

Indiana's Freight Story

2

OVERVIEW

The Indiana freight network is a robust multimodal system comprised of highway, railroad, port and waterway, and air cargo facilities, as well as intermodal connections between each. The official State motto is "The Crossroads of America," and while that pre-dates the complex transportation system of today, Indiana remains well-positioned with efficient access to 75 percent of United States and Canadian populations. This section provides an overview of Indiana's freight infrastructure, shown in Figure 2. More detailed analysis of each follows.



Indiana Gateway Project in Northwest Indiana

Highlights

6th largest cargo airport in the nation at Indianapolis International Airport.

3rd in total freight railroads with 42.

9th among all states for railroad mileage with 4,273 miles.

9th in the nation in rail tons originated with 56.2 million tons.

Network of more than 680 commercial and general aviation airports.

12th in the nation in total foreign and domestic waterborne shipping with 61 million tons.

Source: Conexus Indiana.



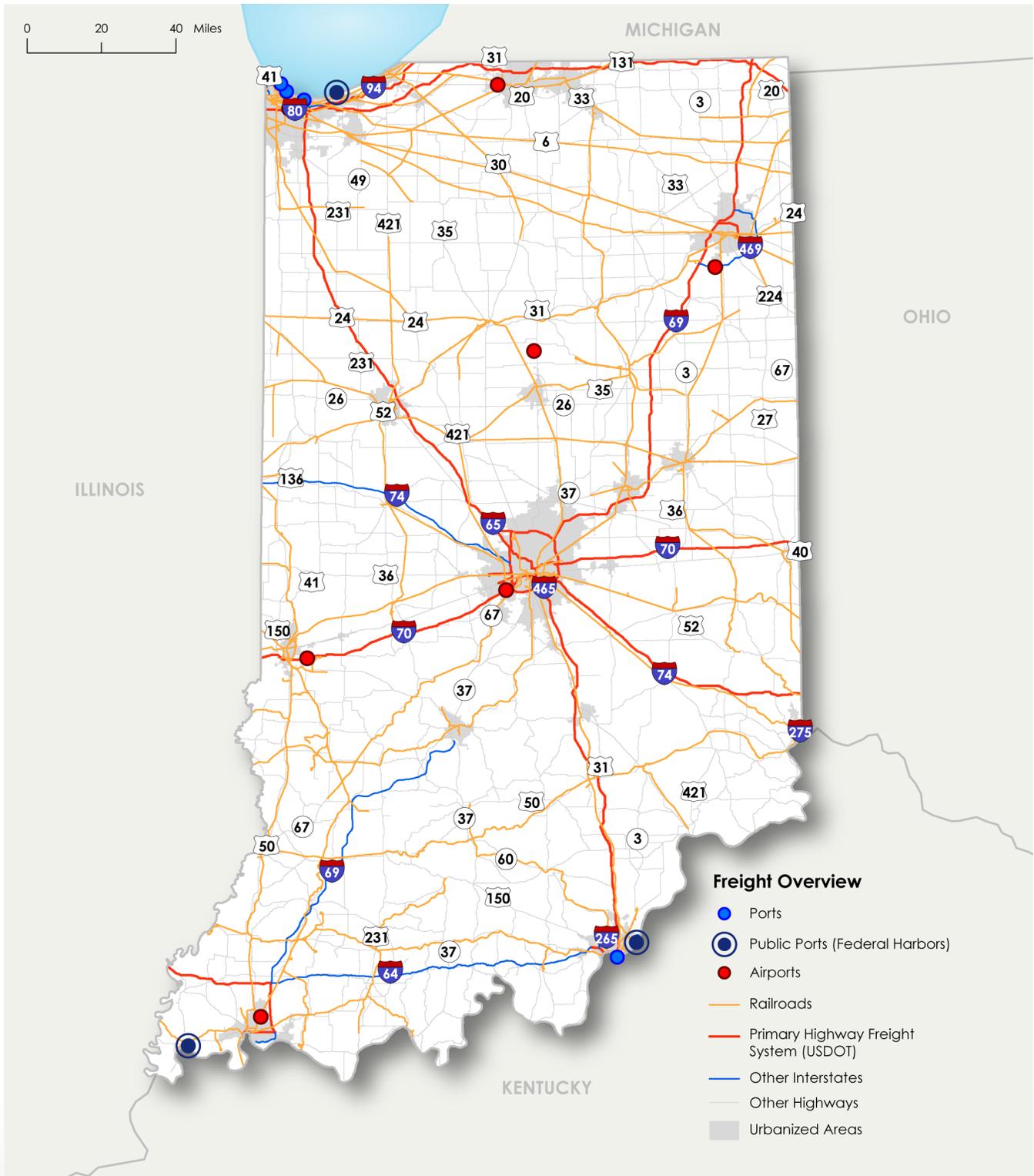


Figure 2. Indiana's Freight System



INDIANA'S HIGHWAYS

The highway network is the largest component of Indiana's freight network in terms of amount of infrastructure, tonnage shipped, and value shipped. The highway freight network provides first and last mile connections to other modes in addition to supporting many of Indiana's key industries.

Key Highway Commodities

Trucks traveling on Indiana's highways carry a wide variety of commodities. As shown in Figure 3, the top 10 truck commodities carry 66 percent of the tons to, from, and within Indiana and 69 percent of the value. Gravel, base metals, and cereal grains are the top three commodities carried by truck by tonnage. Motorized vehicles, mixed freight, and base metals are the top three commodities by value that are transported by truck.

Infrastructure

The Indiana highway system comprises more than 97,000 centerline miles. The Indiana Department of Transportation (INDOT) owns approximately 12 percent of this mileage (11,838 miles).⁸ In addition to the mainlines and frontage road mileage in the State, over 700 miles of publicly-owned ramps must be maintained.

For the purpose of freight and mobility planning for state-owned roadway facilities, INDOT has historically used a corridor hierarchy system based on connectivity, purpose, and the National Highway System (NHS) that consists of the following categories:

⁸ Highway Pavement Management System (HPMS), 2015.

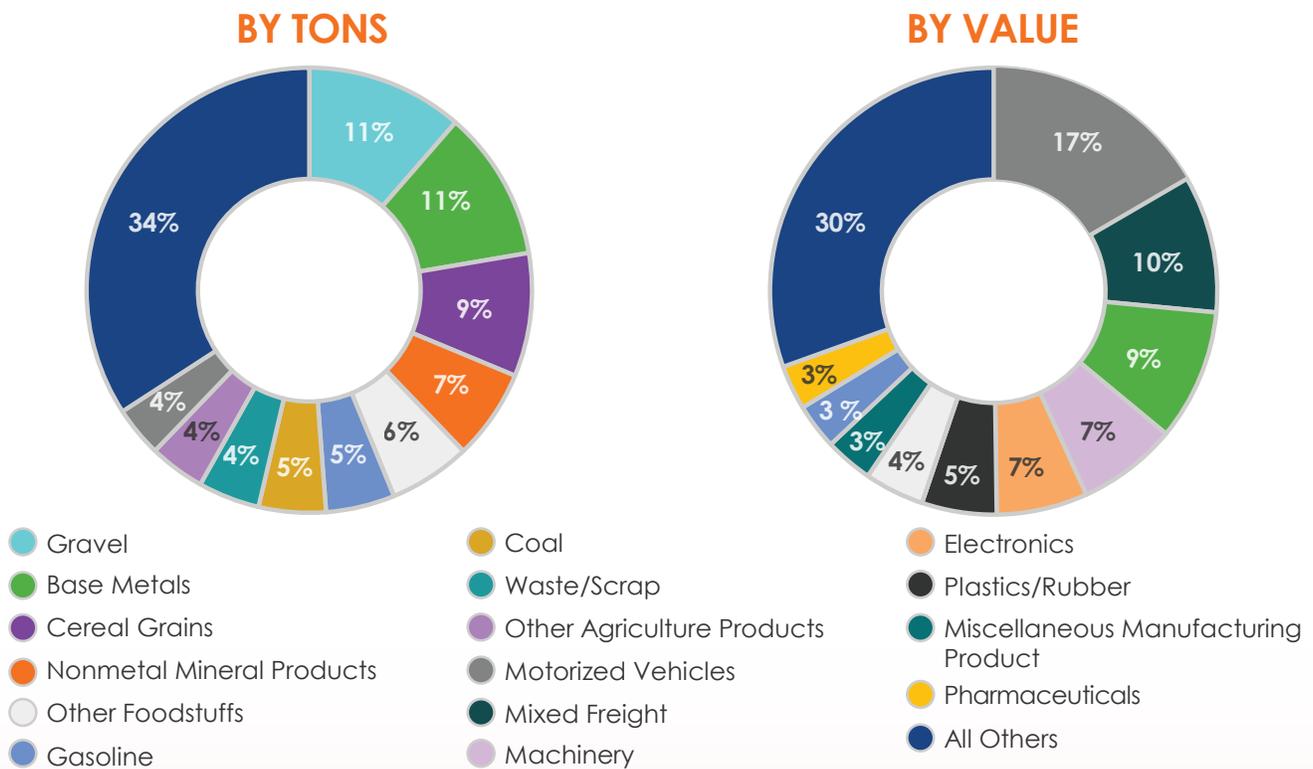
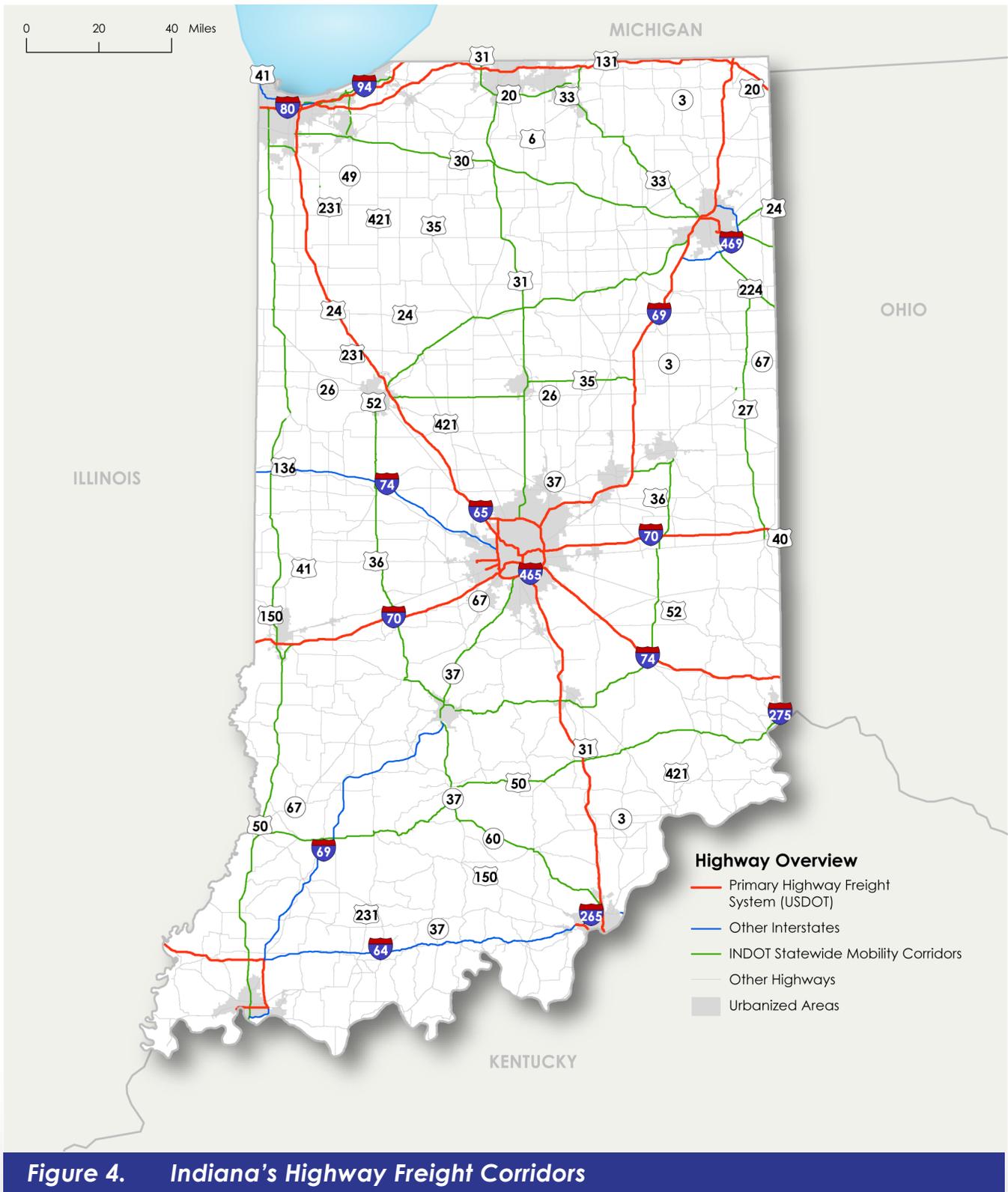


Figure 3. Top Truck Commodities in Indiana, 2015

Note: The industries associated with these commodities are shown in Appendix A.
 Source: Federal Highway Administration, Freight Analysis Framework Version 4.3, 2017.





- **Interstates;**
- **Principal Arterial Network** – Non-interstate roadways which provide access between an arterial route and a major port, airport, public transportation facility or other intermodal transportation facility;
- **The Strategic Highway Network (STRAHNET)** – Highways important to U.S. strategic defense, including access connector routes between major military installations and the STRAHNET; and,
- **Intermodal Connectors** – Roads that connect National Highway System (NHS, see below) routes to intermodal transportation facilities: ports, international border crossings, airports, public transportation and transit centers, interstate bus terminals, and rail yards.

INDOT uses a corridor hierarchy system for statewide prioritization of needs. This hierarchy system has three levels led by roads that are part of the NHS.

- **Statewide Mobility Corridors** – These corridors are the top-end of the highway system and are meant to provide mobility across the State. They provide

safe, high-speed connections for long-distance trips between the metropolitan areas of Indiana and to those of surrounding states. They are the freight arteries of the State, and thus, are vital for economic development. INDOT has as a strategic goal to directly connect metropolitan areas of 25,000 in population or greater with a set of free flowing, high quality corridors.

- **Regional Corridors** – These corridors are the middle tier of the highway system and are meant to provide mobility within regions of the State. They provide safe, high-speed connections for medium-distance trips between smaller cities and towns.
- **Subregional Corridors** – These corridors make up the remainder of INDOT's highway system. They are used for safe, lower speed, short-distances trips. They provide access between local land uses and the rest of the State network.

This framework resulted in the network of freight corridors shown in Figure 4.

INDIANA'S RAILROADS

INDOT updated its State Rail Plan in 2017.⁹ The purpose of the plan was to summarize the existing conditions, needs and opportunities of the Indiana rail system and to engage stakeholders and the general public in a dialogue regarding the State's rail network.

Indiana's central location lends itself to a competitive rail system. Highlights are shown in the box.¹⁰

⁹ <http://www.in.gov/indot/2394.htm>.

¹⁰ Association of American Railroads, State Rankings, https://www.aar.org/Style%20Library/railroads_and_states/dist/data/pdf/State%20rankings.pdf.

Highlights

- 3rd in the number of freight railroads
- 9th in total rail mileage
- 9th in tonnage originated
- 9th in tonnage carried
- 4th in carloads carried
- 9th in rail employment and wages
- 7th in coal tons originated and 6th in coal tons terminated
- 6th in food product tons originated
- 1st in primary metal products originated and terminated



Key Railroad Commodities

Rail in Indiana carries mostly bulk, low-value commodities; other cargo includes automobiles and containerized cargo. As shown in Figure 5, the top 10 rail commodities comprise 90 percent of the tons to, from and within Indiana and 82 percent of the value. Coal, base metals, and cereal grains are the top three commodities carried by rail by ton-nage, with coal alone accounting for 38 percent of the ton-nage. Base metals, motorized vehicles, and machinery are the top three commodities by value that are transported by rail and account for 51 percent of the value.

Infrastructure

Indiana is third nationally in number of railroads and ninth in terms of railroad tonnage. Railroads are privately owned but have a direct impact on publicly owned infrastructure, such as highways, and on economic activity in the State. The Indiana rail network consists of 4,134 route miles, 2,457 of which are operated on by Class I railroads, predominantly CSX Transportation (CSXT) and Norfolk Southern (NS). The Canadian National Railroad (CN) also has operations in northern Indiana. The remaining short line railroad miles are operated by 40 port authority, regional, local, and switching and terminal railroads. Figure 6 shows Indiana's railroad system.

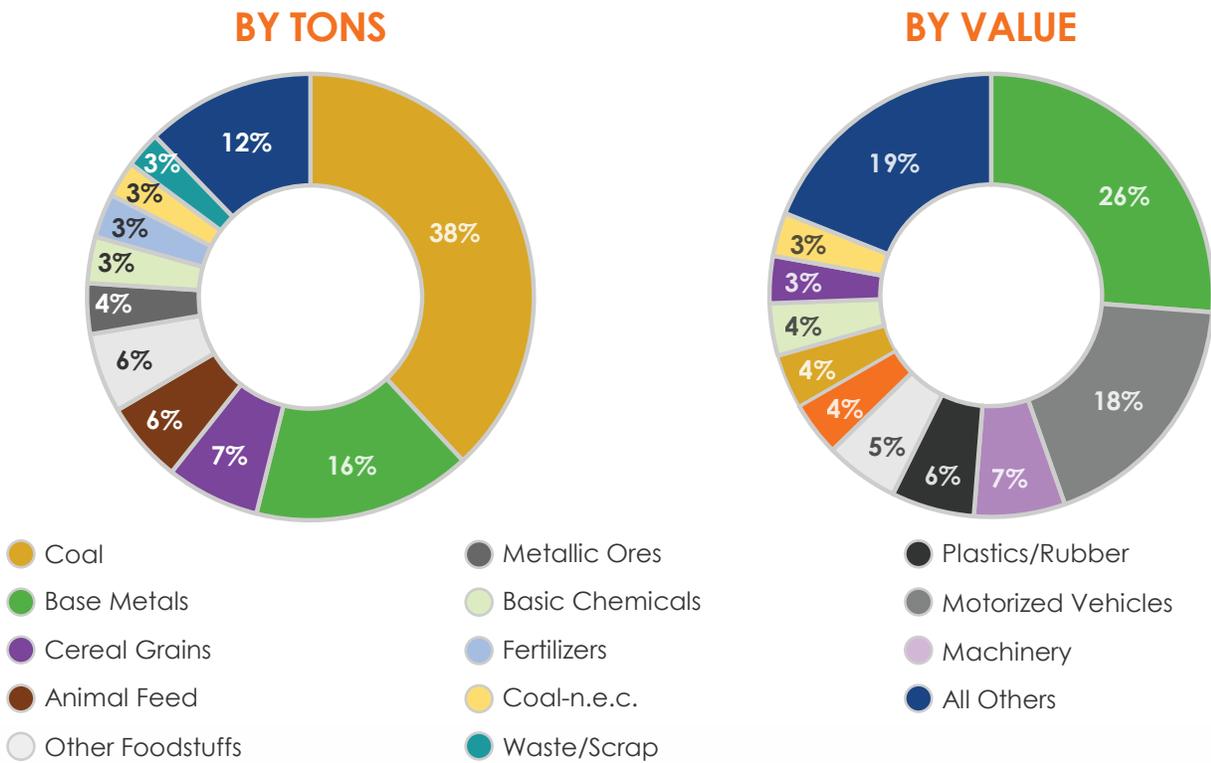


Figure 5. Top Rail Commodities in Indiana, 2015

Source: Federal Highway Administration, Freight Analysis Framework Version 4.3, 2017.

Note: The industries associated with these commodities are shown in Appendix A.



INDIANA RAIL SYSTEM MAP

- AMTK Amtrak
- BLRR Bee Line RR
- BFT Big Four Terminal Railroad
- CAPA City of Auburn Port Authority
- CEIW Central Indiana & Western RR
- CERA Central Railroad Company of Indianapolis RR
- CFER Chicago, Ft. Wayne & Eastern RR
- CIND Central Railroad Company of Indiana
- CKIN Chesapeake and Indiana Railroad
- CMPA City of Madison Port Authority RR
- CN Canadian National RR
- CNC C & NC RR
- CSSB Chicago, Southshore, & South Bend RR
- CSX CSX RR
- DCR Dubois County RR
- EVWE Evansville Western Railroad
- EWR Elkhart & Western Railway
- FLWB French Lick Scenic Railway
- GDLK Grand Elk Railroad
- GRW Gary Railway Company
- HCE HC Railroad
- HHPA Hoosier Heritage Port Authority
- HOS Hoosier Southern RR
- IERR Indiana Eastern Railroad
- IHBR Indiana Harbor Belt
- IN Indiana Northeastern RR
- INCR Indian Creek RR
- INOH Indiana & Ohio RR
- INRD Indiana Rail Road Company
- ISRR Indiana Southern RR
- ISW Indiana Southwestern Railway
- KBS Kankakee, Beaverville, & Southern RR
- KR Kokomo Rail
- KTR Kendallville Terminal RR
- LIRC Louisville & Indiana RR
- LORL Lucas Rail Lines dba LNA&C
- MGR MG Railroad
- MSO Michigan Southern Railroad
- NS Norfolk Southern RR
- OVR Ohio Valley Railroad
- PrivO Private Industry
- SIND Southern Indiana Railway
- TPW Toledo, Peoria, & Western Railway
- VVR Vermilion Valley Railroad
- WC Wabash Central RR
- WSR Winamac Southern RR
- WVRR Whitewater Valley RR

- Class I Railroads*
- Class II Railroads
- Class III Railroads
- City

*Based on Annual Revenue:
 Class I: $\geq \$457.9M$
 Class II: $< \$457.9M$ & $> \$36.6M$
 Class III: $\leq \$36.6M$

0 10 20
 Miles



Figure 6. Railroads in Indiana

Source: 2017 Indiana State Rail Plan. <http://www.in.gov/indot/2394.htm>.



Highlights

- 12th nationally in total foreign and domestic waterborne shipping, which is focused on the Ohio River and Lake Michigan
- Ohio River – 385 miles of border with two public ports operated by Ports of Indiana
- Lake Michigan – 43 miles of border with one public port operated by the Ports of Indiana

Source: BTS, AAPA, Ports of Indiana, USACE.

INDIANA'S WATERWAYS

Indiana moved over 61 million tons of freight through its waterways in 2016, through Lake Michigan and the Ohio River. The State ranks 11th among U.S. states in terms of tonnage by water and 3rd within the Great Lakes Region (behind Illinois and Ohio). About two thirds of Indiana's waterborne tonnage is inbound, 30 percent outbound, and less than 4 percent intrastate. Most waterborne movements in Indiana are domestic (97%) with a small share of foreign (3%) and intrastate movements (4%).¹¹

Table 2. Indiana Waterborne Tonnage, 2015 (Units of 1000 Tons)

| DIRECTION | DOMESTIC | FOREIGN | TOTAL |
|--------------|---------------|--------------|---------------|
| Inbound | 38,731 | 1,829 | 40,560 |
| Outbound | 18,585 | 0 | 18,585 |
| Intrastate | 2,171 | 0 | 2,171 |
| Total | 59,487 | 1,829 | 61,316 |

Source: <http://www.navigationdatacenter.us/wcsc/statetnm16.htm>.

Indiana has access to two of the busiest inland shipping channels in the world through its 400 miles of coastline along Ohio River and Lake Michigan, which create a robust maritime economy that generates an economic impact of \$21 billion per year and supports 155,000 jobs. Indiana ranks 11th in the nation in waterborne shipping, but much of this freight transportation is not well connected to other transportation systems, specifically the interstate system. National initiatives focusing on developing “Marine Highways” and multimodal freight corridors are being designed to improve these critical connections.

¹¹ BTS, AAPA, Ports of Indiana, USACE.



Key Water Commodities

Domestic water transportation (either in barges on the Ohio River or ships on Lake Michigan) in Indiana carries mostly bulk, low-value commodities. As shown in Figure 7, the top 10 water commodities account for 99 percent of the tons to, from, and within Indiana, and 92 percent of the value. Gravel, cereal grains, and non-metallic minerals (e.g., cement) are the top three commodities carried by water by tonnage, and they account for 80 percent of total tonnage. Cereal grains, crude petroleum, and other agricultural products (e.g., nuts and oils) are the top three commodities by value that are transported by water, and they account for 52 percent of the value. In addition, large volumes of iron ore and commodities related to steelmaking are transported to, from, and through Northwest Indiana.

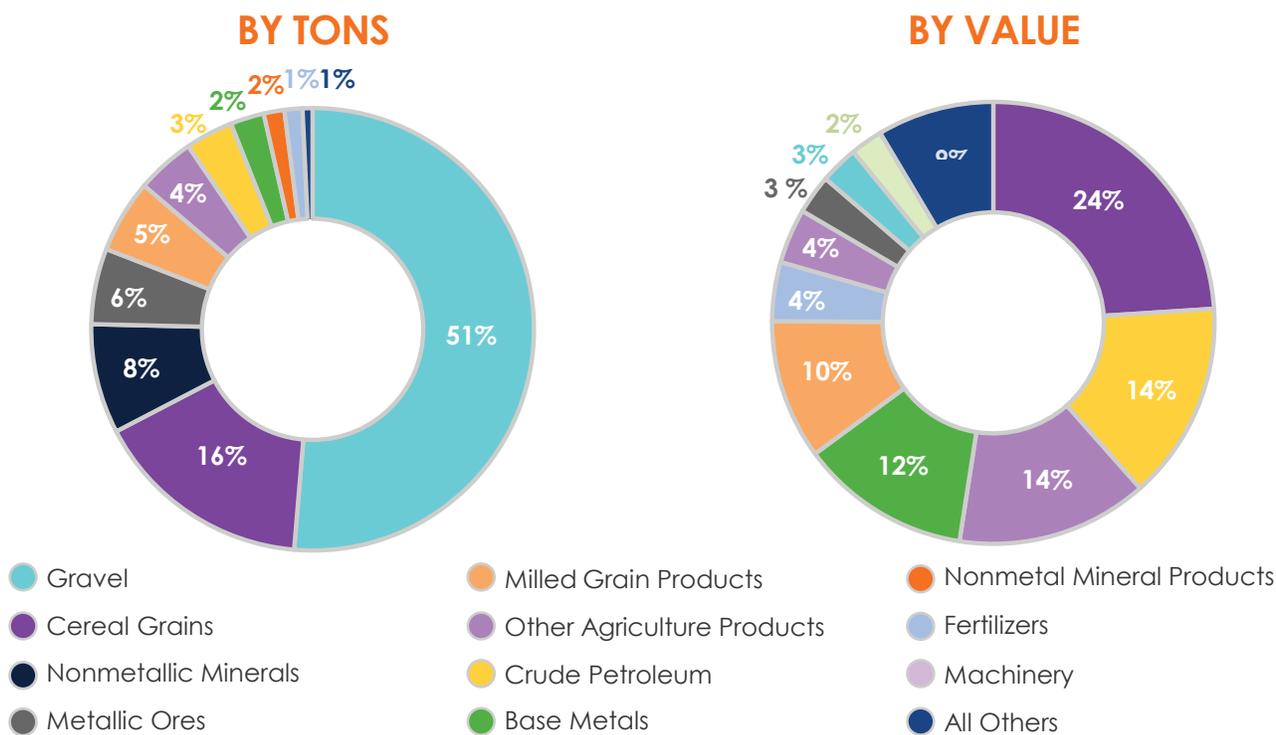


Figure 7. Top Water Commodities in Indiana, 2015

Source: Federal Highway Administration, Freight Analysis Framework Version 4.3, 2017.

Note: The industries associated with these commodities are shown in Appendix A.



Infrastructure

With Lake Michigan at its north and the Ohio River at its south, Indiana ports are conveniently reachable from points throughout the Great Lakes, the Mississippi River Valley, the Gulf of Mexico, and along the Atlantic Ocean. The Ohio River is maintained at a depth of 9 feet, does not freeze, and can ship cargo year-round. The Great Lakes are maintained at a depth of 27 feet and have a nine-month shipping season.



Figure 8. Great Lakes Ports in Indiana

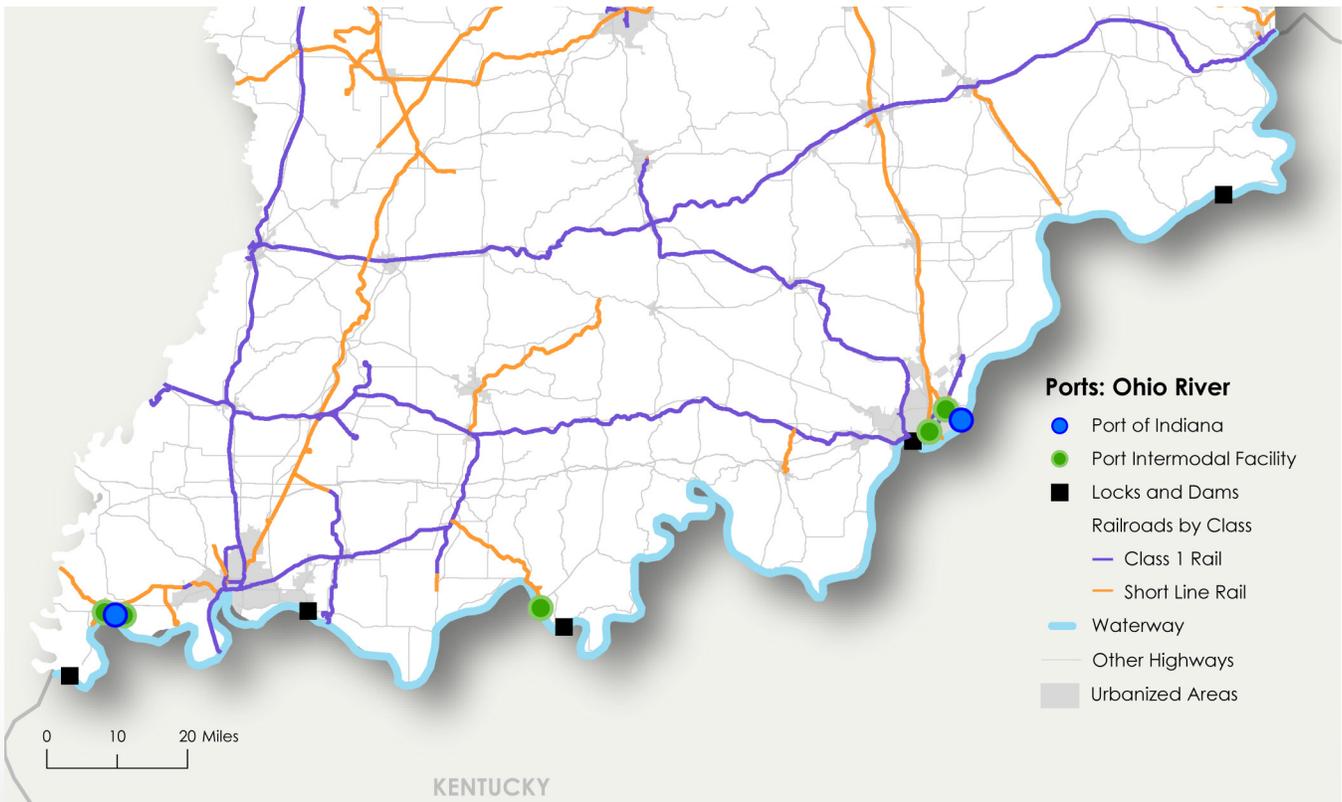


Figure 9. Ohio River Ports in Indiana



The Ports of Indiana, established by IC 8-10, operates three public marine ports, described below:

- Port of Indiana – Burns Harbor** is located on Lake Michigan in Portage, Indiana and is 18 nautical miles from Chicago.¹² The largest commodities processed at this port are steel, iron, and grain. The facility also handles substantial volumes of chemicals, fertilizers, limestone, coal, and heavy lift cargo. This port handles barges traversing the Inland Waterway System via the Illinois Waterway, bulk carriers traveling throughout the Great Lakes, and ocean vessels crossing the Atlantic via the St. Lawrence Seaway. The port facility has 30 on-site tenants and covers nearly 600 acres. It is served by four railroads, including one Class I railroad (NS). Indiana SR 249 connects the port directly to I-94, less than a mile away.
- Port of Indiana – Mount Vernon**, also on the Ohio River, is located approximately 15 miles west of Evansville, Indiana. The facility covers nearly 1,200 acres, has nine on-site tenants, and offers substantial growth potential. The port also offers year-round access to the Gulf of Mexico. The largest commodities traveling out of the port are coal and grain, and the largest incoming commodity is fertilizer. Cement and minerals are among the other commodities passing through this port. An ethanol plant on-site has the potential to greatly increase freight activity at the port. Rail service is available for five class I railroads, while the nearest limited access highway is I-69 in Evansville. Other highway access improvements were recently studied as part of INDOT's Transportation Asset Management Plan.¹³ The best performer of options tested, was an upgraded North-South connection along SR 69 to I-64.
- Port of Indiana – Jeffersonville** is located on the Ohio River, directly across the river from the city of Louisville, Kentucky. This rapidly growing facility includes an on-site "steel campus" where numerous value-added steel production activities occur. There are more than 25 on-site tenants, and it is adjacent to the River Ridge Commerce Center. River Ridge comprises 6,000 developable acres designated for industrial and office park use. The port also has over 300 acres of available, undeveloped land. The port primarily handles steel products, grain, and fertilizers. It is directly served by MG Rail, CSX and the Louisville and Indiana Railroad, as well as an on-site switching railroad.

A fourth public port has been proposed along the Ohio River in southeastern Indiana. The Ports of Indiana have entered an agreement to begin study on a 725-acre potential site in Lawrenceburg and Aurora. A decision on the purchase of the site is expected by the end of 2018.¹⁴ In addition to Indiana's public port system, there are numerous other port facilities throughout the State, most of them privately owned. The Federally designated ports of Indiana Harbor, Gary, and Buffington are complemented by Federal harbors comprised of many small private and local ports. These ports primarily serve the steel industry of northwest Indiana. Together with the three public Ports of Indiana, these six facilities handle nearly two-thirds of all waterborne freight in Indiana. Table 3 lists the rank, total tonnage, and domestic and freight tonnage for Indiana's five largest Federally-designated ports.

¹² Ports of Indiana. <http://www.portsofindiana.com/burns-harbor/global-markets/>.

¹³ <https://www.in.gov/indot/3231.htm>.

¹⁴ <https://calendar.in.gov/site/gov/event/indiana-eyes-lawrenceburgaurora-site-for-potential-fourth-port/>.



Table 3. Tonnage at Principal Ports¹⁵, 2015

| PORT NAME | Rank | TOTAL | DOMESTIC | FOREIGN | IMPORTS | EXPORTS |
|---------------------------|------|------------|------------|-----------|-----------|---------|
| Indiana Harbor, IN | 47 | 11,617,126 | 11,363,107 | 254,019 | 254,019 | 0 |
| Burns Waterway Harbor, IN | 56 | 8,949,771 | 7,455,189 | 1,494,582 | 1,494,582 | 0 |
| Mount Vernon, IN | 59 | 8,375,192 | 8,375,192 | 0 | 0 | 0 |
| Gary, IN | 64 | 7,825,034 | 7,797,830 | 27,204 | 27,204 | 0 |
| Buffington, IN | 115 | 1,812,052 | 1,577,053 | 234,999 | 234,999 | 0 |

Source: <http://www.navigationdatacenter.us/data/datappor.htm>.

Highlights

Two of the top 100 cargo airports in the U.S.: Indianapolis International (7th) and Fort Wayne International (92nd)

Three top 100 cargo airports adjacent to Indiana: Louisville International (3rd), Chicago O'Hare (6th), and Cincinnati/Northern KY (9th)

Four Commercial service airports: Indianapolis International, South Bend International, Fort Wayne International, and Evansville Regional

INDIANA'S AIR CARGO SYSTEM

Indiana has three cargo service airports, defined by the Federal Aviation Administration as airports with landed weight of cargo-only aircraft totaling more than 100 million pounds per year: Indianapolis International (IND), Fort Wayne International (FWA), and South Bend International (SBN). Indianapolis International is the largest cargo airport in the State with over 5 billion lbs. of landed cargo in 2015 and 2016, and it was ranked the seventh largest cargo airport in the country. Table 4 lists the rank, landed weight, and percent change from 2015 to 2016 for Indiana's three cargo airports.

Table 4. Tonnage at Cargo Airports, 2016

| Airport Name | National Rank | 2016 Landed Weight (tons) | 2015 Landed Weight (tons) | Percent Change |
|----------------------------|---------------|---------------------------|---------------------------|----------------|
| Indianapolis International | 7 | 2,664,594 | 2,662,369 | 0.08% |
| Fort Wayne International | 92 | 99,308 | 96,813 | 2.58% |
| South Bend International | 119 | 52,633 | 50,166 | 4.92% |

Source: https://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats.

Key Air Commodities

Although air freight represents less than 0.1 percent of the State's freight traffic by weight, the Freight Analysis Framework Version 4 (FAF4) reports that it carries over 2 percent by value. This statistic represents the typical market for air freight, which primarily transports goods that are lighter weight, less bulky, higher value, and more time-sensitive. An example of this is the biotechnology industry, a major user of air freight services.

¹⁵ U.S. Army Corps of Engineers designated ports.



As shown in Figure 8, the top 10 air commodities carry 89 percent of the tons to, from and within Indiana, and 98 percent of the value. Electronics, pharmaceuticals, and plastics and rubber are the top three commodities carried by air by tonnage and account for 54 percent of the tonnage. Pharmaceuticals, electronics, and basic chemicals are the top three commodities by value that are transported by air and amount to 75 percent of the value.

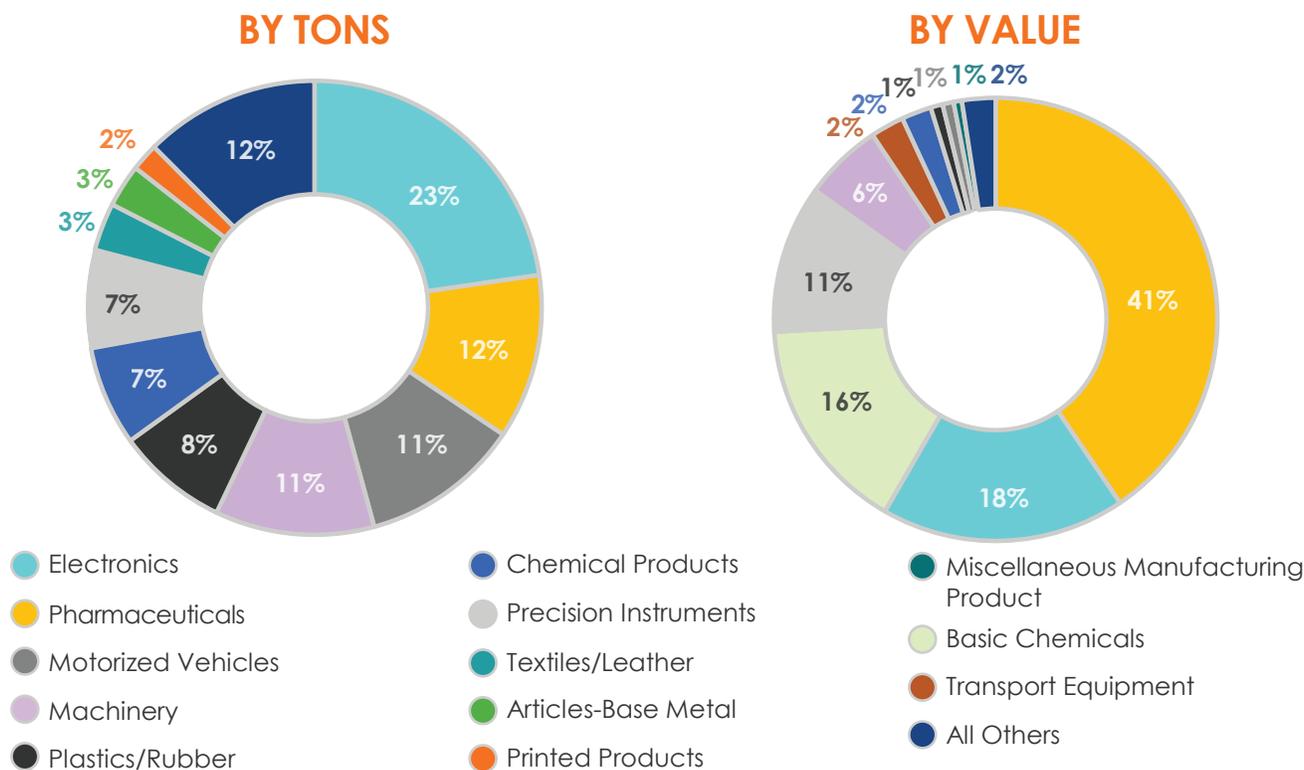


Figure 10. Top Air Commodities in Indiana, 2015

Note: The industries associated with these commodities are shown in Appendix A.

Infrastructure

In Indiana, 7 airports each handled at least one ton of air cargo, and five of these had volumes of 100 tons or greater: Indianapolis, Fort Wayne, South Bend, Evansville, and Gary. Additionally, Grissom Air Reserve Base is of strategic importance to the state due to its role in national defense and its local economic impact of more than \$100 million.¹⁶ Terre Haute Regional Airport has a state-designated Airport Development Zone and a Federally granted Foreign Trade Zone, making it attractive to freight development. These seven airports are shown in Figure 11. Indianapolis International Airport is by far the most significant airport in Indiana for air freight, handling over 1 million tons of combined inbound and outbound freight annually. A high concentration of air cargo activity in close proximity to Indianapolis, and the world's second largest FedEx facility at that airport, have contributed to Indianapolis' ranking among top U.S. airports for freight. Federal Express operates 76 gates and occupies over 500 acres at the airport, employing around 5,000 people, with continued plans for expansion. Integrated express carriers FedEx and UPS have determined that centralized locations such as Memphis, Louisville, and Indianapolis are prime sites for streamlining operations in the U.S. and internationally.

¹⁶ <https://biopharmguy.com/links/state-in-all-geo.php>.



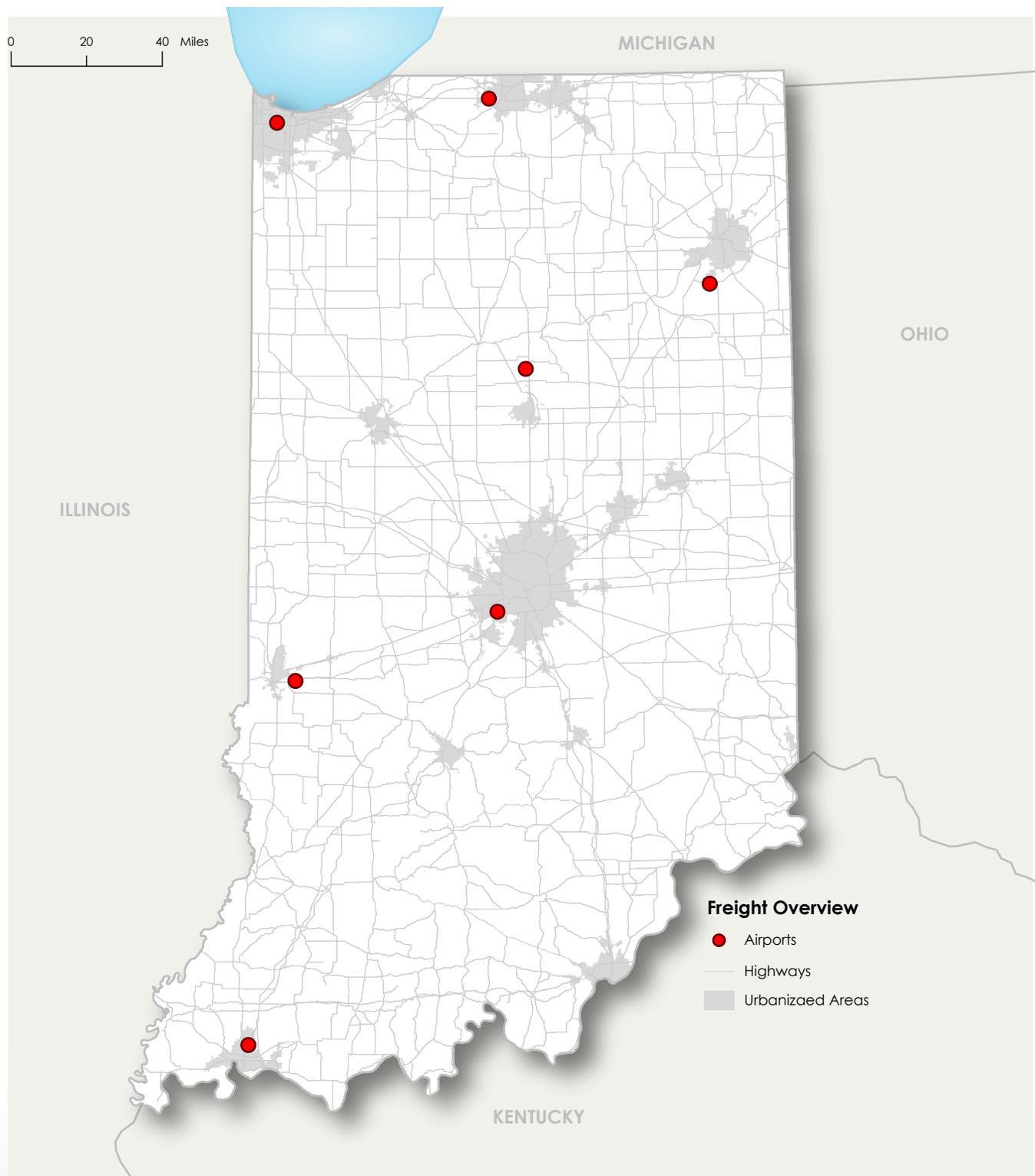


Figure 11. Indiana Air Freight Infrastructure



In 2012 an updated Indiana State Aviation System Plan (ISASP) was completed. It serves as the planning framework for the coming years. It covers system goals, airport roles in the overall system, minimum service level requirements and forecasts, as well as documenting the economic benefits of the system to Indiana.

Indiana has more than 450 private-use airports and 115 public-use airports. Of the public-use airports, 69 are considered of statewide importance and are therefore included in the Indiana ISASP. The Indiana aviation system has been continuously developed over the years using Federal, state and local funds, and it provides statewide access for business, tourism and recreation.

At present, four primary (includes hub and non-hub) airports provide commercial passenger service. These include; Indianapolis International Airport, Fort Wayne-Allen County Airport, South Bend Airport, and Evansville Regional Airport.

Another seven airports serve as reliever airports to those larger commercial airports. The balance of the 69 airports covered by the ISASP is 57 general aviation airports.

Indianapolis International Airport serves as the #2 hub for FedEx after Memphis. This reflects the advantage Indianapolis has being in a strategic Midwest location. In addition there are two other airports with 11,200 feet or more of runway – Fort Wayne and the Grissom Air Reserve Base. However, Indiana trails other regional states in its share of state transportation/warehousing gross domestic product. Indiana has excess air shipping capacity and generally the ability to expand its airports. This means Indiana airports have potential to act as reliever airports to other Midwest airports. Indiana has strong university aviation programs to support its air industry.

