

5.0 Perspective of Freight Stakeholders

■ 5.1 Introduction

With its historic role as a center for agriculture and manufacturing, and its strategic location serving regional, national, and international markets, Indiana's economy is heavily dependent on freight movement. These freight operations, in turn, have significant impact on Indiana's transportation system. INDOT has made initial attempts to understand the issues and concerns of the freight community through development of its Intermodal Management System, and incorporation of freight issues into some corridor studies.

The purpose of this research was to identify concerns of major shippers and carriers for consideration in the statewide planning process, and provide initial recommendations to INDOT regarding the integration of freight and goods mobility issues in the statewide plan.

This section presents background information to help frame the discussion, a description of some typical logistics patterns, the result the results of the stakeholder interviews, and near-term actions that INDOT might pursue to address the issues raised in the outreach.

■ 5.2 Background

Current Freight Movements in Indiana

In order to effectively plan for freight movement in Indiana, it is important to first understand the underlying market forces that drive goods movement, and how freight currently uses the State's freight transportation system to move between origins and destinations. This "snapshot" of current goods movement sets the context for a discussion of the system's strengths and weaknesses. It also helps frame how freight stakeholders perceive INDOT and the way it maintains the transportation network.

State Freight Movement Profile

Information on the flow of commodities into, out of, and through Indiana is available from a variety of sources, including a detailed documentation of internal Indiana flows prepared by Dr. William Black, of the Indiana University. For the purposes of this discussion,

the national “Freight Analysis Framework” (FAF) dataset compiled by the Federal Highway Administration (FHWA) provides an appropriate high-level background. The FAF includes data and forecasts for three target years, 1998, 2010, and 2020.¹

Total Volume of Goods Moved

In 1998, approximately 698 million tons of freight moved to, from, or within Indiana, representing roughly \$398 billion worth of goods in transit. The State is forecast to experience dramatic tonnage growth of nearly 60 percent over the next 20 years. By 2020, roughly 1.11 billion tons (\$1.14 trillion) of freight is expected to use Indiana’s freight network.

Mode Split

Figure 5.1 shows a breakdown of 1998 and forecast 2020 freight flows by mode, including both shipped weight and value. Truck traffic moving on the highway system is the dominant mode of freight shipment, carrying nearly 73 percent of all freight tonnage, and 84 percent of all value. Rail freight serves an important role as a bulk transportation mode, transporting 16 percent of all freight tonnage, but only seven percent of value. Waterborne barge traffic serves an even more niche market of bulk traffic, with more than 11 percent of weight, but less than two percent of value. Airfreight serve the opposite niche of high-value and time-sensitive goods, carrying less than 0.1 percent of the State’s traffic by weight, but nearly eight percent by value.

Looking forward to 2020, the mode split for freight traffic is expected to shift slightly to favor trucking and airfreight over rail and maritime freight. The percentage of weight carried by trucks and planes is anticipated to increase to 75 and 0.1 percent, respectively. At the same time, the weight mode share of rail and barge traffic is forecast to decline to 15 and nine percent, respectively. It should be noted that while the percentage of rail and water tonnage is expected to decline over time, the actual tonnage is expected to increase.

Major Commodities Moved

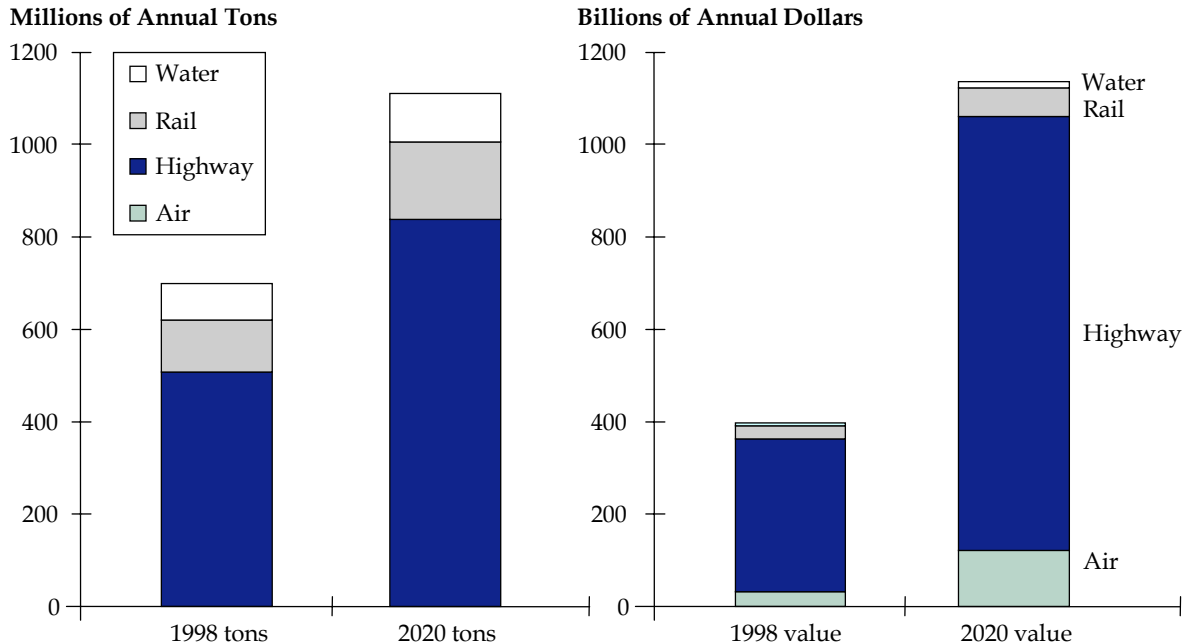
By weight, the top commodities moved in Indiana in 1998 were:

- Non-Metallic Minerals (191 million tons);
- Coal (80 million tons);
- Farm Products (64 million tons);
- Primary Metal Products (60 million tons); and
- Secondary Traffic² (47 million tons).

¹ The complete Freight Analysis Framework, including state to state flow data and pre-defined state reports, is available through the Bureau of Transportation Statistics at www.bts.gov.

² “Secondary Traffic” is the official commodity designation for mixed shipments of consumer goods, generally between warehousing distribution and retail locations.

Figure 5.1 Growth in Freight Movements by Mode
1998 to 2020



By value, the top commodities were:

- Transportation Equipment (\$66 billion);
- Secondary Traffic (\$48 billion);
- Primary Metal Products (\$48 billion);
- Freight All Kinds³ (\$37 billion); and
- Chemicals (\$31 billion).

The same commodities are expected to dominate future freight movements in Indiana.

The dominant commodities suggest that there are four industries in Indiana that are particularly intensive users of the State’s freight system. Non-Metallic Minerals and Coal are both associated with the mining industry. Primary Metal Products, Transportation Equipment and Chemicals are all associated with the Manufacturing sector. Secondary Traffic and Freight All Kinds both represent shipments of consumer goods, and thus have a strong tie to the retail sales business. Finally, Farm Products are part of the agricultural

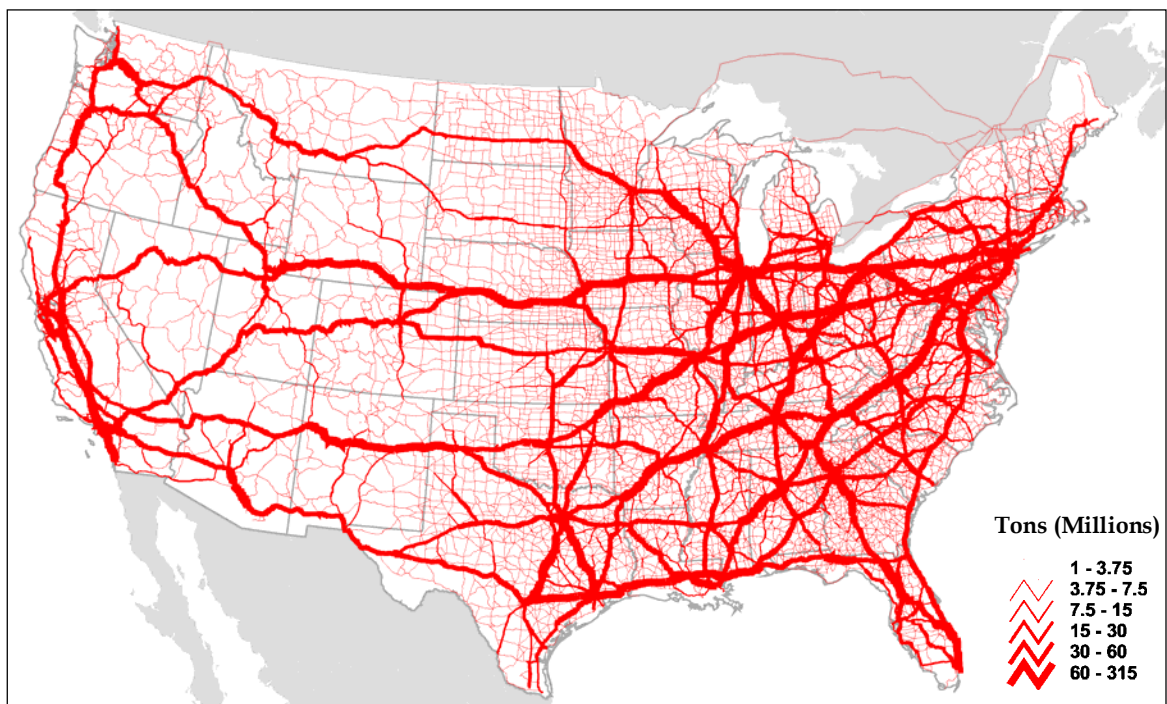
³ “Freight All Kinds” is the commodity designation for general, mixed or unidentified line-haul freight shipments. For example, consumer goods traveling in sealed intermodal containers are generally classified as FAK.

sector. Therefore, in gathering market research on the State’s freight transportation, we focused on input from the agriculture, mining, manufacturing and retail industries.

Through Freight Traffic

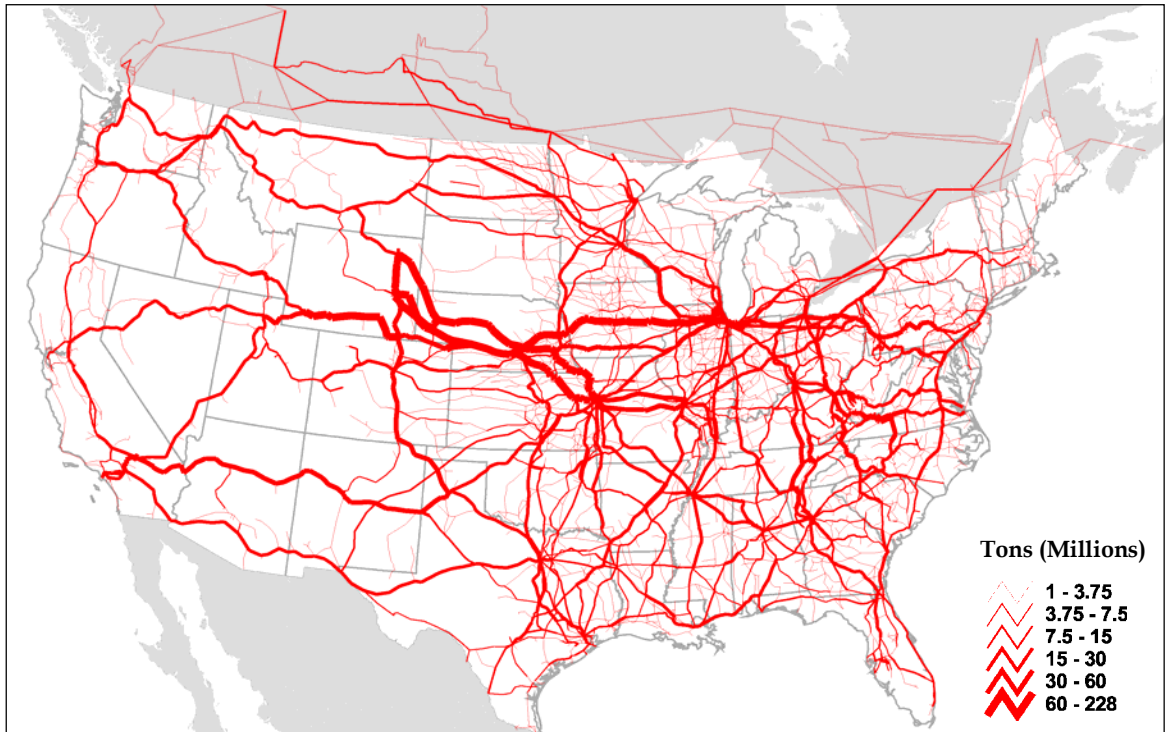
In addition to generating a significant volume of freight traffic, Indiana is also a major corridor for through traffic moving between the Western, Mountain and Midwestern states, and the Northeast. Figures 5.2 and 5.3 show national truck and rail tonnage distributions, and illustrate the large through flows of “land bridge” freight traffic that uses Indiana’s rail lines and roadways. Preliminary results from the FAF dataset suggest that as much as one-third of the freight on Indiana’s transportation network passes through the State without stopping. This makes through carriers a significant stakeholder in the State’s freight system.

Figure 5.2 National Freight-Truck Traffic



Source: Reebie TRANSEARCH and FHWA Freight Analysis Framework Project

Figure 5.3 National Freight-Rail Traffic



Source: Reebie TRANSEARCH and FHWA Freight Analysis Framework Project

Major Freight Facilities/Infrastructure

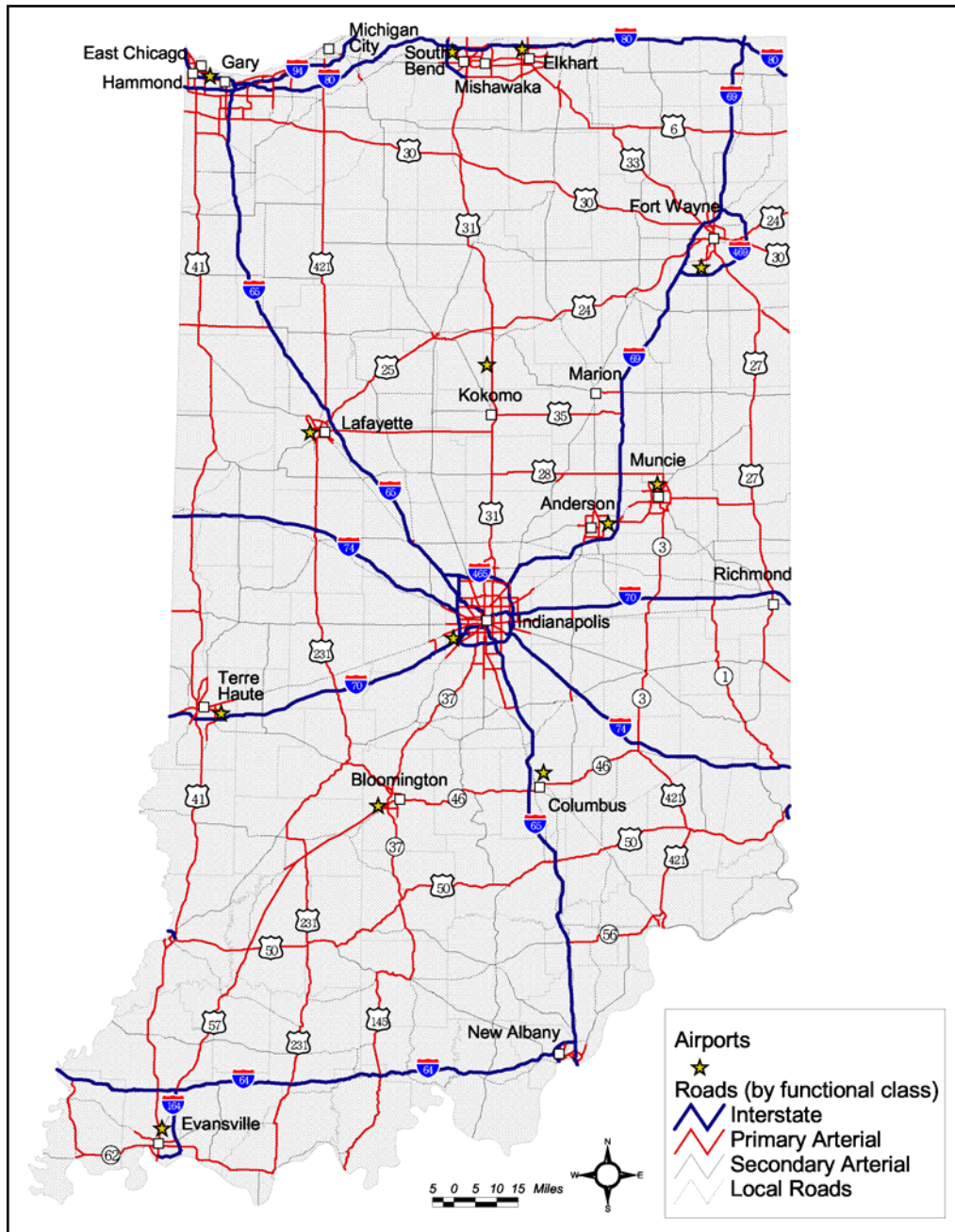
Indiana enjoys a wide selection of freight movement choices, due to its abundant transportation infrastructure and broad modal options. The following section briefly describes the major components of the State's freight transportation system, categorized by mode.

Highway

Indiana has an extensive network of major roadways that provide truck access across the State (see Figure 5.4). The truck freight network is composed of: Interstate highways; U.S. highways, state routes and other primary arterial roadways, county roads and other secondary and local arterials.

Interstates - Indiana's interstate highways provide the major backbone for high-volume goods movement around the State. There are four major east-west interstate corridors across: the northern portion of the State (I-80/90), the central portion (I-70 and I-74) and the southern portion (I-64). Indiana has one major north-south Interstate (I-65) that connects Chicago, Illinois to Louisville, Kentucky through Indianapolis. I-69 connects Fort Wayne and the northeast corner of the State with Indianapolis, but does not continue south to provide a complete north-south corridor across the State. Indianapolis serves as a major hub of the State's Interstate network, with I-65, I-69, I-70, I-74, and the I-465 circumferential highway all intersecting in Marion County.

Figure 5.4 Indiana's Major Roadways and Airports



Primary Arterials – Indiana’s network of U.S. highways and major state routes form a rough grid of north-south and east-west routes, and fill in many of the gaps between Interstates. Major north-south corridors include: U.S. 27, U.S. 31, U.S. 41, U.S. 231, U.S. 421, SR-3, and SR-37. Major east-west corridors include: U.S. 24, U.S. 25, U.S. 30, U.S. 50, and SR-46. The physical configuration of these roads varies greatly; some are

limited access highways, while others are two-lane local streets. Taken as a combined network, however, they serve to connect all of the State's major population centers.⁴

Other Freight Roadways – This network of local roads provides the “last mile” connection to major freight generators in population centers, and connect less populated areas into the State's truck network. In urban areas, these links are composed of local streets, while in outlying areas they are generally rural roads.

Air

Indianapolis International Airport is a major operational hub for FedEx and the United States Postal Service. In this role, it dominates the State's share of airfreight traffic. There are, however, 12 other commercial airports in Indiana (see Figure 5.4) that provide airfreight opportunities for freight movement through either local air carrier service or passenger airline belly cargo.

Rail

Indiana is served by four Class I rail carriers, and 37 regional and short-line railroads (see Figure 5.5). A brief description of the major rail lines is presented below. INDOT's Indiana Rail Plan provides more detailed information on the State's rail system, including 2002 traffic volumes, and an evaluation of the current market sustainability of short-line track routes.

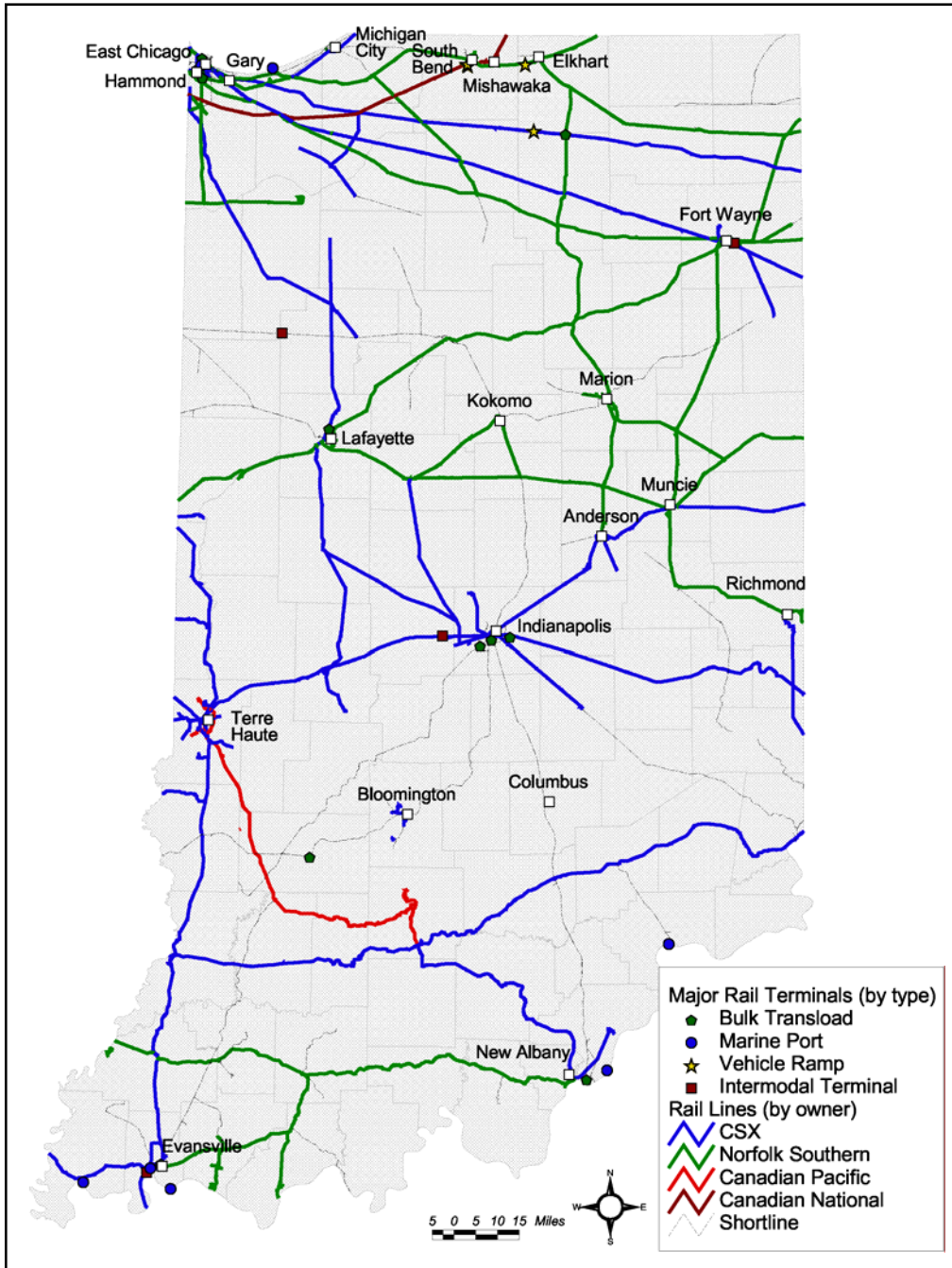
CSX operates 1,935 route-miles of track in Indiana, and maintains a series of major trunklines, including the following.

- Two parallel east-west corridors connecting Chicago, Illinois and Gary to Northern Ohio.⁵ The northern route carries most of the through traffic, while the southern route passes through Fort Wayne, Indiana.
- An east-west corridor from St. Louis, Missouri to Northern Ohio, serving Terre Haute, Indianapolis, and Muncie.
- An east-west corridor connection between St. Louis, Missouri to Cincinnati, Ohio through Vincennes and southern Indiana.
- A north-south corridor that straddles the Illinois/Indiana border, and passes through Terre Haute, Vincennes, and Evansville.

⁴ Cities and towns with a population of at least 10,000 residents.

⁵ In Northern Ohio, these routes connect with CSX's “Water Level Route” – the main CSX corridor to major northeastern population centers (New York City, Boston, and Philadelphia).

Figure 5.5 Indiana Rail Lines and Major Intermodal Terminals



Norfolk Southern (NS) maintains 1,569 route-miles in Indiana. NS utilizes five primary routes through Indiana:

- A heavily used east-west through route between Chicago, Illinois and Detroit, Michigan/Northern Ohio⁶ passing through Gary, South Bend and Elkhart;
- A parallel and somewhat less-utilized route through Fort Wayne;
- An east-west route connecting St. Louis and Northern Ohio, serving Lafayette and Fort Wayne;
- An east-west corridor connecting St. Louis, Missouri and Louisville, Kentucky, through New Albany; and
- A north-south route along the Indiana/Ohio border, connecting Detroit, Michigan and Cincinnati, Ohio via Fort Wayne, Muncie, and Richmond.

Canadian Pacific (CP), via its SOO Line subsidiary, operates a single 94 route-mile corridor between Chicago, Illinois and Louisville, Kentucky. This line passes through Terre Haute and New Albany. This route shares trackage with CSX north of Terre Haute and south of Bedford, Indiana.

Canadian National (CN) operates one route through northern Indiana, totaling 81 route-miles. The corridor serves as CN's main east-west connection between Chicago, Illinois and Toronto, Ontario, along the southern shore of Lake Michigan. It also provides service to South Bend.

Regional and Shortline Railroads provide a vital link in Indiana's rail network. Maintaining a combined total of 1,269 route-miles, short-lines serve vast areas of the State that do not have direct Class I rail service. Particularly in central and southern Indiana, short-lines such as the Louisville and Indiana Railroad, Indiana Railroad, and Indiana Southern Railroad provide north-south connections through the State's major agricultural and mining areas.

Maritime

Indiana is bordered by Lake Michigan to the northwest, and the Wabash and Ohio Rivers to the south. As such, it has significant maritime access to the nation's two major inland waterways: the Great Lakes and St. Lawrence seaways; and the Ohio/Missouri/Mississippi River watershed. These waterways provide high-capacity routes to major domestic and export markets, but both routes impose seasonal limitations. The Great Lakes waterway is open year-round, but the St. Lawrence's bi-national operating

⁶ Routes to Northern Ohio connect with NS's "Pennsylvania Route"- the main NS corridor to the major northeastern cities (New York City, Philadelphia, Baltimore and Washington).

authorities⁷ close the Seaway from mid-December to mid-April for maintenance and repairs. Much of the Ohio River freezes over during the winter, which effectively closes Indiana’s Ohio River ports.

In addition to a multitude of smaller private and municipal marine terminals serving the steel and agricultural industries, Indiana has three public terminals managed by Ports of Indiana. The three facilities are:

- Burns Harbor – A 500-acre terminal on Lake Michigan, serving primarily the steel and agricultural industries;
- Southwind Maritime Center (near Evansville, Indiana) – A 538-acre terminal on the Ohio River, serving the agricultural and mining industries; and
- Clark Maritime Center (near New Albany, Indiana) – A 962-acre terminal on the Ohio River, serving the agricultural and steel industries.

Intermodal Facilities

In addition to port terminals and airports, Indiana’s freight system includes a number of facilities that enable the smooth transfer to goods between modes. These facilities are particularly vital to the State’s rail freight network, because rail carriers typically rely on trucking for pickup and delivery, rather than providing door-to-door service. Indiana’s intermodal facilities generally fall into one of four categories: Trailer-on-Flatcar or Container-on-Flatcar (TOFC/COFC) intermodal terminals, bulk transload facilities, vehicle ramps, and grain elevators.

TOFC/COFC Terminals facilitate the transfer of time-sensitive intermodal rail cargo between highway and rail, using specialized rail equipment that accepts standardized intermodal containers or roadway trailers. Indiana is served by four TOFC/COFC terminals, outlined below.

Facility Name	Location	Serving Railroad
Avon Yard	Indianapolis	CSX
Piqua Yard	Fort Wayne	Norfolk Southern
Evansville Yard	Evansville	CSX
Remington Yard	Remington	Remington, Peoria and Western

⁷ The Saint Lawrence Seaway Development Corporation is the U.S. operating authority, and the Saint Lawrence Seaway Management Corporation is the Canadian operation authority.

Bulk-Transload Facilities enable the intermodal transfer of low-value bulk commodities (such as petroleum, chemicals, plastics, and paper) between rail and road. These facilities are particularly crucial to heavy manufacturing industries that consume large quantities of raw materials. Indiana has 12 major bulk transload facilities.

Facility Name	Location	Serving Railroad
Jeffersonville Flexi-Flo	Jeffersonville	Louisville & Indiana, CSX
Bloomfield Bulk Transfer	Bloomfield	Indiana Railroad
Milford Junction Bulk TransFlo	Milford	CSX
East Chicago Bulk TransFlo	East Chicago	CSX
MDT Transloading Services	Hammond	Indiana Harbor Belt Railroad
Matlack Bulk Intermodal	Whiting	Norfolk Southern
Indianapolis Flexi-Flo Terminal	Indianapolis	CSX
Transfer of Indiana	Indianapolis	CSX
Indianapolis Bulk Transfer	Indianapolis	Indiana Railroad
Indiana Reload Center	Indianapolis	Indiana Railroad
Lafayette Bulk TransFlo	Lafayette	CSX
Evansville Bulk TransFlo	Evansville	CSX

Vehicle Ramps specifically support the automotive industry by allowing finished vehicles to be loaded onto rail cars for efficient distribution across North America. There are four major vehicle ramps in Indiana.

Facility Name	Location	Serving Railroad
South Bend Vehicle Ramp	South Bend	Norfolk Southern
Oliver Yard	South Bend	Canadian National
Elkhart Ramp	Elkhart	Norfolk Southern
Nappanee Ramp	Nappanee	CSX

Grain Elevators allow shipments of grain to be consolidated into unit train shipments destined for major agri-business receivers across the country. These operations typically take place at numerous smaller facilities spread throughout the State. Elevators represent a critical link in the process of bringing Indiana's agricultural products to market.

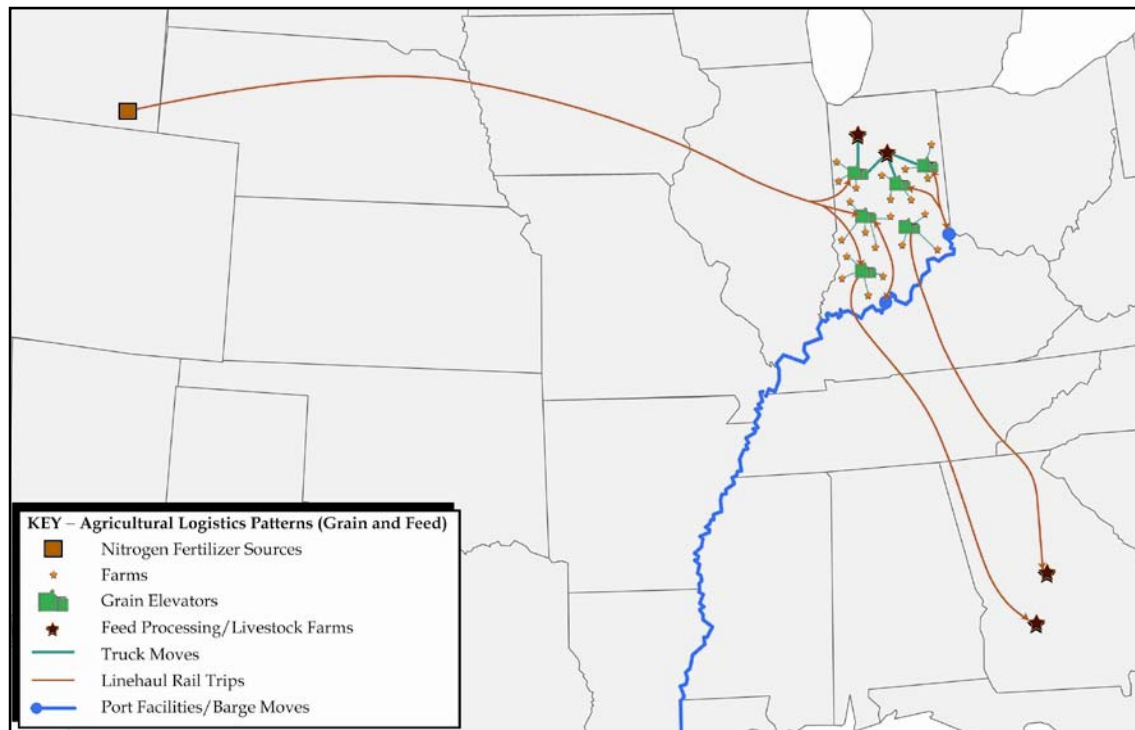
■ 5.3 Major Industry Logistics Patterns

To understand how freight uses Indiana's transportation infrastructure, it is helpful to identify the major logistics patterns that shape the demand for goods movement in the State. As seen from the previous description of commodity flows in Indiana, the four most significant industries with respect to goods movement in Indiana are Agriculture, Mining, Manufacturing and Retail.

Agriculture

Figure 5.6 illustrates one typical agricultural logistics pattern for grain and feed products in Indiana, which is representative of the State's larger agricultural industry. This illustration highlights the key trends in grain logistics patterns, and is not intended to depict a particular operation or the complete set of movements. The key aspects of agricultural logistics are outlined below.

Figure 5.6 A Representative Grain and Feed Logistics Pattern in Indiana



Grain is produced on farms spread throughout central and southern Indiana and transported by truck to local grain elevators, where it is consolidated with grain from neighboring farms into concentrated shipments. This local consolidation is consistent with a “hub and spoke” logistics pattern.

From the consolidation elevators, outbound grain travels to one of three major destinations:

1. Roughly 60 percent of the State's grain production is shipped to feed processing plants or livestock farms within Indiana. The relatively short distance of these moves means that most of these shipments are moved by truck.
2. Some grain travels to major centers of poultry production in the Southeast states (Georgia, Mississippi, Louisiana, and Florida). The longer distances and large volumes of these line-haul moves are a strong match for rail freight service.
3. A portion of Indiana's grain is also transported to the State's Ohio River and Great Lakes ports, where it is shipped by barge through the inland waterway system to serve both domestic and export markets.

Inbound shipments of fertilizers and other agricultural input commodities generally use the same logistics chain in the reverse direction to reach local farms. Potash fertilizers are shipped to Indiana from Canada; phosphate fertilizers are sent from the Southeastern and western states, and ammonia-based fertilizers are imported through New Orleans and transported by barge up the Mississippi. Often, these inbound fertilizers can be carried in the same vehicles that carry outbound grain products. Although the volumes of outbound grain exceed the volume of inbound fertilizer, these "backhaul" opportunities provide significant cost-efficiency to the agricultural logistics chain.

In general, Indiana's grain industry is highly rail dependent, because the industry relies on low-cost bulk transportation to remain competitive in the global market. Although other modes are used in specific applications, rail freight provides a key competitive advantage that allows the agriculture industry to thrive in Indiana.

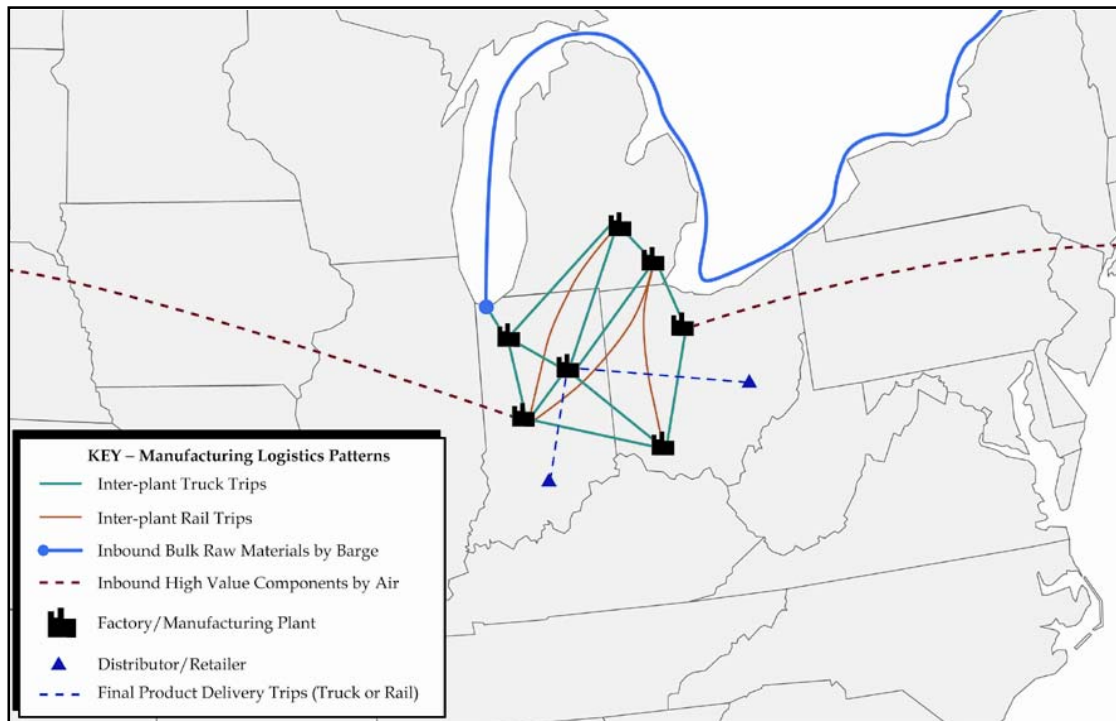
Manufacturing

Figure 5.7 illustrates one representative logistics pattern for manufacturing in Indiana. As with Figure 5.6, this illustration does not represent a particular company or manufacturing industry.

The dominant characteristic of this logistics chain is the "network pattern" of point-to-point interplant moves connecting manufacturing sites responsible for different stages of the production cycle. For larger volumes of heavier components traveling longer distances, this point-to-point connection could be accomplished by rail; however, these time-sensitive moves are generally made by truck.

Low-value bulk inbound commodities (such as steel rolls) generally arrive by ship, whereas high-value inputs (such as electronic components) are generally shipped by air. Depending on the type of product being manufactured and the location of the ultimate retailer, outbound shipments of the final product may travel by rail, air or truck.

Figure 5.7 A Representative Manufacturing Logistics Pattern in Indiana



While other modes are used, Indiana’s manufacturing industry as a whole seems particularly dependent on truck transportation to provide cost-effective and reliable connections between time-sensitive plant operations. Indiana’s abundant highway network and efficient truck service were frequently cited as key advantages by manufacturing stakeholders.

Mining

Figure 5.8 shows a conceptual illustration of mining and quarrying operations in Indiana. Key aspects of the logistics pattern are outline below.

Mining operations in Indiana are concentrated in the Southwest corner of the State. While some coal and minerals are consumed within Indiana itself, the majority is transshipped to out-of-state markets, using Indiana’s Ohio River and Great Lakes ports. Rail freight provides a critical line-haul link between mine locations and the maritime gateways for tremendous volumes of low-value mining and quarrying materials. In fact, the particularly attractive service provided by the Class I railroads from western states to Indiana have made the Indiana ports a gateway for coal from the Powder River Basin in Wyoming and Montana, as well as locally produced resources.

Figure 5.8 A Representative Mining/Quarrying Logistics Pattern in Indiana

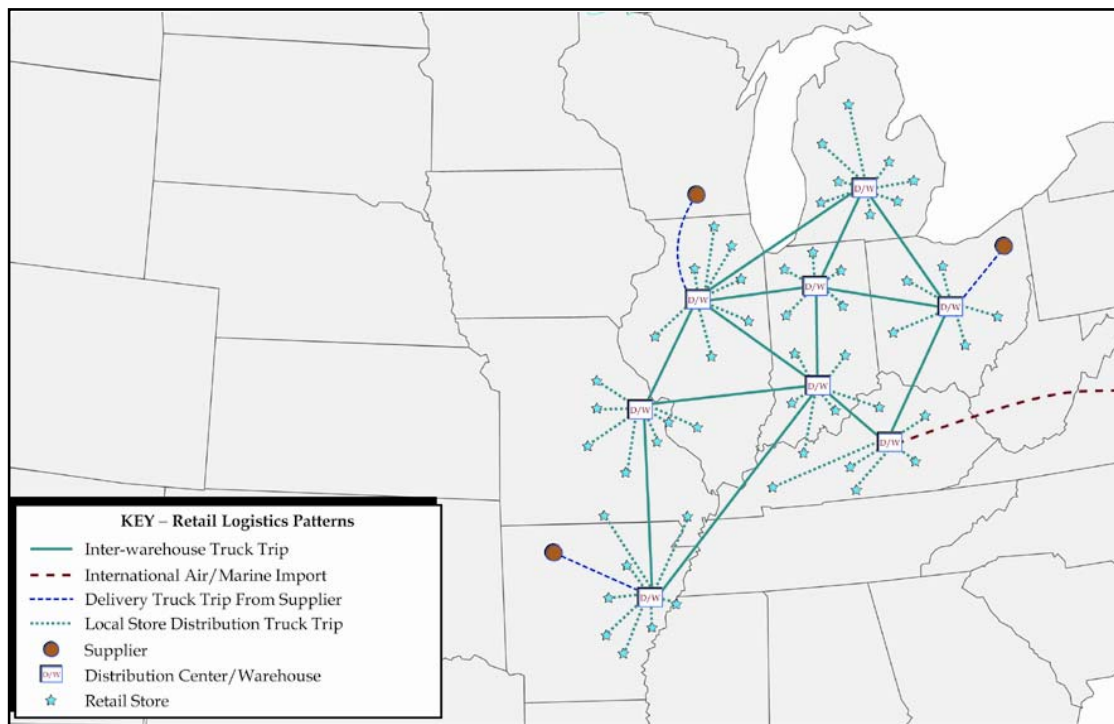


Mining operations in Indiana are extremely dependent on low-cost bulk transport, such as rail freight and barge. Because low-value bulk products compete almost exclusively on the basis of final price to the consumer, and are moved in large quantities. Efficient bulk transportation can be the most significant determining factor in the ability to serve a given market from a particular source.

Retail

Figure 5.9 provides a representative retail distribution chain. This diagram and accompanying description covers the major concepts of retail distribution, rather than an actual retail operation. The key aspects of the retail logistics chain are outlined below.

Figure 5.9 A Representative Retail Logistics Pattern in Indiana



A retail logistics chain combines the “network” patterns discussed previously for the *manufacturing* sector, and the “hub and spoke” pattern utilized in the *agricultural* sector.

- Inbound retail goods are received from suppliers at one distribution center either via truck from local suppliers⁸, or via air or marine gateways for imported goods.
- Goods are moved by truck between a network of distribution centers and warehouses. This is the process by which inventories are balanced at each distribution center, and retail goods are eventually moved from a single supplier to multiple warehouses.
- Finally, each distribution center acts as a supply hub for several retail stores. Inventory for each store is distributed regularly by truck from the warehouses directly to each store.

The retail industry is almost exclusively dependent on trucking to provide flexible, cost-effective, and time-critical goods movement. Airfreight is significantly more important to retail goods movements than to any of the industries discussed previously, but still represents a relatively small portion of the total tonnage transported in Indiana.

⁸ This element is the retail logistics corollary to the “distributor/retailer” element in the *manufacturing* logistics chain, and represents the point where logistics for the two industries interconnect.

■ 5.4 Feedback from Freight Stakeholders

Cambridge Systematics conducted interviews with shippers, receivers, carriers, and other freight system users in Indiana. These interviews were designed to give the freight community a voice in the planning and maintenance of the State's transportation network, and to help INDOT better understand:

- The way freight stakeholders use the State's transportation system;
- The links in the network that are critical to freight movement;
- The freight system's current strengths;
- Areas for improvement; and
- Specific modifications suggested by members of the freight community.

Results from the first two of these topics have already been presented in the context of a discussion of Indiana's key freight infrastructure and the major commodity flow and logistics patterns that shape goods movement in the State. This portion of this section deals specifically with the interviewees' opinions on how well Indiana's transportation system meets the demands for freight movement, and how the system can be improved.

Cambridge Systematics staff conducted interviews with 22 members of the freight community in Indiana. The list of interviewees was generated through discussions with INDOT staff, members of other state authorities, trade associations, and industry groups. The interviewees represent both the shipper and carrier perspectives, include a range of larger and smaller stakeholders, and run the gamut of modes and industries in Indiana.

Prior to the interview, participants were given a one-page background on the study, including: the project purpose; how the interviews fit into the project; and how information from the interview would be used. Appendix F has the freight interview guides.

Depending on what was most convenient for the interviewee, the interview itself was conducted either as an informal telephone discussion, or as a more formal written survey that was e-mailed to the freight stakeholder, and submitted once completed. In either case, the topics of discussion depended on whether the interviewee represented a freight shipper or carrier, and used the interview guides included below as a framework to shape the discussion.

Key Strengths of Indiana's Freight Transportation Network

Central Location – A majority of interviewed freight stakeholders identified Indiana's central location as a key asset to doing business in Indiana. As shown in Figure 5.10, a majority of the U.S. population lives within a one-day truck service radius of Indiana (each ring in the figure represents 200 miles, for a total radius of 800 miles). This makes Indiana a desirable location for concentrated warehousing and distribution facilities that serve multi-state markets.

Quality rail service – Shippers and receivers moving large volumes of low-value goods identified Indiana’s competitive rail service by four Class I and many short-line railroads as fundamental to their operations. While many of these shippers, such as agribusinesses and mining companies, are located in Indiana because of its natural resources rather than for transportation reasons, they cited effective rail transportation as critical to their ability to compete in the global market. One interviewee also noted that because Fort Wayne, Indiana is the nexus of Norfolk Southern Railway’s (NS) “Triple Crown” intermodal service, his Indiana location allowed him to compete better in major Eastern markets served by NS. The railroads attribute their ability to offer highly competitive service in Indiana to the State’s location on several major east-west rail corridors.

Strong modal connections for bulk goods – Members of the agricultural industry, in particular, cited the State’s well-established network of grain elevators, port bulk transfer terminals, and other terminals that facilitate the transfer of goods between modes. For cost-sensitive bulk industries, efficient transfers between modes allow the State’s shippers to utilize the most appropriate mode of transport for each link of the logistics chain.

Taxes and economic development incentives – One interviewee noted that his decision to locate in Indiana had been based, in part, on tax incentives. While economic development incentives are not directly relevant to INDOT’s established mission, it is a consideration for freight stakeholders, and is thus included here for completeness.

Identified Shortcomings and Challenges

Goods movement in Indiana also faces several current shortcomings or emerging challenges. This section presents the deficiencies identified in the interview process. For the purposes of discussion, challenges are segmented by mode.

Highway

Gap in north-south I-69 corridor and poor access to southwest Indiana – Every stakeholder interviewed identified the lack of an interstate highway connection between Indianapolis and Evansville as a major shortcoming of the State’s freight transportation network. Members of the agricultural and mining industry felt that improved truck access to major farming and mining centers in Southwest Indiana would greatly increase the productivity of operations there. Carriers and manufactures identified the route as a major gap in the North-South NAFTA corridor, linking production centers in the Midwest with both Canada and Mexico. Even railroad operators suggested that the roadway link would improve their market in Southwest Indiana by helping local businesses.

Increasing congestion at bottleneck locations – Although congestion on Indiana’s roads is generally lower than in much of the rest of the country, chronic congestion problems are beginning to emerge at several critical bottleneck locations across the State. Particular locations identified in the market research include: the Borman Expressway in Northwestern Indiana, and the intersection of I-69 and I-465 in Northeastern Indianapolis.

Limited capacity to cross Ohio River – One interviewee noted that the Ohio River presents a major barrier to freight exchange with Kentucky and points south. In particular, the I-65 Bridge at New Albany, Indiana is the only roadway crossing in the vicinity of the busy trade corridor with Louisville, Kentucky. This results in bridge congestion that, among other things, impedes goods movement.

Substandard physical geometries at older interchanges and ramps – Trucking carriers identified tight turning radii, confined lane widths, poor sightlines, and short merges at older interchanges as a safety concern for commercial vehicles. In addition to exacerbating congestion, these substandard geometries increase the danger of truck rollovers and other accidents. INDOT has already begun a program of interchange upgrades on some of its older and more heavily used highways, such as I-465 in Indianapolis.

Non-interstate roadway system – Several stakeholders with operations outside of Indiana’s major population centers observed that Indiana’s state and local highways are not as well maintained as the interstate highways, and that even with these roadways there are still large gaps in the State’s truck network. Since virtually all interviewed businesses identified access to high-quality transportation as a major factor in their location decision, this suggests that large portions of the State may be economically hampered because of poor truck access.

Not enough rest areas for long-distance truckers – A few trucking carriers with major operations throughout the Midwest commented that there are not enough rest areas on Indiana highways to serve the needs of long-distance truckers operating through the State. Particularly in light of recent changes to Federal hours-of-service regulations, INDOT should consider evaluating the location of its current rest areas, and augment or relocate these facilities as needed to meet current use patterns.

High cost of truck litigation and damages – One stakeholder observed that recent dramatic escalation in the cost of litigation and damages resulting from accidents involving commercial vehicles have increased the cost of doing business in general (not just in Indiana). While this appears to be a national trend, it suggests that there are significant secondary economic benefits to programs that improve highway safety or reduce dangerous roadway conditions.

Rail

Increasing size of bulk rail equipment – Currently, the most significant trend in railroading is a steady increase in the weight and dimensions of bulk rail cars, and the increasing length of unit trains carrying grain and minerals. This trend is driven by clear economies of scale for the major Class I railroads, which can haul the same traffic with fewer trains and crew. It is, however, more difficult for short-line railroads and local terminal operators to support rapid upgrades to their facilities to accommodate these large trains. With their more limited markets and financial resources, many short-line railroads cannot afford to upgrade their lines to the new 286 thousand pound-per-axle track standard required by modern bulk cars. Similarly, smaller terminal and elevator operators often do not have the resources to lengthen sidings to accommodate more cars. Failure to upgrade, however, prevents these lines from offering competitive service, and undermines their market.

Ultimately, many of the State's short-lines and grain elevators could face closure, resulting in a significant increase in the flow of trucks carrying farm products longer distances to a smaller pool of larger rail terminals.

Shortage of covered hopper cars – The agricultural industry is experiencing a national shortage of covered hopper cars, which are essential to the movement of grain and other bulk farm products. Larger producers have purchased their own cars, but smaller producers cannot justify the cost. These companies are still wrestling with the full delays and uncertainty resulting from the hopper-car shortage.

Marine

Winter closure of Indiana ports – Barge and vessel traffic in Indiana generally serves a specialized niche market that has adapted to the unique strengths and limitations inherent in the inland waterway network. One such limitation is the fact that the St. Lawrence Seaway is closed for maintenance in the winter months, and that the Ohio River freezes and becomes impassable.

Air

No challenges to the region's airfreight system were identified during the course of the interviews. While the focus of the interview was on surface transportation issues, Indiana freight users seem generally happy with the quality of the State's airfreight service.

All Modes

Though not mentioned in the outreach interviews, there has been recent discussion among freight stakeholders about how Indiana's practice of not adopting daylight saving time in part of the state adversely impacts freight costs. The impacts come not only from missed deliveries due to carriers not being aware of the change, but also in the need to reprint schedules.

Suggested Improvements

The interviewed stakeholders suggested several improvements to address the challenges that they observed for the freight system. These suggestions are summarized below, organized by the mode that is most impacted.

Highway

I-69 Extension from Indianapolis to Evansville – Not surprisingly, the extension of I-69 south from Indianapolis to Evansville was the most frequent suggestion for improving the State's freight system. While this improvement has been controversial among certain sectors of the public, it appears to be eagerly embraced by the business and goods movement community.

Geometric improvements to older interchanges – To combat dangerous geometries on older highways, several stakeholders suggested a comprehensive interchange upgrade program

designed specifically to improve commercial vehicle safety. INDOT is already in the process of upgrading interchanges on I-465 in Indianapolis. This program could be expanded to a more comprehensive statewide program.

Second crossing of the Ohio River at Louisville, Kentucky – The stakeholder that commented on the limited number of Ohio River Crossings in the New Albany/Louisville area suggested that another crossing should be constructed in the vicinity. No specific alignment or location was suggested.

Rail

Loans to short lines to upgrade tracks – Several rail stakeholders reinforced an idea that has already been proposed under the Indiana Statewide Rail Plan. Namely, that INDOT provide financial assistance to short-line railroads to help them upgrade their tracks to the new 286,000-pound weight standard. The most common vision of this aid is a government-sponsored loan to help provide supplementary capital. By helping to bridge the near-term capital gap, INDOT could enable short lines to provide more cost-effective service that would translate into operating economies in the future. These operating efficiencies could be used to repay the initial loan.

Loans to smaller shippers to expand sidings and terminal facilities – Building on the rail loan concept, stakeholders also suggested that INDOT loans could be used to help private shippers and terminal owners to upgrade their facilities to accommodate the longer unit trains that form an increasingly significant portion of the rail bulk market. The same principles of near-term support enabling long-term operating efficiencies apply to this situation as well.

■ **5.5 Recommended Next Steps Related to Freight**

Based on the results of the freight interviews, INDOT should examine its current efforts to see whether they support the identified strengths or address the identified shortcomings. The business community's input may provide added importance to existing initiatives that advance goods movement, or may suggest additional measures that INDOT should take to improve the State's freight system.

A number of the interviewed freight stakeholders expressed interest in continuing to actively coordinate with INDOT on freight planning issues. In light of this interest and the valuable perspective that members of the freight community could bring to a statewide freight planning effort, INDOT should consider establishing a standing freight stakeholders committee to provide a formal and ongoing dialogue with industry representatives.