial vehicles is increasing at a faster rate. Currently, approximately one-third of the vehicles on the nation's roadways are moving freight, compared to 22% in the late 1980's.

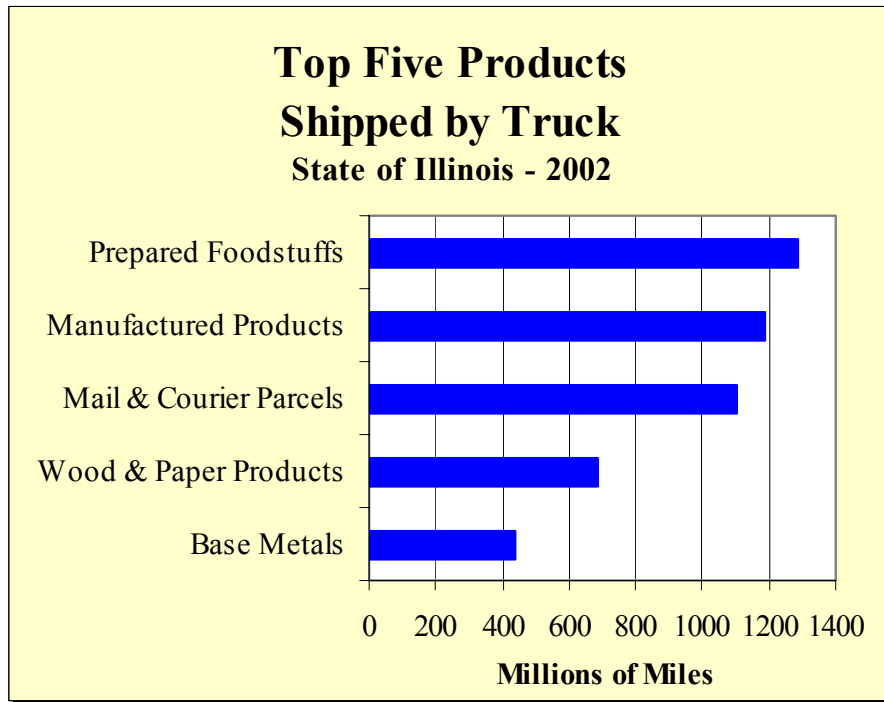
Trucking plays a critical role in the economy. Over 77% of the total tonnage of freight is shipped by highway in the United States. From a value perspective, over 84% of domestic freight is moved by highway. See Figure 3.1.

**Figure 3.1**



One of the advantages of highway transportation is that it can handle a large variety of commodities. Figure 3.2 shows the top five products shipped by truck on Illinois highways.

**Figure 3.2**



### **HIGHWAY TRANSPORTATION IN THE HEART OF ILLINOIS REGIONAL PORT DISTRICT**

The six-county Heart of Illinois Regional Port District has a highway network composed of local, state and federal roads. For this report, state and federal roads will be discussed.

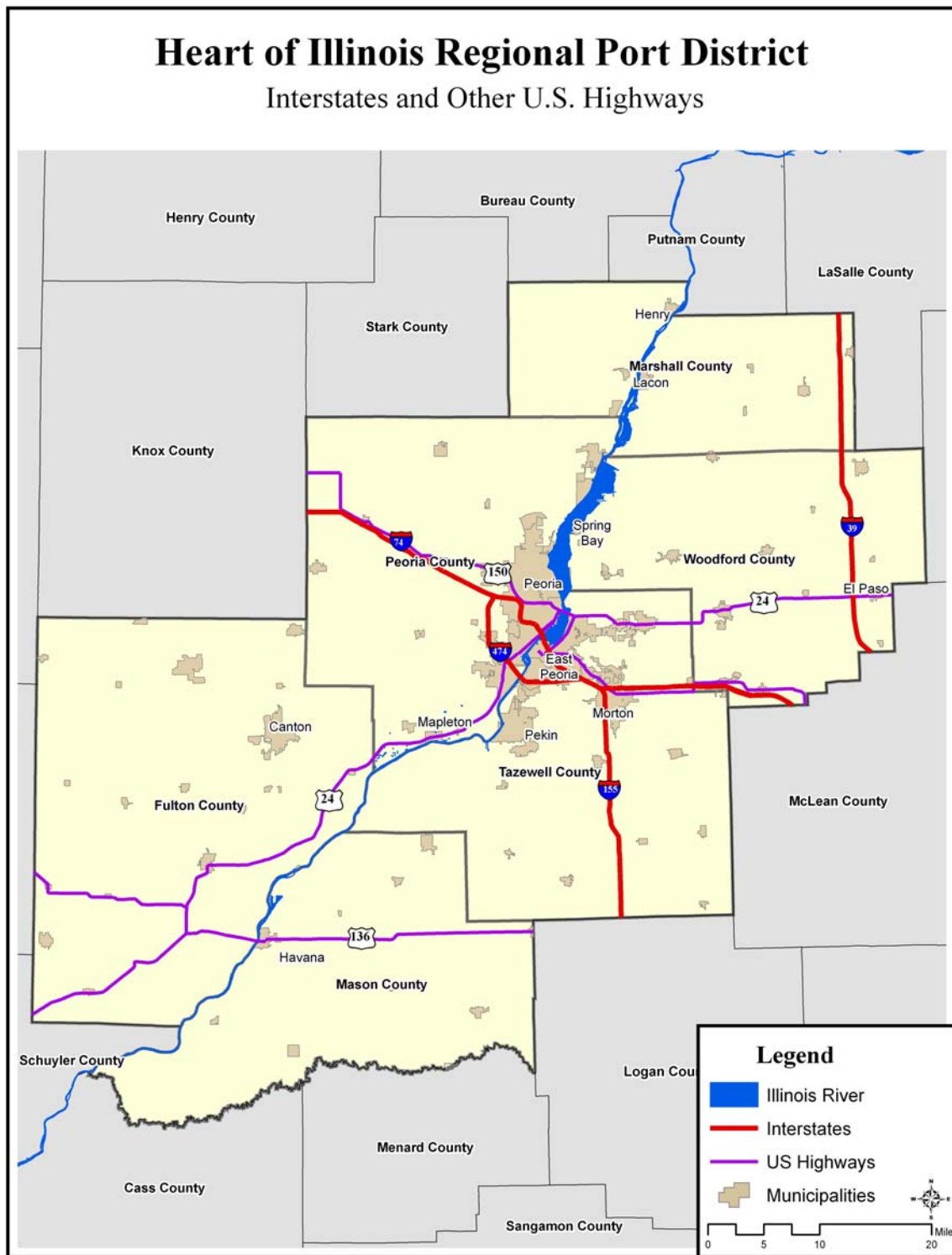
#### ***Federal Highways***

Within the HOIRPD are the following federal highways:

- Interstate 74
- Interstate 474
- Interstate 155
- Interstate 39
- U.S. Route 150
- U.S. Route 24
- U.S. Route 136

Federal highways are broken into two types: Interstates and U.S. Highways. Interstates are primarily located in and around the City of Peoria in the heart of the Port District. The

Figure 3.3



exception to this is Interstate 39, which is located on the northeastern side of the study area. Four counties in the Port District - Peoria, Tazewell, Woodford and Marshall - have an interstate within their borders.

Interstates are a vital link in the transportation system of our region. They allow the movement of freight into and out of the region in an efficient, safe, and reliable manner. They keep existing businesses and industries in our region and are an important factor in encouraging new ones to locate here.

Other federal highways are primarily two-lane roadways with signalized intersections. Therefore, they are not as efficient as interstates for freight transportation. Each county has at least one U.S. Highway, with the exception of Marshall County, which has none. U.S. Highways are important in that they provide a link to the interstate system; most U.S. Highways in Illinois have interchanges on the interstate system.

### ***State Highways***

The map on the following page (Figure 3.4) shows that the HOIRPD has an extensive network of state highways. Most state highways are two-lane. Intersections are at-grade and are controlled with traffic signals. A few state highways have four lanes in and around the Peoria metropolitan area. Like federal highways, state highways are an important 'link' in the overall transportation system of the region.

See Figure 3.5 for a map showing the total transportation network in the Port District.

Figure 3.4

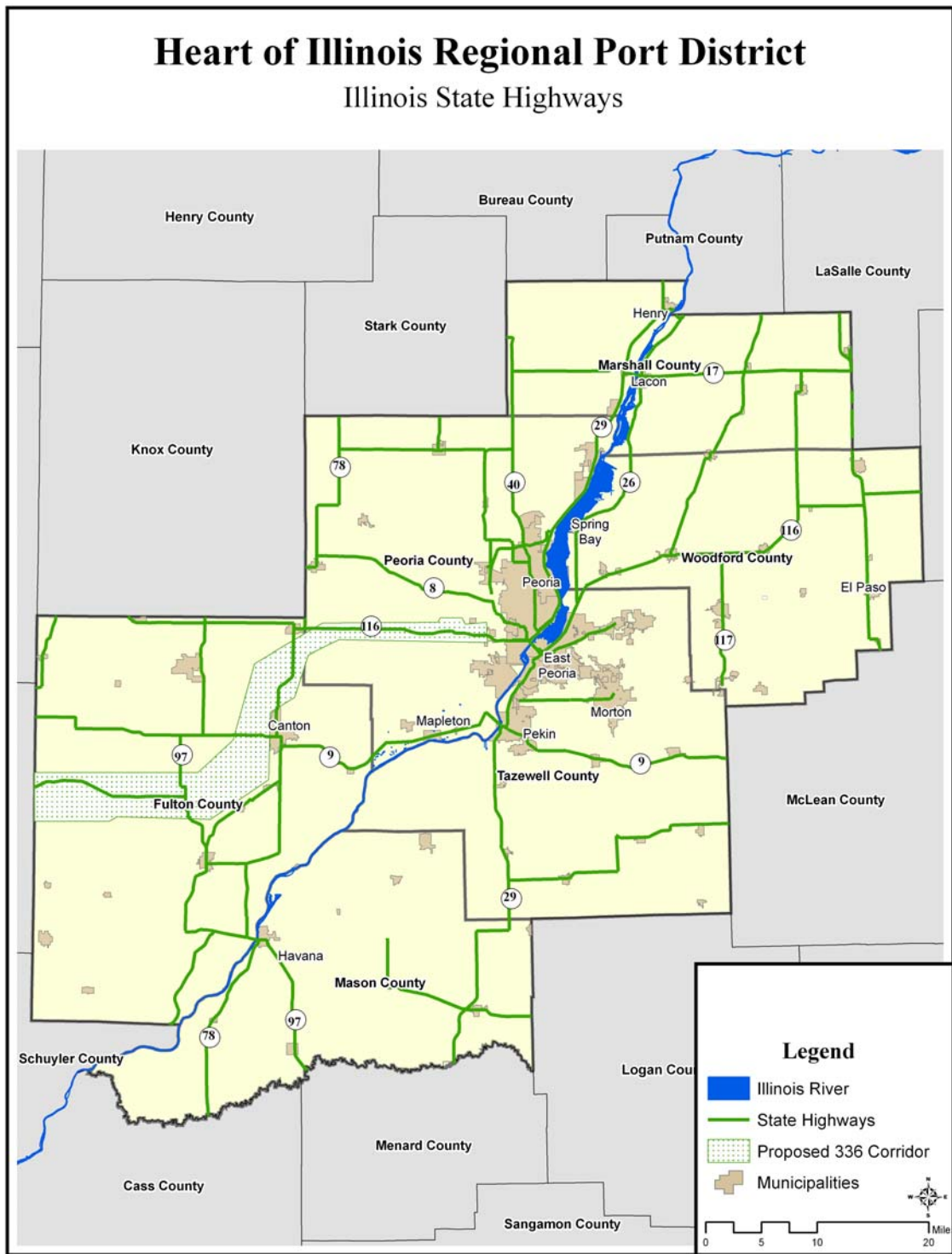
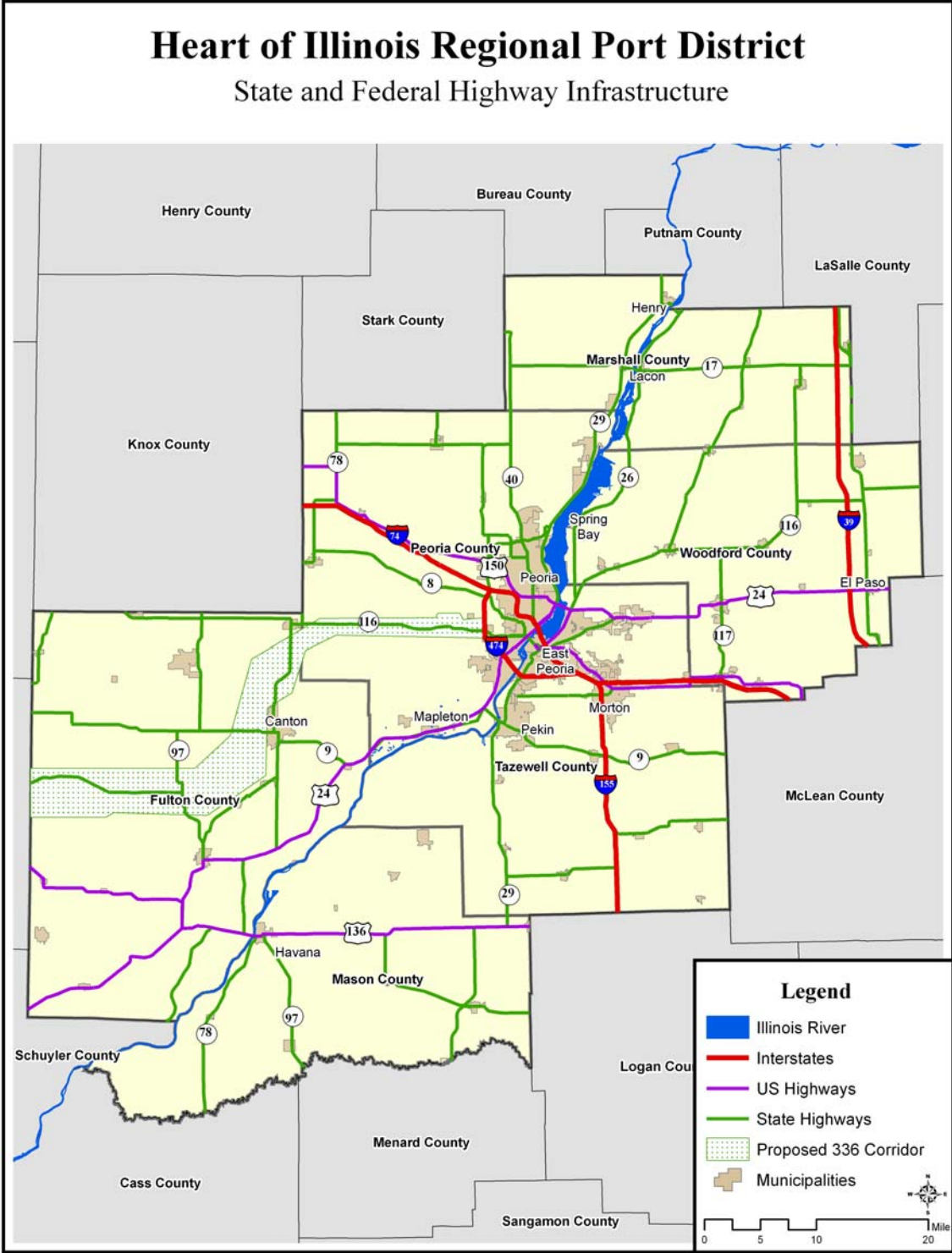


Figure 3.5



## **HIGHWAY CAPACITY**

The capacity of a highway is defined as the maximum number of vehicles that can reasonably be expected to use the facility in a given time period under prevailing roadway, traffic, and control conditions. It is typically measured using a concept called Level of Service (LOS). The LOS comprises a set of defined operating conditions for each type of roadway.

There are numerous operating conditions used in defining the LOS. Some of these are average daily traffic (passenger vehicles and trucks), peak hour traffic, percentage of trucks using the roadway, lane width, speed limit, and the number of intersections. For purposes of this study, however, only two factors were considered: average daily traffic and percentage of trucks.

A Threshold Level of Service is the borderline between inadequate and adequate Levels of Service. For example, for a two-lane highway, an AADT (Average Annual Daily Traffic) less than 10,000 and truck traffic of less than ten percent is considered adequate. Quantities over those figures means vehicles may not be able to travel in a safe and efficient manner.

Table 3.1 indicates the Threshold Level of Service for the types of highways in the Port District.

**Table 3.1**

<b>Threshold Level of Service</b>		
<b>Highway Type</b>	<b>AADT</b>	<b>% TRUCKS</b>
2 Lane Highway	< 10,000	< 10%
4 Lane Highway	< 30,000	< 10%
4 Lane Interstate	< 54,000	< 40%

The Level of Service is important in order to move freight efficiently on the region's highways.

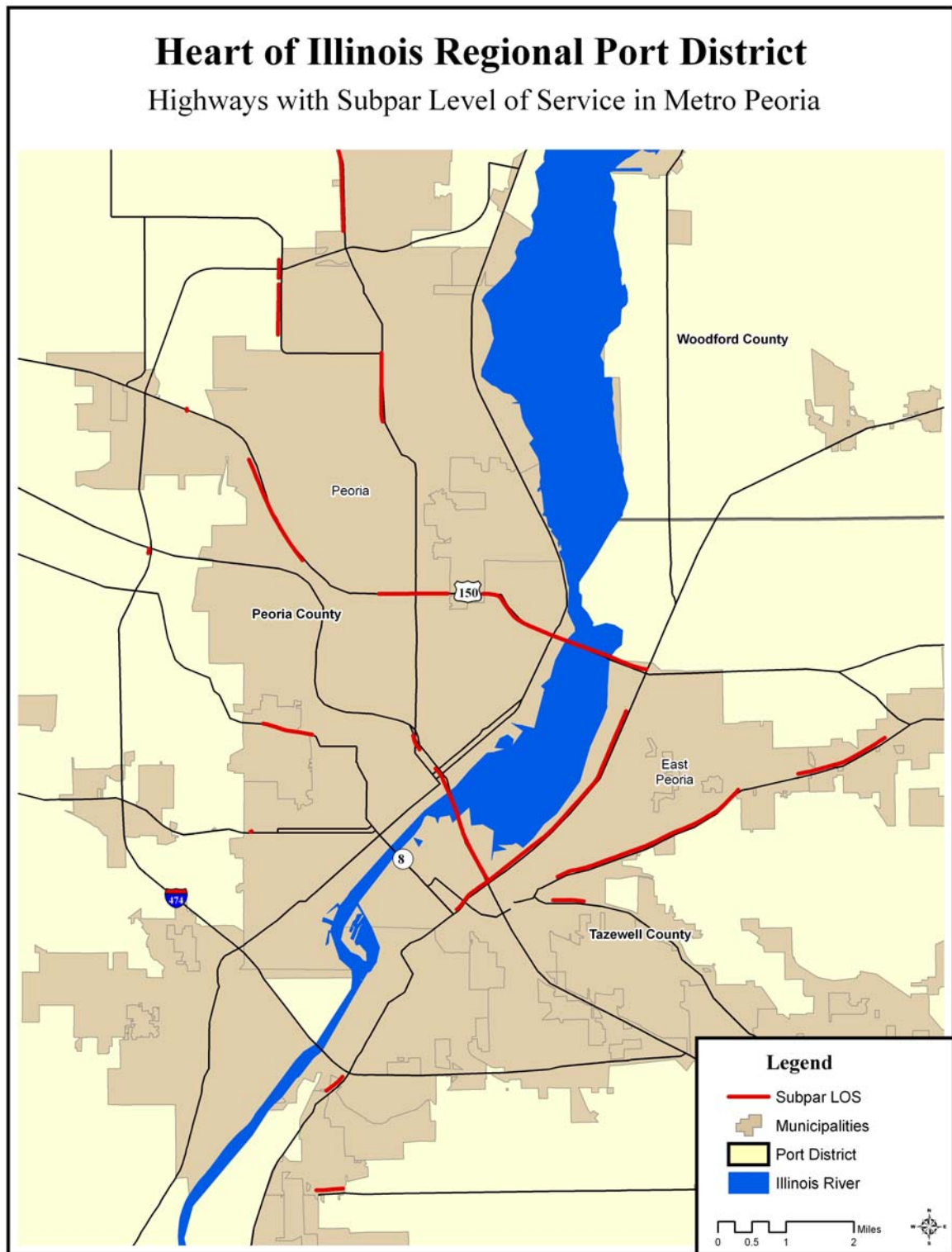
The Threshold Levels of Service were applied to the highway network in the Port District. Any roadway that had an AADT and/or percentage of truck traffic greater than that shown in Table 3.1 was considered subpar. See Figure 3.6. Roadways or sections of roadways highlighted in red indicate areas with a subpar Threshold Level of Service.



Figure 3.6



Figure 3.6a



Most of the roads with a subpar LOS are located in the central part of the Port District. This is to be expected given that the central part of the Port District has the highest concentration of homes and businesses.

Subpar Levels of Service can be found on all types of highways – interstates, federal roads, and state roads. For the most part, sections of roadways, rather than the entire roadway, have subpar levels of service. In addition, some bridges over the Illinois River show a subpar LOS.

In some ways, having the roads with subpar LOS clustered together in the central part of the Port District is not always a negative, due to the fact that there are numerous alternate routes for traffic to follow. For example, I-74 through East Peoria and Peoria – and the bridge that connects them – have a subpar LOS (See Figure 3.6a). However, the existence of I-474 bypassing the metropolitan area gives traffic an efficient way of getting into and out of the region.

**FUTURE HIGHWAY CAPACITY**

Highways with a subpar LOS will only get worse as time goes on, barring any improvements to these roads. Table 3.2 shows the projected growth rate for various modes of transportation over the next twenty years on a national basis. Highway freight transportation is the fastest growing mode of transportation.

**Table 3.2**

<b>Growth Rate for Domestic Freight</b>	
<b>Mode</b>	<b>Projected 20-Year Growth Rate</b>
Highway	32%
Rail	26%
Water	24%

The twenty-year growth rate was applied to the roadways depicted in Figure 3.5. The result is a map showing subpar LOS twenty years in the future. The results, shown on Figure 3.7, is a transportation network that has more highways with subpar LOS.

This map assumes there are no highway improvements in the next twenty years. However, there are a number of improvements either under construction or in the planning stages. The most significant of these are:

- The reconstruction and modernization of 8.3 miles of I-74 through East Peoria and Peoria. This project will provide new overpasses, all new pavement and

Figure 3.7



safer, modern entrance and exit ramps. Additionally, this project, scheduled to be completed in 2007, will provide brighter lighting for safety and new landscaping and beautification to Interstate 74.

- Land acquisition to improve Route 29 from Route 6 (I-474) to I-180.
- Preconstruction activities for Illinois Route 8 from East Peoria to Washington

### **ROLE OF HIGHWAYS**

Highways play two roles in the freight transportation system of a region. One is to move freight into and out of the region. The second is to move freight within a region. The roles are interdependent; neither role is more important than the other.

For the most part freight is moved within a region on local and state highways. The HOIRPD has an excellent system for moving freight within the region. The number and location of local and state highways is adequate to meet this need. Most of these highways have adequate capacity to meet the needs of the region for the next twenty years.

Freight is moved into and out of the region on federal highways, primarily interstates. The Heart of Illinois Regional Port District is directly served by one interstate, I-74 (and I-474). Two other interstates are located within the region – I-155 and I-39 – and I-55 can be accessed within an hour of Peoria.

There are two major weaknesses in the highways that move freight into and out of the region. These are the lack of a direct interstate connection to Chicago, and the lack of an interstate connection to the west.

There are two new highways being planned for the Heart of Illinois Regional Port District to address the weaknesses in the freight transportation system. The first is a continuation of I-474 around the Peoria metropolitan area. The highway, commonly called the eastern bypass, will have a new bridge over the Illinois River connecting Peoria County near Mossville with Woodford County near Germantown Hills. In August 2005, Congress passed a five-year transportation bill that included over \$2M for a study and land acquisition for this project.

In the future, it is hoped, a direct Peoria to Chicago highway will be built. The terminus of the new roadway will be the (potentially) completed I-474 eastern bypass.

The second highway is Route 336. The new roadway will connect Interstate 474 with economic markets to the west. The four-lane highway will go to Macomb and then to Quincy, Illinois. When done, Route 336 will connect central Illinois with Kansas City.

## CHAPTER 4.

# INVENTORY AND CAPACITY OF RAIL TRANSPORTATION

### INTRODUCTION



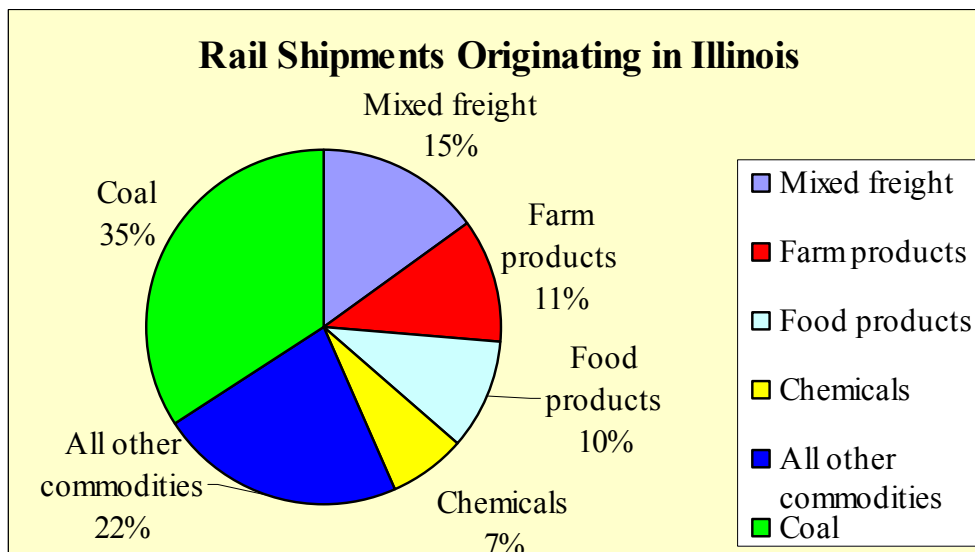
The third mode of transportation analyzed is rail. Rail transportation is an important method of freight transportation to the national economy. Railroads serve nearly every industrial, wholesale, and retail business sector of the economy.

According to the American Association of Railroads, rail moves 42% of our nation's intercity freight (measured in ton-miles).

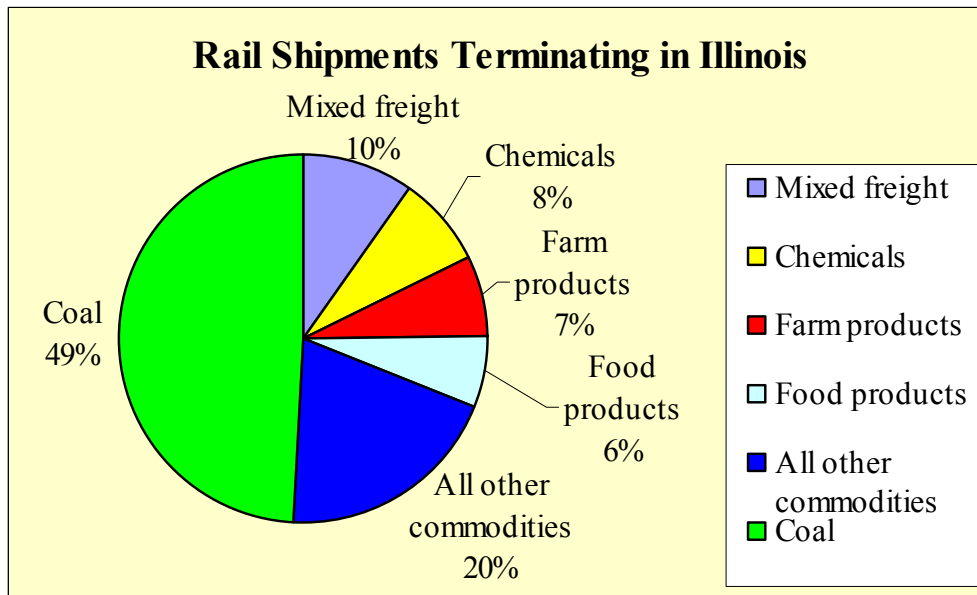
Numerous commodities are moved by rail. The following charts (Figures 4.1 and 4.2) show the types of rail freight originating in Illinois and terminating in Illinois.

Coal is the single most important commodity shipped by rail. Most of the coal shipped into the state of Illinois is used to generate electricity at coal-fired power plants. Farm products, primarily grain, is the second most common commodity shipped by rail in Illinois.

**Figure 4.1**



**Figure 4.2**



*Note: Freight that originates in Illinois **and** terminates in Illinois (e.g., coal) will appear on both charts.*

The State of Illinois has an extensive rail system. In fact, Illinois is the center of the nation's rail network. Chicago is the largest U.S rail gateway, and another major rail center is located in East St. Louis. In all, more than two dozen railroads are able to provide service from Illinois to every part of the United States.

Many of these rail lines run through the Heart of Illinois Regional Port District. Each county in the Port District is served by at least one rail line, with most rail lines converging in the center of the District. Peoria and Tazewell Counties, in particular, have significant rail lines and rail yards near the Illinois River.

As can be seen in Figure 4.3, the region is well-served by rail lines that travel both in a north/south direction, and lines that travel in an east/west direction. Thus, rail is available to reach economic markets in all directions from the Port District.

**FACTS ABOUT RAIL IN ILLINOIS**

Illinois Ranks:

- 3<sup>rd</sup> in the nation in the number of railroads
- 2<sup>nd</sup> in rail miles
- 2<sup>nd</sup> in rail freight employment

Figure 4.3





## **TYPES OF RAILROADS**

There are four types of freight railroads. Each is important in the overall rail system of a region.

- *Class I Railroads.* Class I Railroads concentrate on long-haul, high-density intercity traffic. There are seven Class I Railroads in the country, all of them operated in Illinois. Three of these – the Union Pacific, Burlington Northern Santa Fe, and CSX Transportation – operate within the Port District.
- *Regional Railroads.* Each Regional Railroad operates 400 to 650 miles of track and serves a region of two to four states. There are 32 regional railroads in the U.S., and seven in Illinois. The Port District is home to one Regional Railroad – the I&M Rail Link.
- *Local Linehaul.* Local linehaul railroads perform point-to-point service over short distances. Most operate less than 50 miles of track.
- *Switching and Terminal.* This type of railroad performs pickup and delivery services within a specified area for one or more connecting local linehaul carriers.

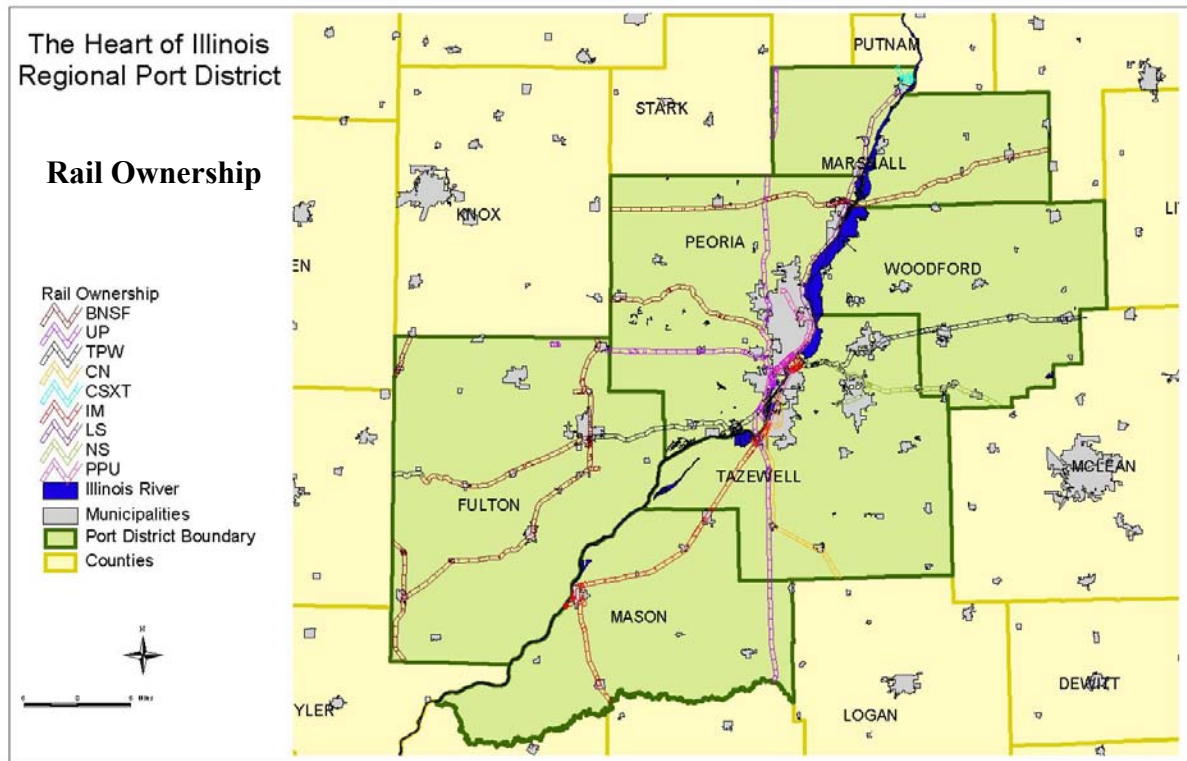
**Table 4.1**

<b>Type of Railroad</b>	<b>No. in U.S.</b>	<b>No. in Illinois</b>	<b>No. in Port District</b>
Class I	7	7	3
Regional	32	7	1
Local Linehaul	304	10	2
Switching & Terminal	213	17	1

The Heart of Illinois Regional Port District is fortunate in that each type of railroad is present in the Port District.

Refer to Figure 4.4 at the top of the next page for a map showing the location and ownership of rail lines in the Port District.

**Figure 4.4**



### **CAPACITY OF RAIL TRANSPORTATION**

It is not enough to know the location and ownership of rail lines within the Heart of Illinois Regional Port District. The capacity of the rail lines is also important in planning for the future of transportation into and out of the region.

Figure 4.5 at the top of the next page is a map showing the capacity of the Class 1 rail lines in the state of Illinois and in the Port District. It can be seen on the map that the railroads with the highest capacity are located in the Chicago metropolitan area. This is consistent with the fact that Chicago is one of the largest and busiest areas in the nation for rail freight.

In the Port District, the Burlington, Northern, Santa Fe Railroad has the most capacity. The BNSF is indicated on Figure 4.5 by the heavy red line traveling east/west at the northern part of the Port District.

In addition to rail capacity, track utilization was studied. Track utilization is a ratio measuring the amount of time an individual rail line is in use. For example, track utilization of .5 indicates the track is in use approximately 50% of the time. A track utilization of 1.0 indicates the track is at capacity, and a track utilization of greater than 1.0 means the track is over capacity. See Figure 4.6 on page 36 and Figure 4.6a on Page 37.

Figure 4.5

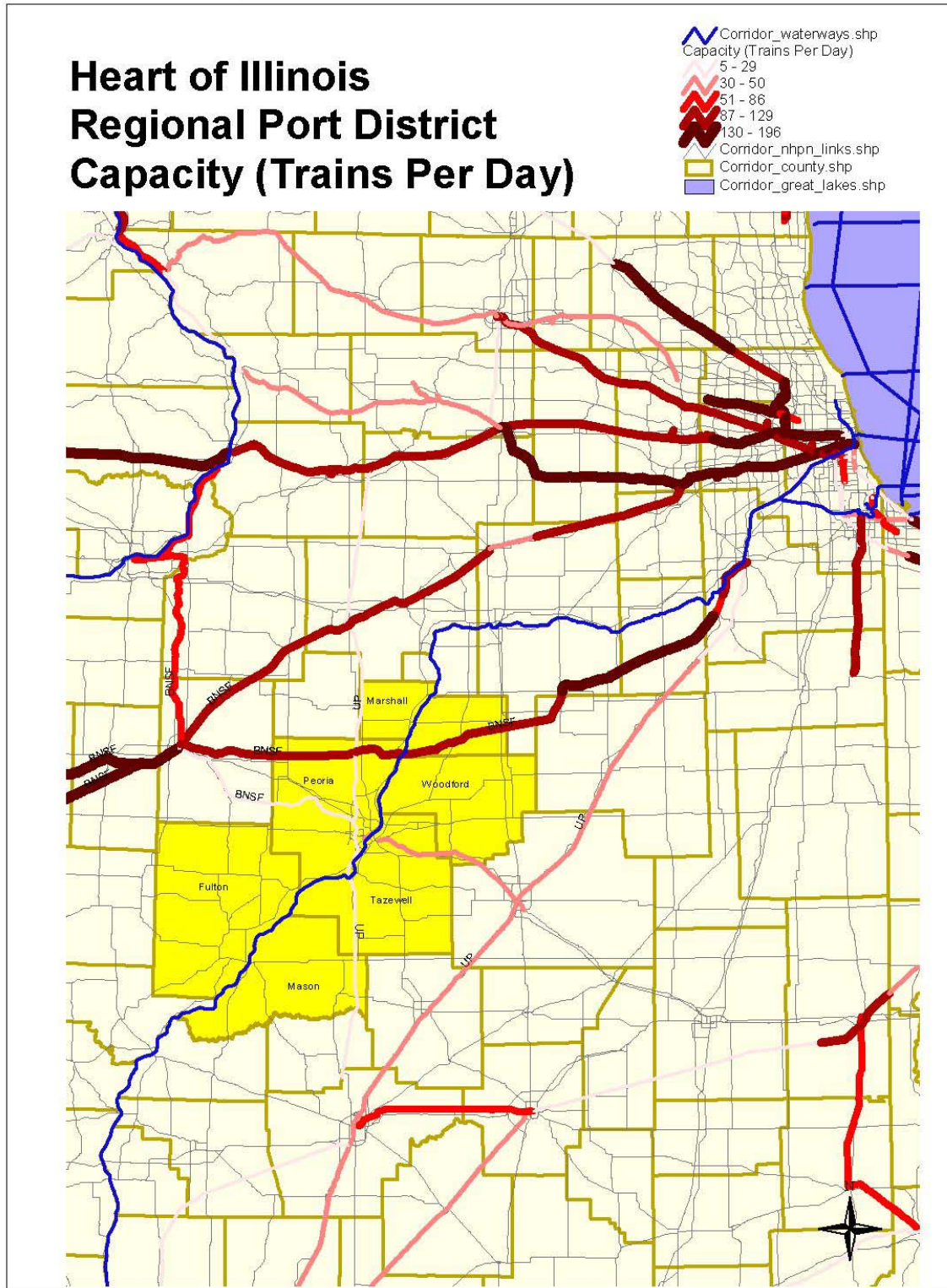


Figure 4.6

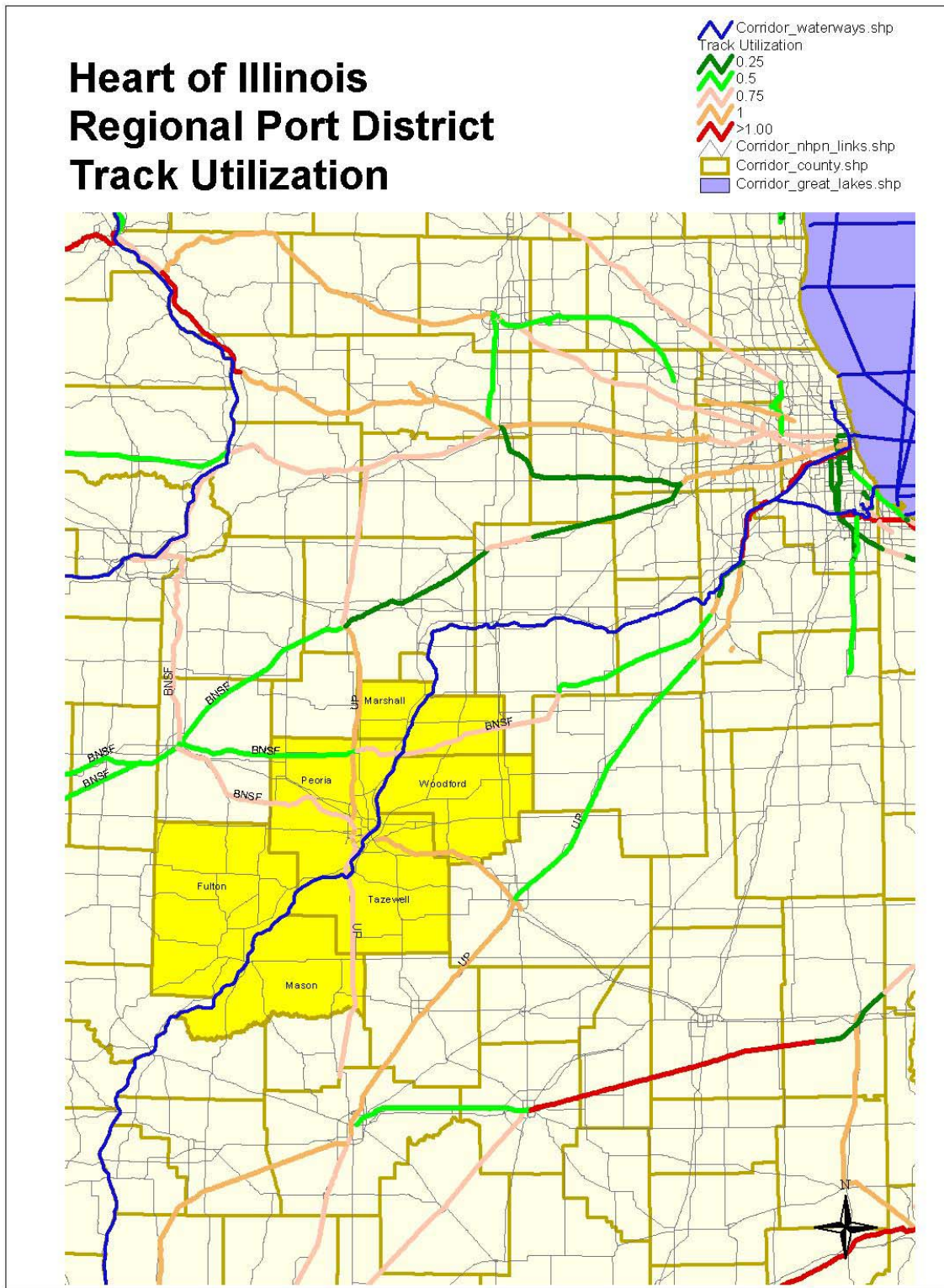
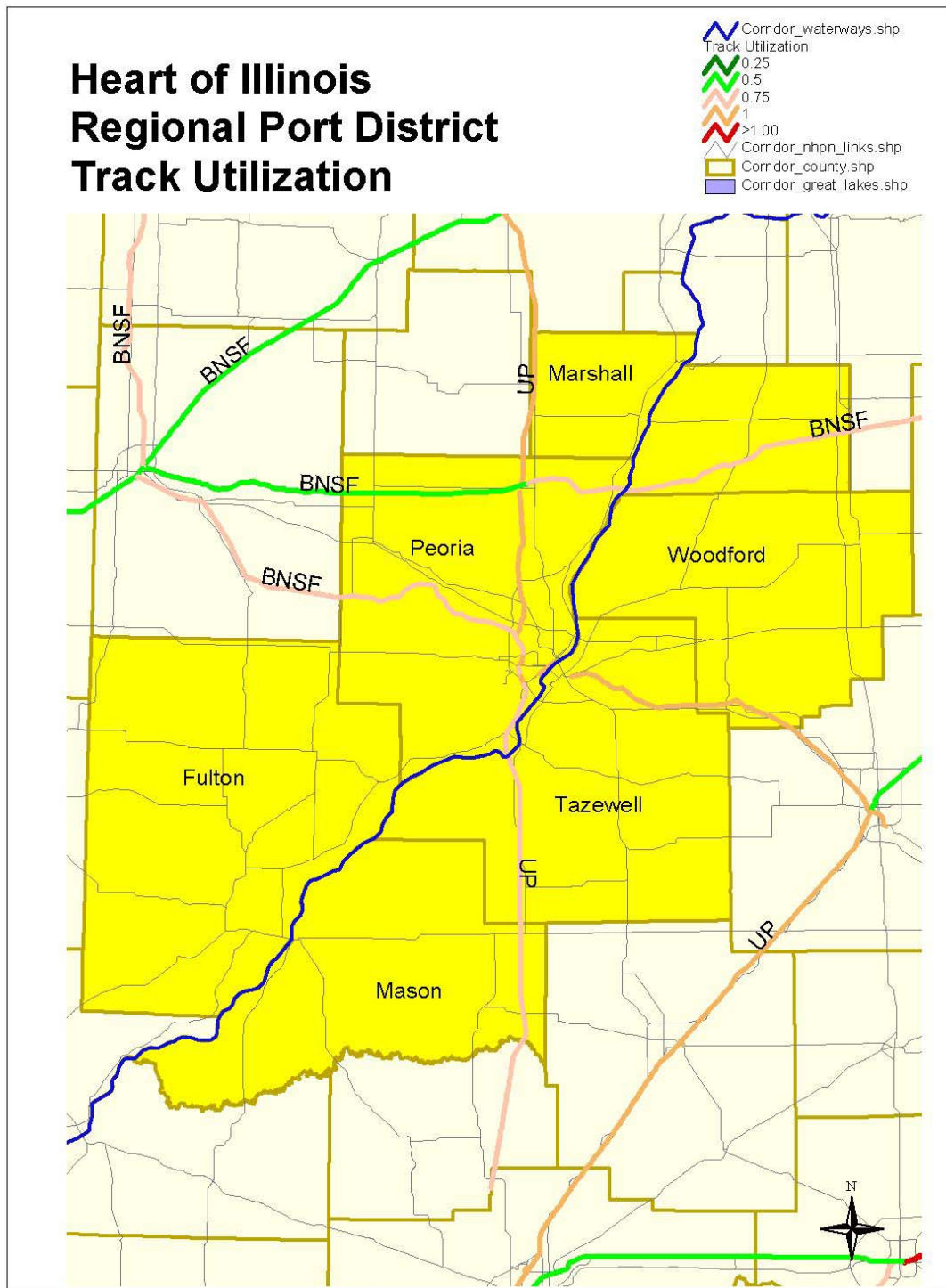


Figure 4.6a



Figures 4.6 and 4.6a show track utilization of the Class I rail lines in the Port District. Many of the rail lines are at or near capacity, although none are over capacity. This information

must be taken into consideration as plans are made to use rail as a means of moving freight into and out of the Port District.

### **INTERMODAL RAIL TRANSPORTATION**

Over the last ten years, intermodal traffic – defined as the movement of truck trailers or containers by rail and at least one other form of transportation – has been the fastest growing rail segment. Intermodal rail and truck transportation combines the convenience of trucks with the long-haul economy of railroads. Intermodal rail and water-borne transportation makes it possible to take advantage of global manufacturing facilities.



Rail intermodal traffic has more than tripled in the last twenty-five years, rising from 3.1 million trailers and containers in 1980 to nearly 11 million units in 2004. Currently, intermodal accounts for about 23% of the revenue for Class I railroads on a national basis.

Rail intermodal transports a wide range of goods – everything from bicycles to automotive parts, lawn mowers to glassware, greeting cards to bottled water, and toys to computers. As manufacturing has become more global and as supply chains have become longer and more complex, intermodal has come to play an important role in making supply chains more efficient.

## CHAPTER 5.

# INVENTORY AND CAPACITY OF AIR TRANSPORTATION

### INTRODUCTION



The fourth and final mode of freight transportation to be discussed is air. Air transportation is a much different industry than other modes of transportation. First, the vast majority of air mileage is passenger-based, not freight-based. Rail, highway, and water transportation networks display a much higher proportion of freight movements. In the case of rail and water, freight actually represents a larger percentage of transportation movements than passenger trips.

Second, unlike highway, rail, and water transportation, air is not focused on moving heavy or bulky goods. Instead, air freight transportation is focused on moving relatively lightweight, high value goods and materials.

Lastly, air is one of the least restricted modes of freight transportation. Transit routes and corridors are virtually unlimited in air transit, limited only by the need for an airport of sufficient infrastructure and capacity to handle the planes.

Air transportation is the quickest form of cargo transportation. Many of the goods shipped via air are on a time-sensitive schedule, including fulfillment of emergency supplies or parts for just-in-time manufacturing operations. For this reason, avoidance of delays is paramount.

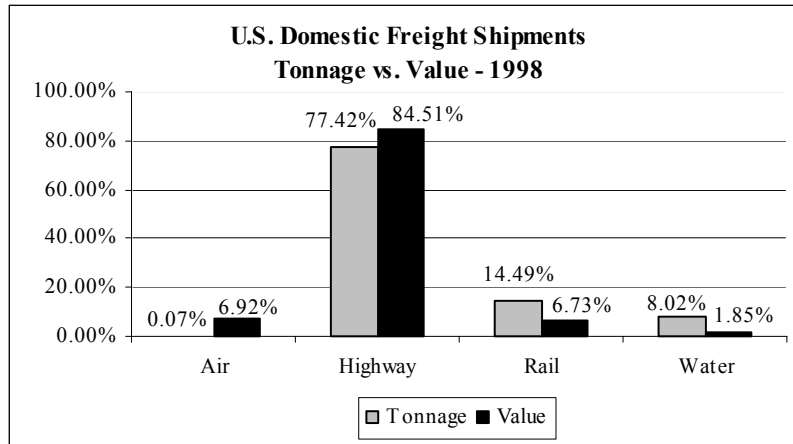
The previously mentioned lack of fixed infrastructure lines allows shipment of goods to a much wider geographic area than any other mode of transit when considered with transit time. While all modes offer access to adjacent countries or continents, air transportation allows overnight access to markets and facilities around the world.

Air transportation's short transit times, access to global markets and flexibility allow the rapid movement of goods, but also increase transportation costs. The cost per ton of goods shipped via air is the highest of any of the transportation modes analyzed in this study. This naturally limits the types and quantities of cargo shipped via air, resulting in the creation of relatively narrow niche markets for air transit.

## AIR FREIGHT TRANSPORTATION

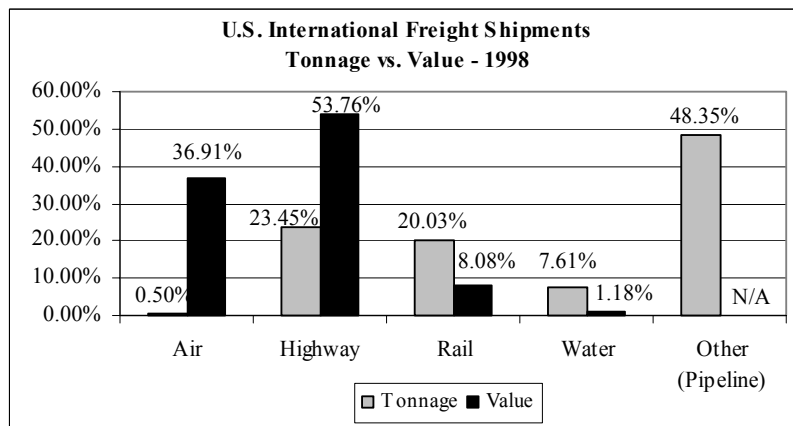
Airfreight transit plays an important role in the U.S. national economy. While domestic air freight accounts for a miniscule portion of total tonnage shipped, Figure 5.1 shows that in comparison to total tonnage its value/ton is considerably higher than cargo shipped via other modes. According to the graph, air freight accounts for almost seven percent of the value of all goods shipped domestically. However, its tonnage is less than one tenth of one percent of all freight shipped within the United States.

**Figure 5.1**



The results are similar on an international level. As seen in the following graph, the same relationship holds true for international freight shipments in the United States, although the magnitude of the relationship between tonnage and value is much larger than for domestic air cargo. On the international level, while total tonnage shipped by air is still miniscule, it accounts for almost thirty-seven percent of the value of all freight shipped.

**Figure 5.2**



The relationship between the tonnage and value of freight shipped via air transportation underscores the importance of speed and timeliness for air cargo. Air freight tends to be



much more valuable and time-sensitive; therefore shippers are more likely to consider the more expensive option of air transportation.

As such, the existence of quality air transportation facilities and carriers is a crucial component of a region’s balanced intermodal transportation plan. Access to air facilities and sufficient capacity to handle air freight are important factors in expanding and integrating air freight shipments into a regional transportation network.

The Upper Midwest Freight Corridor Study (UMFCS) analyzed freight transportation in the Upper Midwest region, including the counties comprising the HOIRPD. This 2004 study, a joint effort between The University of Wisconsin – Madison, University of Illinois at Chicago, and University of Toledo, provides in-depth analysis of all major modes of freight transit in the Upper Midwest in order to better understand freight transportation in the region and promote the region’s competitiveness in transportation sectors.

The UMFCS found that the largest product category shipped via airfreight in the upper midwest region was electronic and other electrical equipment, representing 35.4%, 42.7%, and 45.1% of total airfreight shipments by weight, value, and ton-miles respectively. Other important air freight categories include: motorized and other vehicles (including parts), machinery, and precision instruments and apparatus.

**Table 5.1**

<b>MODAL GROWTH PROJECTIONS FOR DOMESTIC FREIGHT 2000-2020</b>			
<b>Mode</b>	<b>Indicator</b>	<b>Projected Annual Growth Rate</b>	<b>Projected 20-Year Growth Rate</b>
Truck	Tons	1.59 %	31.8 %
	Ton-Miles	1.58 %	31.6 %
Rail	Tons	1.39 %	27.8 %
	Ton-Miles	1.31 %	26.2 %
<b>Air</b>	<b>Tons</b>	<b>2.43 %</b>	<b>48.6 %</b>
	<b>Ton-Miles</b>	<b>2.15 %</b>	<b>43.0 %</b>
Water	Tons	1.30 %	26.0 %
	Ton-Miles	1.19 %	23.8 %
All Modes	Tons	1.54 %	30.8 %
	Ton-Miles	1.50 %	30.0 %

Table 5.1 shows the projected increases in freight movements for the various forms of transportation. As the table shows, domestic air cargo is projected to have the fastest growth rate from 2000 to 2020 in terms of both total tonnage and ton-miles. Although the projected increases are far larger than other modes when expressed as percentage growth, actual projected tonnage increases are relatively small due to the small baseline of air tonnage.

## **AIR FREIGHT TRANSPORTATION IN THE HEART OF ILLINOIS REGIONAL PORT DISTRICT**

In the six counties comprising the Heart of Illinois Regional Port District, the Greater Peoria Regional Airport (GPRA) is the only air facility offering the size and capacity necessary to support major air freight transportation.

Currently, air transportation makes up a very small portion of inbound and outbound freight shipments in the HOIRPD. In 2000, air and intermodal (rail to truck) shipments combined represented only 1% (by tonnage) of both inbound and outbound freight movements.

It is currently unknown how closely GPRA freight shipments resemble freight shipments across the entire upper midwest region. Given the manufacturing-intensive make-up of the Peoria region's economy however, it is reasonable to presume that airfreight shipments at GPRA are similar in category and quantity to the larger upper midwest region.

As the primary airport in the Port District, the GPRA handles the vast majority of air cargo. In 2002, GPRA averaged two incoming and two outgoing flights per hour per day, handling 2,285 tons of incoming and 2,652 tons of outgoing cargo per month. By 2004, incoming and outgoing freight dropped to an average of 742 and 1,148 tons per month, respectively. Based on the difference between incoming and outgoing airfreight, incoming flights at GPRA have excess capacity.

Based on the projected annual growth rates outlined in Table 5.1 and the 2002 air freight volumes, cargo tonnage at GPRA could reach approximately 3,520 tons of incoming and 4,085 tons of outgoing air cargo monthly by 2020. These projected figures represent a total increase of 54% over the 2002 baseline.

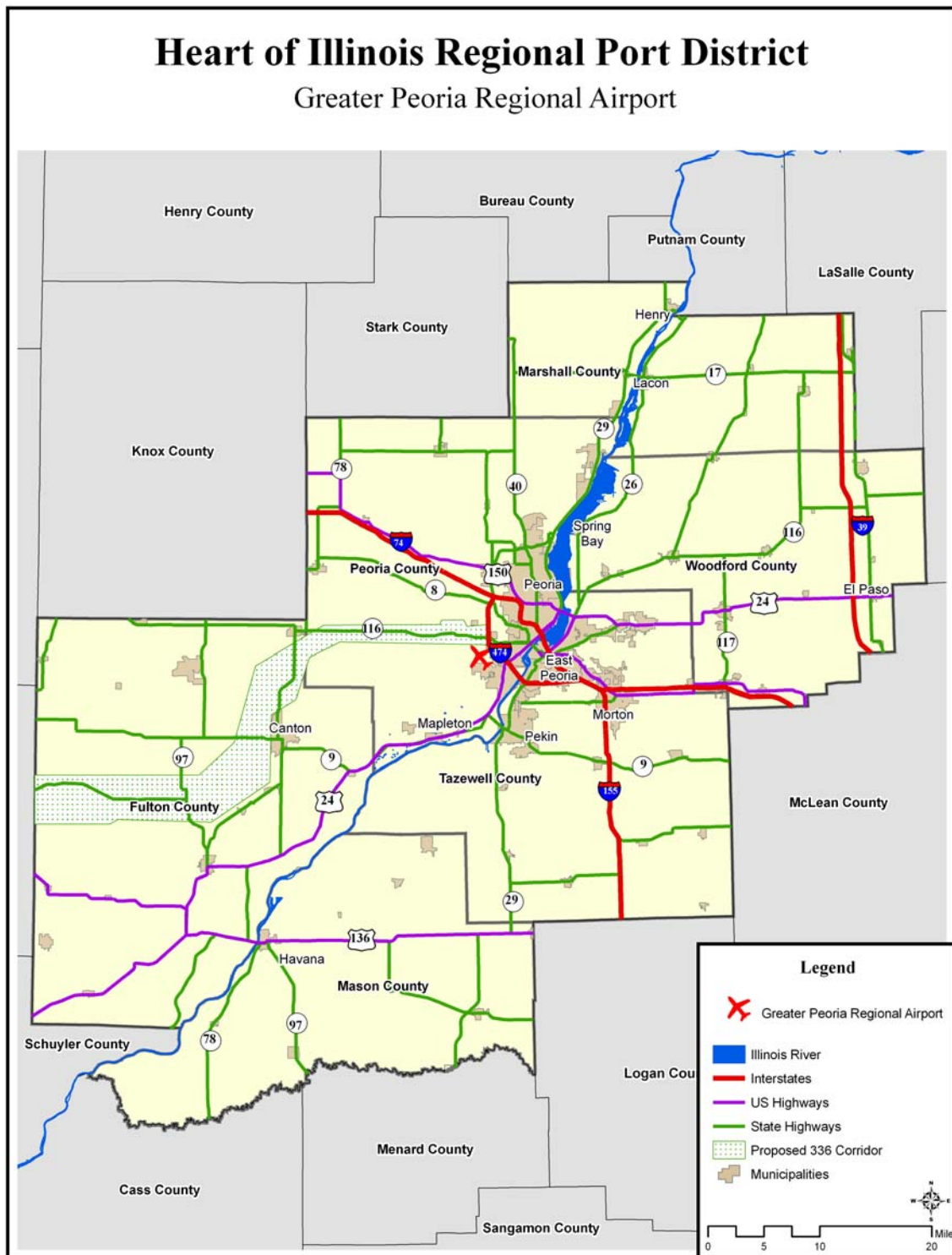
See Map 5.3 on the following page for the location of the Greater Peoria Regional Airport within the Port District.

## **CAPACITY OF AIR FREIGHT TRANSPORTATION**

The actual capacity of an airport is dependent upon two general factors: airside capacity and landside capacity. Airside capacity is the maximum number of airplanes that can depart and/or arrive at an airport in one hour, a figure primarily determined by runway capacity. Landside capacity is essentially an airport's capability to move cargo, passengers, aircraft and support equipment. Landside capacity is considerably more difficult to calculate, and is generally the more limiting of the two on an airport's total capacity.

The UMFCS focused solely on ultimate capacity at airports. Ultimate capacity provides a "best-case scenario" estimate of airport capacity, ignoring some of the more difficult-to-measure limitations. Table 5.2 compares the capacity of the Greater Peoria Regional Airport to three other Illinois airports.

Figure 5.3



**Table 5.2**

<b>AIRPORT CAPACITY COMPARISON</b>				
<b>Airport</b>	<b>Hourly Runway Capacity (No. of Planes)</b>	<b>Total Inbound / Outbound Flights per Hour</b>	<b>Unused Capacity (No. of Planes)</b>	<b>Percent Unused Capacity</b>
Peoria	96	4	92	95.83%
Rockford	96	2	94	97.92%
Moline	144	4	140	97.22%
Chicago O'Hare	336	190	146	43.45%

GPRA does not really operate at less than 5% capacity. Factors such as ground staff levels, weather and air traffic conditions contribute to a drastic reduction in overall capacity. These factors may reduce practical capacity to as little as 30-40% of ultimate capacity.

A number of cargo service companies serve GPRA. Fed Ex, Airborne, Emery, and UPS provide all cargo service in addition to cargo carried in the cargo holds of passenger flights serving GPRA. These carriers offer a number of different flights into and out of GPRA, with service on most days of the week.

**Table 5.3**

<b>Greater Peoria Regional Airport Projected Cargo Facility Capacity and Occupancy (as of January 1, 2006)</b>	
<b>Occupant</b>	<b>Square Footage</b>
Airborne Express	18,000
Emery Worldwide	6,000
Federal Express	16,875
Customs Office / Consultant Office Space	1,875
Dynair CFE Service	1,875
Vacant/Available	11,750
<b>Total</b>	<b>56,375</b>

Cargo facility capacity is also important in analyzing cargo capacity. As Table 5.3 shows, GPRA will offer over 56,000 square feet of building facilities dedicated to cargo operations after a planned late-2005 expansion.

Of this space, 11,750 square feet (over 20% of the total) is currently vacant. This vacant space has truck docking and access to a cargo ramp.

While the percentage of unused capacity is almost certainly lower than shown in Table 5.2, GPRA's exact capacity is currently unknown. While excess capacity is available for both runways and cargo facilities, exactly how much excess capacity exists is unknown. The capacity of ground operations such as fueling is also unknown. However, given

the drop in both enplaned and deplaned cargo tonnage between 2002 and 2004 and the 20% vacancy rate in cargo facility space, it would appear that there is potential for the expansion of cargo operations in the Heart of Illinois Regional Port District at the Greater Peoria Regional Airport.

## **INTERMODALISM**

By its very nature, air freight transportation requires the use of intermodalism. Highway transportation is used to move freight to or from the airport.

The interface between the highway transportation network and the airport is critical. For the Greater Peoria Regional Airport, this interface is Interstate 474. According to the highway analysis undertaken as part of this study (see Chapter 4), I-474 has adequate capacity to provide highway transportation to the airport for the foreseeable future.

## **U.S. CUSTOMS PORT OF ENTRY**

Greater Peoria Regional Airport is a U.S. Customs Port of Entry for air cargo. One of the advantages of being a Port of Entry is that a Foreign Trade Zone (FTZ) has been established in the region.

All cargo entering the country from foreign soil is subject to inspection and clearance by U.S. customs, as well as payment of duty. One major exception to this is a Foreign Trade Zone. A Foreign Trade Zone is a specially designated area, in or adjacent to, a U.S. Customs Port Of Entry, which is considered to be outside the Customs Territory of the U.S.

Within this designated area, foreign and domestic merchandise may be stored, repackaged, manipulated, manufactured, destroyed or otherwise altered or changed and re-exported without the usual formal customs entry procedures and payment of duties and taxes. If merchandise is sold within the U.S., no formal customs entry procedures are required and no duties are paid until the merchandise leaves the Foreign Trade Zone.

The purpose of an FTZ is to attract economic activity. Ideally, this activity would include attracting foreign investment to the region and encouraging domestic firms to expand their international trade activity. Tenants of FTZ's vary from small import export companies to large multi-national manufacturing companies. There are two firms with FTZ status within the Port District. They are Caterpillar, Inc. and E.I. Dupont in El Paso, Illinois.

# **SUPPLY CHAIN LOGISTICS AND TRANSPORTATION INDICATOR STUDY**

## **PART II OF III**

### **MARKET ANALYSIS**



# CHAPTER 1.

## OVERVIEW

In order to complete the Market Analysis, several key areas were examined. First, it is important to understand what is happening in the freight industry on a national and international level. The trends in freight that are happening on the national and international level can be used as a gauge for what to expect in the six counties that encompass the Heart of Illinois Regional Port District (TransPORT). Second, the specific freight activity that is occurring at the local level needs to be examined. This data can help determine what specific trends are being seen locally in terms of areas of growth and potential areas of opportunity. Third, the local users of the freight handling system need to be identified and then asked how they presently use the system and how they plan to use the system. Local users will be a key component of determining freight policy that is enacted in the region. Fourth, potential growth opportunities in the freight and other industries need to be examined. Opportunities such as container-on-barge (COB) should be looked at to help TransPORT determine what industry segments can be attracted and expanded upon locally.



Finally, some overall conclusions will help tie together the above pieces as well as help set a strategic course for TransPORT as it looks to develop the proposed sites listed in Part III of this study and capitalize on the available capacity discussed in Part I of this study.

## CHAPTER 2.

### FREIGHT INDUSTRY

#### INTRODUCTION

Before examining what the freight industry looks like in the six-county Heart of Illinois Regional Port District (HOIRPD or TransPORT), it is important to have a grasp on what is happening on national and international levels. Looking at the freight industry from those perspectives can help to project what will happen with the freight industry at the local level. For instance, with the freight industry expected to nearly double in the next twenty years, what impact could that have on the local level? Furthermore, with a doubling in freight coupled with the coastal ports continuing to operate near capacity, what effect could be in store for the counties that make up TransPORT?

Freight has become and will continue to be an important part of the economy in terms of both input/output and workforce development. In tons, domestic freight transportation grew by nearly 40% from 1992 to 2002, and freight transportation will significantly increase over the next twenty years, (Office of Freight Management and Operations, 9). Table 2.1 also shows the tremendous amount of growth that will take place in highway, rail, and air transportation as well. It is especially important to note the growth in the amount of highway and rail transportation and the lack of substantial growth in water (river) transportation. As was shown in Part I of this Study, the HOIRPD has excess capacity in river transportation, which would bode well for alleviating the possible congestion that could result from the increase in highway and rail transportation.

**Table 2.1**

<b>Freight Shipments by Weight and Value (US Dept of Transportation, 2002)</b>						
	<b>Tons (millions)</b>			<b>Value (\$ billions)</b>		
<b>Mode</b>	<b>1998</b>	<b>2010</b>	<b>2020</b>	<b>1998</b>	<b>2010</b>	<b>2020</b>
<b>Total</b>	<b>15,271</b>	<b>21,376</b>	<b>25,848</b>	<b>9,312</b>	<b>18,339</b>	<b>29,954</b>
<b>Domestic</b>	<b>13,484</b>	<b>18,820</b>	<b>22,537</b>	<b>7,876</b>	<b>15,152</b>	<b>24,075</b>
Air	9	18	26	545	1,308	2,246
Highway	10,439	14,930	18,130	6,656	12,746	20,241
Rail	1,954	2,528	2,894	530	848	1,230
Water	1,082	1,345	1,487	146	250	358
<b>International</b>	<b>1,787</b>	<b>2,556</b>	<b>3,311</b>	<b>1,436</b>	<b>3,187</b>	<b>5,879</b>
Air	9	16	24	530	1,182	2,259
Highway	419	733	1,069	772	1,724	3,131
Rail	358	518	699	116	248	432
Water	136	199	260	17	34	57
Other	864	1,090	1,259	NA	NA	NA



## **TRENDS**

There are several trends in the freight industry that will more than likely affect the TransPORT region. As the manufacturing of goods continues to move offshore, the United States has seen a tremendous growth in imports, especially the importation of containerized cargo. In fact, containerized cargo has grown quite rapidly over the past several years. Between 1994 and 2003, container trade at the Ports of Los Angeles and Long Beach doubled. In that same time period, overall containerized cargo increased by nearly 75% (Office of Freight Management and Operations, 14). Currently, the containerized cargo market is concentrated at a few large, West Coast ports.

### ***Container Market***

Although the container market is concentrated at just a few major coastal ports, the continued explosive growth in this market would lead one to believe that ports throughout the United States will begin to see affects from that growth. Furthermore, with the ongoing threat of congestion at the coastal ports, the ports in the Gulf of Mexico as well as those on the Inland Waterway System could become even more significant in the container industry. To that end, Sea Point, a transfer facility, is in the process of building a multimillion dollar facility south of New Orleans near the mouth of the Mississippi River that will allow containers to be transferred directly from large ocean vessels to barges. Sea Point is investing in this facility to take advantage of the tens of millions of people that can be served by the inland waterway system (www.sea-point.net, 2005). This potential container-on-barge market, despite some of its obstacles to growth, could offer tremendous growth potential to TransPORT and will be examined in much greater detail in Chapter 4.

**Table 2.2**

<b>Total United States Container Trade, 1999-2004</b>						
<b>Source: Journal of Commerce, PIERS</b>						
	1999	2000	2001	2002	2003	2004
Imports	9.96	11.09	11.27	12.92	13.90	15.81
Yearly Change	N/A	11%	2%	15%	8%	14%
Exports	6.60	6.85	6.85	6.81	7.39	8.04
Yearly Change	N/A	4%	0%	-1%	9%	9%
Total	16.56	17.94	18.12	19.73	21.29	23.85
Yearly Change	N/A	8%	1%	9%	8%	12%

### ***Free Trade Agreements***

Free trade agreements between the United States and other nations and regions are beginning to have a significant impact on the freight industry. For instance, since the signing of the North

**From 1996 to 2003 U.S. trade with Canada and Mexico grew by 37% from just over \$410 billion to nearly \$563 billion.**

American Free Trade Agreement (NAFTA) in 1994, trade with Canada and Mexico has skyrocketed (Office of Freight Management and Operations, 15). The growth in trade with Mexico is especially significant. From 1996 to 2003 exports to Mexico grew from \$51.75 billion to \$85.61 billion, while imports from Mexico grew from \$63.312 billion to \$114.84 billion. These gains translate to a 65% jump in exports and an 80% growth in imports.

**Increased traffic at West Coast ports in the United States are creating opportunities for Mexican ports such as Lazaro Cardenas.**

Other ports throughout the United States have looked to capitalize on NAFTA and the growth of trade with Canada and especially Mexico. For instance, cities such as Kansas City and Pittsburgh along with several ports along the Gulf Coast have established relationships with cities in Mexico to help their respective ports gain access to the hot Mexican market. Kansas City, through their KC SmartPort initiative, has started to make inroads with Lazaro Cardenas, a port city in Mexico, and capitalize on the rail linkages from Lazaro Cardenas to Kansas City ([www.kcsmartport.com](http://www.kcsmartport.com), 2005). In addition, in their container-on-barge feasibility study, the Port of Pittsburgh focused exclusively on Lazaro Cardenas in Mexico as a way to increase container traffic on the inland waterway and thus with the Port of Pittsburgh. The Port examined what freight was currently being traded with Lazaro Cardenas to determine if there were parts of that freight that could begin to be traded by barge (Port of Pittsburgh Commission, 27-28). Based on these successful initiatives, it would be feasible for TransPORT to examine a relationship with a NAFTA city (probably in Mexico). To make this initiative successful, TransPORT should look to see if there is already a fair amount of trade occurring between a city in Mexico (and/or Canada) and Central Illinois. Furthermore, TransPORT could look to the companies located within the six county region that have trade relationships with Mexico or Canada and then determine if there are ways in which the trade can be increased and enhanced.

With the success of NAFTA, one can see that free trade agreements have significant impacts on the shipment of freight in and out of the United States. The importance will continue to be underscored as additional free trade agreements, such as the Central America Free Trade Agreement (CAFTA), are established (and as tariffs and quotas are lifted). As with NAFTA, CAFTA is expected to lead to increases in freight. Based on the success that cities and areas have seen with establishing relationships with NAFTA cities, it can be seen that establishing relationships with CAFTA cities early on can be a critical force in the growth of freight in the TransPORT region, thus allowing the region to capitalize on the available capacity in rail and water transportation that were highlighted in Part I of this study.

### ***Employment***

In addition, with the expected surge in freight will also come a surge in the employment necessary to accommodate the industry increase. Transportation and warehousing employment is expected to grow by about 22% over the next decade (compared to a 15%

growth in employment as a whole). With truck transportation expected to account for over 75% of all tonnage moved by the year 2020, having a workforce ready and able to serve this market is crucial (Office of Freight Management and Operations, 8-9).

### **FREIGHT SHIPMENTS IN AMERICA**

Using the Commodity Flow Survey of 2002, the following table depicts the modal change in shipment value, tonnage, and ton-miles within the United States between 1993 and 2002 as measured by the Bureau of Transportation Statistics.

**Table 2.3**

	<b>Domestic Freight Percentage Change between 1993 and 2002 (Bureau of Transportation Statistics, 2002)</b>		
<b>Transportation Mode</b>	<b>Value (real)</b>	<b>Tons</b>	<b>Ton-miles</b>
Truck	42.2	26.4	55.5
Rail	39.2	19.9	29.9
Water	39.9	10.2	-16.9
Air (includes truck and air)	96.7	45.9	63.2
Multimodal combinations	67.0	-7.5	36.7
<b>Overall total</b>	<b>45.3</b>	<b>18.4</b>	<b>23.8</b>

[Note: Because the Commodity Flow Survey does not cover several important commodities and sectors of the economy, such as crude petroleum pipeline movements and imports, the volumes and shares of the commodities moved could vary with the addition of out-of-scope shipments.]

Strong growth in the domestic economy, wholesale trade, and retail trade were significant factors that affected the level of freight shipments within the United States between 1993 and 2002. In fact, in 2002 the United States economy, as measured by Gross Domestic Product, was over 30% larger than it was in 1993, which means that the economy grew by approximately 3.3% annually. This growth spurred the growth in freight shipments, which during the same period saw the value of freight shipments grow 45%, the tons of freight grow 18%, and the ton-miles of freight grow 24% (see Table 2.3, above).

When examining additional sources of growth, the following have all contributed to the growth in freight tonnage and ton-miles: changes in patterns of goods production and trade, increases in consumer demand for rapid delivery of goods, and a rise in international trade (Freight Shipment in America, 17). Additionally, the continued shifts in the United States and world economies toward more services and high-value, low-weight products such as laptops, cell phones, and handheld personal computing devices are influencing the commodity mix and modal choice even as overall freight shipments rise. Furthermore, while the United States economy will continue to use large quantities of low-value bulk commodities, and while the movement of these goods may continue to grow, it is quite likely that high-value freight will be an even more important part of the

overall freight industry and the United States economy. (Bureau of Transportation Statistics, 17).

### ***Freight Shipments by Mode of Transportation***

Overall, heavy, low-value commodities are mostly transported at lower unit costs by rail and water transportation, while lighter, high-value, time-sensitive commodities often move by truck and air-truck or rail-truck intermodal combinations (Bureau of Transportation Statistics, 19). In 2002 trucking continued to dominate the freight industry, moving 64% of the nation's commercial freight as measured by value and 58% as measured by tonnage. For the decade ended 2002, truck ton-miles grew by 56%, nearly twice that of rail (Bureau of Transportation Statistics, 20). In 2002 rail carried about 4% of shipments as measured by value and 12% as measured by weight. Additionally, rail carried more than a quarter of the total ton-miles, despite having a more spatially concentrated network than the highway system.

**Truck transportation continues to dominate the freight industry. More than half of all the commercial freight by value is shipped via truck.**

**Containerships are becoming increasingly important as the United States maintains its reliance on imported goods.**

In 2002 United States waterborne freight, in total tons, measured over 2.3 billion, an increase of over 10% since 1993 when waterborne freight measured approximately 2 billion tons. During that decade, tons of waterborne imports and exports increased as the United States continued to increase its international trade. Indeed, maritime transportation carries over 75% of the weight of United States international merchandise freight. Furthermore, the value per ton of waterborne freight in 2002 was \$370 compared to \$290 in 1993 (Bureau of Transportation Statistics, 22). This increase reflects the rising reliance the United States has on imports for manufactured goods, such as higher value automobiles and automotive parts from Asia and Europe.

Also in 2002 about 11% of shipments, when measured by value, moved multimodally, which is a small increase over 1993. However, multimodal shipments are higher in average value per ton than typical single-mode shipments. The average value per ton of goods shipped by multimodal combinations was more than \$5,000 in 2002. The multimodal combination of rail and truck grew 47% during that decade from 118 million tons to 173 million tons (Bureau of Transportation Statistics, 23).

### ***Freight Shipments by Distance***

When looking at distance, most freight shipments by value and tonnage move less than 250 miles (Bureau of Transportation Statistics, 24). From 1993 to 2002 local and short-haul shipments grew 41% by value, 16% by weight, and 19% by ton-miles. Over that same time period shipments traveling over 250 miles grew faster: 51% by value, 34% by weight, and 36% by ton-miles (Bureau of Transportation Statistics, 24). The ability to

move both large and small amounts of freight on a local and national level allows domestic trade to flourish and also shows how important freight transportation is to the nation's economy.

The data in the prior paragraph help to illustrate the advantageous position that TransPORT is in. With local and short-haul shipments continuing to dominate the market, it would seem logical that TransPORT would be able to capitalize on its proximity to the major markets of Chicago, St. Louis, and Indianapolis. In addition, with long haul shipments also showing stellar growth, TransPORT seems poised to capitalize on those shipments as well, especially when one considers TransPORT's location on the Inland Waterways System. Indeed, it would not be hard to imagine TransPORT capitalizing on both long- and short-haul growth by engaging a marketing campaign that helps to boost shipments from ports along the Gulf Coast, such as New Orleans and Houston, for distribution in short-haul shipments in the Midwest.

**TransPORT is in a position to capitalize on long- and short-haul shipments with its available capacity in every transportation mode.**

### ***Freight Shipments by Major Commodity Group***

When looking at commodity groups, the 2002 Commodity Flow Survey showed that electronic, electrical, and office equipment was the top commodity moved by value, gravel and crushed stone the top commodity by weight, and coal the top commodity by ton-miles (Bureau of Transportation Statistics, 32). Looking more closely, more than \$1 out of every \$10 of freight goods shipped in 2002 was for the commodity group of electronic, electrical, and office equipment. Following this commodity group in value were mixed freight, motorized and other vehicles (including parts), machinery, textiles, pharmaceuticals, and miscellaneous manufactured products (Bureau of Transportation Statistics, 32). When looking at weight, gravel and crushed stone, both low-value commodities that move short distances, were the leading items shipped. One out of every seven tons transported by freight carriers were gravel and crushed stones. And while this commodity group was approximately 15% of the total 2002 CFS weight, it accounted for less than 1% of the value and only about 3% of the ton-miles (Bureau of Transportation Statistics, 33-34). Finally, coal carried the most ton-miles, 562 billion, in 2002, which accounted for nearly 18% of the total 2002 CFS ton-miles. Following coal in ton-miles were cereal grains, basic chemicals, prepared foodstuffs, and gasoline and aviation fuel.

### ***Rail Infrastructure***

Over the past several decades there has been an overall pattern of a declining ratio of capital to output in highway and rail (Transportation Research Board, 54). Although traffic growth for Class I railroads has accelerated since the industry was deregulated in 1980, the mileage of track owned by those railroads has actually contracted during this period. And even though some of this decline resulted from Class I railroads divesting track to small regional short line railroads, the rail roadway operated by all United States railroads has declined from 181,000 miles in 1987 to 171,000 miles in 1999

(Transportation Research Board, 59). Additionally, while the rail industry has ushered in technological improvements that have improved efficiency, some experts note that even with the track downsizing ending within the past few years, the railroads will probably now face the need for expansion if they are to serve the expected growth in demand (Transportation Research Board, 61).

## **CONCLUSION**

Over the past decade, the freight industry has become an integral part of the domestic and international economies. And, the freight industry is expected to continue to grow, quite rapidly in some instances, over the course of the next 20 years. New trends, markets, and trading partners continue to emerge, and TransPORT needs to track these developments closely to capitalize on the tremendous growth that is sure to be seen.

## CHAPTER 3.

### LOCAL FREIGHT OVERVIEW

#### INTRODUCTION

Although looking at national trends in freight is important, it is equally important to examine what is occurring in the local freight arena. The local freight industry was examined by comparing freight statistics of the Peoria, IL BEA from the years 2000 and 2004. Although having trend data from additional years would have been beneficial, the data that was obtained from 2000 and 2004 do allow for comparisons to be made and general analysis to be undertaken. Based on the data presented, some general conclusions will be made along with some conclusions regarding how to capitalize on some of the information that follows.

[NOTE: Before beginning the discussion on the local freight data, a quick note needs to be made regarding the statistics that were used. The statistics from both the year 2000 and the year 2004 were obtained from Transearch, a part of the firm Global Insight. Transearch/Global Insight is recognized as a leader in freight data and statistics. As such, Transearch/Global Insight is always working on improving their data gathering techniques and offering a more robust service. This improvement is seen in the decline in miscellaneous freight from 2000 to 2004 as it was assigned to other categories. In addition, Transearch/Global Insight had begun tracking additional data and expanding their coverage in the trucking industry, so The Heartland Partnership and Transearch/Global Insight staff worked together to allow for the comparison of similar data in 2000 and 2004.]

#### FREIGHT OVERVIEW: TOTAL COMMODITY GROUP

Table 3.1

<b>Peoria, Illinois BEA Freight Comparison 2000 and 2004</b>				
<b>Commodity Group</b>	<b>Total</b>			
	<b>2000</b>	<b>2004</b>	<b>Change</b>	<b>Growth</b>
<b>Ore, Coal, Petroleum</b>	13,721,837	17,851,924	4,130,087	30.10%
<b>Farm, Food Product</b>	15,291,342	18,688,719	3,397,377	22.22%
<b>Textile, Apparel</b>	21,569	171,158	149,589	693.54%
<b>Lumber, Wood, Paper</b>	1,169,149	4,281,808	3,112,659	266.23%
<b>Chemical, Rubber, Plastic</b>	4,416,258	8,132,619	3,716,361	84.15%
<b>Clay, Concrete, Stone</b>	3,583,616	4,228,926	645,310	18.01%
<b>Metal Prod, Machine, Equip</b>	3,921,926	6,160,347	2,238,421	57.07%
<b>Misc Freight</b>	6,329,517	818,478	(5,511,039)	-87.07%
<b>Waste/Scrap</b>	308,744	491,509	182,765	59.20%
<b>TOTAL</b>	<b>48,763,958</b>	<b>60,825,488</b>	<b>12,061,530</b>	<b>24.73%</b>

Table 3.1 above shows the change in freight by category and by total. As can be seen, the total freight flows into and out of the area increased by over 20%. With the United States freight growing at a 18.4% (Table 2.3) rate for the decade ended 2002, the 20% growth rate in local freight, although high, does not seem to be out of line. In looking at total growth, it is important to note some of the product areas that had exceedingly strong growth. These include textiles, lumber, petroleum, chemicals, and metal products/machine/equipment.

**Table 3.2**

<b>Outbound Peoria, IL BEA Freight Comparison 2000 and 2004</b>				
<b>Commodity Group</b>	<b>Outbound</b>			
	<b>2000</b>	<b>2004</b>	<b>Change</b>	<b>Growth</b>
<b>Ore, Coal, Petroleum</b>	2,746,820	3,161,146	414,326	15.08%
<b>Farm, Food Product</b>	10,085,043	13,285,426	3,200,383	31.73%
<b>Textile, Apparel</b>	4,821	25,666	20,845	432.38%
<b>Lumber, Wood, Paper</b>	626,177	895,494	269,317	43.01%
<b>Chemical, Rubber, Plastic</b>	1,827,571	3,064,795	1,237,224	67.70%
<b>Clay, Concrete, Stone</b>	1,980,403	907,309	(1,073,094)	-54.19%
<b>Metal Product, Mach, Equip</b>	1,818,545	1,695,197	(123,348)	-6.78%
<b>Misc Freight, Mfg Product</b>	3,922,555	639,540	(3,283,015)	-83.70%
<b>Waste/Scrap</b>	30,472	166,998	136,526	448.04%
<b>TOTAL</b>	<b>23,042,407</b>	<b>23,841,571</b>	<b>799,164</b>	<b>3.47%</b>

Table 3.2 shows the total outbound freight from the Peoria, IL BEA. The data show only a slight growth in outbound freight, which means that, as will be shown, inbound freight experienced much more significant growth. The data continue to show strong growth in textiles, lumber, and chemicals. In addition, growth was also seen in farm products and petroleum. However, there was a significant decline in clay/concrete/stone as well as a modest decline in metal products/machines/equipment. Although there was a significant decline in miscellaneous freight/manufactured products, some of this can be attributed to better tracking mechanisms and a reallocation of those types of freight to other commodity groups.

Table 3.3 at the top of the next page shows the total inbound freight for the Peoria, IL BEA. As was noted in the previous paragraph, substantial growth was seen in the amount of freight flowing into the area. Tremendous growth occurred across the board, with the exception of miscellaneous freight/manufactured products. Again, some of this can be attributed to better tracking mechanisms and a reallocation of those types of freight to other commodity groups. Textiles, lumber, and chemicals are again commodities that have had impressive growth. Additionally, clay/concrete/stone as well as metal products/machine/equipment both experienced very high growth.

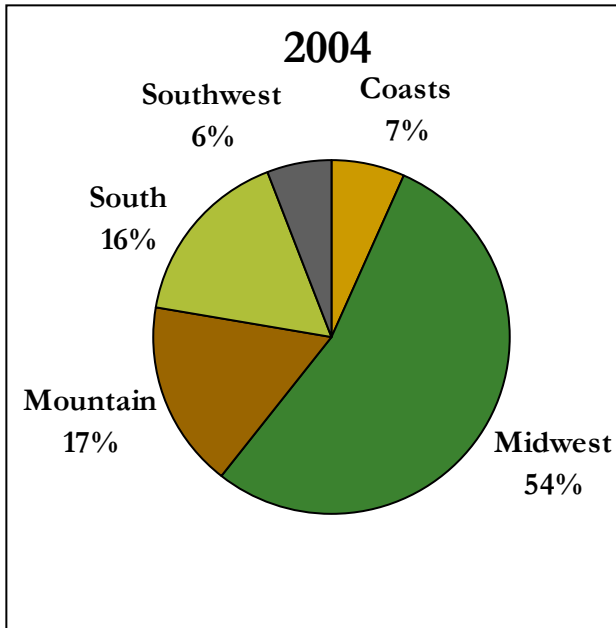


**Table 3.3**

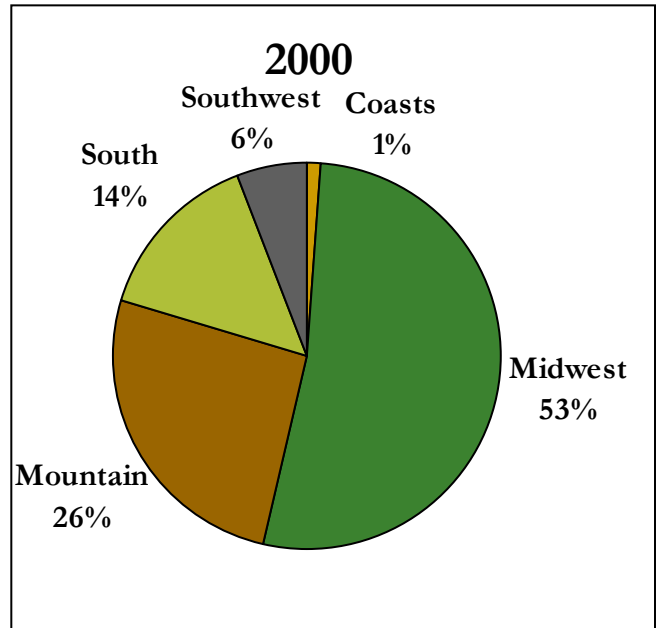
<b>Inbound Peoria, IL BEA Freight Comparison 2000 and 2004</b>				
<b>Commodity Group</b>	<b>Inbound</b>			
	<b>2000</b>	<b>2004</b>	<b>Change</b>	<b>Growth</b>
<b>Ore, Coal, Petroleum</b>	10,975,017	14,690,778	3,715,761	33.86%
<b>Farm, Food Product</b>	5,206,299	5,403,293	196,994	3.78%
<b>Textile, Apparel</b>	16,748	145,492	128,744	768.71%
<b>Lumber, Wood, Paper</b>	542,972	3,386,314	2,843,342	523.66%
<b>Chemical, Rubber, Plastic</b>	2,588,687	5,067,824	2,479,137	95.77%
<b>Clay, Concrete, Stone</b>	1,603,213	3,321,617	1,718,404	107.19%
<b>Metal Product, Mach, Equip</b>	2,103,381	4,465,150	2,361,769	112.28%
<b>Misc Freight, Mfg Product</b>	2,406,962	178,938	(2,228,024)	-92.57%
<b>Waste/Scrap</b>	278,272	324,511	46,239	16.62%
<b>TOTAL</b>	<b>25,721,551</b>	<b>36,983,917</b>	<b>11,262,366</b>	<b>43.79%</b>

**INBOUND/OUTBOUND BY DESTINATION**

**Inbound by Destination**



**Figure 3.1**

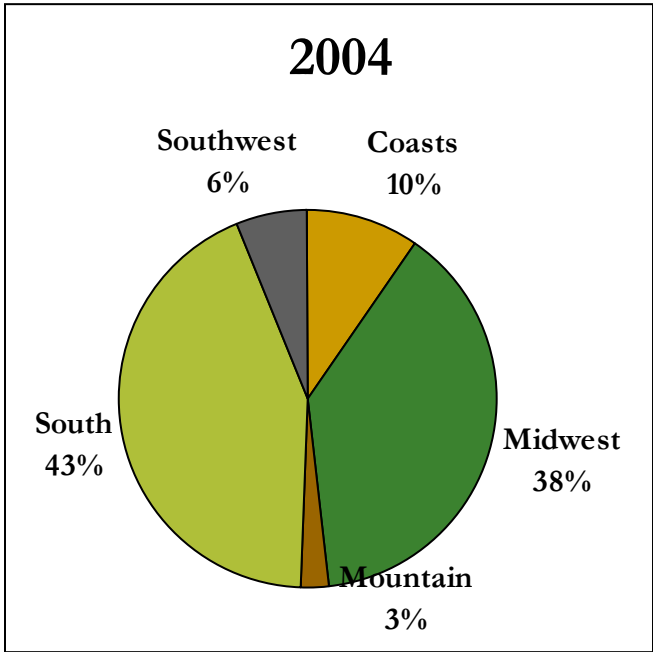


**Figure 3.2**

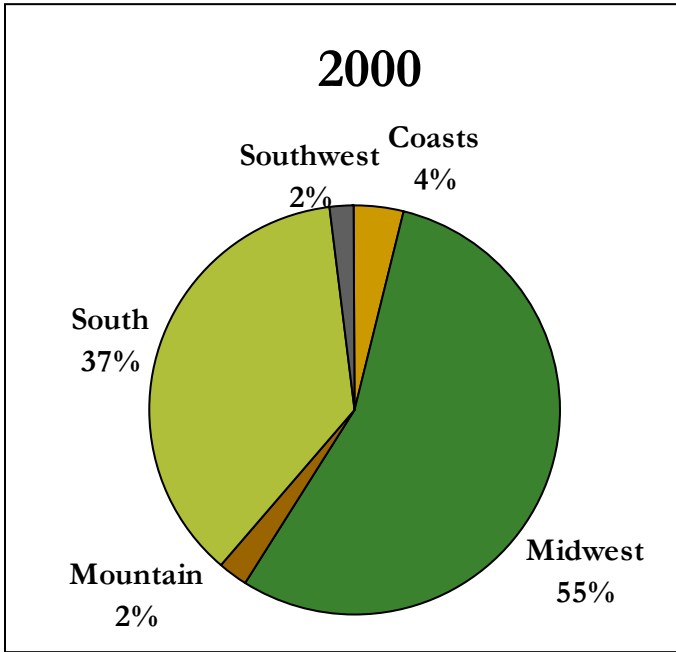
Figures 3.1 and 3.2 indicate where the freight flowing into the Peoria BEA is coming from as a percentage of total freight. These figures show that over half of the freight

continues to come from the Midwest, meaning freight connections within the State of Illinois as well as those with the surrounding states is important. The above figures also show how, as a percentage, less freight was received from the Mountain area and, as a percentage, more freight was received from the South and Coasts.

**Outbound by Destination**



**Figure 3.3**



**Figure 3.4**

Figures 3.3 and 3.4 show where the freight flowing out of Peoria, IL finds its destination, by percentage. As is shown in the figures, the Peoria BEA, as a percentage, sent quite a bit less of its freight to the Midwest and sent much more to the South. In addition, the Southwest and Coasts also increased. If the South continues to grow in importance, maintaining the Illinois River as the primary gateway to that market becomes increasingly important.

## INBOUND/OUTBOUND BY MODE

### Inbound by Mode

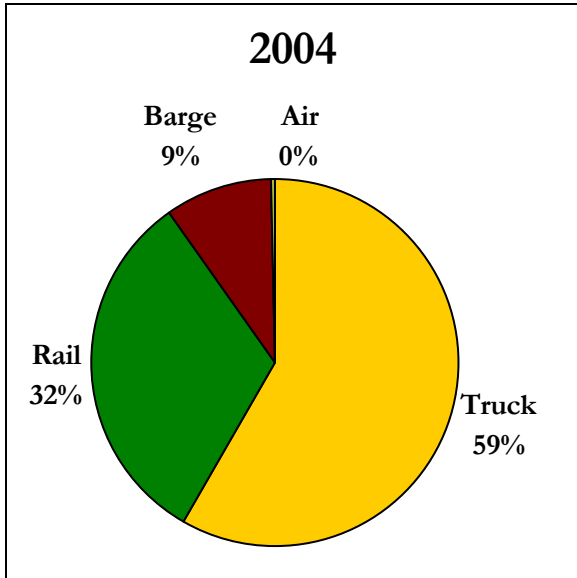


Figure 3.6

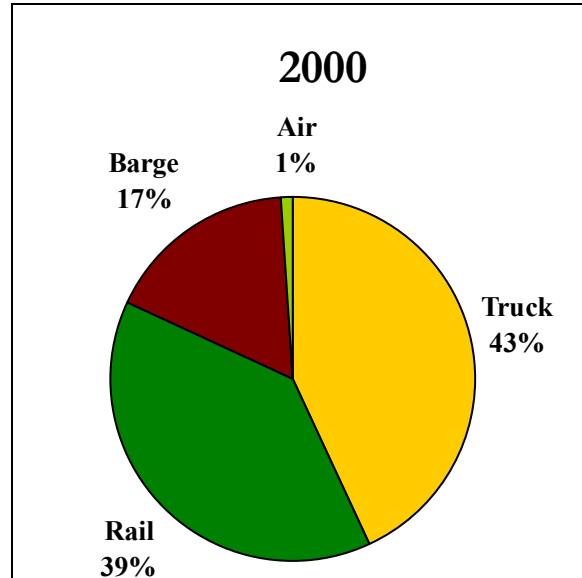


Figure 3.7

Figures 3.6 and 3.7 show what modes of transportation are used for inbound freight as a percentage of the total amount of inbound freight. Inbound freight became much more reliant on truck as a transportation mode. Although overall air freight increased over this time period, the percentage of freight received via air decreased, making it an inconsequential portion of inbound freight. In addition, rail decreased some, and barge saw a decline as well. It is interesting to note that overall inbound freight grew in terms of tons by nearly 40%, and the dependency on truck mirrored that same growth pattern. Furthermore, the area became less reliant on barge transportation, and as was noted in Part I of this study, inbound barges come back empty approximately one-third of the time. So, it appears as though inbound freight arriving via barge could be an area where the region is poised for opportunistic growth.

### Outbound by Mode

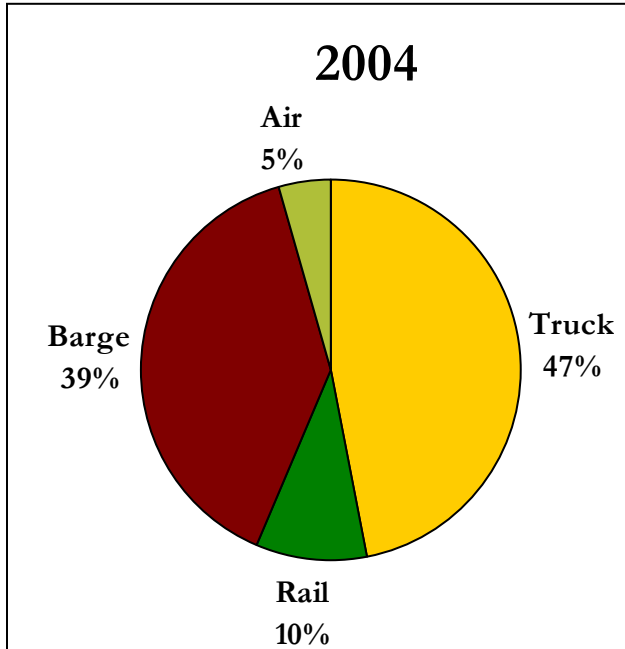


Figure 3.8

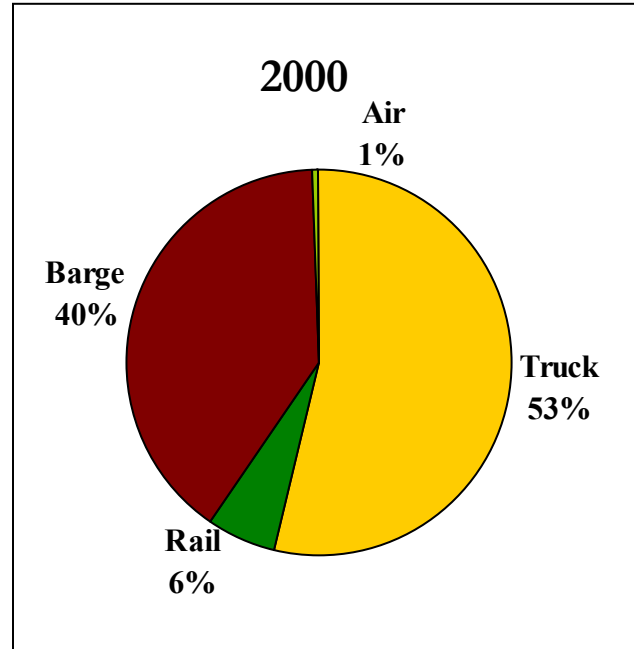


Figure 3.9

Figures 3.8 and 3.9 show what modes of transportation are used for outbound freight as a percentage of the total amount of outbound freight. These figures show that the region relies heavily on truck transportation for both inbound and outbound freight. However, with a substantial portion of outbound grain being shipped via barge, barge transportation now becomes much more important. Additionally, based on the heavy reliance on barge for outbound transportation and the limited use of barge for inbound transportation, this further substantiates the trends seen in Part I of this study (regarding inbound empty barges) and also indicates, as mentioned above, the potential for growth in this area. In looking at the other modes, rail saw a slight increase, and air saw an increase as well. As was the case with inbound air, although it saw a very substantial amount of growth, the amount of outbound air freight in relation to the total amount of freight was not very significant.

## INBOUND/OUTBOUND BY TONS

**Figure 3.10**

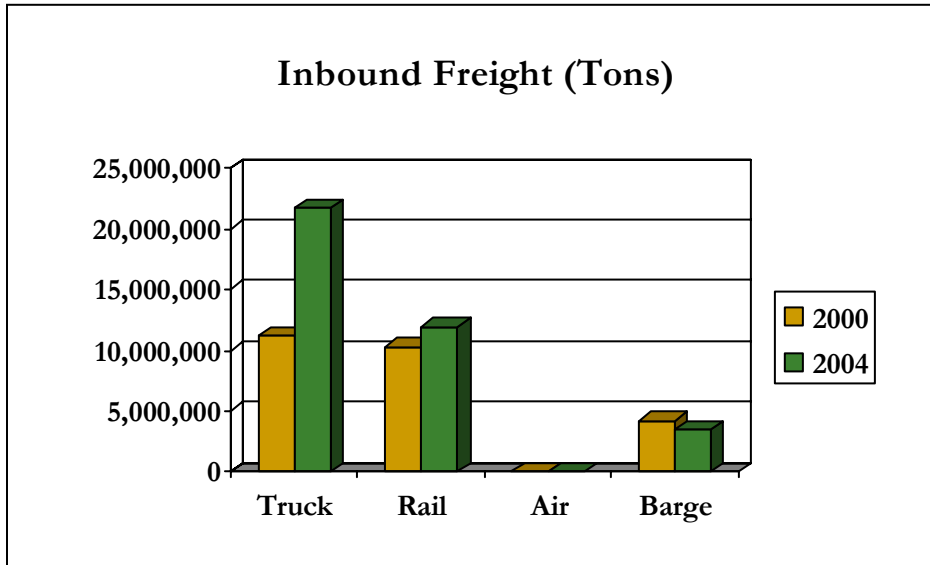


Figure 3.10 shows the total tons of freight shipped inbound by mode. As is indicated in the figure, truck freight nearly doubled in this time period, and this is also reflected in its percentage of total inbound freight, increasing from 43% to 59%. In addition, rail saw a 17% increase, while barge transportation saw a decrease of 19%. The decrease in barge transportation resulted in inbound freight relying on barge 9% of the time in 2004 versus 17% of the time in 2000.

**Figure 3.11**

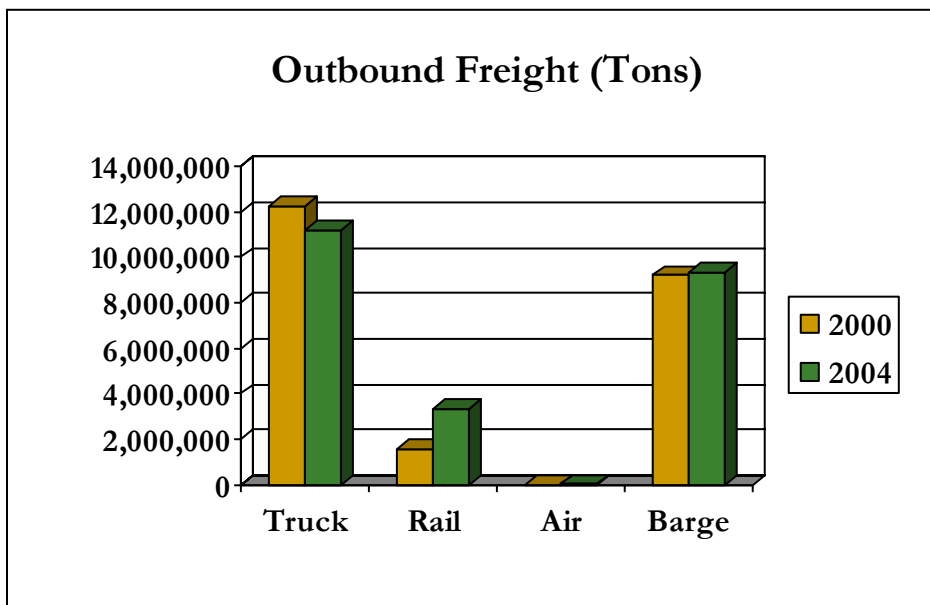


Figure 3.11 shows the total tons of freight shipped outbound by mode. As can be seen, outbound freight experienced only a slight increase. While both rail and air saw substantial increases, barge saw a slight increase, and truck shipments actually decreased. As can be seen, rail outbound totals doubled, and air saw an increase of over 60% (although air is still an insignificant part of the overall local freight industry). In addition, outbound barge transportation grew by about 1%, and truck transportation decreased by nearly 9%.

## **CONCLUSION**

The freight industry continues to be an important part of the local economy. As freight continues to expand nationally, those same affects will more than likely be felt locally as well. When examining the local freight data, the following conclusions were made:

- With the significant growth seen in inbound freight, there is a trend away from barge transportation for that freight, even though the capacity available on inbound barges is significant. It would seem that inbound freight sent via barge would be an opportunity for growth for TransPORT. In addition, inbound freight capacity would also lend itself to inbound COB activity.
- The commodity groups that saw the greatest increase, especially as related to inbound trucking, were textiles, lumber, chemicals, and petroleum. In addition, growth in those same areas (minus textiles) were also seen in rail. It would not be out of the question to suppose that TransPORT could capitalize on the growth in these areas and look to determine ways to emphasize the importance of those types of freight in our region. One potential scenario might look like the following: TransPORT attracts companies in one of these areas at one of the potential sites; TransPORT would work with the company and local barge lines to capitalize on the capacity of inbound barge traffic; the company would then use its site within TransPORT to distribute its products throughout the Midwest. (Similar scenarios have played out in other successful ports in the Midwest.)
- If TransPORT wants to capitalize on the benefits of river transportation and the capacity offered by barge, it will need to work very deliberately to communicate those benefits since the region is very dependent on truck transportation. (See truck as a percentage of total above and tremendous reliance on truck transportation of survey respondents listed below.) In addition, TransPORT will need to use an effective communication plan with the local freight handlers as well, since a move to barge would potentially mean a move away from rail or truck, unless TransPORT can expand the entire market.
- Even though a tremendous growth in the freight industry has occurred, Part I of this study showed that capacity still exists in the various transportation modes throughout the region. So, TransPORT is poised to take advantage of the projected future freight growth.

## CHAPTER 4.

### LOCAL FREIGHT SURVEY

#### INTRODUCTION

The logistics industry is becoming an increasingly significant element of both the global marketplace and the local economy in central Illinois. As a result, the ability to better understand how the shipment of products within a company's entire supply chain has become especially important. With the freight industry expected to nearly double in the next two decades, it is critical to plan for and understand the implications involved with the increased movement of goods throughout the Heart of Illinois Port District.

In order to help gauge how companies throughout central Illinois utilize the current freight handling system and in order to understand how that system needs to adapt to meet the ever changing needs of local companies, The Heartland Partnership and the Economic Development Council for Central Illinois developed a freight assessment survey for distribution to local businesses. The Central Illinois Freight Strategies Study is a comprehensive survey that gauges current utilization and future expectations of the regional freight handling system.

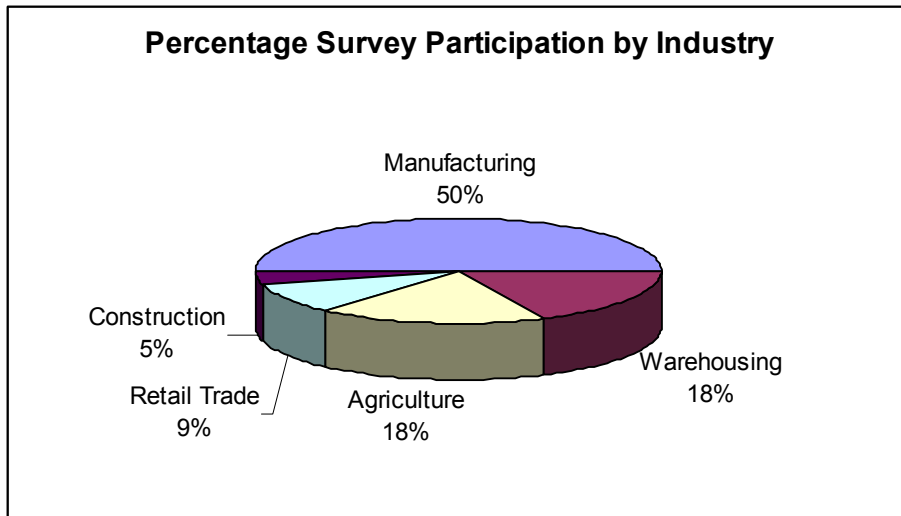
Using categories derived from the North American Industry Classification System (NAICS), a total of **323 companies were targeted** for participation in the freight strategies study. Primarily, these companies included those operating in the manufacturing, transportation, and warehousing industries. While efforts were made to incorporate all six counties of the Heart of Illinois Regional Port District, the majority of targeted businesses were located within Peoria, Tazewell, and Woodford counties.

In order to offer a thorough assessment of local freight use, the Central Illinois Freight Strategies Study totaled eight pages in length and included forty-seven questions. Of these, twenty-eight questions were multiple-choice, and nineteen were open/free response. In addition to detailing their company's use of the freight system, survey participants were asked to suggest improvements, offer predictions, and forecast challenges facing the overall freight industry in Central Illinois. A copy of this survey can be found in the Appendix to Part II of this study.

The survey packets were mailed to unsolicited companies throughout the community on June 14, 2005. The unsolicited caveat is important because survey recipients were not contacted in advance; therefore, local businesses did not expect to receive the study nor were they given prior opportunity to accept or decline participation in the study. As a result, of the 323 total surveys distributed, The Heartland Partnership received 22 total responses, or a 6.9 percent response rate. Completed surveys were returned to The Heartland Partnership from Peoria, Tazewell, and Woodford counties. No surveys were returned from businesses located in Fulton, Marshall, or Mason counties.

Although the rate of response to the Central Illinois Freight Strategies Study was limited, valuable feedback was received. The twenty-two companies that offered input to this study represent a broad spectrum of the Central Illinois economy. Due to confidentiality policies established within the survey, specific business names cannot be listed in this report. However, some of the larger industry segments can be conveyed. Figure 4.1 offers a breakdown of survey participation for different industry segments.

**Figure 4.1**

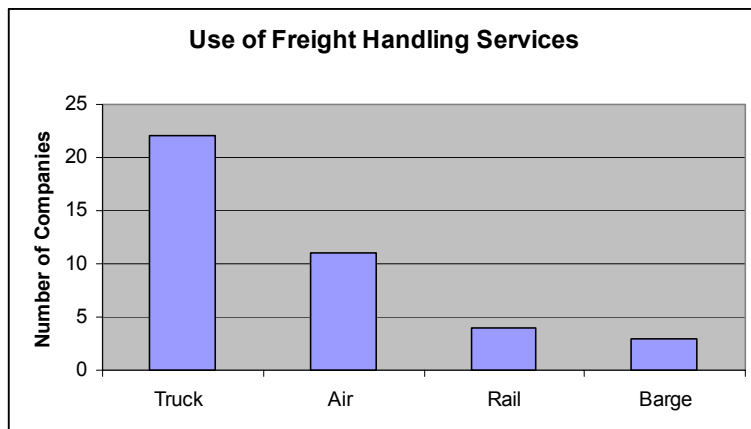


**STATISTICAL RESULTS**

The businesses participating in the Central Illinois Freight Strategy Study range in size from two to ninety-five employees. Survey results show that the average number of employees is 32.5; the median number of employees is 19. For all but one business, central Illinois is the site of their primary office location.

The survey asks local businesses to detail their use of various freight handling services. Results show that each company makes use of freight transportation via truck. Approximately half of those businesses also use air freight transport, while a few firms utilize the rail or barge system. Figure 4.2 illustrates these results.

**Figure 4.2**

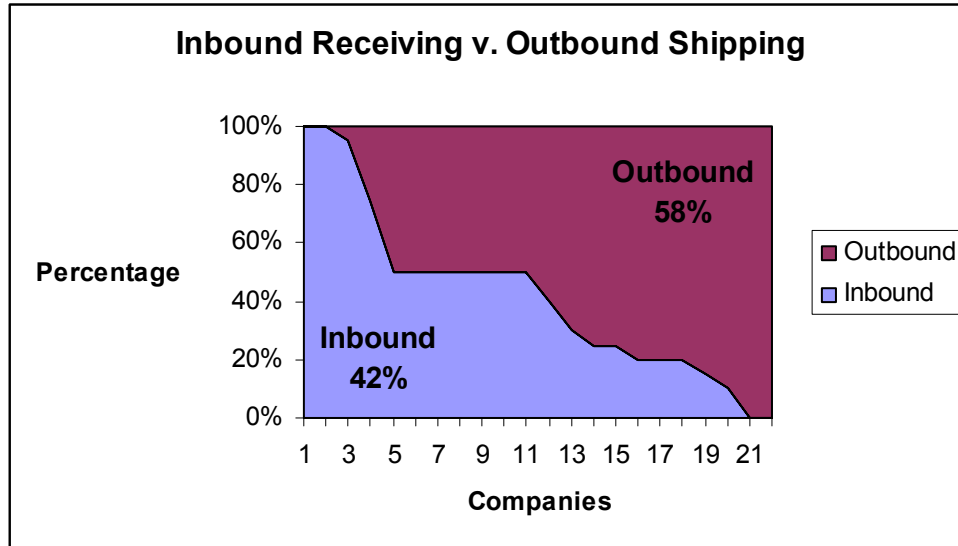


An important element of the freight study is an assessment of where freight is coming from and where it is going. Figure 4.3 shows inbound receiving and outbound shipping as



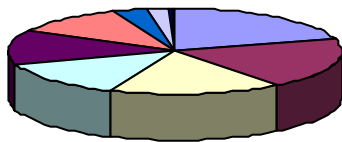
a percentage of each company's total freight use. The percentages are aggregated to show overall freight distribution for all businesses surveyed. Figure 4.4 displays the origin of inbound freight shipments. This includes materials arriving for fabrication by local manufacturers as well as goods for warehousing and distribution centers. Figure 4.5 shows destinations for all outbound freight shipments.

**Figure 4.3**



**Figure 4.4**

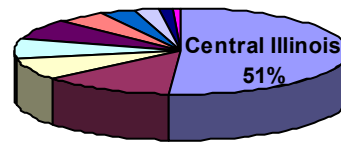
**Inbound Geographic Receiving**



Central Illinois: 21%	Midwest: 19%
Chicago: 17%	Illinois: 14%
St. Louis: 13%	Other USA: 11%
South: 3%	East/West Coast: 2%
Canada/Mexico: 0%	Overseas: 0%

**Figure 4.5**

**Outbound Geographic Distribution**



Central Illinois: 51%	Midwest: 12%
Illinois: 8%	South: 8%
Other USA: 7%	St. Louis: 5%
Chicago: 4%	East/West Coast: 2%
Canada/Mexico: 1%	Overseas: 1%

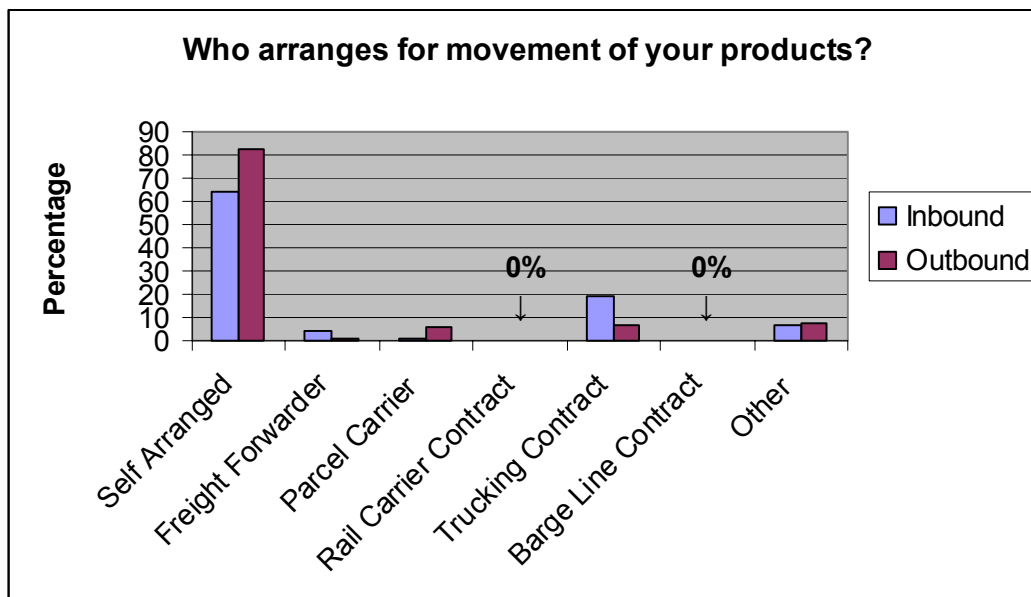
When it comes to shipping products and receiving goods, time may often be of the essence for local businesses. The results of the freight strategy study provided substantiation for the importance of transportation time. Companies were asked the following time sensitivity questions.

- Is making deliveries by a certain time of day important to your operation?
  - YES: 76%      NO: 24%

- For those answering yes to the previous question, what is the most important time requirement for your transportation needs?
  - **58%** of companies are required to meet a schedule consistently and reliably
- Is your company willing to give up some time control to save on total shipping costs?
  - **NO: 77%**                      **YES: 23%**
- For those yes to the previous questions, what percentage would your business need to save on freight transportation costs to give up some degree of time control?
  - Freight savings need to **meet/exceed 20%** to justify time control loss

Because time sensitivity is such an important issue, survey results indicate that a majority of businesses arrange for their own product transportation. In other words, very few firms contract out their freight handling services to third party providers. Figure 4.6 shows the importance of self-arranged shipping for local businesses.

**Figure 4.6**

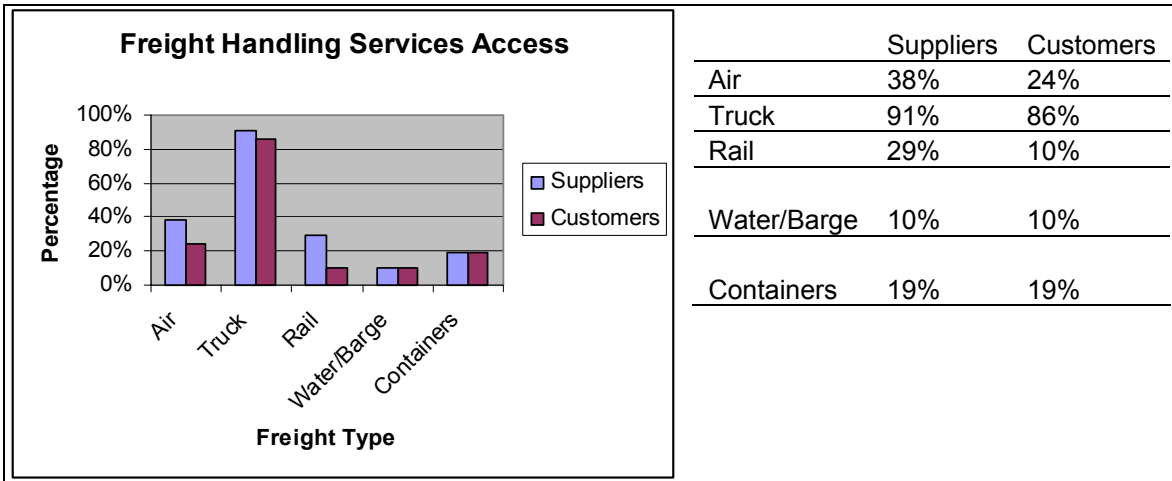


One of the key findings of the freight strategy survey is the importance of trucking for local businesses. The central Illinois economy, like other regions across the country, is almost entirely dependent on freight movement via truck. As a result, the remaining statistical data illustrates the overwhelming reliance of companies on truck transportation.

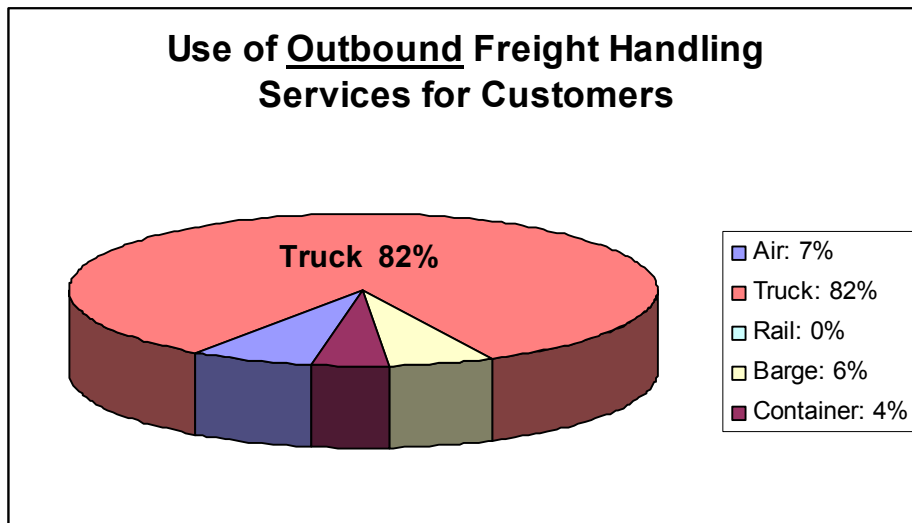
Survey participants were asked to list the freight handling services for which their major suppliers and customers have access. In addition to air, truck, rail, and barge services, this area of the survey incorporates the use of containers for freight shipping as well. Nonetheless, the dominance of local trucking access is evident and can be observed in Figure 4.7.

After providing information about what types of freight services are used, companies were asked to indicate how often each mode of transportation is used with their suppliers and customers. This is significant because many local firms fail to utilize certain forms of freight transportation – even if particular suppliers or customers have access to them. For example, Figure 4.7 shows that an average of 10 percent of the surveyed company’s customers have access to rail transportation. However, Figure 4.8 indicates that rail transportation is never utilized for any outbound shipments to customers. Instead, freight transportation from suppliers and to customers is accomplished almost exclusively through trucking. Figure 4.8 shows the types of freight services used with major customers. Figure 4.9 shows the types of freight services used with major suppliers.

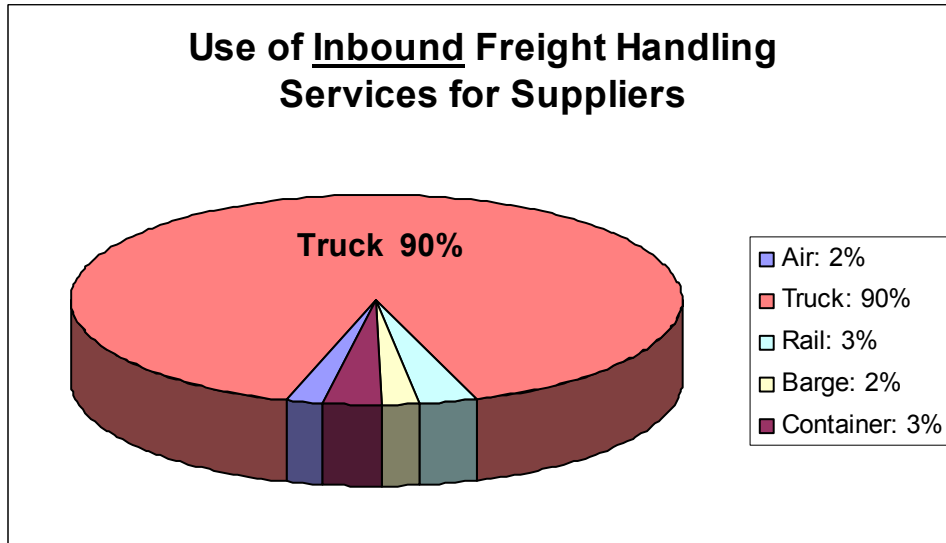
**Figure 4.7**



**Figure 4.8**

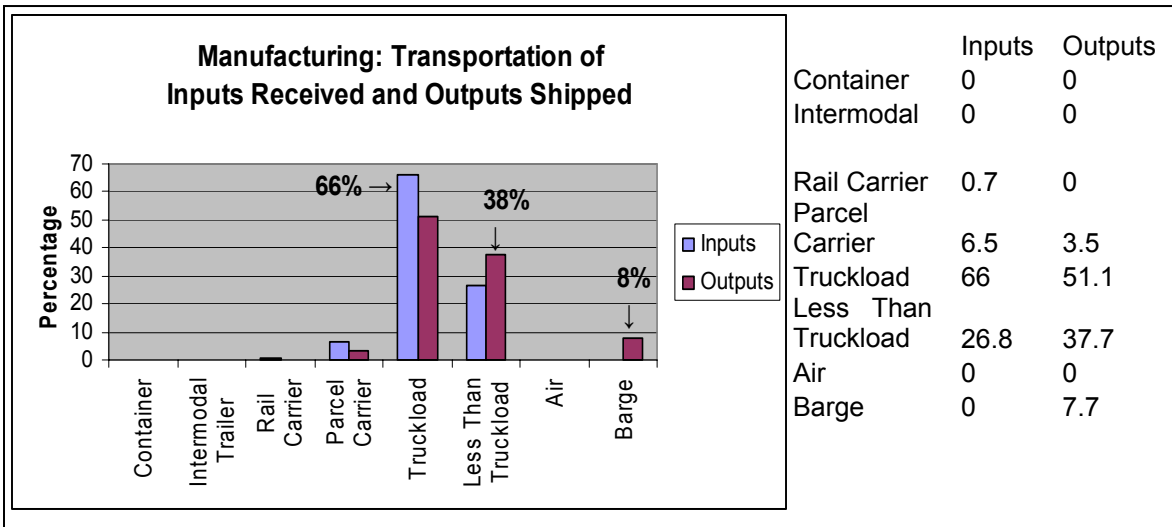


**Figure 4.9**

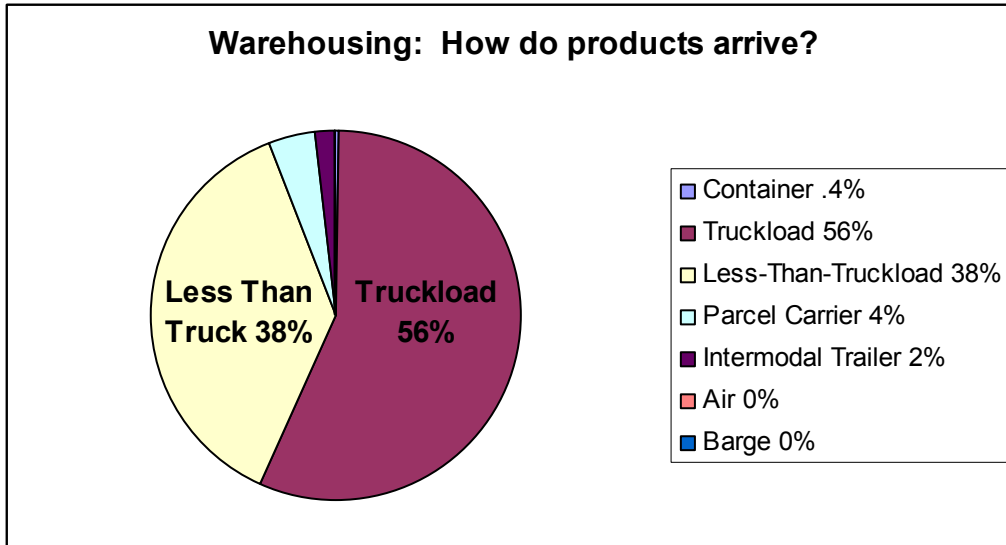


A large portion of the freight strategies survey focuses specifically on the manufacturing and warehousing industries. Although there are many successful businesses that encompass both areas in central Illinois, a majority of companies surveyed for this study identified focus in a single area. However, for both manufacturers and warehouse firms the reliance on trucking is nearly identical. Both industry segments have a reliance on trucking that meets or exceeds 90 percent. Figure 4.10 displays the methods for which manufacturers transport supplies and products. Figure 4.11 presents the methods for which products arrive for distribution and warehousing.

**Figure 4.10**

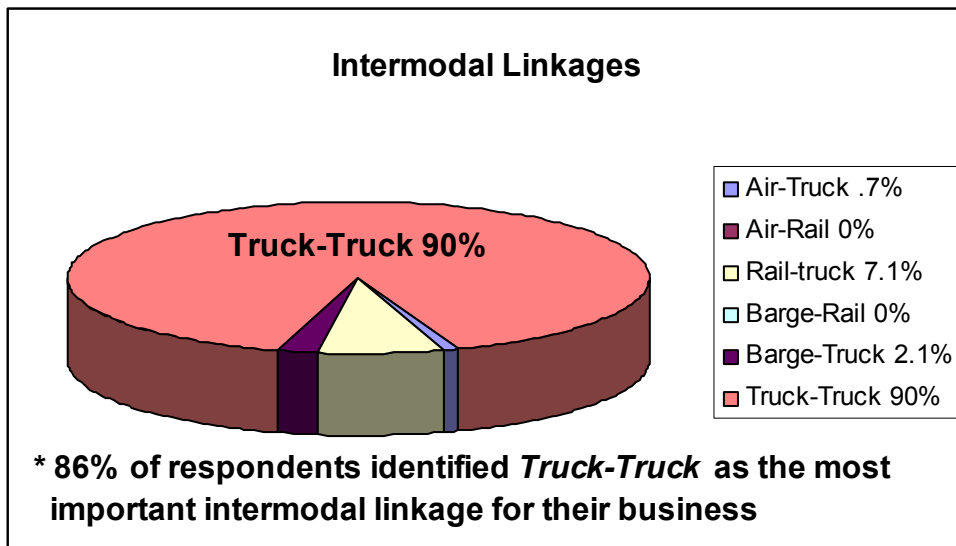


**Figure 4.11**



The final component of the quantitative reporting section of the survey refers to intermodal linkages. The study asks participants to evaluate their use of various intermodal transport linkages. Again, local businesses indicate that their use of alternative transportation options is very limited. Only a handful of companies noted any use of intermodal logistics at all. Instead, the most commonly cited linkage was truck-truck. Freight transfers from one truck to another is an example of an intermodal linkage. Figure 4.12 details the use of intermodal linkages as reported by survey participants.

**Figure 4.12**



### **QUALITATIVE OPINION RESULTS**

The Central Illinois Freight Strategies Study included a number of free-response and opinion related questions. These qualitative results are shown below.

*How important do you think marketing strategies that promote the importance of central Illinois for intermodal transportation would be to your site?*

- Very beneficial: **5%**
- Somewhat beneficial: **10%**
- Neutral: **50%**
- Not very beneficial: **25%**
- Not at all beneficial: **10%**

*What major intermodal freight improvements would you suggest for the central Illinois area?*

- Increased train service on a regular and consistent basis
- Better freight tracking on truck
- Increase in waterway freight usage
- Four-lane highway to Chicago
- More inexpensive air options

*What do you foresee as some of the major challenges related to the freight industry in central Illinois over the next 10 years?*

- Higher costs of moving products via truck due to fuel price increases, licenses, and increasing government regulation
- Receiving goods and parts on a timely basis
- Getting shipments on time in a consistent manner
- Competition from the I-80 corridor
- Availability of qualified drivers to move freight via truck
- Railroad congestion

*What are some of the changes you expect to see in the next 10 to 20 years as related to the freight industry in central Illinois?*

- More government cost and regulation
- Increased use of double trailers
- Peoria to Chicago interstate
- Completion of I-74 improvements
- Higher costs for truck transportation

*What are some of the changes you would like to see in the next 10 to 20 years as related to the freight industry in central Illinois?*

- Less government regulation
- Use of bio-diesel fuel
- Cost reductions derived through increased competition
- Completion of I-474 ring road

## **CONCLUSION**

Results of the Central Illinois Freight Strategies Study illustrate the tremendous dependence of local industries on trucking transportation. As a result of this reliance on

trucks for the majority of regional freight transportation, it will likely be difficult to significantly increase the use of other modes of transportation for businesses currently located in Central Illinois. Instead, the expansion of alternative transportation, river transportation specifically, will most likely come through external marketing and new business recruitment.

This survey indicates a major challenge for the Heart of Illinois Regional Port District. As local businesses continue to exhibit reservations concerning intermodal transportation, the port district must work to educate the regional community about the numerous advantages of river and other large-capacity freight handling systems. This survey offers validation of current freight trends within our local economy and will stand as a useful measurement of current industry sentiment.

## CHAPTER 5.

# GROWTH OPPORTUNITIES

### INTRODUCTION

In order to fully capitalize on TransPORT's potential, it is important to focus on several key growth opportunities. One of the primary areas for growth on the Inland Waterway System is that of the container-on-barge (COB) industry. As has been and will be highlighted, the growth of container traffic being shipped into the United States, the potential congestion of east and west coast ports, the potential congestion on highways in major metropolitan hubs, and the potential congestion of rail lines in major metropolitan hubs coupled with the availability and efficiency of barge travel are helping the growth of

**The Short-Sea Shipping initiative is being championed by the Marine Administration to further the use of the Inland Waterway System as a viable freight transportation alternative.**

the COB industry. In addition, to help encourage the COB industry, the United States Marine Administration (MARAD) has begun a short sea shipping initiative, which will also be highlighted. Next, potential growth opportunities that can be seen from examining the local freight data will be discussed. Then

industry segments at other ports will be examined to further detail what types of industries could be attracted to potential TransPORT sites. Finally, the value-added manufacturing industry will also be looked at as a potential growth opportunity for TransPORT.

### CONTAINER-ON-BARGE (COB)

As was noted previously, the freight industry has grown tremendously over the past decade and is expected to nearly double in the next twenty years. In conjunction with this growth, the number of containers needing to be moved into, out of, and within the United States is steadily and rapidly increasing as well (IWR White Paper, 2). With the expected surge in freight growth, it can be seen that congestion could result not only at major coastal ports but also on highways and railroads. To help alleviate this congestion, COB could be used to fill a niche market in the transport of certain types of containers, such as those that are not time sensitive and those that exceed highway weight limits (IWR White Paper, 2). Indeed, existing jumbo barges are capable of handling 72 TEU (twenty foot equivalent unites) containers (stacked 3-high), which means that at least 36 trucks are able to be taken off of the road for each fully loaded, individual barge (IWR White Paper, 1).

#### *COB Growth, Developments, and Market Potential*

Although the COB industry has not yet fully emerged on a national basis, it has been successful in specific areas of the country. And although the United States has not yet adopted the COB industry, containers-on-barge are quite commonplace in Europe and



Asia, where waterways are being used regularly to relieve highway congestion. Furthermore, the Rhine River in Europe has seen COB traffic explode from less than 10,000 units in 1975 to 45,000 units in 1991 and to 2,300,000 units in 2003 (IWR White, Paper 1). Domestically, the Columbia-Snake River system has seen COB traffic grow from 125 containers in 1975 to 50,000 in 2000 (IWR White, Paper 1). As the COB industry continues to grow, other developments have begun to appear (IWR White Paper, 1):

**COB is an industry standard in Europe: 2.3 million containers moved along the Rhine River in 2003, up from just 45,000 units in 1991.**

- Osprey Line has established COB service along the Gulf Intracoastal Waterway connecting ports in Houston and Freeport, TX with those in Pensacola, FL
- Osprey Line recently began service to Memphis and Louisville, thus advancing COB up the Mississippi and Ohio Rivers (a stretch containing locks)
- Kirby Corporation, a mainstream barge company, has purchased a one-third interest in Osprey Line, thus giving added confidence to COB's future
- In 2003 COB service began on the Hudson River between Port NY/NJ and Albany
- Port of NY/NJ is funding an east coast network of COB ports
- Port of Pittsburgh and Pittsburgh Barge Shippers Council are pursuing means to reduce impediments to COB and are using Mexico as a potential market

The COB initiative has been gaining in popularity as of late in part because of the many benefits it can provide. To the extent that barges can take trucks off heavily traveled highways, they relieve congestion as well as reduce air emissions. And, in recognizing those benefits, the ports of Houston and New York have received Congestion Mitigation and Air Quality funds under the Transportation Efficiency Act of the 21<sup>st</sup> Century to support COB operations (IWR White Paper, 4). Renewal legislation is now in Congress in the form of the Safe, Accessible, and Flexible Transportation Act. Furthermore, the Port of Pittsburgh Commission concluded that "COB is technically feasible, economically attractive, and environmentally advantageous for the Ohio-Mississippi River System" (Port of Pittsburgh Commission, 9).

### ***Obstacles***

**COB obstacles include:**

- **"Chicken and egg" problem**
- **Potential retaliatory actions of rail and other competitive industries**
- **Complexity associated with started a COB operation**
- **Lock and dam system along the Inland Waterway System**
- **Potential poor image of the barge industry**

Several obstacles still exist when looking at the COB industry. One obstacle in particular is the "chicken and egg" problem: carriers insist that if there is demand, they will offer

the service; shippers retort that if there were a service, they would use it. Secondly, history is not on the side of the COB industry. Several very small COB ventures failed to launch along the Mississippi River in the 1970s and 1980s due to temporary price undercutting on the part of competing transportation modes (IWR White Paper, 2). Specifically, cut-rate rail competition in a very competitive north-south rail network that parallels the Mississippi hampered those previous attempts, as did the lack of deep pockets to withstand such competition, the lack of experience in dealing with unique container handling requirements, and the dependence on single shippers that may change their supply chain logistics requirements for other business reasons (Port of Pittsburgh Commission, 9).

A third obstacle is the complex research and operational organization needed to implement and sustain a successful COB industry. Locating the shippers and organizing the COB service is a complex problem that needs to be done at both ends of the system as well as other ports that wish to participate (Port of Pittsburgh Commission, 9). Yet another obstacle is the lock and dams that are perceived as barriers because of the unreliability that they introduce into the logistics chain. Furthermore, the Osprey Line cited that locks would hinder their efforts to maintain a regular schedule (IWR White Paper, 2).

Two additional obstacles that were identified were the cost of upgrading current facilities and the need to get cooperation of the barge lines. Additionally, two final obstacles include double handling fees and the poor image associated with barge transportation. When containers are unloaded at ocean ports, they are double handled. If they come in by way of ocean vessel, then they must go out via truck, rail, or barge. The fees for the second handling by barges are currently priced similarly to the cost of handling the ocean vessel rather than the much less expensive fee for handling trucks or rail cars. Finally, the overall image of barge transportation is often poor, as many companies and individuals view barge transportation as old, slow, dirty, and unreliable (IWR White Paper, 2-3).

### ***Requirements (RO/RO; LO/LO)***

If a river terminal accustomed to handling steel coils is available, it can be readily adaptable to handling containers with a few modifications and the right expertise. Thus, major inland river terminal construction is not necessary. The basic requirements are (Port of Pittsburgh Commission, 17):

- *Ground Storage* – A terminal typically is required to have 2.5 times the ground storage to work a vessel. Thus, if one barge can hold 72 TEUs, a terminal would need space for 176 TEUs for each barge.
- *Cranes* – A 20-ton crane would be able to handle most highway-weight containers; a 30-ton crane would be necessary for overweight containers. Additionally, the use of mobile cranes has reduced some of the start up costs for terminals wishing to enter this market.
- *Container Forklift* – These forklifts offer efficiency for moving containers within the terminal.

- *Intermodal Connections* – It is essential for the terminal to have good connections to the intermodal network (rail and especially highway).
- *Weigh Station* – This is necessary so that the containers can be inspected and the responsibility for damage can be documents.

Additionally, a COB operation could be established in one of two ways: lift them on and lift them off (LO/LO); or roll them on and roll them off (RO/RO). The specific needs for those types of operations are as follows (IWR White Paper, 4):

RO/RO	LO/LO
Crane not needed; stackers not needed	Required mobile harbor crane or reach stackers
Yard tractors	Yard tractors
Typically less labor for operation	More labor for operations
Ramps necessary at terminals or barges with self-contained ramps	Ramps not needed

### *Characteristics of Successful COB Services*

According to the IWR White Paper, COB services that work are successful logistical operations that utilize the combination of transportation modes, which allows them to promote COB in an integrated, systemic way. Furthermore, some of the characteristics of a successful COB system include IWR White Paper, 4):

- Efficient, cost-effective terminal operations
- Efficient and reliable barge sailing and delivery schedules
- Effective container/chassis equipment control and repair systems
- Well-organized Security, insurance, and risk control systems
- Sophisticated communications systems and extensive preparatory marketing

Although COB operations generally contain cargoes of higher value, greater speed of the transportation of the cargo is not necessarily a requirement. However, reliability is critical and essential.

When specifically looking at what has made the Rhine River System and Columbia-Snake River System so successful, the common attributes they share are (Port of Pittsburgh Commission, 18):

- High productivity
- Relatively high tow speeds
- Competitive rates
- Availability of reliable, scheduled service
- Length of hauls of 250 to 500 miles
- Relatively quick transfer times
- Scheduled service on frequent barges

- Heavy orientation to export traffic
- Door-to-door pricing, transparent to shippers, to eliminate the potential for hidden charges

### ***TransPORT Initiative***

Given the brief overview of the opportunities and obstacles of the COB industry, what conclusions can be drawn in relation to TransPORT? It can be seen that a domestic market for COB is beginning to emerge, although slowly and not without a fair amount of hesitation. Also, based on the information that is available, TransPORT will need to move in a very calculated and deliberate manner in order to capitalize on the COB industry. It is recommended that TransPORT look at the following items in relation to its intent to develop a COB industry in Central Illinois:

- *Coordination with Other Organizations:* TransPORT will need to work collaboratively with other organizations throughout the Inland Waterway System so as to approach the COB industry in a coordinated effort. These organizations include the Waterway Intermodal Cooperative Program, which is sponsored by the Marine Administration, and the Heartland Intermodal Partnership, which is a consortium of IWW ports and operators that has COB development as one of their focus areas. Additionally, the Port of Pittsburgh Commission recommended that a marketing feasibility study be conducted for the entire IWW system to reduce the risk of any COB service. This study would need to be a joint effort.
- *Connection to Outside Markets:* Initiating the COB industry in the region cannot be done alone. In addition to working with other organizations, TransPORT needs to connect itself to outside markets, including the ports along the Gulf Intracoastal Waterway and foreign ports. It is imperative that relationships be established with the large ports along the Gulf. Also, having an international shipping partner can be a vital link to the container market. Both Pittsburgh and Kansas City (although Kansas City does not involve COB) have established shipping ties with port cities in Mexico to further the booming trade that continues to evolve between the United States and Mexico. The relationship between TransPORT and the NAFTA markets could be furthered through an affiliation with the North American International Trade Corridor Partnership (NAITCP), which is an organization helps generate influence, power and synergies by bringing together and organizing the highest level of decision makers concerning economic development and transportation projects along the NAFTA super-highway.
- *Relationship with Local Freight Industry:* In order to make a COB industry viable and successful in the region, TransPORT will need to establish significant relationships within the local freight industry. This includes working with barge operators, railroads, trucking firms, and other freight handlers. Having a relationship with those working with freight will be necessary if the local industry will begin to use COB for shipments.

- *Examination of Local Freight Data:* The local freight data will need to continue to be monitored and further examined. It will be important to look at what trends are occurring and how the local freight industry continues to change and evolve. Additionally, several types of freight could easily be shipped via COB rather than by rail and/or truck. As was outlined in the Local Freight Data chapter, the substantial increase in petroleum, chemicals, and lumber could have been shipped via barge and perhaps in special COB arrangements. [Note: Switching inbound/outbound freight to barge from rail/truck would require a significant relationship with the local rail and truck companies, as noted above.]
- *Federal Assistance:* Federal assistance in the COB industry is all but an essential component in COB's establishment. The importance of Federal assistance has already been seen in the development of COB in New York/New Jersey and Houston, as these ports have used funds from the Congestion, Mitigation, and Air Quality Act as well as the Transportation Efficiency Act for the 21<sup>st</sup> Century. Current legislation is also being developed that could help COB (through the Safe, Accessible, and Flexible Transportation Act). Federal funds would be critical in solving the "chicken and egg" problem and giving a financial incentive to either the seller or the shipper to initiate one of the parties to be a first mover. Additionally, Federal funds could help initiate a study outlining the public benefits of barge transportation.
- *Demonstration Project:* TransPORT could look to partner with organizations, as mentioned above, and look to gain Federal funding to take part in a demonstration project that would outline a successful COB venture in the Midwest that would go through a fairly large portion of the lock and dam system. The benefits of taking part in a demonstration project such as this would be tremendous and would only serve to rapidly expand the COB market in the region.

### ***Short Sea Shipping Initiative***

The Maritime Administration (MARAD) is exploring the development of a short sea shipping system to aid in the reduction of growing freight congestion on the rail and highway systems. Short sea shipping, which would use the Inland Waterway System as a primary component of domestic freight shipments, is fuel efficient, cost effective, and environmentally sound (<http://www.marad.dot.gov/programs/shortseashipping.html>, 2005). Thus, MARAD is focused on using COB (or containers on other types of vessels) as a viable alternative to rail and truck transportation. This initiative, which focuses on the success in Europe (outlined above), if successful, would prove to be an important part in furthering domestic freight movement via barge.

### **OPPORTUNITIES FROM LOCAL FREIGHT DATA**

When examining the local freight data and looking at the comparison of the 2000 and 2004 data several opportunities from growth can be seen.

With the significant growth seen in inbound freight, there is a trend away from barge transportation for that freight, even though the capacity available on inbound barges is significant. It would seem that inbound freight sent via barge would be an opportunity for growth for TransPORT. In addition, inbound freight capacity would also lend itself to inbound COB activity.

The commodity groups that saw the greatest increase, especially as related to inbound trucking, were textiles, lumber, chemicals, and petroleum. In addition, growth in those same areas (minus textiles) were also seen in rail. It would not be out of the question to suppose that TransPORT could capitalize on the growth in these areas and look to determine ways to emphasize the importance of those types of freight in our region.

### **POTENTIAL PORT INDUSTRY SEGMENTS**

In looking at the development of the specific sites outlined in Part III of this report, it is important to keep in mind the types of businesses and companies that normally inhabit port facilities. After examining the industries that exist at several successful ports throughout the Midwest, the following industry segments, among others, were the most common:

- Agricultural entities
- Metal processors and fabricators
- Chemical products
- Other liquids (fertilizers, asphalt, etc.)
- Steel/metal storage
- Warehousing

Although not all of the companies that are located on port facilities use barge transportation, there are a significant amount of companies that rely on barge transportation for their day-to-day business activities. For those companies that relied on barge transportation, the following infrastructure was, most generally, found at the ports:

- A general cargo dock, primarily used for commodity transfer – this dock would be at least about 1,000 in length and 25 feet in width (overall river frontage space can easily be several thousand feet in length)
- An overhead bridge crane able to handle at least 20 to 30 tons (for COB, as noted above), although some ports have cranes that handle up to and in excess of 200 tons
- In addition to an overhead crane, an assortment of other cranes, forklifts, etc. are often necessary as well
- A low water wharf for direct loading of barges – this wharf would probably be several hundred feet long and up to 50 feet wide
- If grain or dry bulk is handled, inbound/outbound conveyance systems will be needed for loading up tens of thousands of bushels or tons per hour.
- If liquid bulk is handled, and inbound/outbound system will be needed

In addition, the following infrastructure and accessibility options were often found:

- Storage facilities for general cargo and bulk commodities, including aggregate, grain, and dry and liquid bulk – facilities including storage for 4 to 5 million bushels of grain, covered storage for 80,000 to 90,000 tons of material, open storage for up to 50,000 tons of material, and liquid bulk storage (most types of storage depend on tenant needs, however)
- Roadways within the port that offer easy access to all portions of the port as well as to major highways and interstates
- A short-line railroad system that offers complete access to terminals and easy access to tenants as well
- Ease of access to airports for shipping of cargo and serving client accessibility needs

### **VALUE-ADDED MANUFACTURING**

Another potential industry that could offer TRANSPORT development opportunities at the proposed sites listed in Part III is that of value-added manufacturing. Value

added is defined as the difference between the final value of finished products and the value of the inputs that were used to manufacture the end products. Value is added to the inputs (raw materials) by processing, refining, manufacturing, transporting, grading, assembling, packaging, and delivering products in a form that satisfies consumers' preferences. (Economic Research Service, 5).

#### **Value-added manufacturing:**

- **Is an important component of the economy**
- **Grew nearly 10% from 1997 to 2000**
- **Covers a wide range of industry segments**
- **Is a key industry segment at successful ports**

Value-added manufacturing has been and will continue to be a very important part of the international, national, and local economies. In fact, Illinois is the fourth largest industrial state, with its value-added manufacturing totaling some \$102 billion. Overall, the State of Illinois saw value-added manufacturing grow by 7.02% from 1997 to 2000 (Value-Added Manufacturing by State, 2002). From 1997 to 2000 the amount of value-added manufacturing in the United States grew 9.69% from \$1.825 trillion to \$2.002 trillion (Value-Added Manufacturing by State, 2002).

Value-added manufacturing covers a wide range of industries. Some of these industries include agriculture, steel, lumber, plastics, etc. These industries feature inputs from commodity groups that run through a value-added process. The value-added manufacturing process makes for a terrific match for port-related activity. Ports are able to obtain the commodity products necessary for the process through low-cost transportation, such as by barge or by rail. Ports are also able to redistribute the finished value-added goods via the same low-cost means of transportation.

An excellent example of value-added manufacturing in the local economy is the Archer Daniels Midland (ADM) plant at the foot of Edmund Street in Peoria. ADM makes ethanol from corn, which is grown locally. The corn is trucked to the plant from local grain elevators. Coal for fuel is transported by barge from Kentucky. The coal is off-loaded into rail cars at the Peoria Barge Terminal, then shipped to ADM. The final product, ethanol, is distributed by truck. Thus, value is added to a locally grown product, while providing jobs that benefit our economy.

Some potential value-added segments that TransPORT could pursue include ethanol, biodiesel, steel, and lumber. The ethanol and biodiesel markets pose a great opportunity for TransPORT due to its proximity to a plentiful agricultural markets and the ability to use river and rail transportation for both the inputs and outputs. The steel industry is ripe with value-added activity, and with the success seen at other ports in this arena, it is quite possible that TransPORT would be able to capitalize on this industry as well. And finally, with the growth in the lumber industry recently in central Illinois (as seen in Chapter 2), TransPORT should further examine the potential of this value-added industry.

Another industry that needs to be further examined for growth within TransPORT is that of “kit” manufacturing. Kit manufacturing involves bringing in containers that have products that still need to be assembled. For example, an appliance manufacturer overseas may be able to get additional appliances in a container by not fully assembling them; then, once the containers are imported into the United States, they are assembled at a United States port for final distribution. According to J. Vann Cunningham at BNSF Railroad, kit manufacturing will be growing substantially over the next decade.

## **CONCLUSION**

Although several obstacles need to be overcome before the COB industry becomes completely viable, it is an industry in which TransPORT can easily be strategically poised to capitalize on the opportunities that are sure to be presented. Although obstacles exist that will temporarily impede the overall growth of COB, the success of the industry in Europe, Asia, and the Pacific Northwest as well as the success of the expansion into Memphis and Louisville certainly point to expanded growth nationwide. However, in order for TransPORT to fully capitalize on the COB industry, it must work diligently to connect to outside markets, develop relationships with the local freight industry, and work with the Federal government to advance the industry.

In addition to looking at the COB industry, TransPORT needs to examine local freight trends for potential growth as well as those industries that are typically present at other successful ports, such as metal processors, warehousing entities, agricultural companies, and the like. And, companies in the value-added manufacturing arena need to be further examined because of their growth potential and overall success at other industrial maritime ports.



## CHAPTER 6. CONCLUSIONS

The freight industry is becoming an increasingly important component of the national and international economies. As has been mentioned previously, the freight industry will continue to expand in importance as it will likely nearly double in the United States over the course of the next 20 years. And as was noted in the local freight overview, the freight industry continues to play a growing role in the local economy as well.

In addition to making some concluding comments about the ideas put forth in each chapter, it is important to note how the information presented thus far can be tied together to present a more complete picture of the overall freight industry and how it affects the local economy.

### ***Conclusion 1: TransPORT's location will allow it to capitalize freight growth***

TransPORT's location in the middle of the United States along the Inland Waterway System is quite enviable and will allow it to be in a great location for growth. Chapter 1 outlined the growth that has been seen in the freight industry as well as the expanded growth that it will continue to see in the decades to come. With the continued growth in manufactured imports, the international (and then national once it is imported) freight market will continue to grow. Additionally, those goods will need to get to the final consumer in an efficient, cost-effective manner. With the current capacity in the TransPORT market in all of the transportation modes, TransPORT is in a position to absorb additional freight growth. To that end, TransPORT should be able to capitalize on its ability to offer every kind of freight handling system as well as its proximity to major Midwestern markets. TransPORT is also located along the NAFTA trade corridor, and with the United States continuing to increase its trade with Canada and Mexico, TransPORT should be in a position to reap the benefits.

### ***Conclusion 2: Local freight data show opportunities for growth***

The local freight data show opportunities for continued growth. First, the local data indicate that the freight industry grew tremendously from 2000 to 2004. However, that growth was largely concentrated within the inbound freight market, with only a very minor increase being seen in the outbound freight market. In addition, the largest increase in inbound activity was in textiles, lumber, chemicals, and petroleum. These products were being imported to the region mostly by truck and rail (significant increases were seen in both modes). However, these products would fit easily into a barge transportation scheme, and with the decrease in local inbound barge activity coupled with the large number of empty barges that travel to the region, it could be quite feasible to develop a plan to use barge transportation as a more efficient and cost-effective transportation mode. Additionally, TransPORT could become a Midwestern hub for the distribution of these materials if it continues to play an important role in the importation of these goods. And, in an interview with a local operator, it was noted that liquid bulk transported via barge could be a growth opportunity for the region.

***Conclusion 3: Local freight users reflect over-reliance on trucking***

As was mentioned in Chapter 3, the local freight survey results indicate that those users of the freight handling system rely almost solely on trucking for their freight transportation needs. It could be seen that these users are over-reliant on trucking as means of transportation because these users might not be fully aware of the availability and advantages of the other transportation modes available in Central Illinois. However, although the reliance on truck is over 90%, it does reflect, somewhat, the national and local trends for freight transportation. The local data indicate that trucking is becoming much more prevalent, especially for inbound freight, and the national data show that trucking makes up about 80% of the domestic freight market (Table 1.1). The local and national data together indicate that the barge industry is in a position to reap the benefits as an efficient and cost-effective transportation alternative.

***Conclusion 4: COB and value-added manufacturing show potential for TransPORT***

Although the container-on-barge (COB) market is currently a fledgling industry, it is showing great promise for growth. COB continues to become an increasingly important part of freight transportation internationally, and it is growing more predominant in the United States. As has been outlined previously, TransPORT is in a position to capitalize on this growing market, but many steps need to be taken for the growth to be realized. In addition, TransPORT needs to dedicate some resources to examining the value-added manufacturing industry. This industry continues to be an important part of the economy, and successful ports across the country have experienced a high rate of success (in terms of economic growth and job generation) in this industry.

***Conclusion 5: Growth opportunities are dependent upon interaction from all levels***

There is no doubt that TransPORT can combine the Market Analysis presented here with the capacity outlined in Part I of this study and the sites outlined in Part III of this study to become a successful inland port with multiple locations. However, doing so will not necessarily be an easy task. TransPORT will need to not only capitalize on the resources that present themselves but also become highly integrated with individuals, organizations, and associations on a local, regional, national, and even international level. For example, having a working relationship with organizations such as North America's SuperCorridor Coalition, the North American Inland Port Network, and a host of others will help TransPORT stay connected to other ports and industry professionals that will ultimately contribute to the success of TransPORT. In looking at the Market Analysis, TransPORT will need to work with these national/international organizations to capitalize on the freight industry outlined in Chapter 1 and the growth opportunities outlined in Chapter 4. In addition, working with individuals and organizations on a local level will help TransPORT to overcome the challenges and capitalize on the opportunities outlined in Chapters 2 and 3.

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**APPENDIX IIA**  
**Central Illinois Freight Strategies Study**

## Central Illinois Freight Strategies Study

**Sponsored by: The Heartland Partnership, Tri-County Regional Planning Commission, and the Economic Development Council for Central Illinois**

Please take a few minutes to complete this survey which will help us in developing strategies for this important study concerning intermodal freight movement in Central Illinois. The results of this survey, coupled with a concurrent Supply Chain Logistics and Transportation Indicator Study will help shape the policy directives for freight in the region moving forward. Your help in this matter is critically important! If you have questions, please contact Kip McCoy of The Heartland Partnership at 309.495.5925.

Please be assured that ALL information is confidential. Neither you nor your company name will be associated with your responses. The information will appear only in a summary format. The survey will take about 20 minutes to complete. A few questions may not apply to you, but PLEASE answer all other questions that do. Thanks again for your involvement!

-----

Your Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Street/Mailing Address: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

-----

1. Please indicate the name of the site for which this survey is being answered.

\_\_\_\_\_

Is this the primary site for your company? \_\_\_ Yes \_\_\_ No

2. Approximately how many full-time equivalent persons work for this firm at this site?

Number of full-time equivalent employees: \_\_\_\_\_

3. Does your company have offices/facilities located outside of Central Illinois?

\_\_\_ Yes [Please indicate the top location(s) \_\_\_\_\_]

\_\_\_ No

4. What types of freight handling services does your firm use? Are these services provided in-house? (CHECK ALL THAT APPLY)

Use      In-House

Air..... \_\_\_\_\_

Truck..... \_\_\_\_\_

Barge/water..... \_\_\_\_\_

Rail..... \_\_\_\_\_

Logistics/third party..... \_\_\_\_\_

Warehousing..... \_\_\_\_\_

Intermodal..... \_\_\_\_\_

5. What percentage of your freight handling services are...

FROM your site to another location \_\_\_\_\_%

TO your site from another location \_\_\_\_\_%

6. In regards to the geographic scope of your business (OUTBOUND/SHIPPING and INBOUND/RECEIVING), what percentage of your business is done within the following areas? [Round to the nearest 10% when estimating the percentage in each category.]

	<u>Inbound</u>	<u>Outbound</u>
Central Illinois (your facility to another in the area).....	_____ %.....	_____ %
Chicago area.....	_____ %.....	_____ %
St. Louis area.....	_____ %.....	_____ %
Illinois (outside of the above areas).....	_____ %.....	_____ %
Midwest (outside of above areas).....	_____ %.....	_____ %
South (New Orleans, Houston, etc.).....	_____ %.....	_____ %
East/West Coast.....	_____ %.....	_____ %
All other United States.....	_____ %.....	_____ %
Canada or Mexico.....	_____ %.....	_____ %
Overseas.....	_____ %.....	_____ %

7. Is receiving or making deliveries by a certain time of day important to your operation?

Yes [GO TO QUESTION 8]

No [GO TO QUESTION 9]

8. What is the time sensitivity of your major INBOUND and OUTBOUND products? [Check ONE response for INBOUND and ONE response for OUTBOUND]

	<u>Inbound</u>	<u>Outbound</u>
Overnight.....	_____	_____
To meet a just-in-time schedule.....	_____	_____
To meet a schedule consistently or reliably.....	_____	_____
Subject to contract with rail carrier.....	_____	_____
Subject to contract with trucking carrier.....	_____	_____
Other (specify: _____).....	_____	_____
No sensitivity.....	_____	_____

9. During what hours do you usually need to receive/ship deliveries of your major INBOUND and OUTBOUND products?

[Check ONE response for INBOUND and ONE response for OUTBOUND]

Inbound                      Outbound

Morning..... \_\_\_\_\_ .....

Afternoon..... \_\_\_\_\_ .....

24 hours a day..... \_\_\_\_\_ .....

Morning and afternoon..... \_\_\_\_\_ .....

Evening..... \_\_\_\_\_ .....

10. Is time sensitivity an essential component of your INBOUND and OUTBOUND products?

\_\_\_ Yes    \_\_\_ No

11. Is your company willing to save on its shipping costs for INBOUND and/or OUTBOUND products if you were to give up some control on when the products are RECEIVED and/or SHIPPED?

\_\_\_ Yes    \_\_\_ No

If yes, please indicate the percentage you would need to save on your INBOUND and/or OUTBOUND products in order to give up some control on when the products are RECEIVED and/or SHIPPED.

Inbound savings: \_\_\_\_\_                      Outbound savings: \_\_\_\_\_

12. What freight handling services do your major SUPPLIERS and CUSTOMERS have access to? [Check ALL that apply]

Suppliers                      Customers

Air..... \_\_\_\_\_ .....

Truck..... \_\_\_\_\_ .....

Rail..... \_\_\_\_\_ .....

Water/Barge..... \_\_\_\_\_ .....

Containers..... \_\_\_\_\_ .....



13. What percentage of the time do you use the following freight handling services with your major SUPPLIERS and CUSTOMERS? [Please round to nearest 10%]

	<u>Suppliers</u>	<u>Customers</u>
Air.....	_____	_____
Truck.....	_____	_____
Rail.....	_____	_____
Water/Barge.....	_____	_____
Containers.....	_____	_____

14. How many freight handling locations do you have in Central Illinois?

Number of freight handling locations \_\_\_\_\_

15. From what sources do you receive supplies? [Check ALL that apply]

Supplier's plant  
 Warehouse or distribution center  
 Directly from port of entry  
 Other: please describe \_\_\_\_\_

16. Who arranges for the movement of your products INBOUND and OUTBOUND?  
[Round percentages to the nearest 10%]

	<u>Inbound</u>	<u>Outbound</u>
We do.....	_____ %	_____ %
Freight forwarder.....	_____ %	_____ %
Parcel carrier.....	_____ %	_____ %
Contract with rail carrier.....	_____ %	_____ %
Contract with trucking carrier.....	_____ %	_____ %
Contract with barge line.....	_____ %	_____ %
Other (specify: _____).....	_____ %	_____ %

17. What is/are the PRIMARY type(s) business(es) done by your firm at this site? Please indicate the TOP TWO that apply and then answer the question(s) associated with each area.

<input type="checkbox"/> Agriculture	<input type="checkbox"/>	Answer questions <b>18-26</b> and then proceed with the remainder of the survey
<input type="checkbox"/> Mining		
<input type="checkbox"/> Construction		
<input type="checkbox"/> Manufacturing		

<input type="checkbox"/> Transportation/Public Utilities	<input type="checkbox"/>	Answer questions <b>27-38</b> and then proceed with the remainder of the survey
<input type="checkbox"/> Warehousing/Wholesale		
<input type="checkbox"/> Retail Trade		

<input type="checkbox"/> Finance, Insurance, Real Estate	<input type="checkbox"/>	Proceed to question <b>39</b>
<input type="checkbox"/> Services		
<input type="checkbox"/> Government, miscellaneous		

**AGRICULTURE, MINING, CONSTRUCTION, MANUFACTURING – ANSWER QUESTIONS 18-26; THEN PROCEED ACCORDINGLY**

18. What is the primary product produced at this site?

Primary product \_\_\_\_\_

19. Approximately, how many tons of your ONE PRIMARY product (listed above) were SHIPPED OUT during the last year for which you can make a good estimate?

Tons of PRIMARY product during the last year \_\_\_\_\_

20. How many TOTAL tons for ALL products were SHIPPED OUT during that same year?

Tons of ALL products during the last year \_\_\_\_\_

21. What is the primary input to your production process that is RECEIVED at this site?

Primary input \_\_\_\_\_

22. How many TOTAL tons for the ONE PRIMARY INPUT to your production process were RECEIVED during the same year?

Total of PRIMARY input received during the last year \_\_\_\_\_

23. How many TOTAL tons for products used as inputs to your production process were RECEIVED during that same year?

Total of ALL products RECEIVED as INPUTS last year \_\_\_\_\_

24. By what means do you receive/ship products and materials that you RECEIVE AS INPUTS and SHIP OUT FINAL PRODUCTS? [Round percentages to the nearest 10% via each of the following methods]

	<u>Inputs</u>	<u>Shipped Out</u>
Container.....	_____ %	_____ %
Intermodal trailer.....	_____ %	_____ %
Rail carrier.....	_____ %	_____ %
Parcel carrier.....	_____ %	_____ %
Truckload.....	_____ %	_____ %
Less-than-truckload.....	_____ %	_____ %
Air.....	_____ %	_____ %
Water/Barge.....	_____ %	_____ %

25. Please check ALL of the following which you have access to at YOUR PRIMARY SITE.

- \_\_\_\_\_ Rail siding
- \_\_\_\_\_ Truck docks
- \_\_\_\_\_ Barge docks
- \_\_\_\_\_ Warehousing facilities

26. At what capacity (in terms of percentage of maximum throughput) is your current site operating?

Capacity \_\_\_\_\_

**IF ONE OF YOUR TWO PRIMARY BUSINESSES INVOLVES WAREHOUSING, TRANSPORTATION, DISTRIBUTION, OR RETAIL TRADE AND YOU HAVE NOT ANSWERED QUESTIONS 27 TO 38, PLEASE PROCEED TO QUESTION 27; OTHERWISE, PLEASE PROCEED TO QUESTION 39**

**WAREHOUSING, TRANSPORTATION, DISTRIBUTION, RETAIL TRADE –  
ANSWER QUESTIONS 27-38; THEN PROCEED ACCORDINGLY**

27. What types of facilities are at this site? (Check ALL that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Warehouse                           | <input type="checkbox"/> Air                               |
| <input type="checkbox"/> Distribution                        | <input type="checkbox"/> Rail                              |
| <input type="checkbox"/> Retail trade                        | <input type="checkbox"/> Barge                             |
| <input type="checkbox"/> Local consolidation/deconsolidation | <input type="checkbox"/> Truck                             |
| <input type="checkbox"/> Break bulk and/or reconsolidation   | <input type="checkbox"/> Third party<br>logistics provider |

28. How many loading docks do you have? Number of docks \_\_\_\_\_

29. What kind of INBOUND shipments are handled at this site? (Check ALL that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Less than truckload       | <input type="checkbox"/> Bulk commodity in rail cars |
| <input type="checkbox"/> Truckload                 | <input type="checkbox"/> Mail                        |
| <input type="checkbox"/> Parcels                   | <input type="checkbox"/> Stripping containers        |
| <input type="checkbox"/> Freight forwarder traffic | <input type="checkbox"/> Hazardous materials         |
| <input type="checkbox"/> Waste materials           | <input type="checkbox"/> Air freight consolidation   |

30. What kind of OUTBOUND shipments are handled at this site? (Check ALL that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Less than truckload       | <input type="checkbox"/> Bulk commodity in rail cars |
| <input type="checkbox"/> Truckload                 | <input type="checkbox"/> Mail                        |
| <input type="checkbox"/> Parcels                   | <input type="checkbox"/> Stripping containers        |
| <input type="checkbox"/> Freight forwarder traffic | <input type="checkbox"/> Hazardous materials         |
| <input type="checkbox"/> Waste materials           | <input type="checkbox"/> Air freight consolidation   |

31. How do products ARRIVE at your site? (Round to nearest 10% the percentage arriving via each of the following methods; be sure percentages add to 100%)

- |                                |                          |
|--------------------------------|--------------------------|
| Container..... _____%          | Air..... _____%          |
| Truckload..... _____%          | Barge..... _____%        |
| Less-than-truckload.. _____%   | Parcel carrier... _____% |
| Intermodal trailer..... _____% | Rail carload..... _____% |

32. About how many square feet of warehousing space are there in TOTAL (both used and unused) at your site?

TOTAL warehousing space on site \_\_\_\_\_

33. About how many square feet of warehousing space is CURRENTLY AVAILABLE (unused) both INDOORS and OUTDOORS at your site?

CURRENTLY AVAILABLE warehousing space INDOORS on site

\_\_\_\_\_

CURRENTLY AVAILABLE warehousing space OUTDOORS on site

\_\_\_\_\_

34. On AVERAGE, how many feet of TOTAL warehousing space (INDOORS and OUTDOORS) is generally AVAILABLE (unused) at your site in a given year?

AVERAGE AVAILABLE warehousing space on site \_\_\_\_\_

35. What is the acreage of your ENTIRE site (building and land)?

Acres \_\_\_\_\_

36. What percentage of your acreage is developed? \_\_\_\_\_%

What additional percentage could be developed for use? \_\_\_\_\_%

37. Is your site primarily a WAREHOUSING and/or DISTRIBUTION facility?

\_\_\_\_\_ Yes [GO TO QUESTION 38]

\_\_\_\_\_ No [GO TO QUESTION 39]

38. If your site is primarily WAREHOUSING and/or DISTRIBUTION, please indicate what kinds of products are handled here.

Types of products handled: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**IF ONE OF YOUR TWO PRIMARY BUSINESSES INVOLVES AGRICULTURE, MINING, CONSTRUCTION, OR MANUFACTURING AND YOU HAVE NOT ANSWERED QUESTIONS 18 TO 26, PLEASE RETURN TO QUESTION 18; OTHERWISE, PLEASE PROCEED TO QUESTION 39**

**EVERYONE PLEASE ANSWER THE REMAINDER OF THE QUESTIONS**

39. How would you rank Central Illinois' ability to move freight in terms of: (Please circle the appropriate response)

**Frequency of service**

By Truck.....Poor.....Fair.....Good.....Excellent  
 By Rail.....Poor.....Fair.....Good.....Excellent  
 By Plane.....Poor.....Fair.....Good.....Excellent  
 By Barge.....Poor.....Fair.....Good.....Excellent

**Reliability of service**

By Truck.....Poor.....Fair.....Good.....Excellent  
 By Rail.....Poor.....Fair.....Good.....Excellent  
 By Plane.....Poor.....Fair.....Good.....Excellent  
 By Barge.....Poor.....Fair.....Good.....Excellent

**Accessibility of facilities**

By Truck.....Poor.....Fair.....Good.....Excellent  
 By Rail.....Poor.....Fair.....Good.....Excellent  
 By Plane.....Poor.....Fair.....Good.....Excellent  
 By Barge.....Poor.....Fair.....Good.....Excellent

**Transit time to facility**

By Truck.....Poor.....Fair.....Good.....Excellent  
 By Rail.....Poor.....Fair.....Good.....Excellent  
 By Plane.....Poor.....Fair.....Good.....Excellent  
 By Barge.....Poor.....Fair.....Good.....Excellent

**Facilities capacity**

By Truck.....Poor.....Fair.....Good.....Excellent  
 By Rail.....Poor.....Fair.....Good.....Excellent  
 By Plane.....Poor.....Fair.....Good.....Excellent  
 By Barge.....Poor.....Fair.....Good.....Excellent

40. What are the THREE top PRIORITIES for service requirements to your business?  
Use the letters by each service requirement to select your three priorities.

1<sup>st</sup>

2<sup>nd</sup>

3<sup>rd</sup>

- A. Speed
- B. Time
- C. Reliability
- D. Less damaged goods
- E. Direct access to client(s)
- F. Cost
- G. Low loss of goods

41. How often do you use the following types of intermodal linkages?  
[Round to nearest 10%]

(A) Air/truck \_\_\_\_\_%

(B) Air/rail \_\_\_\_\_%

(C) Rail/truck \_\_\_\_\_%

(D) Barge/rail \_\_\_\_\_%

(E) Barge/truck \_\_\_\_\_%

(F) Truck/truck \_\_\_\_\_%

Which are the two MOST important to you? [Use the letters to the left of the linkage.]

1<sup>st</sup>

2<sup>nd</sup>

42. How beneficial do you think marketing strategies for intermodal transportation would be to Central Illinois and your site?

\_\_\_\_\_ (1) Very beneficial

\_\_\_\_\_ (2) Somewhat beneficial

\_\_\_\_\_ (3) Neutral

\_\_\_\_\_ (4) Not very beneficial

\_\_\_\_\_ (5) Not at all beneficial

43. What are two major intermodal freight improvements that you would suggest for the Central Illinois area?

1) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

44. During the next five years, what is the outlook for your company's business activities in Central Illinois?

\_\_\_\_\_ (1) Some growth...What % growth do you expect in five years? \_\_\_\_\_%

\_\_\_\_\_ (2) No growth

\_\_\_\_\_ (3) Some decline...What % decline do you expect in five years? \_\_\_\_\_%

45. What do you foresee as some of the major challenges, especially as they relate to the freight industry in Central Illinois, your company will face in the next 10 years?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



46. What are some of the changes you expect to see or would like to see in the next 10 to 20 years as related to the freight industry in Central Illinois?

Expect to see: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Would like to see: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

47. Would you be interested in providing additional input to this study?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

If so, check those activities that would interest you.

\_\_\_\_\_ Focus group

\_\_\_\_\_ Resource person (e.g., advisory committee)

# **SUPPLY CHAIN LOGISTICS AND TRANSPORTATION INDICATOR STUDY**

## **PART III OF III**

### **SITE SELECTION ANALYSIS**



# CHAPTER 1.

## SITE SELECTION CRITERIA

### INTRODUCTION

Part III of the study is a site selection analysis for future port facilities along the Illinois River. The goal was to identify five to fifteen sites that have the potential to become new port facilities.

In order to determine the best locations for new port facilities, three sets of criteria were developed. One set of criteria dealt with Transportation, one with Land Use, and the final set of criteria is related to Environmental Factors. The presence or absence of a factor within each of the set of criteria, in itself, was not enough to include a particular site or take a site out of consideration. However, each factor was analyzed in terms of the overall site selection process.

**Maps showing the locations of Potential Sites can be found in Appendix IIIA, beginning on Page 103.**

The sites that have been identified have not been prioritized. At this point in time, the end users of the potential sites is not known; therefore, it is impossible to evaluate sites without specific criteria from potential end users.

### SELECTION CRITERIA

#### *Transportation Criteria*

The first set of criteria dealt with transportation. A port site must have access to an adequate highway transportation network. Secondly, a site should have access to rail.

Sites were based on their location within an “Optimal Transportation Zone,” which was defined for purposes of this study as a site within one mile of a state or federal highway and within .2 of a mile of an existing rail line or spur. Further, the highways that serve a particular site must have capacity for the next twenty years. (See Part I, Chapter 3, for a discussion of highway capacity.)

In the HOIRPD, highway transportation is critical to the movement of freight by barge. The primary mode of moving freight both to and from barge terminals is truck. Therefore, it was critical that a site have access to highway transportation. A distance of one mile or less to a state or federal highway was selected.

One of the goals of the HOIRPD is to increase river/rail inter-modal transportation. Many existing barge terminals along the Illinois River have a rail spur as part of their facility, and it was felt that any new facilities should also have rail. The criterion established for rail was that a potential site be within .2 of a mile of an existing rail line.

The combination of a state or federal highway within one mile and a rail spur within .2 miles has been termed an Optimal Transportation Zone (OTZ).

### ***Land Use and Zoning Criteria***

The second set of criteria that was analyzed related to land use and zoning. Port facilities are considered an industrial use because of the nature of the business. Port facilities, in addition to a dock or pier, also have heavy equipment such as cranes and endloaders. They also have significant storage facilities on the site. Storage may be covered or uncovered, and can be bulk materials or liquids.

Many port facilities also have warehousing, manufacturing, assembly, or processing uses on site, especially if container-on-barge or value-added manufacturing activities are taking place. They may also have a high noise level and create dust and odors.

Adjacent land uses were also considered. Port facilities must be located in areas that do not create serious problems of compatibility with other kinds of land uses. In particular, industrial uses such as ports should be located in areas that are separated from residential and even prime retail developments.

Land use is related to zoning, in that the zoning on a parcel of land relates to the use of that land. For port facilities, industrial zoning is required. If a parcel is not zoned for industrial uses, it will most likely need to be rezoned. In the site selection process, preference was given to land already zoned for, or adjacent to, industrially zoned land.

### ***Environmental Criteria***

The Illinois River is, and has been, filling with sediment at a rapid rate. For example, the Peoria Lakes have lost 77% of their original volume. Outside of the channel, the average depth of Upper Peoria Lake is only about two feet. The sedimentation not only reduces lake volume and depth but also impacts water quality, aquatic habitat, navigation, recreation, real estate values, and tourism.

The U.S. Army Corps of Engineers (COE), whose responsibility it is to manage the Inland Waterway System, including the Illinois River, is currently studying the potential economic losses that are a result of significant traffic delays at locks and dams over the next fifty years. The COE has a two-pronged goal: to attain an environmentally sustainable navigation system, while insuring an efficient transportation system for the future.

This study is also being sensitive to environmental issues that impact the integrity of the Illinois River. For that reason, each of the sites identified as a potential new port facility was analyzed on a variety of environmental issues.

The third set of criteria used to analyze potential port locations are environmental in nature. They are listed below:

- Location within a 100 Year Flood Zone. Permanent structures must be built above the 100 Year Flood Elevation and according to Federal Emergency Management Agency (FEMA) standards.
- Location within a Wetlands, as defined by the Illinois Department of Natural Resources. A port facility could be located within a Wetlands; however, any wetlands disturbed by development must be mitigated by creating wetlands at another location or by purchasing land in a wetlands bank.
- Availability of water and sewer. The ease of developing a new port facility will be enhanced if public water and sewer is on or near the site.
- Distance from shoreline to the navigation channel. The navigation channel on the Illinois River is approximately 300 feet wide and, in most areas of the river, is centrally located within the two shores. A side channel is necessary for barges to travel from the navigation channel to a terminal facility along the shoreline. Because of siltation in the river, and the need to dredge side channels, the shortest distance from the navigation channel to the shore is preferable.
- Acreage Available. One of the goals of the Port District is to develop new port facilities that support container-on-barge shipping or value-added manufacturing. These uses require warehouses or manufacturing facilities near a river terminal, which can take a significant amount of land. A minimum of ten acres was used as a threshold for the amount of land needed for a new port facility.
- Conservation Land Use. Sites used for conservation and/or owned by the state or federal government were not considered.

## CHAPTER 2.

### POTENTIAL PORT FACILITY SITES

#### INTRODUCTION

The Heart of Illinois Regional Port District covers six counties and almost one hundred miles of river. Therefore, there are almost two hundred miles of shoreline where new port facilities can be built.

On the west side of the Illinois River, the Port District is located in Marshall, Peoria, and Fulton Counties and has ninety miles of shoreline. On the east side of the Illinois River, the Port District covers Marshall (Marshall County is the only county in the Port District that is located on both sides of the

Illinois river), Woodford, Tazewell and Mason Counties, and has ninety-seven miles of shoreline. A breakdown of the miles of shoreline in each county is listed in Table 2.1

**Table 2.1**

MILES OF SHORELINE AND POTENTIAL SITES PER COUNTY		
County	Miles of Shoreline	Number of Potential Sites
Marshall	28	2
Woodford	13	1
Peoria	45	5
Tazewell	35	2
Fulton	31	2
<u>Mason</u>	<u>35</u>	<u>1</u>
<b>TOTAL</b>	<b>187</b>	<b>13</b>

#### POTENTIAL SITES

From the three sets of criteria listed in Chapter 1, thirteen potential sites were selected. The number of potential sites in each county is listed in Table 2.1.

The potential sites are not prioritized. The criteria were not weighted and no values were assigned to each factor. This was done because much of the criteria is not quantifiable; instead, many judgment calls were necessary to select the sites.

***NOTE: The tenants and/or property owners of the potential sites have NOT been notified of their inclusion in this report.***

#### TRANSPORTATION

The first set of criteria analyzed was Transportation. Of the three sets of criteria, transportation is the most important. It is important because, without the ability to move freight to or from a port facility, there would be no market for the goods transported by

barge. Table 2.2 indicates each potential site with information regarding Transportation Criteria.

All sites are within one mile of a state or federal highway, which is the most important factor used to select potential sites. Not all sites, however, have access to rail. Either rail is not available on the same side of the river as a potential site, or the rail that is available is too far away, making it cost-prohibitive to extend a rail line.

Table 2.2 also includes a column indicating whether the highway that serves a potential site has excess capacity, both now and twenty years into the future. (See Part I, Chapter 3.) Only one site has a constraint of this nature – potential site MS-1 in Havana, which will be discussed later.

**Table 2.2**

<b>TRANSPORTATION CRITERIA</b>							
<b>Site Label</b>	<b>County</b>	<b>Location</b>	<b>Optimal Transportation Zone</b>	<b>Distance to Highway (miles)</b>	<b>Distance to Rail (miles)</b>	<b>Current Highway Capacity</b>	<b>Future Highway Capacity</b>
MR 1	Marshall	North of Henry	Full OTZ	1.8	.4	Yes	Yes
MR 2	Marshall	North of Lacon	Partial OTZ	.25	No rail access	Yes	Yes
P 1	Peoria	Hwy 6 & 29 near Mossville	Full OTZ	.25	.25	Yes	Yes
P 2	Peoria	Expand at/near Peoria Barge Terminal	Full OTZ	.4	On-Site	Yes	Yes
P 3	Peoria	Darst Street	Full OTZ	.35	.1	Yes	Yes
P 4	Peoria	Across IL river from Pekin	Full OTZ	1.5	.2	Yes	Yes
P 5	Peoria	Redevelop old Caterpillar facility near Mapleton	Full OTZ	.75	On-Site	Yes	Yes
W 1	Woodford	2.5 miles north of 116 on Hwy 26, at County Rd. 1200N	Partial OTZ	.75	No rail access	Yes	Yes
T 1	Tazewell	Former BP/Amoco facility in Creve Coeur	Full OTZ	.4	.1	Yes	Yes
T2	Tazewell	Crystal Lake Pekin	Full OTZ	.3	On-Site	Yes	Yes
F 1	Fulton	Between Liverpool & Rice Lake State Fish & Wildlife Area	Partial OTZ	1.0	No rail access	Yes	Yes
F 2	Fulton	Across IL river from Havana	Partial OTZ	.4	No rail access	Yes	Yes
MS 1	Mason	Expand at/near Imperial Valley Term/Havana	Full OTZ	.20	.2	No	No



## **LAND USE**

The Land Use criteria deal with the use of land at the site and adjacent to the potential site. Land use planning provides a mechanism for orderly and desirable development as well as preservation of existing desirable physical elements of the county or municipality.

Zoning is used to control the use of land. Zoning divides land into compatible and complementary uses. Within each zoning district, the following three items are addressed:

- The use of land or buildings;
- The intensity of that use; and
- The height and bulk, or extent, of that use.

For example, industrial uses should be near other industrial uses. Further, industrial uses should be separated from residential uses.

Table 2.3 on the next page lists the current land use of each potential site, the land use of the land adjacent to the potential site, and the current zoning for the property.

The current land use of the potential sites is agriculture or industrial. This is to be expected given that, historically, land along the Illinois River has been used for row crops. As docks have been constructed along the river, ‘pockets’ of land used for industrial purposes have appeared.

All the counties in the HOIRPD have instituted county zoning. Many of the docks and wharves were built before county zoning took effect. In most cases, these areas have been zoned either light or heavy industrial.

There is one instance residential land uses can be found near a potential site. This is site W1 in Woodford County., and will be discussed later in this report.

**Table 2.3**

<b>LAND USE CRITERIA</b>						
<b>Site Label</b>	<b>County</b>	<b>Location</b>	<b>River Mile</b>	<b>Current Land Use</b>	<b>Surrounding Land Use</b>	<b>Site Zoning</b>
MR 1	Marshall	North of Henry	198	Agriculture	Industrial	Agriculture
MR 2	Marshall	North of Lacon	190	Vacant	Industrial	Industrial
P 1	Peoria	Hwy 6 & 29 near Mossville	172.5	Agriculture	Agriculture	Agriculture
P 2	Peoria	Expand at/near Peoria Barge Terminal	160	Industrial	Industrial	Industrial
P 3	Peoria	Darst Street	160	Industrial	Industrial	Industrial
P 4	Peoria	Across IL river from Pekin	151.5	Agriculture	Agriculture	Agriculture
P 5	Peoria	Redevelop old Caterpillar facility near Mapleton	147.5	Industrial	Industrial	Industrial
W 1	Woodford	2.5 miles north of 116 on Hwy 26, at County Rd. 1200N	169	Agriculture	Agriculture	Residential
T 1	Tazewell	Former BP/Amoco Wesley Street facility in Creve Coeur	158	Vacant Industrial	Industrial	Industrial
T2	Tazewell	Crystal Lake Pekin	151.2	Industrial	Industrial/ Residential	Industrial
F 1	Fulton	Between Liverpool & Rice Lake State Fish & Wildlife Area	131	Agriculture	Agriculture	Agriculture
F 2	Fulton	Across IL river from Havana	120	Agriculture	Agriculture	Agriculture
MS 1	Mason	Expand at/near Imperial Valley Terminal in Havana	119	Industrial	Agriculture/ Industrial	Industrial

## **ENVIRONMENTAL FACTORS**

Most of the 100 miles of the Illinois River that is in the Port District is in the 100-Year Flood Zone. This is to be expected given the nature of the river and the fact that docks must be built on the shoreline. In addition to docking facilities, however, this study also looked at surrounding land that could be used for warehousing or manufacturing facilities. The vast majority of this land, also, is in the 100-Year Flood Zone, with eleven of the thirteen potential sites in a flood zone.

There are two ways to build in the flood zone. One is to construct buildings so that the lowest floor level is above the floodplain. The second is to protect buildings by the use of a levee system.

Wetlands cover a significant part of the Illinois River shoreline in the Port District. In Mason and Fulton Counties, two-thirds to three-fourths of the shoreline are wetlands. The more developed counties have less wetlands, primarily because they have been destroyed during the years of urban development.

It is possible to develop new port facilities in wetlands. However, the wetlands must be replaced either by the development of wetlands in another location or by investment in a wetlands bank.

*A wetlands mitigation bank is a large tract of created or restored wetlands, which has been set aside to offset the future loss of other wetlands. The "banker" (who also builds and manages the wetlands) offers credits to developers who need to compensate, or mitigate, for their wetland impacts. How many credits a developer must purchase is determined by the U.S. Army Corps of Engineers and other regulatory agencies, and depends upon the size, type and quality of the impacted wetland.*

In the Heart of Illinois Regional Port District, four sites out of thirteen, or 30%, are located in wetlands.

The distance to the channel was analyzed in order to gauge the amount of dredging that would be required to keep a side channel open from the main channel to the dock facility. Obviously, the closer the channel is to the shore, the better in terms of channel dredging.

The thirteen sites fall into two general distance categories. In a majority of the sites (nine out of thirteen), the channel is within 500 feet of the shoreline. In three of the sites, the channel is from two-thirds of a mile to over a mile from the shore. All three of these sites are located in the Peoria Lakes, where the river can be well over a mile in width.

**Maps showing the locations of Potential Sites can be found in Appendix IIIA, beginning on Page 103.**

**Table 2.4**

<b>ENVIRONMENTAL CRITERIA</b>									
<b>Site Label</b>	<b>County</b>	<b>Location</b>	<b>Wet-lands</b>	<b>Flood-plain</b>	<b>Levee</b>	<b>Distance to Channel (ft)</b>	<b># Acres</b>	<b>Water Available</b>	<b>Sewer Available</b>
MR 1	Marshall	North of Henry	No	No	No	475	100+	No	No
MR 2	Marshall	North of Lacon	No	Yes	No	1,125	10+	Yes	No
P 1	Peoria	Hwy 6 & 29 near Mossville	Yes	Yes	No	4,625	84	No	No
P 2	Peoria	Expand at/near Peoria Barge Terminal	No	Yes	No	500	100	Yes	Yes
P 3	Peoria	Darst Street	No	Yes	No	400	30	Yes	Yes
P 4	Peoria	Across IL river from Pekin	Yes	Yes	Yes	450	100+	No	No
P 5	Peoria	Redevelop old Caterpillar facility near Mapleton	Yes	Yes	No	300	230	No	No
W 1	Woodford	2.5 miles north of 116 on Hwy 26, at County Rd. 1200N	No	Yes	No	5,200		No	No
T 1	Tazewell	Former BP/Amoco Wesley Street facility in Creve Coeur	No	No	No	325	30	Yes	Yes
T2	Tazewell	Crystal Lake Pekin	No	Yes	No	2,250	27.5	Yes	Yes
F 1	Fulton	Between Liverpool & Rice Lake State Fish & Wildlife Area	No	Yes	Yes	425	100+	No	No
F 2	Fulton	Across IL river from Havana	Yes	Yes	Yes	300	100+	No	No
MS 1	Mason	Expand at/near Imperial Valley Terminal in Havana	No	Yes	No	450		No	No

## CHAPTER 3.

### DESCRIPTIONS OF POTENTIAL SITES

#### INTRODUCTION

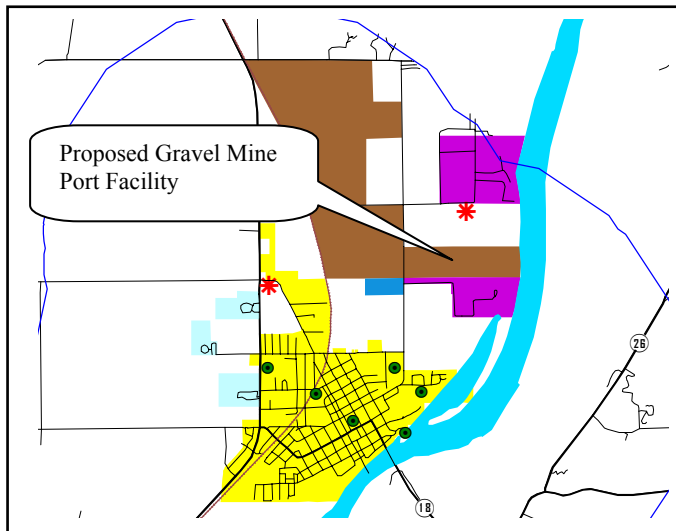
Each of the thirteen sites listed above is unique. No two are exactly alike. Because of these differences, a potential site may have an advantage over another site for a particular purpose. This Chapter describes each site some of its advantages or disadvantages.

#### MARSHALL COUNTY

##### *MR1. North of Henry, Illinois*

Site MR1 is located in Marshall County, very close to the northern boundary of the city of Henry, Illinois. It has previously been considered for port development, most recently for a large sand and gravel operation planned for the immediate area. The sand and gravel operation, and the port, however, did not come to fruition. The land is zoned Agricultural according to the Marshall County zoning map, and is adjacent to land zoned for Industrial purposes.

**Figure 3.1**



There are over 100 acres available for port development. Figure 3.1 shows the City of Henry (in yellow) and the proposed gravel mine (in brown). Existing industrial sites are in purple. See Map 1 in Appendix IIIA for the location of this site within the HOIRPD.

##### *MR2. North of Lacon, Illinois*

The area just to the north of Lacon is home to three docks, one that ships out grain, one that ships out sand and gravel, and one that has been used in the past to bring in road salt and which is currently unused. (The Village of Lacon felt the salt stored near the shore was contaminating the town's water supply.)

The site has access to three state highways: Routes 17, 26 and 29. However, there is no rail access to the site.

See Map 1 in Appendix IIIA for the location of this site within the Heart of Illinois Regional Port District.

A 10.5 acre site with river frontage is currently on the market. The site contains industrial buildings containing over 13,000 square feet of floor space. The site is approximately one mile from the unused dock. See Figure 3.2.

**Figure 3.2**



## **PEORIA COUNTY**

### ***P1. Intersection of Route 6 and Route 29, Mossville, Illinois***

Site P1 is located at near the intersection of Route 20 and Route 6, giving it excellent access to the interstate system. It is also located near the north-south rail line that runs adjacent to Route 29.

For the most part, the land between Route 29 and the Illinois River is not conducive to industrial uses because the land mass is very narrow along most of this stretch of the river. However, the area denoted by P1 is over 1,000 feet in width, making it suitable for port facilities.

The primary drawbacks to this site are that it is located in a floodplain and is also in a wetland.

See Map 3 in Appendix IIIA for the location of this site within the HOIRPD.

### ***P2. Unused Capacity at the Peoria Barge Terminal***

The Peoria Barge Terminal (PBT) owns 100 acres of land and numerous buildings used for warehousing and storage. (The site was once a distillery.) They have five docks and are permitted through the Army Corps of Engineers to have one more. PBT has

significant excess capacity (approximately 50%) both in docking space and in warehouse space.

All necessary infrastructure is in place at this site. Road access, public water, and public sewer are already in existence.

A rail spur owned by the Tazewell and Peoria Railroad (formerly the P&PU Railroad) is on the site. The T&PR spur connects with the Union Pacific, a Class I Railroad, within a mile of the site.

Much of the machinery and equipment needed for a terminal of this size is available on site, and these facilities are not currently being utilized to their fullest capacity.

**Figure 3.3**



From an environmental standpoint, the site is located advantageously. It is not within a floodplain or a wetland.

The Peoria Barge Terminal is termed a ‘public terminal’. This means that any freight carrier can ship goods into or out of the terminal. (A ‘private terminal’ is one that is owned by a company and is used only to ship that company’s product. For example, most of the terminals that handle grain are private terminals.)

See Map 4 in Appendix IIIA for the location of this site within the Port District.

### ***P3. Darst Street, Peoria, Illinois***

The City of Peoria owns approximately 30 acres of land along Darst Street, adjacent to the Greater Peoria Sanitary District. The land was a brownfield site that has been remediated, and the City is interested in selling the property for redevelopment purposes.

**Figure 3.4**



The parcel does not have frontage on the Illinois River; however, the site has rail access and is within one-half mile of the river. It is also less than one

mile from the Peoria Barge Terminal docks.

The site has excellent access to I-474 and has a Tazewell & Peoria Railroad spur (formerly P&PU) on the property. In addition, public water and sewer are available. This site can be found on Map 4 in Appendix IIIA.

#### ***P4. Across from Pekin, Illinois***

Site P4 is located in Peoria County directly across from Pekin. The Pekin side of the river is currently home to numerous docks. The Peoria side, at this time, has only one dock, which is a fleeting facility.

The two main advantages to this site are its proximity to a Union Pacific (UP) rail line and the number of acres available for development. The UP railroad is less than one-quarter mile from the site. A local rail spur would be needed to access this Class I rail line. In addition, there are hundreds of acres of farmland along this stretch of the river on the Peoria County side. The farmland is located in the Pekin and LaMarsh Drainage and Levee District, which presents a challenge. While the dock facility could be located between the levee and the river, any industrial, manufacturing, or warehouse buildings would need to be located on the inside of the levee, meaning ramps would need to be built over the levee or the levee itself moved further inland.

This site can be found on Map 4 in Appendix IIIA.

#### ***P5. Adjacent to Caterpillar Mapleton Facility***

**Figure 3.5**





Over 230 acres are available adjacent to the Caterpillar, Inc. Mapleton facility. The site is zoned for industrial use and has over one million square feet of vacant warehouse/manufacturing space under roof. The site has the potential for a slackwater harbor for barge loading/unloading.

Figure 3.5 indicates parcels, currently owned by Caterpillar, Inc., that are available for redevelopment.

The site has frontage on U.S. Highway 24 and also has access to the Union Pacific Railroad.

The site can be found on Map 4 in Appendix IIIA.

### **WOODFORD COUNTY**

#### ***W1. Rt. 26 and County Road 1200N.***

Woodford County is very limited in the site selection process. Only one site has been identified in Woodford County due to a number of constraints. First, there is only thirteen miles of shoreline in the County, compared to over two to three times that many in each of the other five counties. Secondly, the channel of the river as it passes through the Peoria Lakes, for the most part, hugs the western shoreline. This makes the distance from the shoreline to the channel prohibitive in terms of the cost to keep a side channel open to move barges from the Woodford County shore to the main river channel. A third reason is the lack of rail transportation. The only rail line in Woodford County is an east-west TP&W line that generally follows Route 24 from East Peoria to El Paso, and from there to Indiana.

The site selected in Woodford County is located approximately 2½ miles north of the intersection of Routes 26 and 116. The closest road intersection is Spring Beach Road and Township Road 1200 North. Although the site is in Woodford County, it is in the Village of Peoria Heights. A further challenge to the site is that there are numerous homes along the Illinois River in this area of Woodford County.

See Map 3 in Appendix IIIA.

## TAZEWELL COUNTY

### *T1. Former BP/Amoco facility, Wesley Road, Creve Coeur*

**Figure 3.6**



This site on Wesley Road is a vacant former BP/Amoco facility directly behind the Peoria Lock & Dam. The site contains thirty acres and two buildings. The site does not have river access. However, a pipeline exists from the site to a dock on the Illinois River. The distance from the site to the dock is less than one-half mile. See Map 4 in Appendix IIIA.

### *T2. Crystal Lake, Pekin*

**Figure 3.7**

The Crystal Lake site is an eleven acre lake surrounded by 27.5 acres of industrial property. It is located to east of Powerton Lake on the west side of Route 29. Land to the north of the lake is in the City of Pekin, and is also in the City's Enterprise Zone. (The Pekin Corporate Limits are indicated in red on Figure 3.7.)



Access to the Illinois River is via an approximately 1,500 foot long channel to the river.

There is one existing dock in Crystal Lake. However, because of the narrowness of the Channel, the dock can handle only a limited number of barges at any particular time. See Map 4 in Appedix IIIA for the location of Site T2.

## **FULTON COUNTY**

Fulton County has significant challenges in the location of port facilities. The land along the Illinois River is excellent farmland but is prone to flooding. For this reason, levees have been built along the river shore. Fulton County has thirty-one miles of shoreline; however, levees have been built along eighteen miles, or 60% of this length so that the low-lying land can be used for row crops.

In recent years, the environmental community has promoted the idea of leaving the low-lying land in its natural state. The State of Illinois has purchase thousands of acres of bottomland and is using it for conservation purposes. In fact, of the thirteen miles of river shore in Fulton County that are not protected by levees, approximately 8½ miles are designated conservation areas and are owned by the State of Illinois. The conservation areas include Emiquon, Banner Marsh Fish & Wildlife Area, Rice Lake State Conservation Area, and Spring Branch State Conservation Area. The State of Illinois does not allow development in these areas.

It is possible to build port facilities in an area protected by a levee. First, permission must be obtained from the levee district. Secondly, a roadway must be built over the levee from a docking facility, or the levee itself moved back to accommodate warehousing or industrial uses.

### ***F1. Between Liverpool and Rice Lake State Fish & Wildlife Area***

Site F1 in Fulton County is located approximately four miles northeast of Liverpool. Route 24 is located one mile from the site. Hundreds of acres of farmland surround the site.

The site is located within the East Liverpool Drainage and Levee District. As can be seen in Figure 3.7, the land is currently being used for row crops. Because the land is within a levee district, permission to develop must be obtained from the district and accommodations must be made to that the integrity of the levee is not breached.

**Figure 3.8**



Site F1 can be found in Appendix IIIA, Map 6.

***F2. Across from Havana, Illinois***

**Figure 3.9**



Site F2 is across from Havana, Illinois, to the south of the Route 136 bridge. North of the bridge is the Emiquon site. A levee begins just south of the bridge, and behind the levee are vast areas of farmland.

There are numerous ports on the Mason County side of the river at this location. Currently, the only dock on the Fulton County side is used for fleeting services.

See Map 7 in Appendix IIIA for the location of this site within the Port District.

**MASON COUNTY**

***MS1. Expand at or near Imperial Valley Terminal, Havana***

The Imperial Valley Terminal in Havana receives liquid fertilizer. It is located in Havana Township and, as such, is not officially within the Heart of Illinois Regional Port District. However, there is vacant land available in the vicinity of this port.

An advantage of this site is that it is not in the floodplain and there are no wetlands in the vicinity.

**Figure 3.10**



The site has access to a federal highway, Route 136, and to two state highways, Routes 78 and 97. The site does not have rail on the site but is less than one-half mile from the I&M railroad, which serves other river terminals in the immediate area.

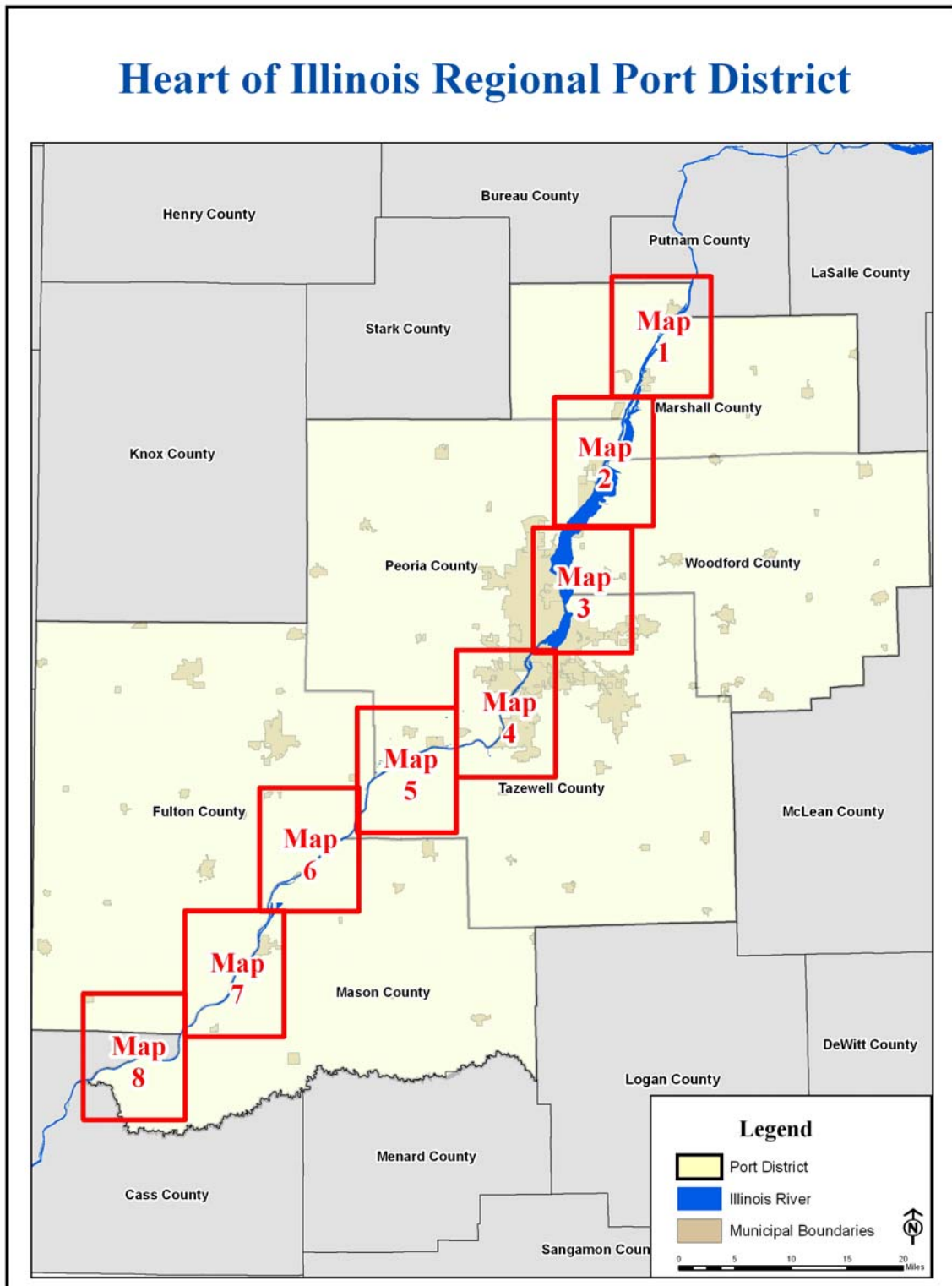
A possible constraint on this site is the capacity of the highway system. According to the analysis discussed in Part I, Chapter x, the roadway where the three highways are coterminous (through downtown Havana) is currently at capacity, and will become worse in the future if no improvements are made.

This site can be found in Map 7 of Appendix IIIA.

**APPENDIX IIIA**

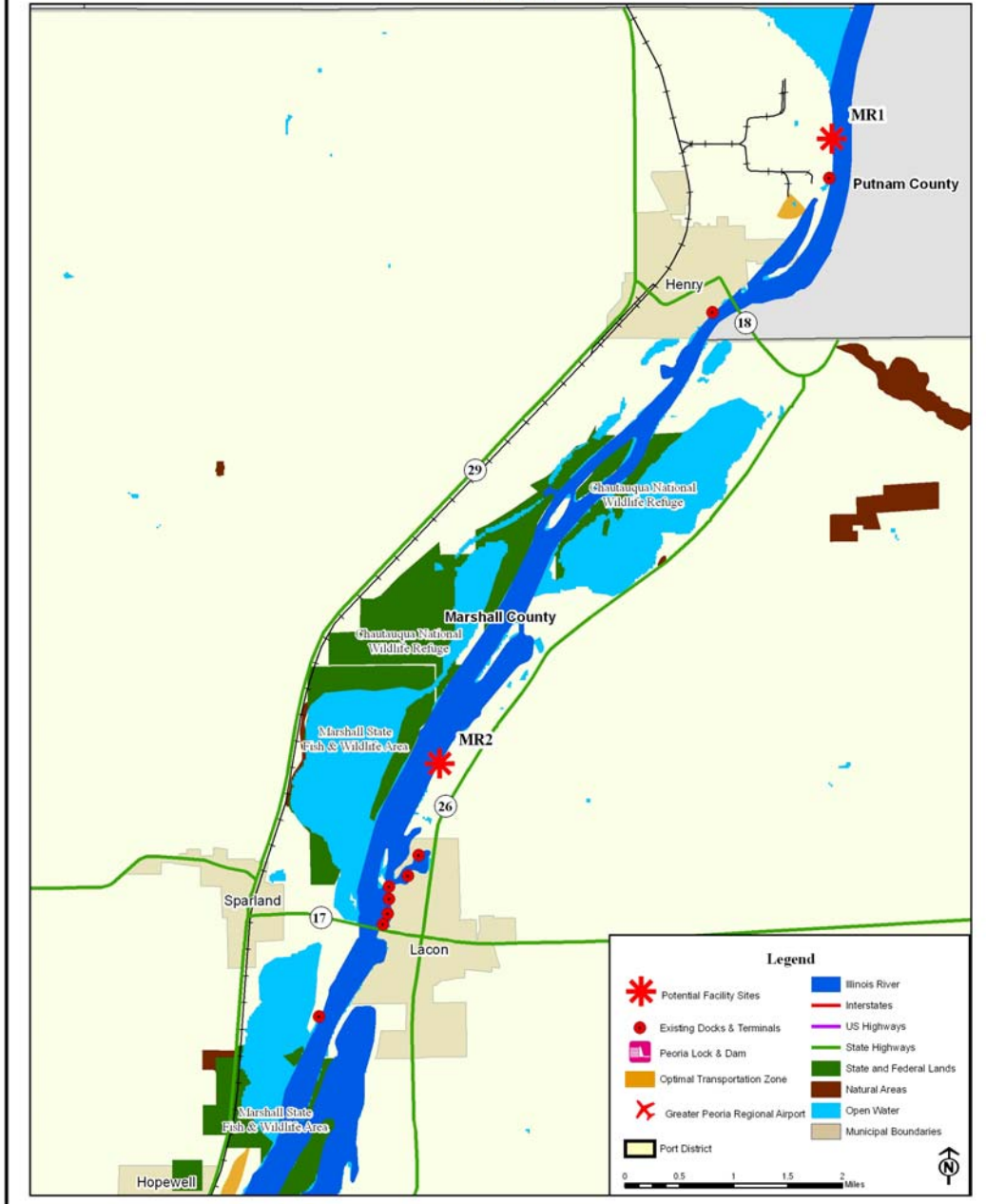
**LOCATION OF POTENTIAL SITES**

# Map Guide



# Heart of Illinois Regional Port District

Henry and Lacon  
River Miles 185 to 199  
Map 1 of 8



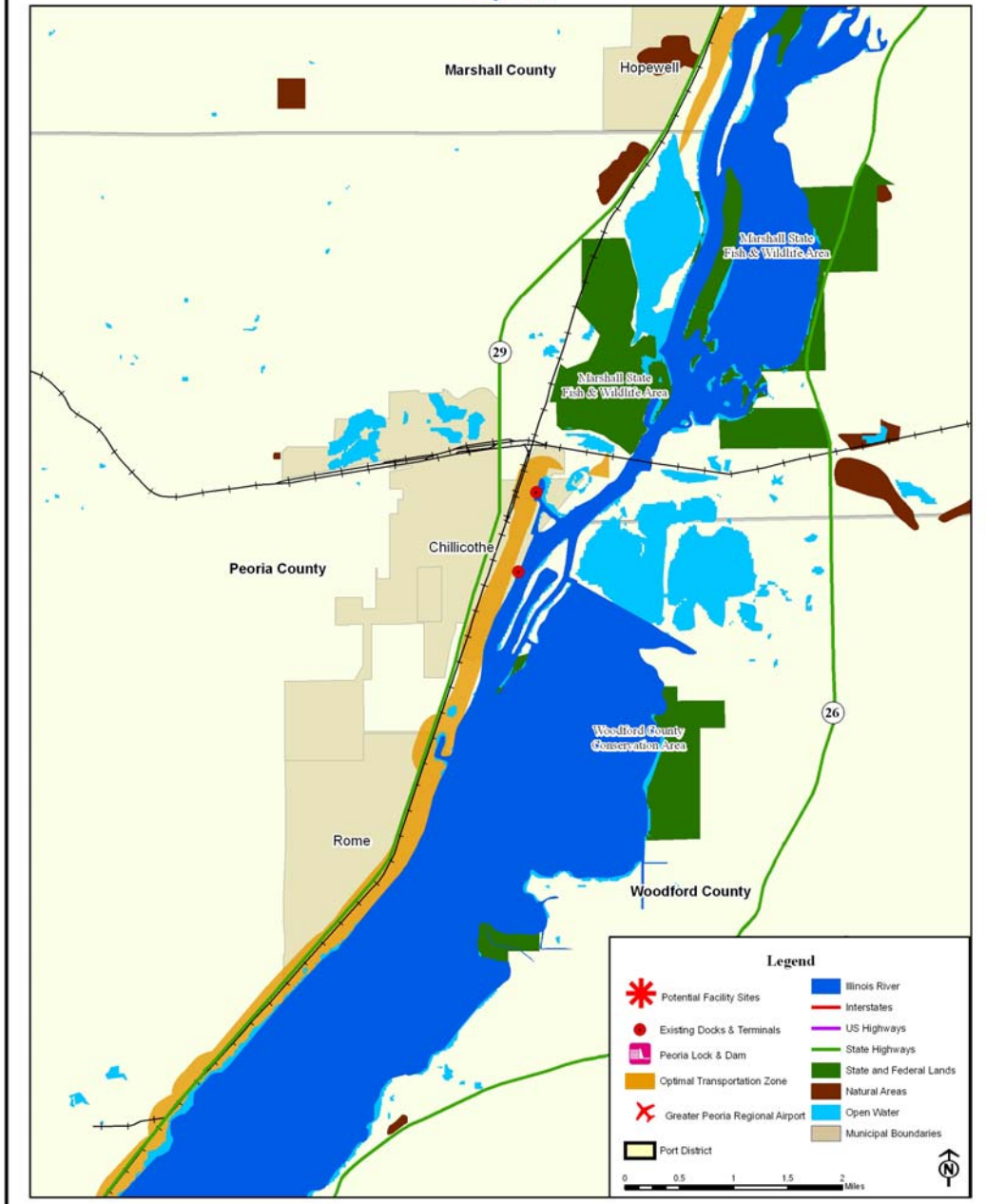


# Heart of Illinois Regional Port District

Hopewell, Chillicothe and Rome

River Miles 174 to 185

Map 2 of 8

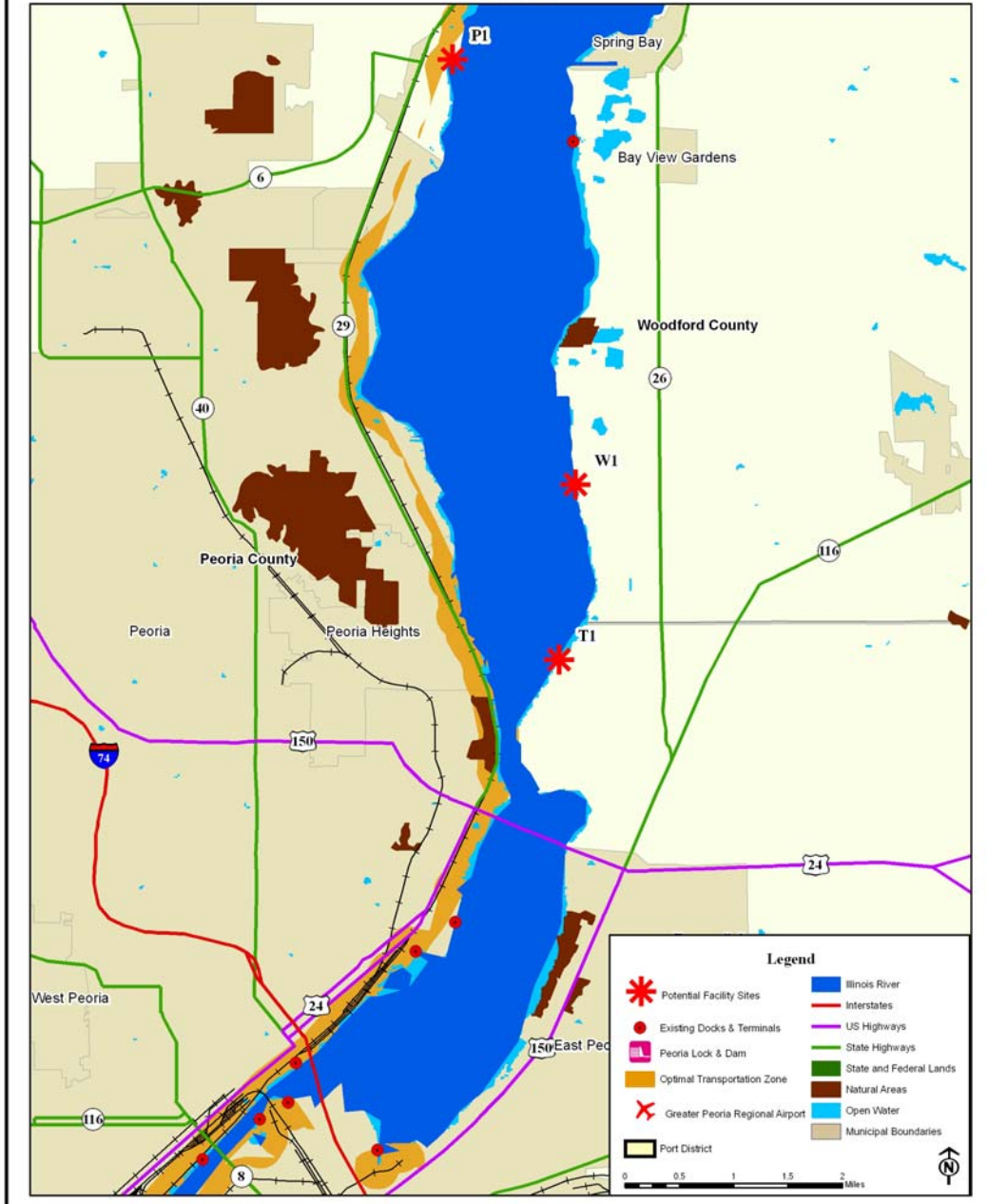


# Heart of Illinois Regional Port District

## Peoria and East Peoria

River Miles 161 to 174

Map 3 of 8

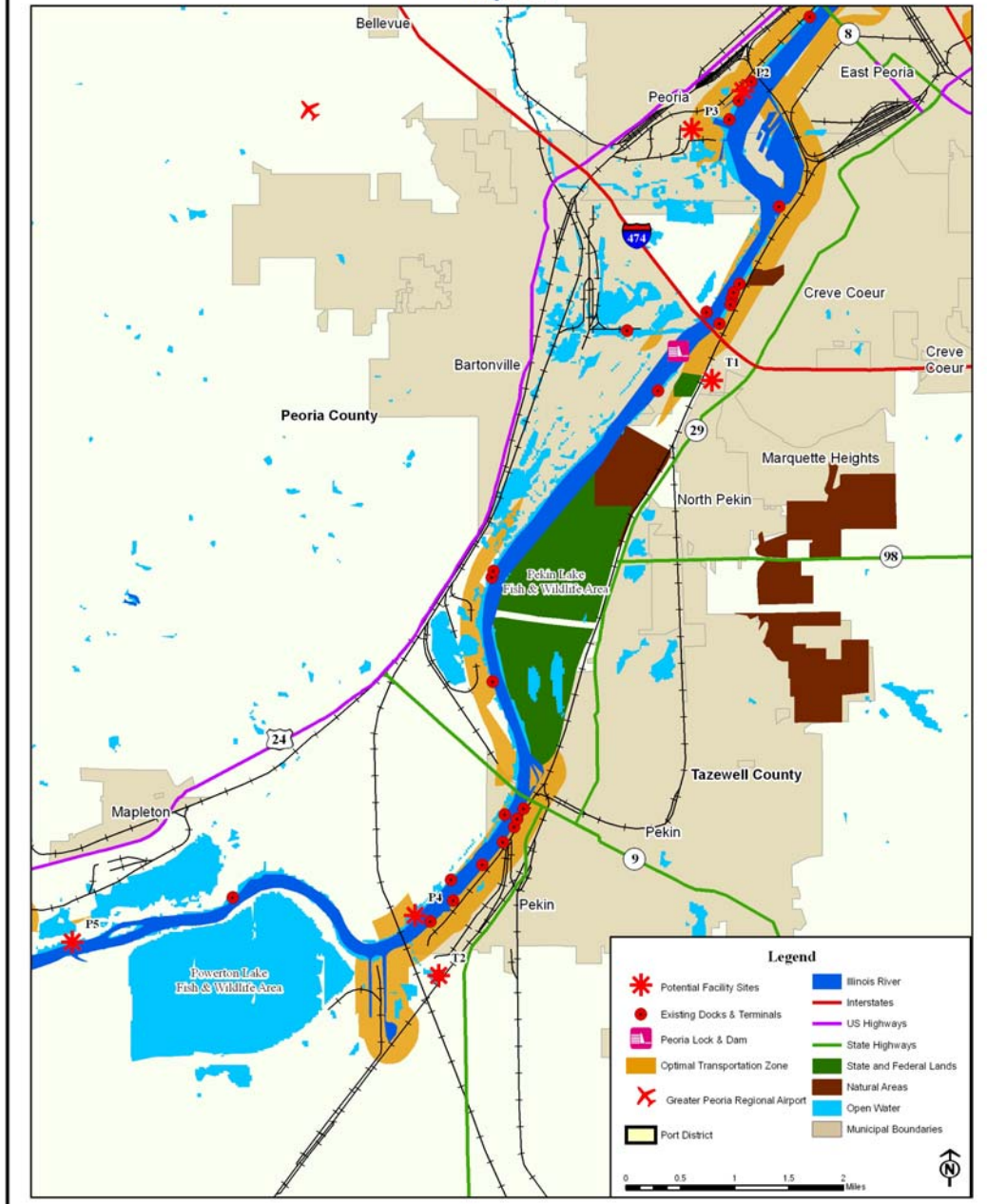


# Heart of Illinois Regional Port District

## Creve Coeur to Mapleton

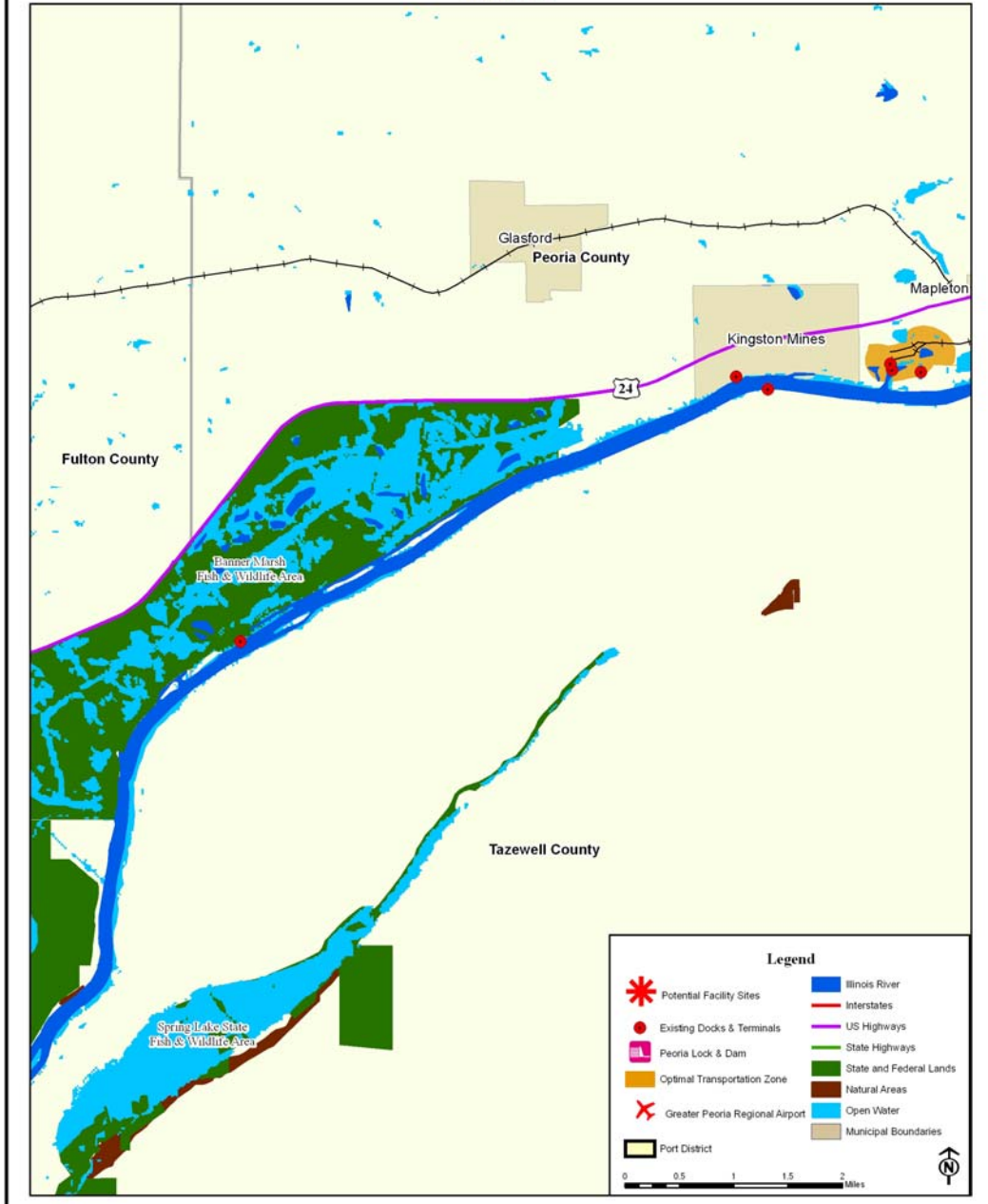
River Miles 147 to 161

Map 4 of 8



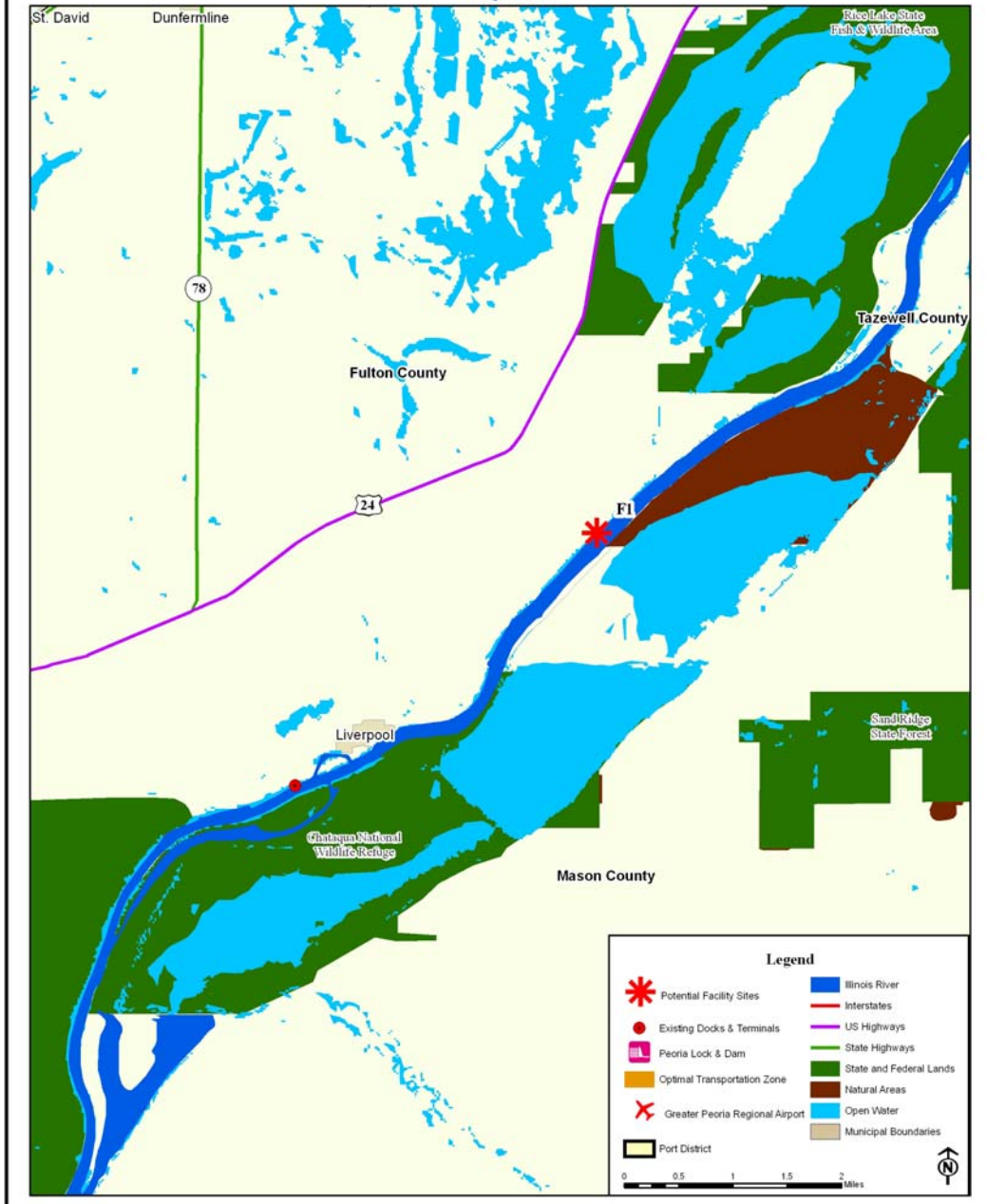
# Heart of Illinois Regional Port District

Kingston Mines  
River Miles 136 to 147  
Map 5 of 8



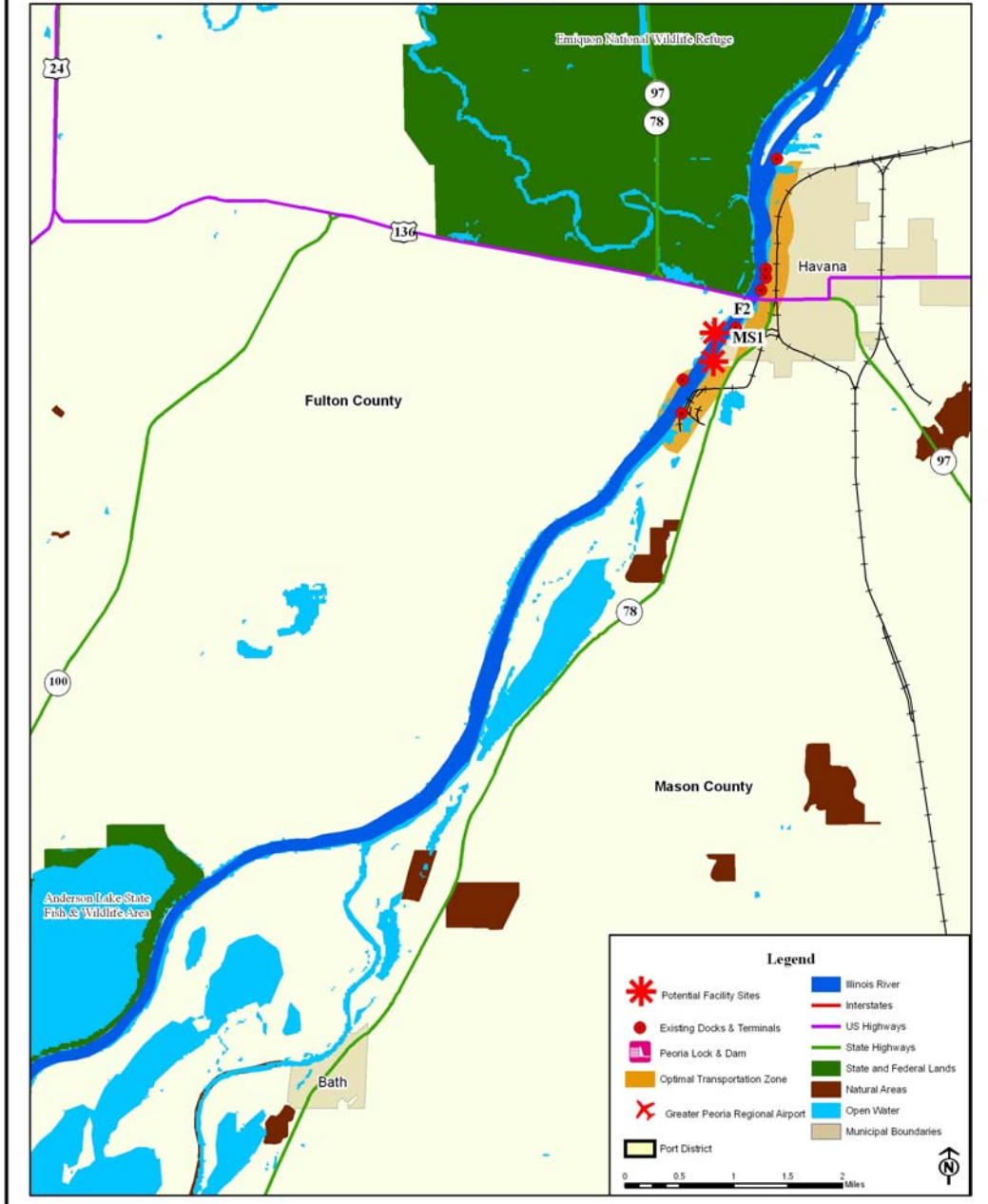
# Heart of Illinois Regional Port District

Liverpool  
River Miles 123 to 136  
Map 6 of 8



# Heart of Illinois Regional Port District

Havana  
River Miles 109 to 123  
Map 7 of 8



# Heart of Illinois Regional Port District

Southern Mason County

River Miles 98 to 109

Map 8 of 8

