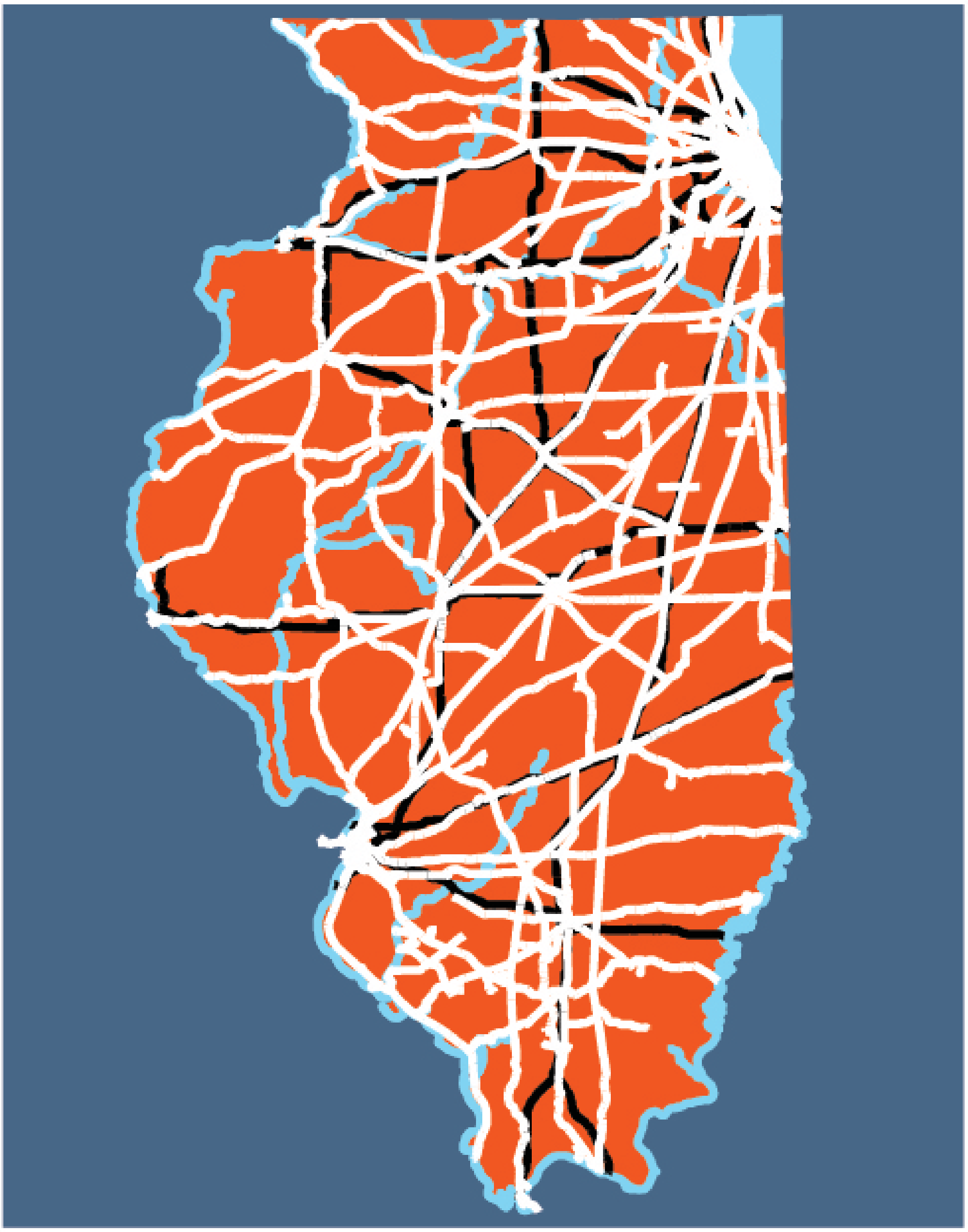
Illinois State Freight Plan



Illinois Department of Transportation

Illinois State Freight Plan

Oct. 3, 2017

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Prepared for:

Illinois Department of Transportation

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Illinois State Freight Plan

Introduction:

Illinois Department of Transportation (IDOT)

Freight transportation has been integral to the development of the State of Illinois. Originally, because of its waterways and central location, and then because industry and other modal transportation networks developed on similar patterns, Illinois is a national freight crossroads, transporting goods from all directions. Now, over 1.2 billion tons of freight, valued at nearly $3 trillion, are moved to, from or within Illinois.

Freight transportation in Illinois is also a key driver of the state's economy and is integral to the global system of trade, despite being in the interior of the continent. Intermodal service is a principal advantage that Illinois brings to supply chain businesses; this advantage helps drive the state's economy. Businesses are dependent on moving agricultural products, raw materials, and finished products efficiently. This requires an integrated system of freight transportation and Illinois' transportation network and freight services provide a full range of options.

Highlights of Illinois' total multimodal freight transportation system are described below.

Roadways: The National Highway System (NHS) in Illinois is the 4th largest in the nation. This includes approximately 2,185 miles of Interstate highways. Trucks carry over half of the Illinois' freight tonnage, 664 million tons valued at over $1 trillion. Cereal grains represent 12.2 percent of all tons moved by truck, with the majority of these connecting farms to grain elevators and to other modes, closely followed by gravel at 12.1 percent that typically involve shorter distance moves within the state to destinations such as construction sites.

Typically, in other states, the core roadway network is a blend of interstates with U.S. and state highways, but in Illinois the interstate highway system is truly the core network. More than half of the interstate highway miles in Illinois – 55 percent – have truck proportions of 25 percent or greater. This contrasts with other roadways in the state, which reach 25 percent trucks on just 4 percent of their total miles. From these figures, twelve interstate highways along with associated bypasses can be considered as the core roadway freight network for the State of Illinois. These twelve interstate highways are: I-24, I-39, I-55, I-57, I-64, I-70, I-72, I-74, I-80, I-88, I-90 and I-94.

Rail: Freight rail shipments by carload represent over one-quarter of Illinois' freight tonnage, nearly 350 million tons valued over $370 billion, including nearly half of the inbound freight to the state. A significant portion of this inbound rail freight is transferred for onward movement by truck (typically trailers and containers), waterways, and connections to other railroads. Coal represents over 40 percent of all rail freight tonnage, followed by basic chemicals, and cereal grains. The Illinois freight railroad system is comprised of 45 railroads, including all seven Class I railroads, three regional and 26 shortline railroads, and nine terminal carriers, and nearly 10,000 miles of tracks. The rail network ranks second among all states in total railroad track mileage, with northeastern Illinois being the hub of the nation's rail system. Statewide, rail intermodal accounts for over 105 million tons annually, valued at over $1.3 trillion.

Waterways: The Illinois maritime transportation system includes 1,095 miles of navigable inland waterways and Lake Michigan. The Illinois maritime transportation system carries nearly 108 million tons of freight valued at nearly $32 billion. These figures illustrate the cost competitive nature of the navigable inland waterways for lower value-to-weight commodities, such as gravel, sand, grain and coal. Movement of waterborne freight through Illinois is predominately north-to-south, since the Illinois River and canal system connects Lake Michigan to the Mississippi River and allows for transport to occur between the Great Lakes and the Gulf of Mexico. Other major freight flows by waterway in Illinois occur on the Mississippi River along the western border of Illinois, the Ohio River at the southern end of Illinois, and on the Kaskaskia River.

Air: Air freight is a small yet vital component of Illinois freight transportation system, with most of the air cargo being lighter weight and higher-value. Nearly 2 million tons of air cargo shipments, valued at over $185 billion, are made annually in Illinois. Chicago O'Hare International Airport is one of the nation's primary air hubs, particularly for international trade, with nearly 72 percent of its air cargo being international, and stands out as the state's principal air cargo facility. Chicago Rockford International Airport is a regional air hub for United Parcel Service (UPS), and is second to O'Hare in both inbound and outbound air cargo. General Wayne A. Downing Peoria International Airport and Chicago Midway International Airport are ranked third and fourth for air cargo, with traffic at other Illinois airports being scattered and light.

The Illinois Department of Transportation (IDOT) has developed this freight plan in accordance with the requirements of the current federal surface transportation bill, Fixing American's Surface Transportation (FAST) Act, Section 8001; 49 U.S.C. 70202. This freight plan is organized as follows:

- Chapter 1 – ***Freight Flows*** - presents freight flow by mode of transportation, type of commodity, and geography. This chapter also analyzes commodity flow by tonnage as well as value. In addition to state-wide numbers, tonnage and value is shown at the county level. International trade numbers are also shown.
- Chapter 2 – ***Freight Trends Affecting the Illinois Multimodal System*** - discusses freight infrastructure needs; workforce characteristics, and overall emerging trends such as autonomous vehicles, intermodal developments, warehousing, retail home delivery, and supply chain sourcing.
- Chapter 3 – ***Illinois Truck Bottlenecks*** - discusses truck bottlenecks, delay, unreliability and the Illinois Core Freight Roadway Network.
- Chapter 4 - ***Freight Strategies*** - presents planning and policy strategies for the freight network and for economic development.
- Chapter 5 - ***Goals and Performance Measures*** - presents strategic goals and performance measures.

- Chapter 6 - ***Freight Investment Plan and Priority Projects*** - discusses the freight investment project priorities that IDOT has identified through its *Competitive Freight Program* grant opportunity.
- Appendices
  - Appendix A is comprised of the commodity flow data sets.
  - Appendix B identifies each truck bottleneck, by county.
  - Appendix C is a map of the Illinois Department of Transportation regions and districts.

Acronyms / Abbreviations

3D	Three Dimensional (Printing)
3PL	Third Party Logistics
AADT	Annual Average Daily Traffic
AAR	Association of American Railroads
ADM	Archer Daniels Midland
AHUA	American Highway Users Alliance
AMS	Amsterdam Airport Schiphol
ANC	Ted Stevens International Airport (Anchorage)
ARRA	American Recovery and Reinvestment Act
AT	Autonomous Truck
ATRI	American Transportation Research Institute
BLS	Bureau of Labor Statistics
BLV	Midamerica St. Louis Airport (Belleville)
BMI	Central Illinois Regional Airport (Bloomington-Normal)
BNSF	Burlington Northern Santa Fe Railway
BRU	Brussels International Airport
BTS	Bureau of Transportation Statistics
CBP	County Business Pattern (Data)
CDG	Charles De Gaulle International Airport (Paris)
CHI	Chicago (Metro Area Airport Code)
CMAP	Chicago Metropolitan Agency for Planning
CMI	Champaign Willard Airport (University of Illinois)
CMV	Commercial Motor Vehicle
CN	Canadian National Railway
CP	Canadian Pacific Railway
CPI	Consumer Price Index
CREATE	Chicago Region Environmental and Transportation Efficiency (Program)
CRFC	Critical Rural Freight Corridor
CRS	Condition Rating Survey
CSX	CSX Transportation
CUFC	Critical Urban Freight Corridor
DC	Distribution Center
DDI	Diverging Diamond Interchange
DHL	DHL Express
DOH	Doha Hamad International Airport
DPA	DuPage Airport (West Chicago)
DUB	Dublin International Airport
FAA	Federal Aviation Administration

FAF	Freight Analysis Framework
FAST	Fixing America's Surface Transportation (Act)
FASTLANE	Fostering Advancements in Shipping and Transportation for Long Term Achievement of National Efficiencies (Grants)
FedEx	Federal Express
FHWA	Federal Highway Administration
FIPS ID	Federal Information Processing Series Identification
FRA	Frankfurt International Airport
GDP	Gross Domestic Product
GMO	Genetically Modified Organisms
GPS	Global Positioning System
HKG	Hong Kong International Airport
HPMS	Highway Performance Monitoring System
IANA	Intermodal Association of North America
ICN	Incheon International Airport (Seoul)
IDOT	Illinois Department of Transportation
INFRA	Infrastructure for Rebuilding America (Grants)
IRI	International Roughness Index
ISFAC	Illinois State Freight Advisory Council
ITAP	Illinois Transportation Automated Permits
ITS	Intelligent Transportation Systems
KCS	Kansas City Southern Railway
LED	Local Employment Dynamics (Partnership)
LEHD	Longitudinal Employer-Household Dynamics (Program)
LHR	London Heathrow Airport
LODES	LEHD Origin-Destination Employment Statistics
LOT	Lewis University Airport (Lockport/Romeoville)
LRTP	Long Range Transportation Plan
LTL	Less Than Truckload
LUX	Luxemburg Findel Airport
MAASTO	Mid America Association of State Transportation Officials
MAFC	Mid-America Freight Coalition
MAP-21	Moving Ahead for Progress in the 21st Century (Act)
MARAD	United States Maritime Administration
MDW	Chicago Midway International Airport
MEX	Mexico City International Airport
MLI	Quad City International Airport (Moline)
MPO	Metropolitan Planning Organization
MUC	Munich Airport
MYP	Multi-Year Program
NAICS	North American Industry Classification System
NEC	Not Elsewhere Classified

NFSP	National Freight Strategic Plan
NHFN	National Highway Freight Network
NHFP	National Highway Freight Program
NHS	National Highway System
NPMRDS	National Performance Management Research Data Set
NRT	Narita International Airport (Tokyo)
NS	Norfolk Southern Railway
NSFHP	Nationally Significant Freight and Highway Projects (Program)
NXP	NXP Semiconductors N.V.
ORD	Chicago O'Hare International Airport
OSOW	Over-Size/Over-Weight
OTTO	Ottomotto, LLC (formerly known as)
PB	Parsons Brinckerhoff (now known as WSP)
PEK	Beijing Capital International Airport
PHFS	Primary Highway Freight System
PIA	General Wayne A. Downing Peoria International Airport
PIK	Glasgow Prestwick Airport
PVG	Shanghai Pudong International Airport
RFD	Chicago Rockford International Airport
SAP	System Analysis and Program Development Company (formerly known as)
SCTG	Standard Classification of Transported Goods
SF	Square Feet
SMS	Safety Management System
SPI	Abraham Lincoln Capital Airport (Springfield)
STB	Surface Transportation Board
STEM	Science, Technology, Engineering, and Mathematics
SVO	Sheremetyevo International Airport (Moscow)
T-100	T-100 Air Database (Reporting Form T-100)
TARP	Truck Access Route Program
TIP	Transportation Improvement Plan
TMC	Traffic Message Channel
TPIMS	Truck Parking Information System
TS	Transearch
TTTR	Truck Travel Time Reliability (Index)
TTU	Trade, Transportation and Utilities
UIC	University of Illinois Chicago
UP	Union Pacific Railroad
UPS	United Parcel Service
US	United States
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation

USEIA	United States Energy Information Administration
USPS	United States Postal Service
VMT	Vehicle Miles Traveled
WSP	Parsons Brinckerhoff (now known as WSP)
ZRH	Zurich International Airport

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Chapter One:

Illinois Freight Flow and Forecast: Commodity and Modal Traffic

Illinois Department of Transportation (IDOT)

1. Freight Flows

1.1 Approach

Freight traffic flows by mode, commodity and geography are a fundamental way to understand the demand on Illinois infrastructure and the connection between freight and the economy of the state. Several datasets were combined to develop an accurate overview of Illinois' freight flows. For commodities moving by truck, the Federal Highway Administration's Freight Analysis Framework (FAF) data was disaggregated to the county level to provide enhanced geographical detail within the state. The totals from the disaggregated FAF data match those from the original data, preserving the integrity of statewide estimates.

The disaggregated FAF data:

- Estimates the tonnage and value shipped by truck at the county level.
- Considers both domestic and international shipments.
    - o Classifies commodities into 42 commodity groups using a two-digit Standard Classification of Transported Goods (SCTG) coding system.

The commodity groups that contribute the freight flows in Illinois will be discussed in the sections below. These sections provide graphic illustrations that summarize and highlight important aspects of the state's freight flow activity.

To provide a context for the commodity discussions that will follow, Table 1-1: Standard Classification of Transported Goods (SCTG) Commodity Codes, shows the 42 commodity groups used in the FAF dataset and their two-digit SCTG code.

Table 1-1: Standard Classification of Transported Goods (SCTG) Commodity Codes

Code	Description	Code	Description
01	Animals and Fish (live)	22	Fertilizers
02	Cereal Grains (includes seed)	23	Other Chemical Products and Preparations
03	Agricultural Products (excludes animal feed, cereal grains, and forage products)	24	Plastics and Rubber
04	Animal Feed, Eggs, Honey, and Other Products of Animal Origin	25	Logs and Other Wood in the Rough
05	Meat, Poultry, Fish, Seafood, and Their Preparations	26	Wood Products
06	Milled Grain Products and Preparations, and Bakery Products	27	Pulp, Newsprint, Paper, and Paperboard
07	Other Prepared Foodstuffs, Fats, and Oils	28	Paper or Paperboard Articles
08	Alcoholic Beverages and Denatured Alcohol	29	Printed Products
09	Tobacco Products	30	Textiles, Leather, and Articles of Textiles or Leather
10	Monumental or Building Stone	31	Non-Metallic Mineral Products
11	Natural Sands	32	Base Metal in Primary or Semi-Finished Forms and in Finished Basic Shapes

Code	Description	Code	Description
12	Gravel and Crushed Stone (excludes dolomite and slate)	33	Articles of Base Metal
13	Other Non-Metallic Minerals (not elsewhere classified)	34	Machinery
14	Metallic Ores and Concentrates	35	Electronic and Other Electrical Equipment and Components, and Office Equipment
15	Coal	36	Motorized and Other Vehicles (includes parts)
16	Crude Petroleum	37	Transportation Equipment, not elsewhere classified
17	Gasoline, Aviation Turbine Fuel, and Ethanol (includes kerosene, and fuel alcohols)	38	Precision Instruments and Apparatus
18	Fuel Oils (includes diesel, Bunker C, and biodiesel)	39	Furniture, Mattresses and Mattress Supports, Lamps, Lighting Fittings, and Illuminated Signs
19	Other Coal and Petroleum Products(not elsewhere classified)	40	Miscellaneous Manufactured Products
20	Basic Chemicals	41*	Waste and Scrap (excludes agricultural or food)
21	Pharmaceutical Products	43*	Mixed Freight

*There is no Commodity Code “42”.

The disaggregated FAF data was complemented with two additional modal datasets that provide a complete accounting of freight movements by rail and water. The information in these datasets is more current than the FAF data and has more specificity and geographic detail.

For rail, the Surface Transportation Board’s (STB) Confidential Waybill Sample was translated into the structure of the disaggregated FAF data and combined into a single database.

Data on freight movements by water was also integrated into this data set. This information came from IHS Global Insight’s Transearch database.

Rail and water data were provided for 2014 while the disaggregated FAF data was estimated for 2012. This dataset was scaled up to 2014 for consistency using the forecasted long-run growth rates from FAF. These FAF growth rates were applied to the composite data set as well to create a 2045 forecast.

Data on freight movements by air was obtained from the Bureau of Transportation Statistic’s T-100 air database.

Note that due to rounding, some calculations in this chapter may vary slightly from the sum of their individual components.

1.2 Overview of Freight Flows

In 2014, 1.23 billion tons of freight was moved to, from or within Illinois. This cargo was valued at $2.97 trillion.

The modal breakdown and directional flow of this freight movement is shown below. The top half of Table 1-2: Mode and Type of Flow Overview, 2014, shows tonnage and value for inbound, outbound, and within state flows. The bottom half shows the mode share percentages based on these tonnages and values.

Table 1-2: Mode and Type of Flow Overview, 2014

	Inbound		Outbound		Within		Grand Total	
	Tons 2014 (M)	Value 2014 (B USD)	Tons 2014 (M)	Value 2014 (B USD)	Tons 2014 (M)	Value 2014 (B USD)	Tons 2014 (M)	Value 2014 (B USD)
Truck - FAF Dis	129.1	$296.3	133.8	$415.2	401.4	$360.8	664.2	$1,072.3
Rail Intermodal - STB	48.8	$647.3	56.2	$662.4	0.1	$3.9	105.1	$1,313.6
Rail Carload - STB	195.2	$198.1	129.5	$161.9	24.2	$11.1	348.9	$371.2
Water - TS	21.2	$10.6	80.0	$19.7	6.6	$1.2	107.8	$31.5
Air - T100	1.0	$97.7	0.9	$87.0	-	$0.7	1.9	$185.4
Grand Total	395.3	$1,250.0	400.4	$1,346.2	432.3	$377.7	1,227.9	$2,974.0
Truck - FAF Dis	32.7%	23.7%	33.4%	30.8%	92.9%	95.5%	54.1%	36.1%
Rail Intermodal - STB	12.3%	51.8%	14.0%	49.2%	0.0%	1.0%	8.6%	44.2%
Rail Carload - STB	49.4%	15.8%	32.3%	12.0%	5.6%	2.9%	28.4%	12.5%
Water - TS	5.4%	0.8%	20.0%	1.5%	1.5%	0.3%	8.8%	1.1%
Air - T100	0.3%	7.8%	0.2%	6.5%	0.0%	0.2%	0.2%	6.2%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

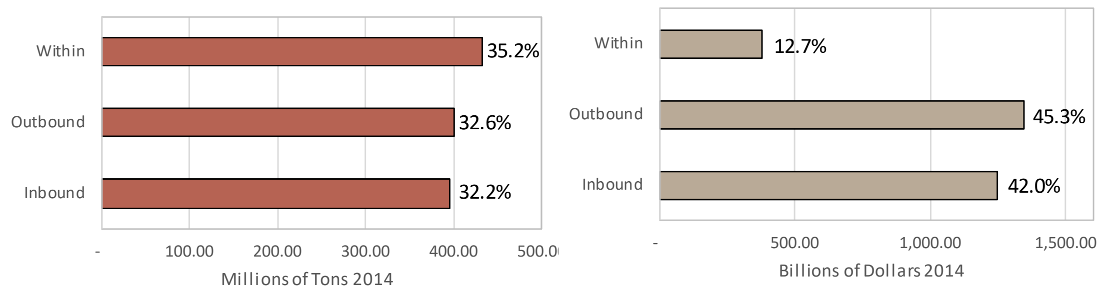
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, Air, and Water
**STB: Surface Transportation Board; TS: Transearch; T100: 2014 Bureau of Transportation Statistics T-100 Segment Database (value calculated based on average value per ton figures from FAF)*

A comparison of inbound, outbound and within state flows, by tonnage and by value is presented below. As shown on the left side of Figure 1-1: Freight Flow Overview (shares labeled), 2014, by tonnage, freight flows inbound, outbound and within the state are roughly evenly distributed, at 32.2 percent, 32.6 percent, and 35.2 percent, respectively. These percentages are based on the total tonnages for inbound, outbound and within state flows shown in Table 1-2: Mode and Type of Flow Overview, 2014, divided by the grand total of 1,227.9 million tons.

As shown on the right side of Figure 1-1: Freight Flow Overview (shares labeled), 2014, the value of inbound and outbound freight was roughly equal at 42.0 percent and 45.3 percent, respectively, whereas, the value of freight moving only within the state was much lower, at 12.7 percent. These percentages are based on the total values of inbound, outbound, and within state freight flows shown in Table 1-2: Mode and Type of Flow, 2014, divided by the grand total of $2,974.0 billion.

These figures exclude freight that passes through the state, such as transcontinental rail shipments hubbed in and around Chicago or interstate truck trips from Wisconsin to Indiana.

Figure 1-1: Freight Flow Overview (shares labeled), 2014



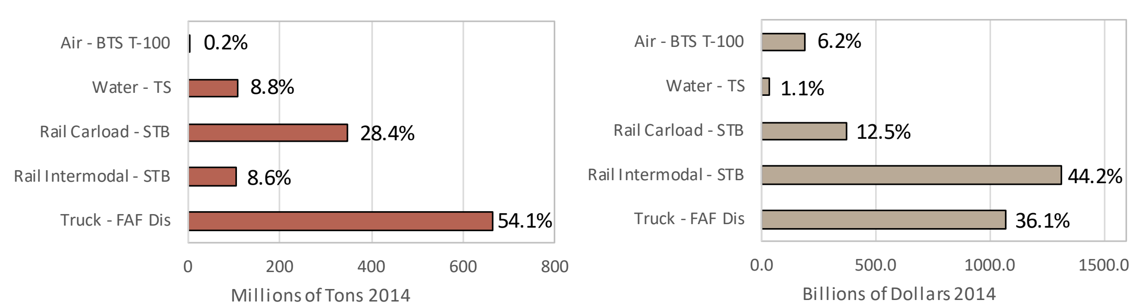
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, Air, and Water

A comparison by mode share is shown below. This comparison summarizes the modal breakdown from the Grand Total column in Table 1-2: Mode and Type of Flow Overview, 2014. Additional information on these and many other figures in this chapter can be found in Appendix A: Data Sets for Commodity Flow Chapter Figures.

As shown on the left side of Figure 1-2: Modal Overview, 2014, over half (54.1 percent) of all tonnage is transported by truck. Rail intermodal shipments represent 8.6 percent of tonnage. Rail shipments by carload represent 28.4 percent of tonnage. Water represents 8.8 percent of tonnage. Air represents 0.2 percent of tonnage.

As shown on the right side of Figure 1-2: Modal Overview, 2014 the rail intermodal mode jumps to a mode share of 44.2 percent in terms of value, which is larger than the mode share for truck (36.1 percent). This reflects the importance of intermodal to the region and the relatively high value commodities that use this mode. The truck mode in Illinois carries a significant tonnage of gravel and other low value commodities which accounts for its lesser value share of 36.1 percent. Rail carload value also drops considerably from a tonnage share of 28.4 percent to a value share of 12.5 percent due to a large percentage of bulk commodities, such as coal and cereal grains. Water's mode share also decreases considerably going from a tonnage share of 8.8 percent to a value share of only 1.1 percent due once again to its concentration in bulk commodities. On the other hand, the air mode increases to 6.2 percent in terms of value.

Figure 1-2: Modal Overview, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, Air, and Water

Several other findings from Table 1-2: Modal Overview, 2014, also stand out:

- The inbound rail carload tonnage is substantially larger than the truck inbound tonnage, which are 195.2 and 129.1 million tons, respectively.
- The inbound and outbound truck tonnage is essentially balanced (129.1 and 133.8 million tons, respectively), and trucking handles the vast majority of traffic that stays within the state (401.4 million tons).
- There is roughly four times more tonnage outbound by water than inbound by water (80.0 and 21.2 million tons, respectively).
- Most of these outbound water flows are lower value commodities, as the gap is smaller by value, with total values of $19.7 billion for outbound and $10.6 billion for inbound, which by percentage of overall value correlates to 1.6 percent and 0.9 percent, respectively.
- Inbound air cargo represents 7.8 percent of the value and outbound air cargo represents 6.5 percent of the value, but air cargo is negligible in terms of tonnage share[1].

Understanding the flow of individual commodities is necessary to characterize the drivers of freight activity. Commodity flows by tonnage, value, mode, and type will be shown in the figures below.

As shown in Figure 1-3: Top 15 Commodities by Tonnage by Type of Flow, 2014 (Excluding Air), the largest commodity flow in 2014 by tonnage is coal, representing 14.9 percent of all tons moved to, from, and within the state, with the majority of these flows heading inbound.

As shown by Figure 1-5: Mode Share of Top 15 Commodities by Tonnage, 2014 (Excluding Air), 76.8 percent of coal is transported by rail carload in unit trains, although the water mode is used more intensely than other states, accounting for 18.0 percent of tons moved of this commodity. Inbound flows of coal are primarily supplying power plants for local energy generation.

As shown in Figure 1-3: Top 15 Commodities by Tonnage by Type of Flow, 2014 (Excluding Air) also shows that cereal grains are the second largest commodity by tonnage, representing 10.7 percent of all flows to, from, and within Illinois. This is unsurprising given the importance of this industry to Illinois' economy. Most of these grain movements are internal, heading to consumption markets and food processing facilities around the state, although outbound flows to other states are also substantial.

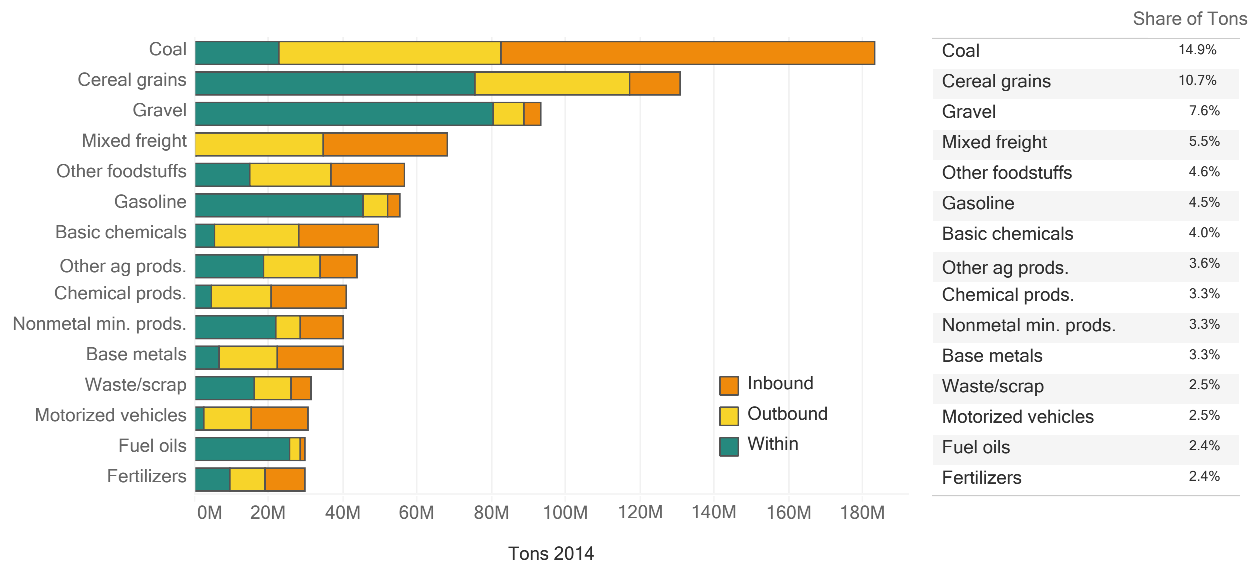
As shown in Figure 1-5: Mode Share of Top 15 Commodities by Tonnage, 2014 (Excluding Air), approximately 61.8 percent of these grain tons were carried by truck, with an additional 22.3 percent being transported by rail carload.

Figure 1-3: Top 15 Commodities by Tonnage by Type of Flow, 2014 (Excluding Air) also shows that the third largest commodity by tonnage is gravel, representing 7.6 percent of tons. Gravel is used primarily in the construction sector. Due to its high weight to value ratio, gravel is typically only shipped short distances, which is why the majority of gravel shipments that start in Illinois have destinations in Illinois.

[1] Air cargo totals are included in Figure 1-2, but are excluded from subsequent tables and figures because they were generated from a database that did not contain commodity level information

As shown in Figure 1-5: Mode Share of Top 15 Commodities by Tonnage, 2014 (Excluding Air), Gravel is transported mainly by truck, with a mode share of 86.1 percent.

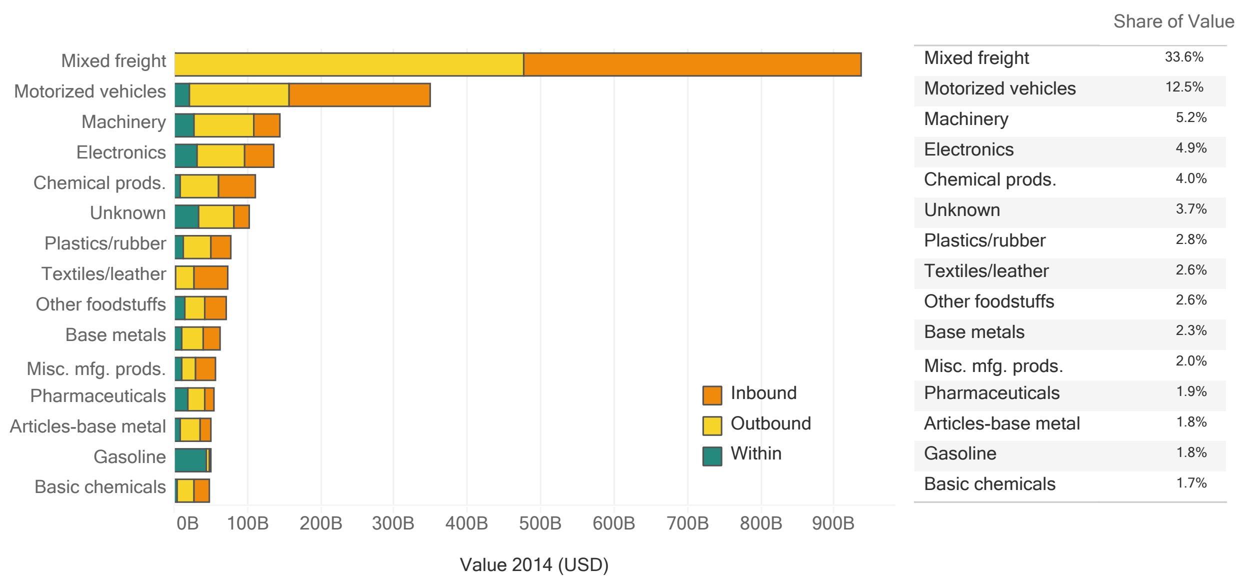
Figure 1-3: Top 15 Commodities by Tonnage by Type of Flow, 2014 (Excluding Air)



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Coal (15), Cereal grains (02), Gravel (12), Mixed freight (43), Other foodstuffs (07), Gasoline (17), Basic chemicals (20), Other ag. prods. (03), Chemical prods. (23), Nonmetal min. prods. (31), Base metals (32), Waste/scrap (41), Motorized vehicles (36), Fuel oils (18), and Fertilizers (22).]

Figure 1-4: Top 15 Commodities by Value by Type of Flow, 2014 (Excluding Air)



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Mixed freight (43), Motorized vehicles (36), Machinery (34), Electronics (35), Chemical prods. (23), Unknown (N/A), Plastics/rubber (24), Textiles/leather (30), Other foodstuffs (07), Base metals (32), Misc. mfg. prods. (40), Pharmaceuticals (21), Articles-base metal (33), Gasoline (17), and Basic chemicals (20).]

Analyzing commodity flows by value provides an overview of the supply-chains that are most important to the state's economy. As shown in Figure 1-4: Top 15 Commodities by Value by Type of Flow, 2014 (Excluding Air), shipments of mixed freight are by far the largest commodity flow in the state (33.6 percent); however, this is a special category used for rail intermodal traffic and it can be composed of a wide range of products. Given the importance of Chicago in nationwide intermodal logistics and the movement of international trade, it is expected that this commodity group appears prominently in the data. An issue that might be overstating the importance of these shipments is that some rail intermodal containers that pass through Chicago on transcontinental shipments are rebilled (issued a second waybill) in Chicago as they switch railroads. It is possible these shipments are counted twice as shipments that terminate in the state and then originate again. Rebilling generally occurs at any east/west rail interchange and thus can affect data at St. Louis as well, although Chicago is the chief location. Adjusting for it is not simple—there is no way to perfectly connect rebilled shipments. However, the effect of this data issue on total results is likely to be of secondary importance: it tends to exaggerate volumes more than it distorts broad traffic patterns.

Figure 1-4: Top 15 Commodities by Value by Type of Flow, 2014 (Excluding Air), is also useful to highlight the key outbound commodities for the state. For commodities such as machinery, electronics, chemical products, and plastic/rubber, the state ships more to other states than it receives for local consumption. Outbound flows of these high value commodities are important for the local economy because they are an indication of manufacturing activity and high value added production.

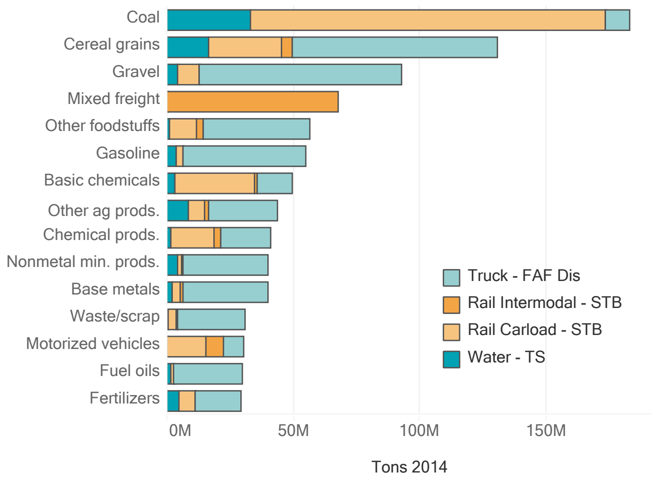
As shown in Figure 1-6: Mode Share of Top 15 Commodities by Value, 2014 (Excluding Air), with the exception of chemical products, truck is the most important mode for these commodities. The truck mode share for chemical products was only slightly less than that for rail carload. The truck mode share for these commodities is as follows:

- Machinery (69.3 percent).
- Electronics (63.8 percent).
- Chemical Products (37.4 percent).
- Plastic/Rubber (67.4 percent).

As shown by Figure 1-4: Top 15 Commodities by Value by Type of Flow, 2014 (Excluding Air), the second largest commodity group in Illinois by value is motorized vehicles, representing 12.5 percent of flows in the whole state. This reflects the importance of this sector to the state's economy.

As shown by Figure 1-5: Mode Share of Top 15 Commodities by Tonnage, 2014 (Excluding Air), around half of these flows are moving by rail carload (50.9 percent) and the rest are split between truck (27.3 percent) and rail intermodal (21.8 percent).

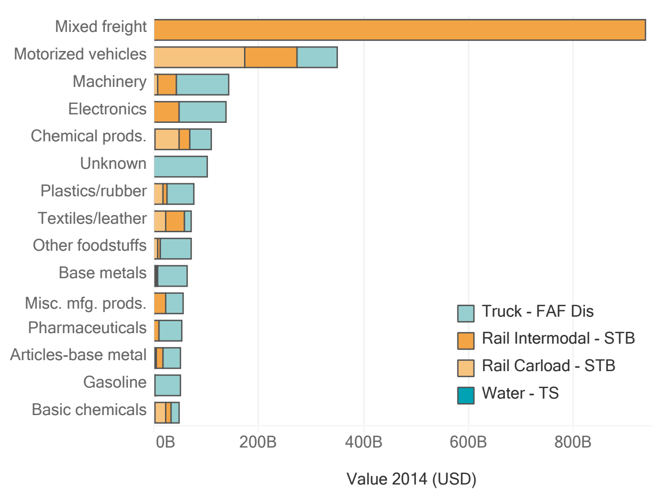
Figure 1-5: Mode Share of Top 15 Commodities by Tonnage, 2014 (Excluding Air)



	Water - TS	Rail Carload - STB	Rail Intermodal - STB	Truck - FAF Dis	Grand Total
Coal	18.0%	76.8%	0.0%	5.1%	100.0%
Cereal grains	12.6%	22.3%	3.3%	61.8%	100.0%
Gravel	4.4%	9.4%	0.0%	86.1%	100.0%
Mixed freight	0.0%	0.3%	99.7%		100.0%
Other foodstuf..	1.5%	19.0%	5.4%	74.1%	100.0%
Gasoline	6.8%	4.5%	0.1%	88.6%	100.0%
Basic chemic..	6.4%	63.7%	2.2%	27.7%	100.0%
Other ag prod..	19.4%	14.3%	3.8%	62.5%	100.0%
Chemical pro..	4.5%	41.6%	6.6%	47.4%	100.0%
Nonmetal min..	10.6%	4.0%	1.0%	84.3%	100.0%
Base metals	5.2%	8.8%	1.7%	84.3%	100.0%
Waste/scrap	2.1%	10.2%	2.1%	85.6%	100.0%
Motorized veh..	0.0%	50.9%	21.8%	27.3%	100.0%
Fuel oils	5.6%	3.7%	0.1%	90.7%	100.0%
Fertilizers	16.7%	21.1%	0.2%	62.0%	100.0%
Grand Total	8.8%	28.5%	8.6%	54.2%	100.0%

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
[The corresponding SCTG Commodity Codes for the above are: Coal (15), Cereal grains (02), Gravel (12), Mixed freight (43), Other foodstuffs (07), Gasoline (17), Basic chemicals (20), Other ag. prods. (03), Chemical prods. (23), Nonmetal min. prods. (31), Base metals (32), Waste/scrap (41), Motorized vehicles (36), Fuel oils (18), and Fertilizers (22).]

Figure 1-6: Mode Share of Top 15 Commodities by Value, 2014 (Excluding Air)



	Water - TS	Rail Carload - STB	Rail Inter modal - S TB	Truck - FAF Dis	Grand Total
Mixed freight	0.0%	0.0%	100.0%		100.0%
Motorized vehicles	0.0%	49.4%	29.2%	21.5%	100.0%
Machinery	0.1%	4.6%	26.1%	69.3%	100.0%
Electronics	0.0%	0.8%	35.4%	63.8%	100.0%
Chemical prods.	3.2%	40.9%	18.5%	37.4%	100.0%
Unknown				100.0%	100.0%
Plastics/rubber	0.0%	22.5%	10.1%	67.4%	100.0%
Textiles/leather	0.0%	31.4%	48.4%	20.1%	100.0%
Other foodstuffs	1.1%	10.7%	5.2%	83.0%	100.0%
Base metals	4.6%	4.0%	2.2%	89.2%	100.0%
Misc. mfg. prods.	0.1%	0.0%	38.6%	61.3%	100.0%
Pharmaceuticals		0.8%	17.3%	81.9%	100.0%
Articles-base metal	2.7%	8.1%	26.0%	63.2%	100.0%
Gasoline	1.9%	3.6%	0.1%	94.4%	100.0%
Basic chemicals	4.2%	44.6%	19.8%	31.4%	100.0%
Grand Total	1.1%	13.3%	47.1%	38.5%	100.0%

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
[The corresponding SCTG Commodity Codes for the above are: Mixed Freight (43), Motorized vehicles (36), Machinery (34), Electronics (35), Chemical prods. (23), Unknown (N/A), Plastics/rubber (24), Textiles/leather (30), Other foodstuffs (07), Base metals (32), Misc. mfg. prods. (40), Pharmaceuticals (21), Articles-base metal (33), Gasoline (17), and Basic chemicals (20).]

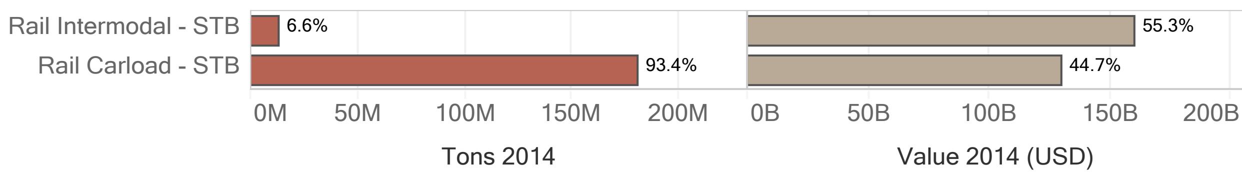
1.2.1 Pass-through Traffic

The rail freight dataset also contains information about shipments that are routed through the state. Actual routes are not observed in this dataset, however routes are estimated by the STB using a network model. As shown in Figure 1-7: Rail Pass-Through Overview, 2014, this analysis estimates that close to 200 million tons of freight were moved by railroads through the state, representing close to $300 billion in 2014.

If pass-through rail is added to rail shipments with either an origin or destination in Illinois, it would represent roughly thirty percent of tonnage and fifteen percent of value. For tonnage this estimate is based on adding the 200 million tons of pass-through tonnage to the grand total tonnage of rail intermodal (105.1) and the grand total tonnage for rail carload (348.9) and dividing by the pass-through tonnage by the total (200.0/654.0). For value, this estimate is based on adding the $300 billion in pass-through value to the grand total of rail intermodal value ($1,313.6) and the grand total of rail carload ($371.2) and dividing the pass-through value by the total ($300/$1,948.8).

As can be seen in Figure 1-7: Rail Pass-Through Overview, 2014, although rail intermodal accounts for 6.6 percent of pass-through tonnage, it accounts for 55.3 percent of pass-through value, with rail carload accounting for 93.4 percent of pass-through tonnage and 44.7 percent of pass-through value.

Figure 1-7: Rail Pass-Through Overview, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

To capture pass-through truck traffic, an estimation based on Vehicle Miles Traveled (VMT) was employed instead of simply tonnage, because VMT adjusts for the fact that one ton traveling two hundred miles places more burden on Illinois highways than one ton traveling one mile. A model was run for 2014, the base year, and for 2045, the forecast year, using FAF traffic projections. Figure 1-8: Truck Assignment in Illinois, is a bandwidth plot of the 2045 truck assignment that shows the projected level of pass-through truck traffic.

Figure 1-8: Truck Assignment in Illinois

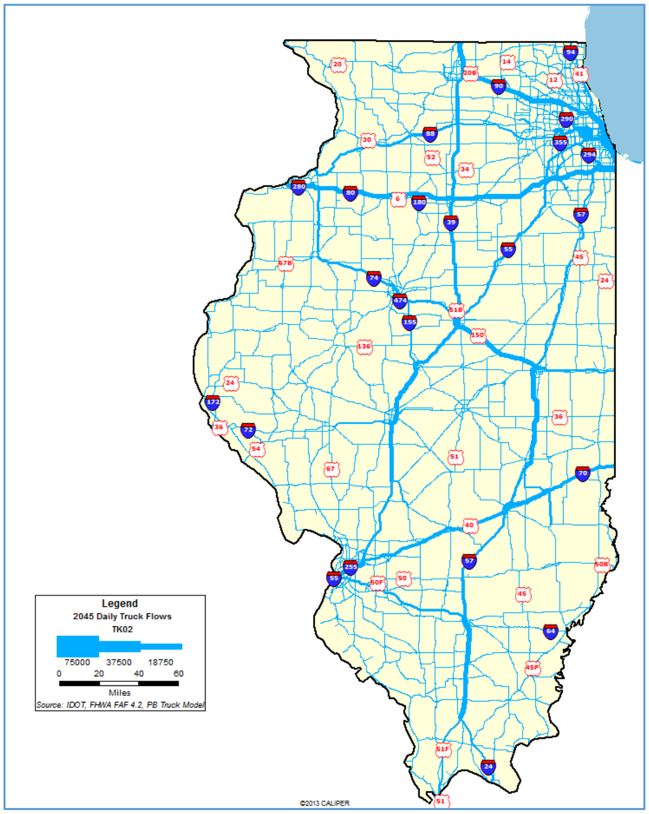


Table 1-3: All Truck VMT vs. Pass-Through on Illinois Roads, shows the results from the truck model. In 2014, about 27.8 million truck vehicle miles occurred on Illinois roadways. Of these, about 10.4 million were trucks passing through – a percentage of about 38 percent. In 2045, about 50.5 million truck vehicle miles are anticipated to occur on Illinois roadways. Of these, about 22 million are anticipated to be trucks passing through – a percentage of about 43 percent and higher than 2014, indicating that through traffic is projected to increase.

Table 1-3: All Truck VMT vs. Pass-Through on Illinois Roads

Grand Total Trucks, Illinois-Based and Through	
Year	**Truck VMT**
2014	27,824,439
2045	50,498,350
All Trucks Nationally that Travel Through Illinois	
Year	**Truck VMT**
2014	10,484,718
2045	21,947,399
Percentage Through	
2014	38%
2045	43%

Source: FAF 4.2, WSP|PB 2014 Truck Model

1.3 Geography

The disaggregation of freight flows at the county level provides greater geographic detail within Illinois. Figure 1-9: Millions of Tons Terminated by County and Mode Shares, 2014 (Excluding Air), shows the termination of freight shipments by county by mode.

The county that received the most freight was Cook County, which encompasses the majority of metropolitan Chicago and contains key logistics infrastructure. Cook County received over a third (33.4 percent) of all tonnage that terminated in the state. Slightly over half (52.1 percent) of these freight flows moved by truck with rail carload moving 30.1 percent and rail intermodal 14.1 percent.

DuPage County and Will County, both adjacent to Cook County, were second and third, respectively, in tons terminated, with St. Clair County, in the St. Louis area, being fourth. Of the top four counties, DuPage showed the most intense use of the truck mode, at 83.9 percent while rail was more important in Will and St. Clair counties.

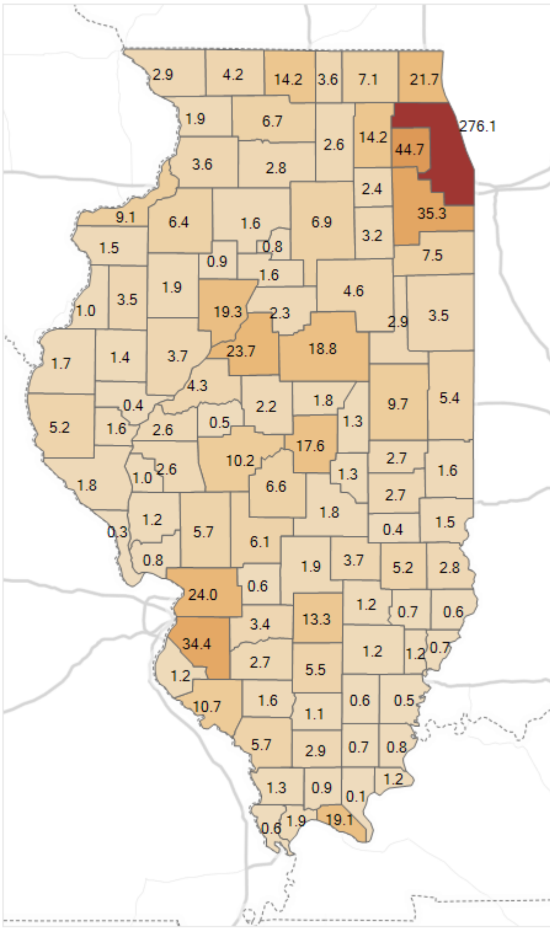
Truck serves all counties, but some of them have greater reliance on other freight modes. Rail intermodal is important in delivering freight to Cook and Will Counties, with a mode share of 14.1 percent and 23.1 percent, respectively, whereas counties with at least one percent of the total tonnage terminated that relied more on rail carload than on any other mode for delivering freight are as follows:

- St. Clair – 51.1 percent.
- Massac – 88.7 percent.
- Marion – 76.9 percent.
- Randolph – 70.1 percent.

Figure 1-9: Millions of Tons Terminated by County and Mode Shares, 2014 (Excluding Air), also shows which counties have a greater reliance on the water mode. As shown, for the counties with one percent of the total tonnage terminated that had a water mode share greater than seven percent are as follows:

- DuPage – 7.7 percent.
- St. Clair – 8.4 percent.
- Madison – 8.0 percent.
- Lake – 9.7 percent.

Figure 1-9: Millions of Tons Terminated by County and Mode Shares, 2014 (Excluding Air)



	Tons 2014 (M)	%	Mode Share			
			Truck - FAF Dis	Rail Inter modal - STB	Rail Carload - STB	Water - TS
Cook	276.1	33.4%	52.1%	14.1%	30.1%	3.7%
DuPage	44.7	5.4%	83.9%		8.3%	7.7%
Will	35.3	4.3%	47.3%	23.1%	25.7%	3.9%
St. Clair	34.4	4.2%	37.0%	3.5%	51.1%	8.4%
Madison	24.0	2.9%	62.3%	0.8%	28.9%	8.0%
Tazewell	23.7	2.9%	49.0%		48.2%	2.8%
Lake	21.7	2.6%	75.9%		14.5%	9.7%
Peoria	19.3	2.3%	59.4%		37.0%	3.6%
Massac	19.1	2.3%	8.4%		88.7%	3.0%
McLean	18.8	2.3%	99.6%		0.4%	
Macon	17.6	2.1%	58.9%	0.6%	40.4%	
Winnebago	14.2	1.7%	98.8%		1.2%	
Kane	14.2	1.7%	97.0%		3.0%	
Marion	13.3	1.6%	23.0%	0.1%	76.9%	
Randolph	10.7	1.3%	28.6%		70.1%	1.3%
Sangamon	10.2	1.2%	98.8%		1.2%	
Champaign	9.7	1.2%	92.2%		7.8%	
Rock Island	9.1	1.1%	91.0%		6.5%	2.6%
Kankakee	7.5	0.9%	58.7%		41.3%	
McHenry	7.1	0.9%	97.5%		2.5%	
La Salle	6.9	0.8%	75.5%		19.4%	5.1%
Ogle	6.7	0.8%	88.6%	4.2%	7.2%	
Christian	6.6	0.8%	36.4%		63.6%	
Henry	6.4	0.8%	100.0%		0.0%	
Montgomery	6.1	0.7%	45.8%		54.2%	
Macoupin	5.7	0.7%	99.7%		0.3%	
Jackson	5.7	0.7%	26.8%		71.4%	1.7%
Jefferson	5.5	0.7%	49.7%		50.3%	
Vermilion	5.4	0.7%	92.7%		7.3%	
Adams	5.2	0.6%	90.4%		4.6%	5.0%
Jasper	5.2	0.6%	23.5%		76.5%	
Coles	2.7	0.3%	93.6%		6.4%	
Grand Total	826.6	100.0%	64.2%	5.9%	26.5%	3.4%

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
** Top counties listed. Grand Total includes all 102 counties in Illinois*

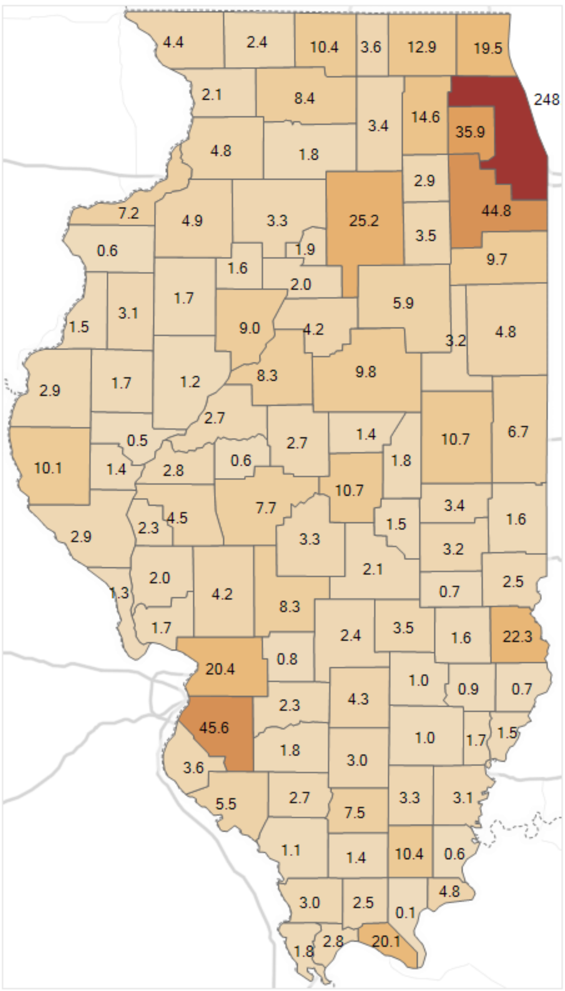
The same four counties that terminate the most tons also represent the top four counties originating tons (although in slightly different order). Cook County generated 29.9 percent of all tonnage, with over half (54.3 percent) moving by truck. St. Clair County generated 5.5 percent of all tonnage, with truck accounting for 19.3 percent and notably has a relatively high water mode share at 45.7 percent. Will County generated 5.4 percent of all tonnage, with truck being used for 69.7 percent of tons and nearly all of the remainder (25.3 percent) on rail intermodal. DuPage County generated 4.3 percent of all tonnage and depends almost exclusively on truck (93.6 percent).

With the exception of DuPage County, which has virtually no rail intermodal traffic, the same top four counties that have a relatively high mode share for receiving rail intermodal shipments, as shown by Figure 1-10: Millions of Tons Terminated by County and Mode Shares (Excluding Air), also have a high mode share for originating shipments by this mode. The rail intermodal mode share percentage for terminated compared to originated for these counties is as follows: Cook (14.1/17.1), St. Clair (3.5/3.0), and Will (23.1/25.3).

As shown, the counties with at least one percent of the total tonnage originated that had a water mode share greater than 25 percent are as follows:

- St. Clair - 45.7 percent.
- Madison - 33.9 percent.
- Massac - 97.8 percent.
- Adams - 27.6 percent.
- Tazewell - 28.1 percent.

Figure 1-10: Millions of Tons Originated by County and Mode Shares, 2014 (Excluding Air)



	Tons 2014 (M)	%	Mode Share			
			Truck - FAF Dis	Rail Intermodal - STB	Rail Carload - STB	Water - TS
Cook	248.4	29.9%	54.3%	17.1%	24.6%	4.0%
St. Clair	45.6	5.5%	19.3%	3.0%	32.1%	45.7%
Will	44.8	5.4%	69.7%	25.3%	1.8%	3.2%
DuPage	35.9	4.3%	93.6%		0.5%	5.9%
La Salle	25.2	3.0%	53.3%		41.6%	5.1%
Crawford	22.3	2.7%	94.6%		5.4%	
Madison	20.4	2.5%	50.7%	1.6%	13.9%	33.9%
Lake	19.5	2.3%	95.7%		0.3%	4.0%
Kane	14.6	1.8%	99.6%		0.4%	
McHenry	12.9	1.5%	98.5%		1.5%	
Champaign	10.7	1.3%	78.1%		21.9%	
Macon	10.7	1.3%	41.4%	1.2%	57.4%	
Saline	10.4	1.2%	37.4%		62.6%	
Winnebago	10.4	1.2%	98.2%		1.8%	
Adams	10.1	1.2%	67.9%		4.5%	27.6%
McLean	9.8	1.2%	88.8%		11.2%	
Kankakee	9.7	1.2%	71.4%		28.6%	
Peoria	9.0	1.1%	69.8%		11.6%	18.6%
Ogle	8.4	1.0%	77.8%	7.3%	15.0%	
Tazewell	8.3	1.0%	69.4%		2.5%	28.1%
Montgomery	8.3	1.0%	43.0%		57.0%	
Sangamon	7.7	0.9%	93.9%		6.1%	
Franklin	7.5	0.9%	18.8%		81.2%	
Rock Island	7.2	0.9%	78.5%		11.8%	9.7%
Vermilion	6.7	0.8%	88.0%		12.0%	
Livingston	5.9	0.7%	91.4%		8.6%	
Randolph	5.5	0.7%	43.7%		53.3%	3.1%
Henry	4.9	0.6%	94.4%		5.6%	
Iroquois	4.8	0.6%	76.8%		23.2%	
Hardin	4.8	0.6%	77.2%			22.8%
Whiteside	4.8	0.6%	77.9%		15.6%	6.5%
Morgan	4.5	0.5%	42.8%		40.4%	16.8%
Marion	4.3	0.5%	58.8%	0.2%	41.0%	
Macoupin	4.2	0.5%	66.2%		33.8%	
Coles	3.2	0.4%	81.5%		18.5%	
Grand Total	831.8	100.0%	64.3%	6.8%	18.5%	10.4%

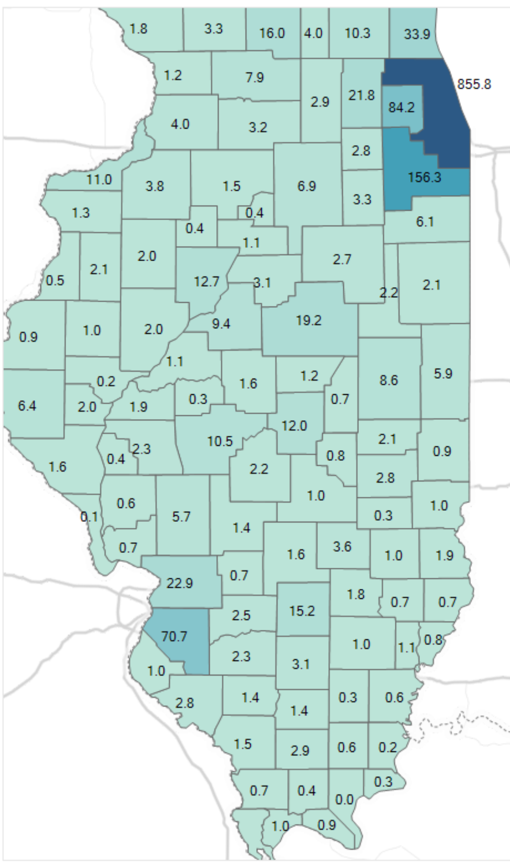
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
** Top counties listed. Grand Total includes all 102 counties in Illinois*

In terms of value, the counties in and around the Chicago metropolitan area terminate and originate a large share of commodity flows. As shown in Figure 1-11: Billions of Dollars Terminated by County and Mode Shares, 2014 (Excluding Air) Cook, Will and DuPage Counties together received 71.7 percent of all value received in the state, with percentages of 56.0, 10.2, and 5.5, respectively.

As shown in Figure 1-12: Billions of Dollars Originated by County and Mode Shares, 2014 (Excluding Air), these three counties originated more than two-thirds (68.7 percent) of all value originated, with percentages of 55.6, 7.8, and 5.3, respectively.

As shown in Figure 1-11: Billions of Dollars Terminated by County and Mode Shares, 2014 (Excluding Air), and Figure 1-12: Billions of Dollars Originated by County and Mode Shares, 2014 (Excluding Air), with the exception of DuPage County, rail intermodal is a large contributor to the value mode share for these counties in both terminated value and originated value. For Cook County, the percentages of rail intermodal terminated value and originated value are 59.1 and 60.4, respectively, and for Will County, these percentages are 76.6 and 68.2, respectively.

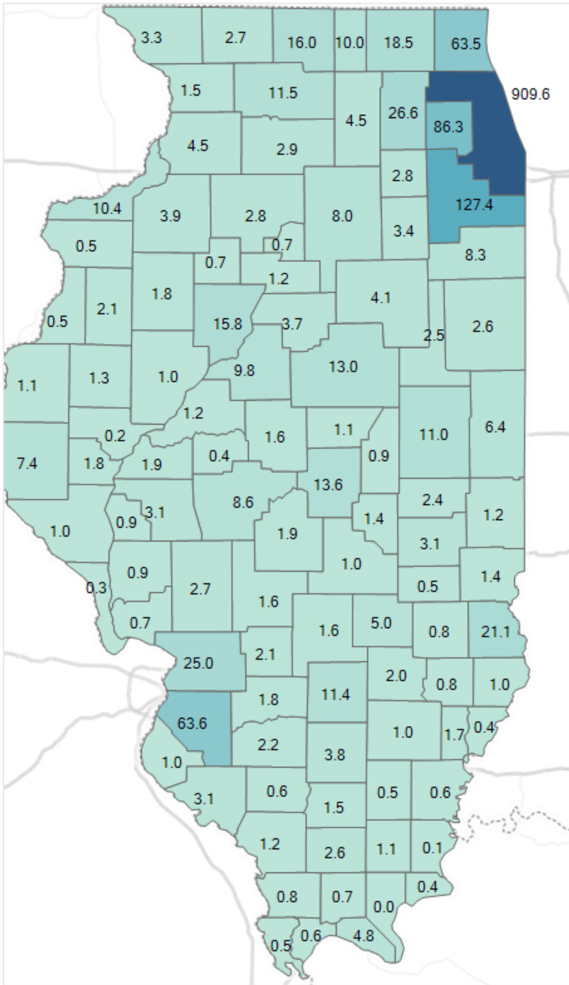
Figure 1-11: Billions of Dollars Terminated by County and Mode Shares, 2014 (Excluding Air)



	B USD	%	Mode Share: Truck - FAF Dis	Rail Inter modal - STB	Rail Carload - STB	Water - TS
Cook	855.8	56.0%	26.0%	59.1%	14.4%	0.5%
Will	156.3	10.2%	17.2%	76.6%	5.8%	0.4%
DuPage	84.2	5.5%	92.9%		5.2%	1.8%
St. Clair	70.7	4.6%	17.4%	23.1%	58.1%	1.4%
Lake	33.9	2.2%	95.9%		1.2%	2.9%
Madison	22.9	1.5%	78.2%	12.6%	6.9%	2.3%
Kane	21.8	1.4%	97.8%		2.2%	
McLean	19.2	1.3%	99.4%		0.6%	
Winnebago	16.0	1.0%	99.0%		1.0%	
Marion	15.2	1.0%	14.3%	1.1%	84.6%	
Peoria	12.7	0.8%	88.2%		7.8%	4.0%
Macon	12.0	0.8%	63.5%	14.3%	22.1%	
Rock Island	11.0	0.7%	94.4%		4.3%	1.2%
Sangamon	10.5	0.7%	98.7%		1.3%	
McHenry	10.3	0.7%	98.2%		1.8%	
Tazewell	9.4	0.6%	92.1%		3.3%	4.6%
Champaign	8.6	0.6%	94.5%		5.5%	
Ogle	7.9	0.5%	37.5%	56.8%	5.7%	
La Salle	6.9	0.5%	76.1%		21.5%	2.4%
Adams	6.4	0.4%	95.5%		2.6%	2.0%
Kankakee	6.1	0.4%	75.9%		24.1%	
Vermilion	5.9	0.4%	92.6%		7.4%	
Macoupin	5.7	0.4%	99.8%		0.2%	
Henry	3.8	0.3%	100.0%		0.0%	
Jefferson	3.1	0.2%	93.2%		6.8%	
Randolph	2.8	0.2%	88.3%		10.3%	1.3%
Coles	2.8	0.2%	94.2%		5.8%	
Christian	2.2	0.1%	93.4%		6.6%	
Jackson	1.5	0.1%	93.7%		4.8%	1.6%
Montgomery	1.4	0.1%	92.2%		7.8%	
Jasper	1.0	0.1%	69.9%		30.1%	
Massac	0.9	0.1%	43.7%		39.0%	17.3%
Grand Total	1,529.4	100.0%	43.0%	42.6%	13.7%	0.8%

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
** Top counties listed. Grand Total includes all 102 counties in Illinois*

Figure 1-12: Billions of Dollars Originated by County and Mode Shares, 2014 (Excluding Air)



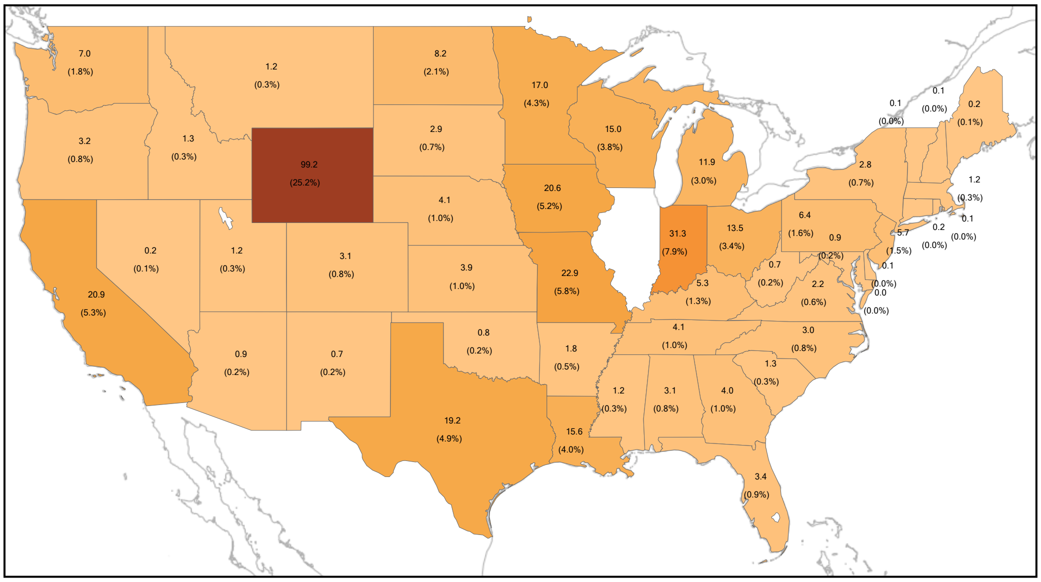
	B USD	%	Mode Share			
			Truck - FAF Dis	Rail Intermodal - STB	Rail Carload - STB	Water - TS
Cook	909.6	55.6%	28.8%	60.4%	10.5%	0.3%
Will	127.4	7.8%	30.6%	68.2%	1.0%	0.3%
DuPage	86.3	5.3%	98.6%		0.7%	0.7%
St. Clair	63.6	3.9%	13.1%	25.2%	53.8%	7.9%
Lake	63.5	3.9%	99.5%		0.2%	0.3%
Kane	26.6	1.6%	98.7%		1.3%	
Madison	25.0	1.5%	58.9%	17.8%	16.9%	6.4%
Crawford	21.1	1.3%	97.4%		2.6%	
McHenry	18.5	1.1%	99.7%		0.3%	
Winnebago	16.0	1.0%	99.6%		0.4%	
Peoria	15.8	1.0%	87.7%		9.4%	2.9%
Macon	13.6	0.8%	56.7%	10.8%	32.5%	
McLean	13.0	0.8%	91.5%		8.5%	
Ogle	11.5	0.7%	29.1%	69.8%	1.0%	
Marion	11.4	0.7%	26.0%	1.7%	72.3%	
Champaign	11.0	0.7%	93.9%		6.1%	
Rock Island	10.4	0.6%	92.1%		6.7%	1.1%
Boone	10.0	0.6%	55.3%		44.7%	
Tazewell	9.8	0.6%	90.3%		3.0%	6.7%
Sangamon	8.6	0.5%	96.2%	2.1%	1.6%	
Kankakee	8.3	0.5%	91.2%		8.8%	
La Salle	8.0	0.5%	81.5%		14.0%	4.5%
Adams	7.4	0.5%	81.3%		10.0%	8.6%
Vermilion	6.4	0.4%	88.2%		11.8%	
Effingham	5.0	0.3%	81.4%		18.6%	
Whiteside	4.5	0.3%	82.9%		16.0%	1.1%
DeKalb	4.5	0.3%	100.0%			
Livingston	4.1	0.3%	96.9%		3.1%	
Henry	3.9	0.2%	89.3%		10.7%	
Jefferson	3.8	0.2%	99.1%		0.9%	
Woodford	3.7	0.2%	92.7%		1.0%	6.3%
Grundy	3.4	0.2%	54.5%		42.2%	3.3%
Coles	3.1	0.2%	94.0%		6.0%	
Randolph	3.1	0.2%	90.0%		8.8%	1.2%
Grand Total	1,636.3	100.0%	47.4%	40.7%	10.6%	1.3%

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
** Top counties listed. Grand Total includes all 102 counties in Illinois*

1.3.1 Domestic Trade

The figures below show the key state trading partners of Illinois. As shown in Figure 1-13: Millions of Tons Sent to Illinois by State, 2014, in terms of tonnage, Wyoming sent the most tonnage to Illinois (99.2 million tons), comprised almost entirely of coal shipments for energy generation. This represents 25.2 percent of all tonnages heading to Illinois. Other states that send large quantities of freight are neighboring states such as Indiana (7.9 percent), Iowa (5.2 percent) and Missouri (5.8 percent). Next to Wyoming, California and Texas are the second and third largest senders of freight for non-neighboring states, with 5.3 percent and 4.9 percent, respectively.

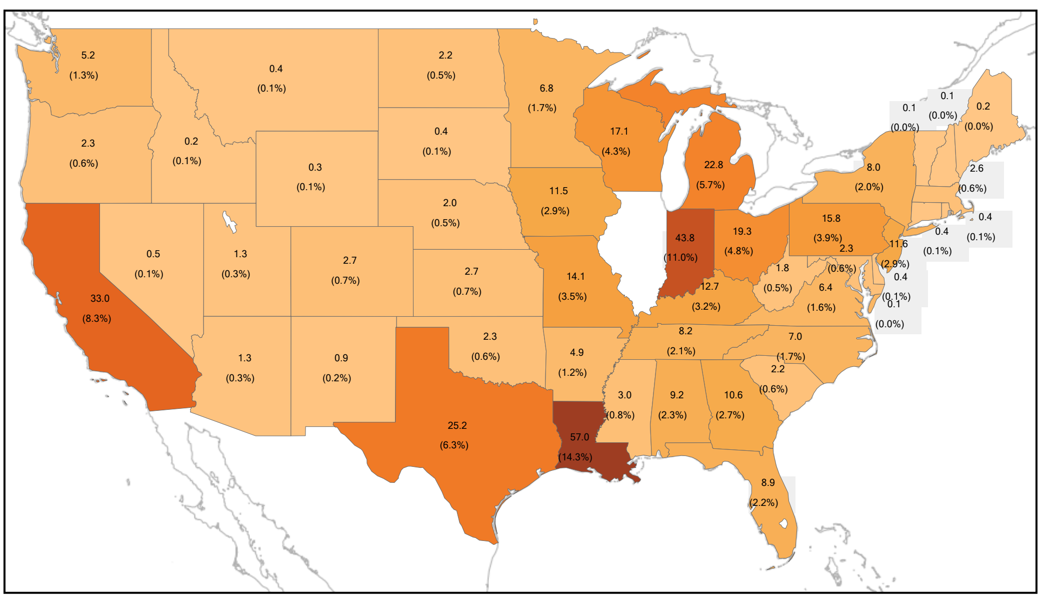
Figure 1-13: Millions of Tons Sent to Illinois by State, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

In Figure 1-14: Millions of Tons Received from Illinois by State, 2014, it can be seen that Illinois sends the most freight to Louisiana (57.0 million tons). Most of these shipments move by water down the Mississippi River and include agricultural products for export. This represents 14.3 percent of all tonnages leaving the state. Aside from Indiana, which is a large market for goods produced in Illinois (11.0 percent), California and Texas also receive substantial quantities of commodities from Illinois, accounting for 8.3 percent and 6.3 percent, respectively of all tons leaving the state.

Figure 1-14: Millions of Tons Received from Illinois by State, 2014

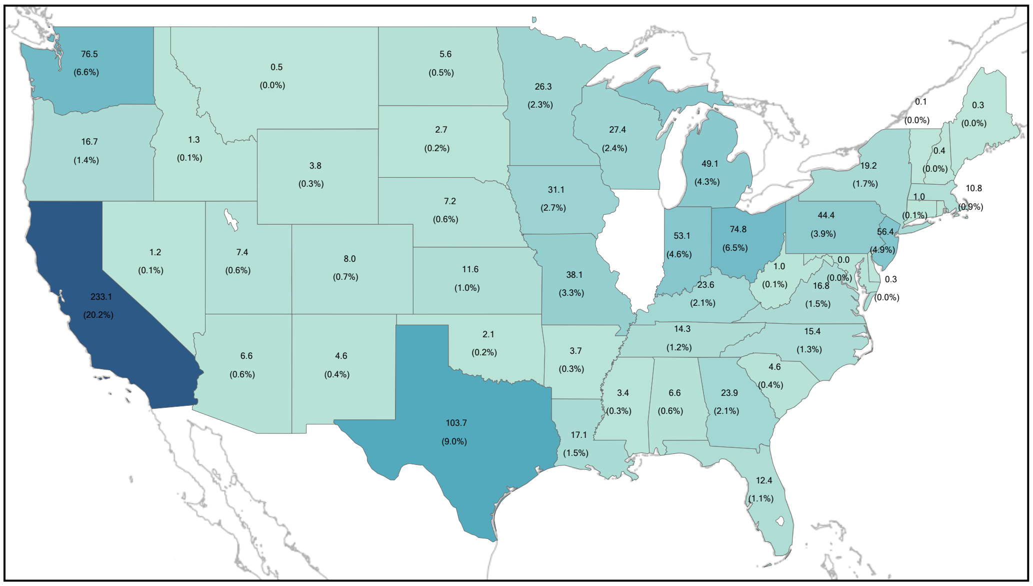


Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

In terms of value, Illinois' largest trading partner is California, in both billions of dollars sent, as shown in Figure 1-15: Billions of Dollars Sent to Illinois by State, 2014 and billions of dollars received, as shown in

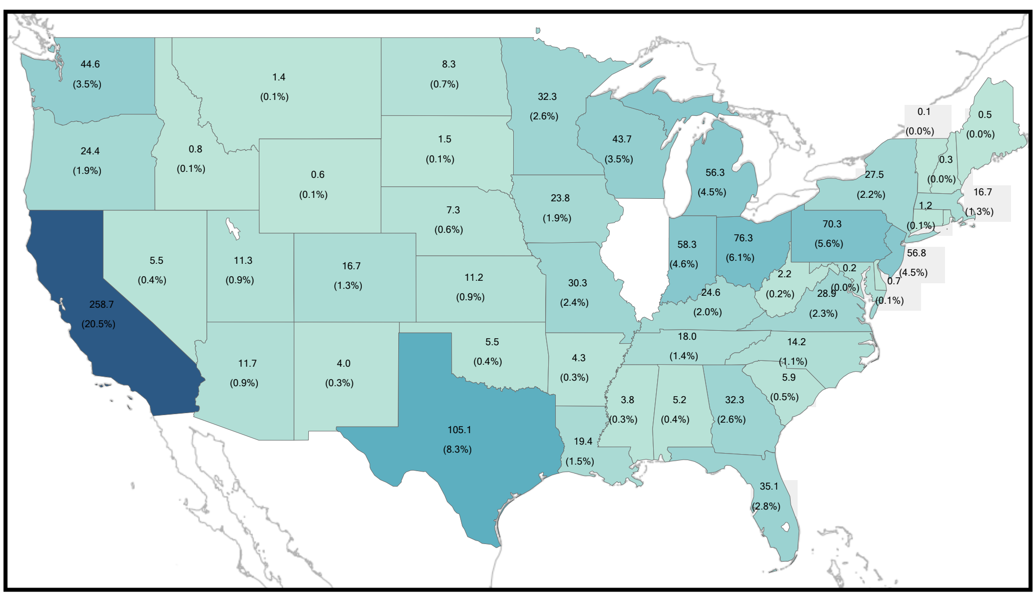
Figure 1-16: Billions of Dollars Received from Illinois by State, 2014. California was responsible for 20.2 percent of the value of all goods received in Illinois and 20.5 percent of the value of all goods shipped out from Illinois. The second most important trading partner is Texas, with 9.0 percent of sent value and 8.3 percent of received value. Washington state is also important in terms of value, sending 6.6 percent of value to Illinois and receiving 3.5 percent of value from Illinois. The trading numbers for California and Washington are not surprising given the intermodal shipments moved through the ports in these west coast states.

Figure 1-15: Billions of Dollars Sent to Illinois by State, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

Figure 1-16: Billions of Dollars Received from Illinois by State, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

1.3.2 International Trade

The analysis in this section relies on figures entirely from the FAF dataset because FAF is the one source that provides international trade information systematically and comparably across modes, including commodity and foreign country detail. The composite data set used for analysis in most of this chapter draws from non-FAF sources for rail, air, and water modes. These sources incorporate foreign trade activity but lack some component detail. By using FAF, this section offers a fuller picture of international freight traffic in Illinois, but with the drawback that figures for non-truck modes are not directly comparable to figures presented elsewhere in this chapter. This is because FAF is simply a different data source and because FAF uses somewhat different conventions to define modal activity. An important example is the "multiple modes and mail" category in FAF, which mixes rail intermodal traffic with other modal transfers and with small package shipping (such as UPS and USPS parcel traffic). Rail intermodal is typically the largest component, particularly for imports, but multiple modes in FAF also can mask the role of waterborne carriage in export activity, since much of it is a truck-water or rail-water combination. Truck data in this section *does* compare directly to truck data elsewhere in this chapter, since FAF is the source for all of it.

According to FAF, the state's international trade volumes are heavily imbalanced with import tons more than double those of exports: 35.1 million tons of exports versus 71.8 million tons of imports in 2014. However, this imbalance is largely due to crude oil imports from Canada which totaled 42.0 million tons in 2014. If these crude oil imports are excluded, the state's imports totaled 29.8 million tons (71.8 – 42.0).

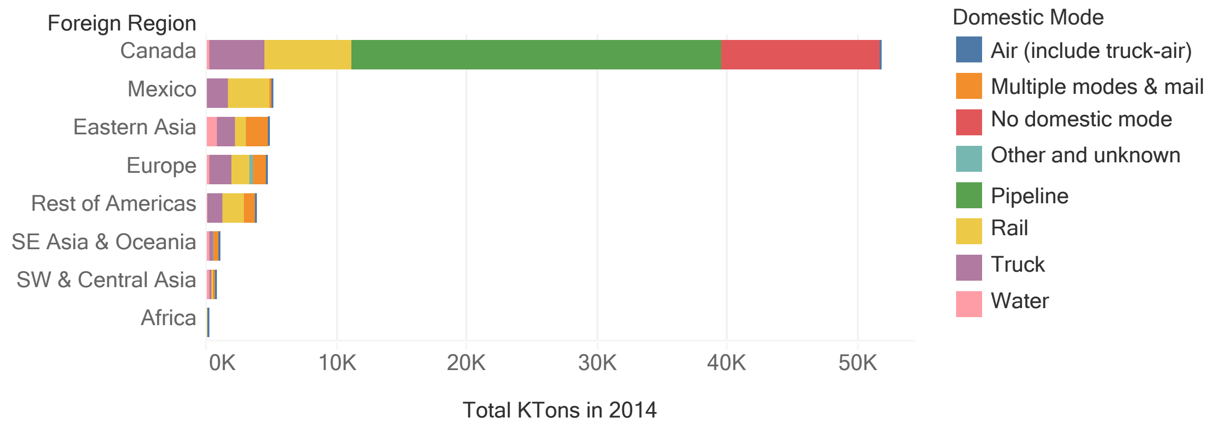
By removing crude oil imports from the comparison, the state's exports of 35.1 million tons in 2014 exceeded the state's imports of 29.8 million tons. Allowing for data limitations described above, the 64.9 (29.8 + 35.1) million tons of international trade works out to 5.3 percent of the 1.23 billion grand total tons of Illinois freight described in the beginning of this chapter (.0649/1.23).

As shown in Figure 1-17: State Imports by Regions and Mode, 2014, Canada is the leading foreign region for imports; followed by Mexico, Eastern Asia, and Europe. As shown in Figure 1-18: State Exports by Region and Mode, 2014 leading regions for exports in 2014 were Canada, Eastern Asia, Europe, and Mexico.

Rail is the top domestic mode for both imports and exports tons at over 11 million tons in both directions (excluding crude oil imports from Canada, as discussed above). This also does not include the 4.2 million tons in imports or 9.1 million tons of exports for multiple modes and mail which is generally containerized freight moved by rail.

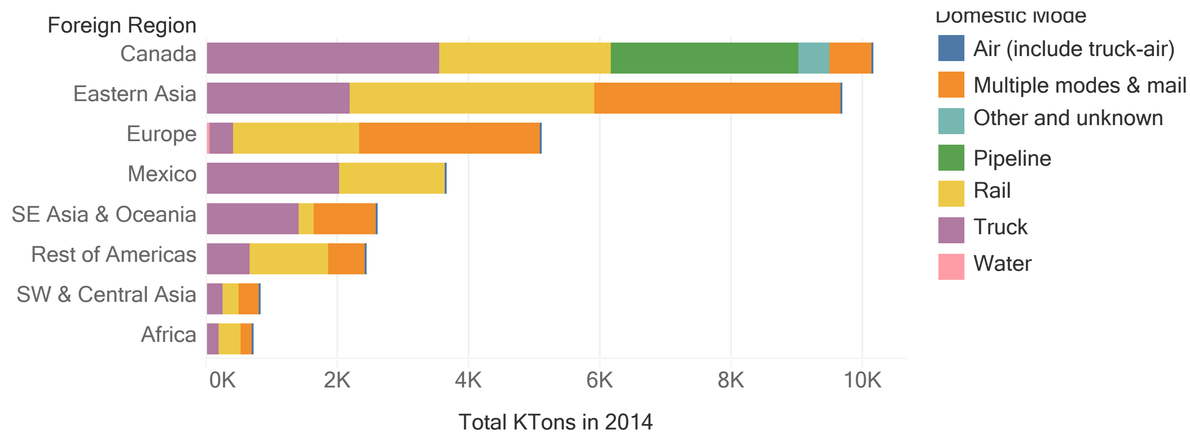
Tons moved by truck were just over 10 million for both imports and exports.

Figure 1-17: State Imports by Regions and Mode, 2014



Source: FHWA Freight Analysis Framework

Figure 1-18: State Exports by Region and Mode, 2014



Source: FHWA Freight Analysis Framework

The top ten import commodities (excluding crude oil) represent 21.7 million tons (73 percent) of the 29.8 million in total import tons excluding crude oil (Figure 1-19: Top Ten Import Commodities, 2014). The top import commodities include base metals, alcoholic beverages, fertilizers, non-metallic minerals and basic chemicals.

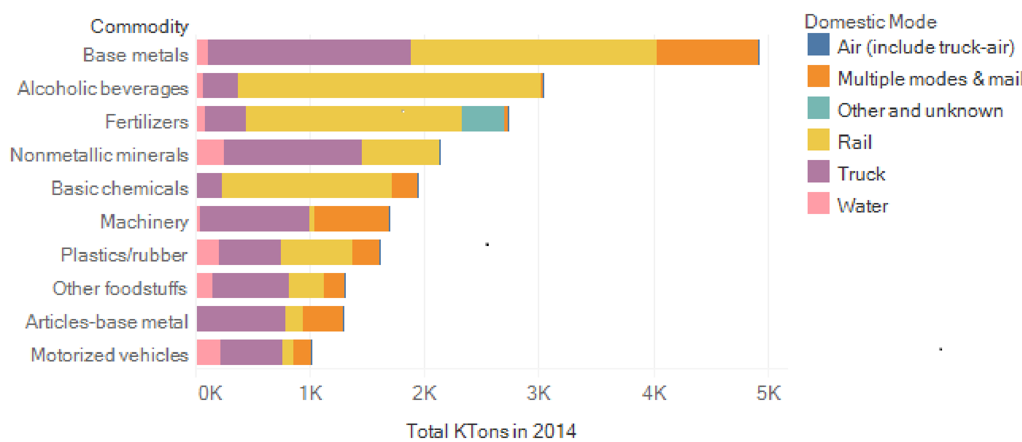
Rail, together with multiple modes and mail, in the top ten import commodities accounted for 12.8 million tons of the 21.7 million top ten import tons (excluding crude oil), or approximately 59 percent of tons shipped among those commodities.

Waterborne transport for imports appears for most commodities as a smaller but meaningful component, generally carrying bulk materials but also machinery and motorized vehicles – which are apt to include large and heavy pieces of equipment.

Volumes of the top ten export commodities totaled 27.8 million tons (79 percent) of the 35.1 million tons total (Figure 1-20: Top Ten Export Commodities, 2014). Three of the top four export commodities were agricultural products: cereal grains, other agricultural products, and animal feed. Coal was the number two export commodity in 2014.

Rail, together with multiple modes and mail , was also the dominant mode for exports but waterborne transport – which is virtually absent in the data – is almost certainly a major component of multiple modes. As shown, the top four export commodities, cereal grain, coal, other agricultural products and animal feed, all have substantial volumes attributed to multiple modes and mail, but all figure prominently in waterborne traffic outbound from Illinois, as the modal highlights presented further below for water traffic will demonstrate.

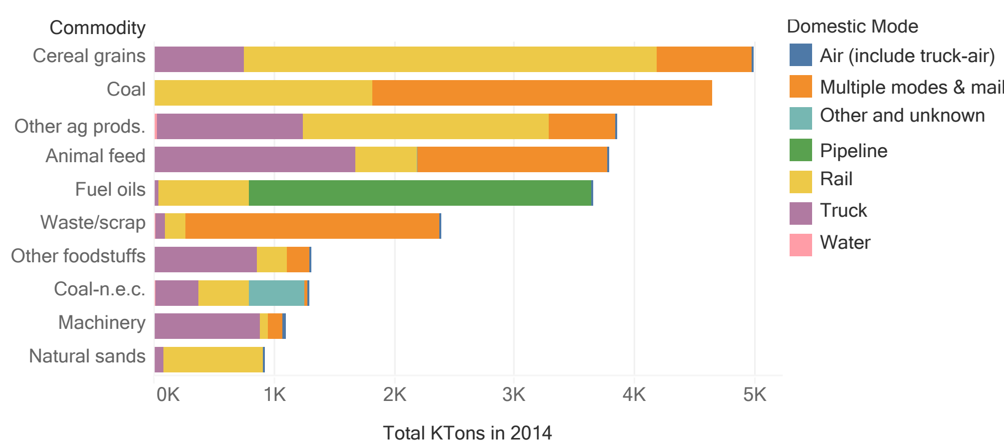
Figure 1-19: Top Ten Import Commodities, 2014



Source: FHWA Freight Analysis Framework

[The corresponding SCTG Commodity Codes for the above are: Base Metals (32), Alcoholic beverages (08), Fertilizers (22), Nonmetallic minerals (13), Basic chemicals (20), Machinery (34), Plastics/rubber (24), Other foodstuffs (07), Articles-base metal (33), and Motorized vehicles (36).]

Figure 1-20: Top Ten Export Commodities, 2014



Source: FHWA Freight Analysis Framework

[The corresponding SCTG Commodity Codes for the above are: Cereal grains (02), Coal (15), Other ag. prods. (03), Animal feed (04), Fuel oils (18), Waste/scrap (41), Other foodstuffs (07), Machinery (34), Natural sands (11), and Plastics/rubber (24).]

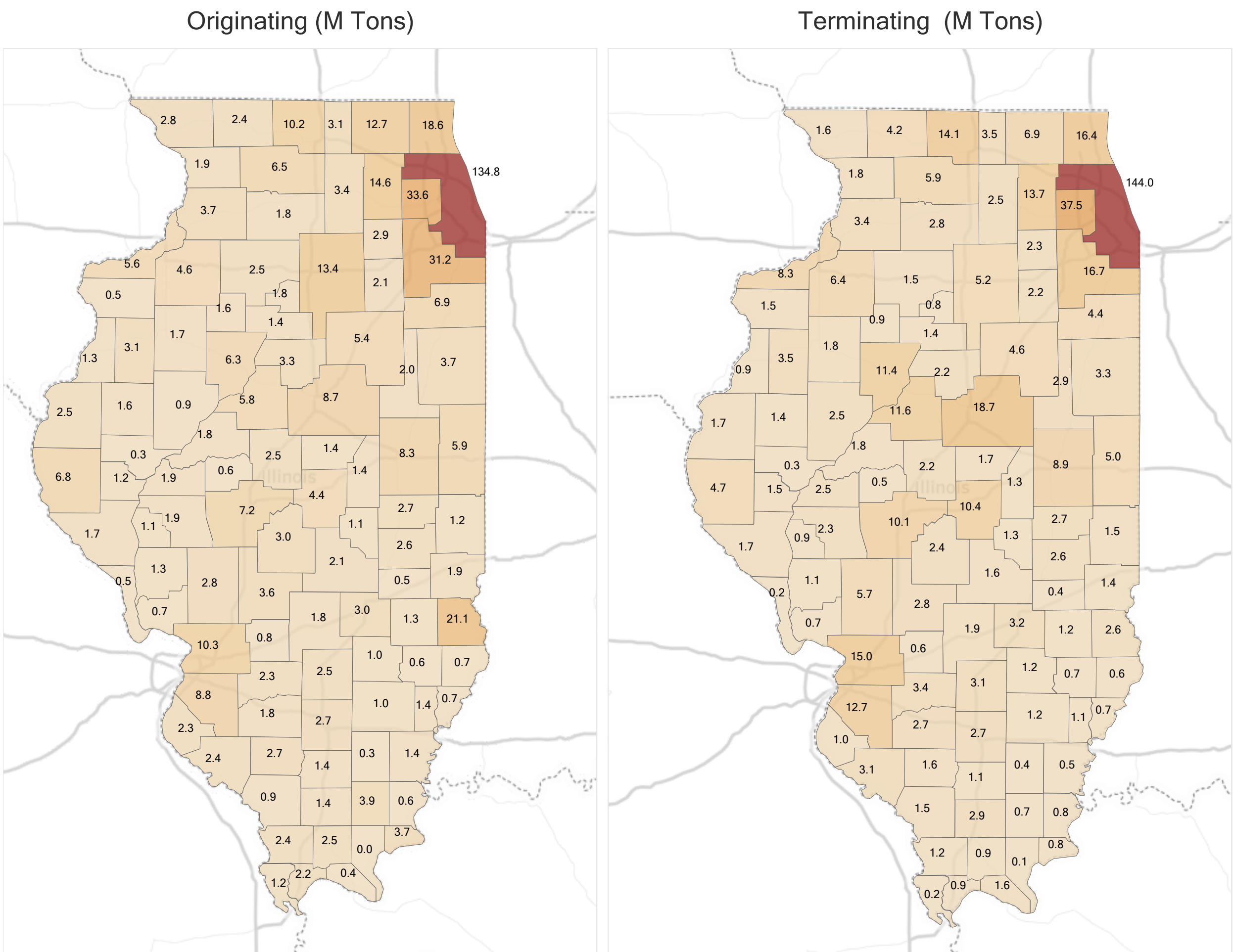
1.3.3 Modal Highlights

Modal traffic in Illinois has distinctive characteristics, as the preceding pages suggest. The following pages provide individual highlights for each freight mode, presenting traffic concentrations and major commodities. The air cargo profile offers additional detail on commodity volumes not included in the commodity tables presented above, which focused on truck, rail, and water traffic.

1.3.4 Truck Traffic Highlights

Figure 1-21: Origination and Termination of Truck Tons, 2014 shows the origination and termination of truck activity by county. As might be expected, the counties with the largest populations also have the highest truck activity. For example, Cook County was the highest in truck tonnages, with 134.8 million originating tons of truck freight and 144.0 million terminating tons of truck freight. Higher volume counties are highlighted with darker shading.

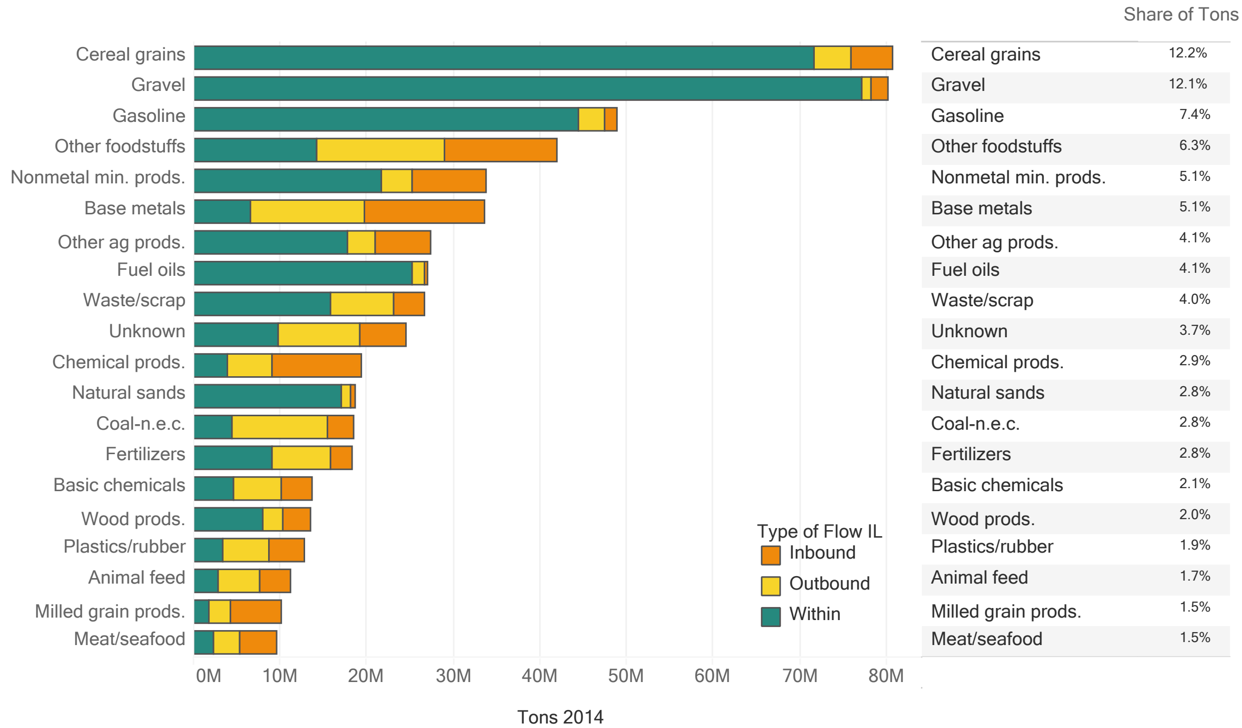
Figure 1-21: Origination and Termination of Truck Tons, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

The top commodities moving by truck are shown in Figure 1-22: Commodities Moving by Truck, 2014, and the three largest move primarily within the state. Cereal grains represent 12.2 percent of all tons moved by truck, and the vast majority of these shipments remain within Illinois, connecting farms to grain elevators and to other modes. A similar pattern prevails for gravel, which represents 12.1 percent of all tons and typically moves short distances within the state to destinations such as construction sites. Truck shipments of gasoline, which represent 7.4 percent of all tons, primarily start from "tank farm" facilities at the end of pipelines within the state and distribute gasoline to fueling stations around the state.

Figure 1-22: Commodities Moving by Truck, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

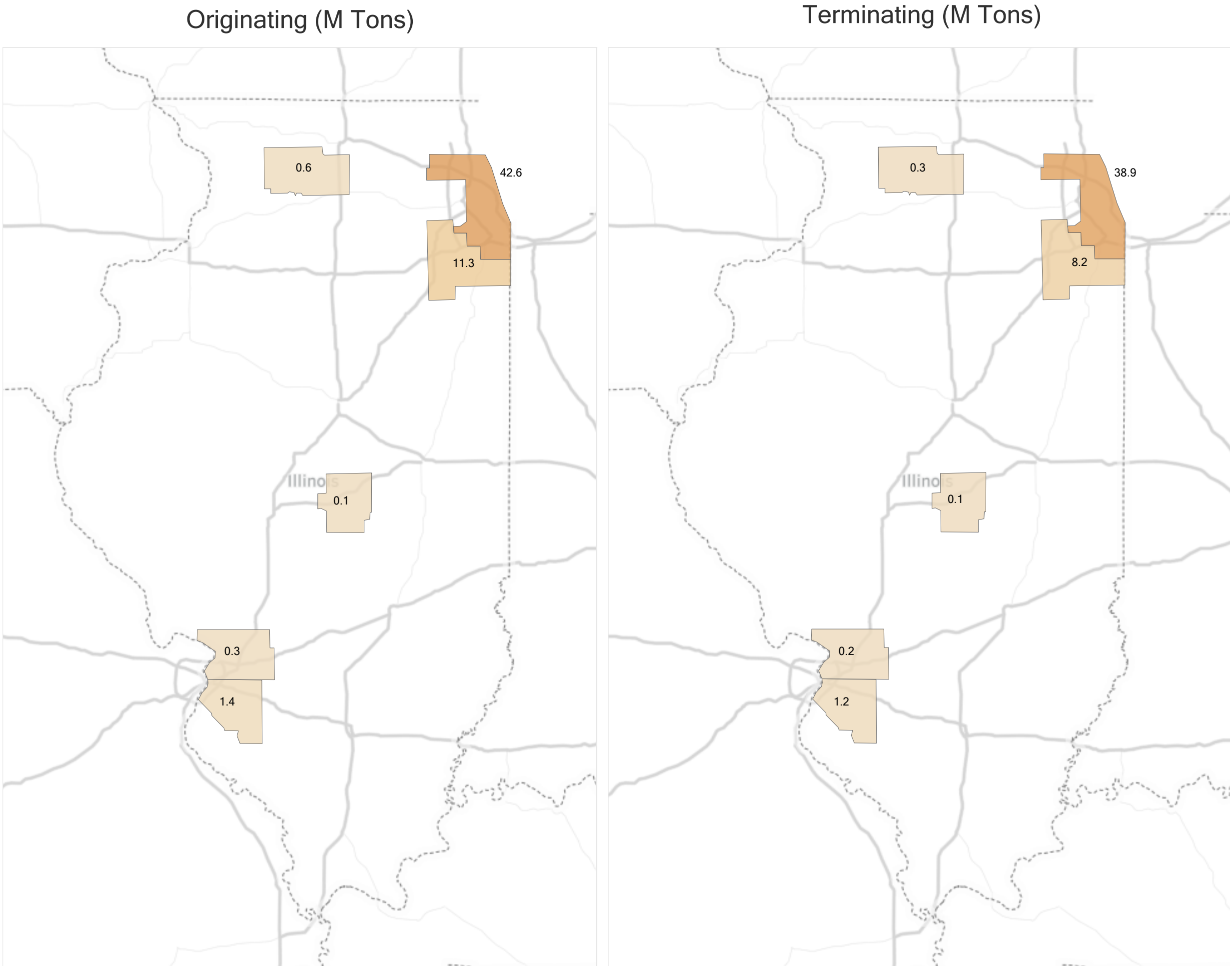
[The corresponding SCTG Commodity Codes for the above are: Cereal grains (02), Gravel (12), Gasoline (17), Other foodstuffs (07), Nonmetal min. prods. (31), Base metals (32), Other ag. prods. (03), Fuel oils (18), Waste/scrap (41), Unknown (N/A), Chemical prods. (23), Natural sands (11), Coal-n.e.c. (19), Fertilizers (22), Basic chemicals (20), Wood prods. (26), Plastics/rubber (24), Animal feed (04), Milled grain prods. (06), and Meat/seafood (05).]

1.3.5 Rail Intermodal Traffic Highlights

As shown in Figure 1-23: Origination and Termination of Rail Intermodal Tons, 2014, the origination and termination of intermodal shipments in Illinois is heavily concentrated in Cook and Will Counties, amidst the national rail hub of greater Chicago. For Cook County, the origination and termination tonnages were 42.6 and 38.9 million tons, respectively. For Will County, the origination and termination tonnages were 11.3 and 8.2 million tons, respectively. However, other counties also have intermodal terminals with significant traffic, including St. Clair and Madison counties in the St. Louis area. For St. Clair County, the origination and termination tonnages were 1.4 and 1.2 million tons, respectively. For Madison County, the origination and termination tonnages were 0.3 and 0.2 million tons, respectively. Other significant counties are Macon, with the Midwest Inland Port in Decatur and Ogle with the Union Pacific

Global III terminal at Rochelle. For Macon County, the origination and termination tonnages were both 0.1 million tons. For Ogle County, the origination and termination tonnages were 0.6 and 0.3 million tons, respectively.

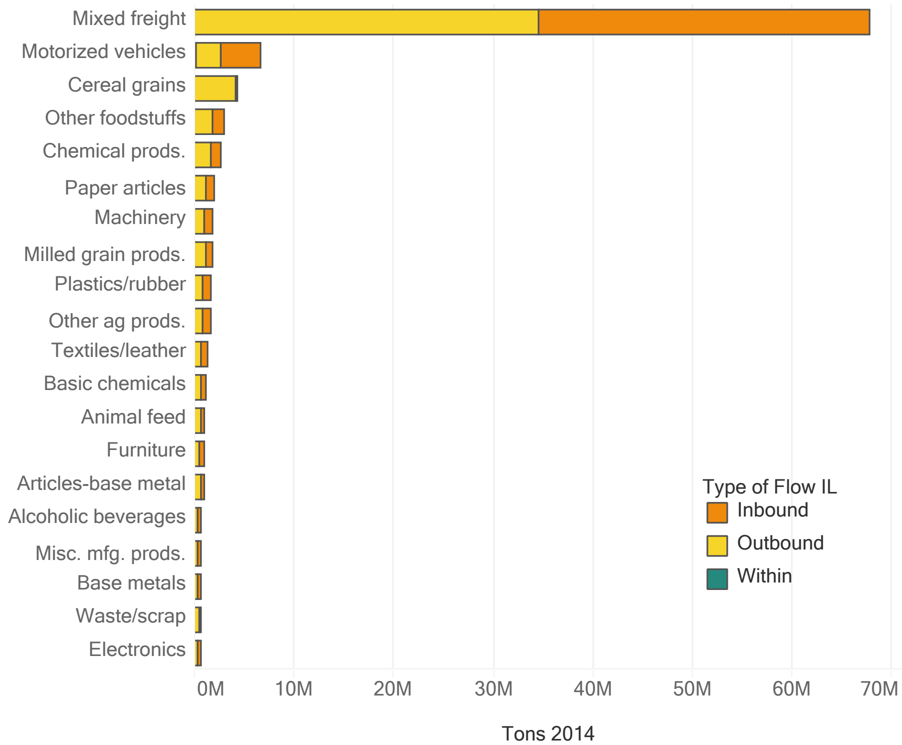
Figure 1-23: Origination and Termination of Rail Intermodal Tons, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

Commodity detail for rail intermodal shipments is not very informative. As can be seen in Figure 1-24: Commodities Moving by Rail Intermodal, 2014, the vast majority of tons (64.4 percent) are classified as "mixed freight", which is a catch-all category appearing in the STB Waybill sample for intermodal shipments. This figure also shows that motorized vehicles, cereal grains, and other foodstuffs are important commodities. The shares of these could be somewhat greater if the "mixed freight" category were to be broken down and reclassified; however, import containers of various consumer goods are the most common class of products shipped intermodally.

Figure 1-24: Commodities Moving by Rail Intermodal, 2014



	Share of Tons
Mixed freight	64.4%
Motorized vehicles	6.3%
Cereal grains	4.1%
Other foodstuffs	2.9%
Chemical prods.	2.6%
Paper articles	1.9%
Machinery	1.7%
Milled grain prods.	1.7%
Plastics/rubber	1.7%
Other ag prods.	1.6%
Textiles/leather	1.3%
Basic chemicals	1.0%
Animal feed	1.0%
Furniture	1.0%
Articles-base metal	1.0%
Alcoholic beverages	0.7%
Misc. mfg. prods.	0.6%
Base metals	0.6%
Waste/scrap	0.6%
Electronics	0.6%

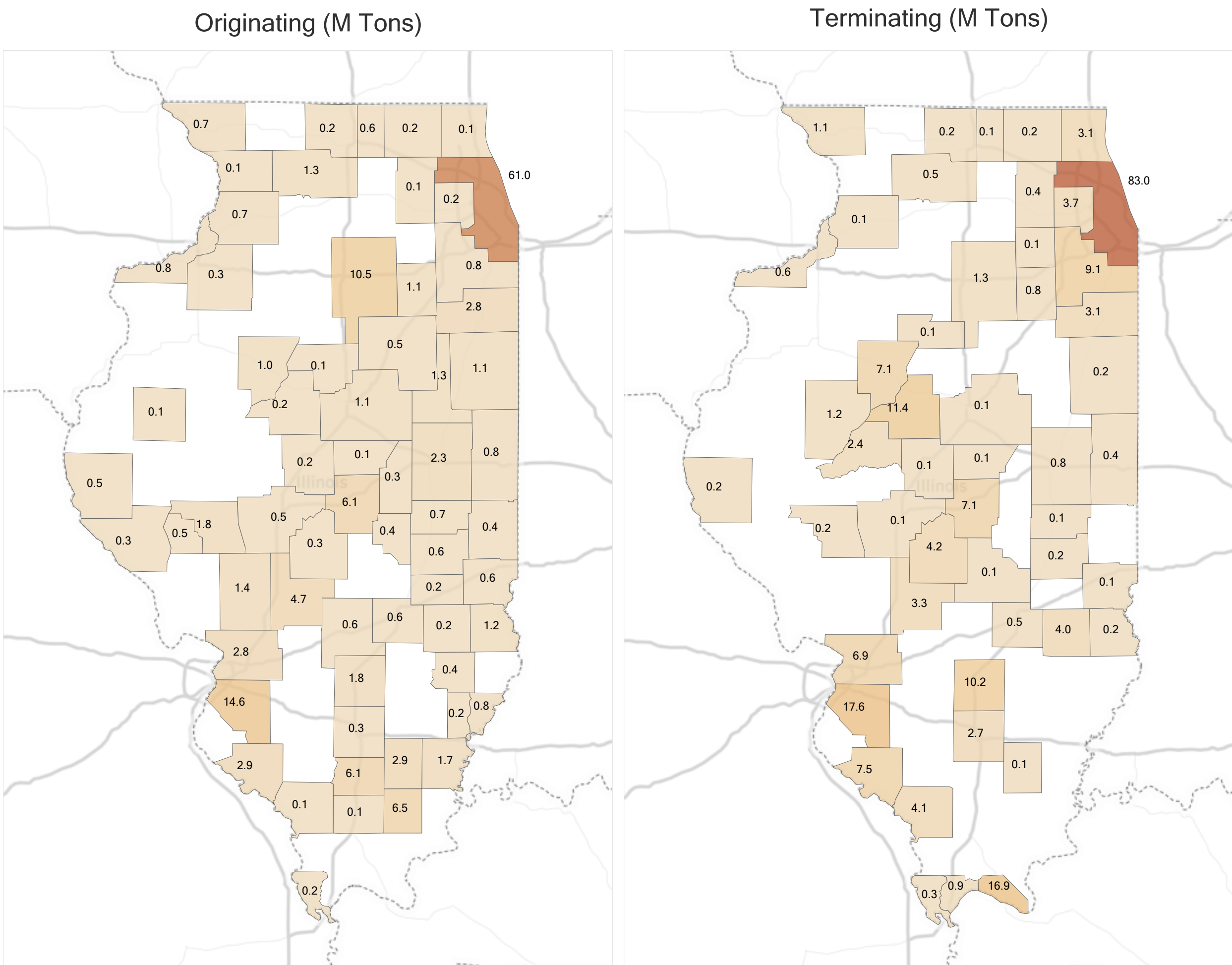
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Mixed freight (43), Motorized vehicles (36), Cereal grains (02), Other foodstuffs (07), Chemical prods. (23), Paper articles (28), Machinery (34), Milled grain prods. (06), Plastics/rubber (24), Other ag. prods. (03), Textiles/leather (30), Basic chemicals (20), Animal feed (04), Furniture (39), Articles-base metal (33), Alcoholic beverages (08), Misc. mfg. prods. (40), Base metals (32), Waste/scrap (41), and Electronics (35).]

1.3.6 Rail Carload Traffic Highlights

As shown in Figure 1-25: Origination and Termination of Rail Carload Tons, 2014, rail carload shipments are originated and terminated virtually throughout the entire state. As with rail intermodal, the majority of these shipments involve Cook County, with 61.0 million originating tons and 83.0 million terminating tons. However, many more counties have rail carload traffic than do rail intermodal traffic, including LaSalle County, which is prominent for originating tonnage at 10.5 million tons, Tazewell County, which is prominent for terminating tonnage at 11.4 million tons, and St. Clair County, which is important in both categories, with originating tonnage at 14.6 million tons and terminating tonnage at 17.6 million tons.

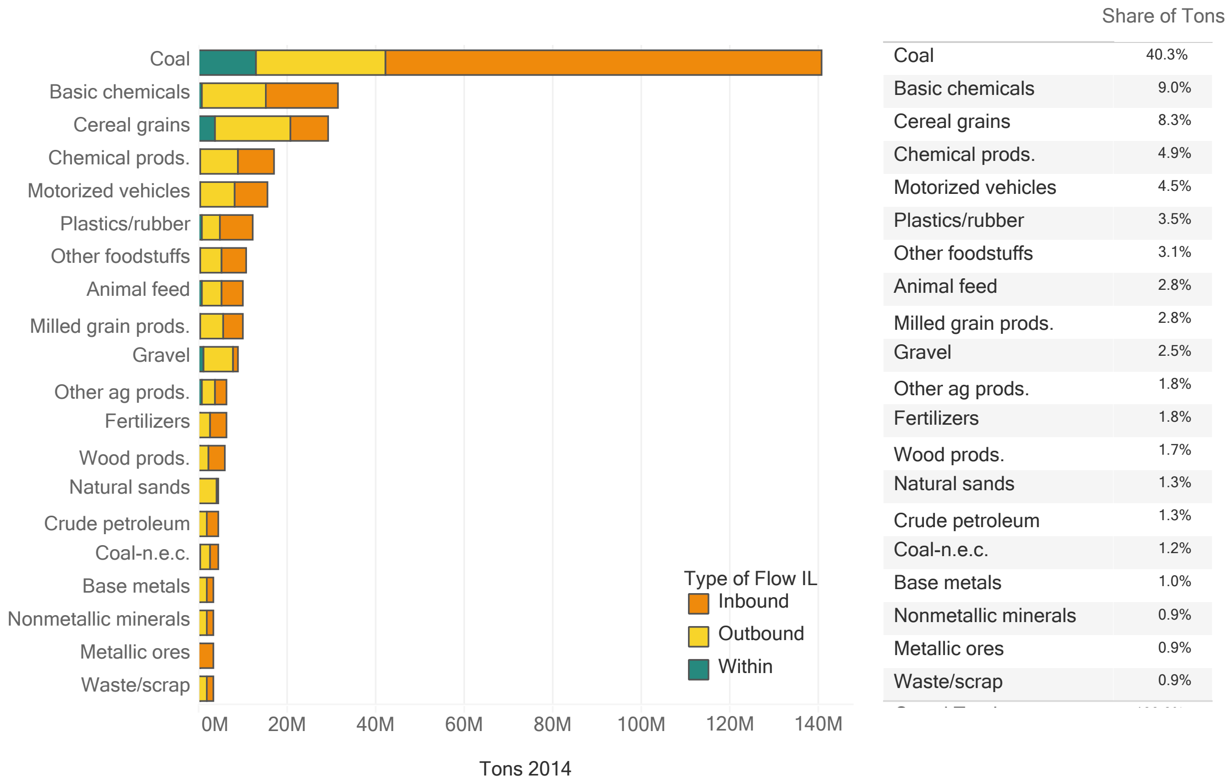
Figure 1-25: Origination and Termination of Rail Carload Tons, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

As shown in Figure 1-26: Commodities Moving by Rail Carload, 2014, coal represents 40.3 percent of all tons shipped by rail carload. The majority of these tons are inbound shipments (primarily from Wyoming), although outbound coal shipments are also significant. Following coal, the next three commodities by tonnage are basic chemicals (9.0 percent), cereal grains (8.3 percent), and chemical products (4.9 percent), all of which are more evenly balanced than coal between inbound and outbound activity.

Figure 1-26: Commodities Moving by Rail Carload, 2014



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Coal (15), Basic chemicals (20), Cereal grains (02), Chemical prods. (23), Motorized vehicles (36), Plastics/rubber (24), Other foodstuffs (07), Animal feed (04), Milled grain prods. (06), Gravel (12), Other ag. prods. (03), Fertilizers (22), Wood prods. (26), Natural sands (11), Crude petroleum (16), Coal-n.e.c. (19), Base metals (32), Nonmetallic minerals (31), Metallic ores (14), and Waste/scrap (41).]

1.3.7 Water Traffic Highlights

Illinois has 1,095 miles of navigable waterways that either border or pass through the state, including the nation's only all-water connection between the Great Lakes and the Mississippi River system. As shown in Figure 1-27: Illinois Waterway System, the five major waterways used to transport freight in Illinois are:

- Lake Michigan
- The Illinois River System connecting Lake Michigan to the Mississippi River including:
  - Chicago River.
  - Calumet River.
  - Des Plaines River.
  - Chicago Sanitary and Ship Canal connecting the Chicago River to the Des Plaines River.
  - Calumet-Sag Channel connecting the Calumet River to the Des Plaines River.
- The Mississippi River on Illinois' western border.
- The Ohio River on the state's southern border.
- The Kaskaskia River.

Figure 1-27: Illinois Waterway System

Source: Illinois Department of Natural Resources

Navigation on the Illinois River System, the Mississippi River, the Ohio River, and the Kaskaskia River is controlled by a series of locks and dams. There are nine lock and dam facilities along the Illinois River System. There are 15 lock and dam facilities along the Mississippi River. There are three lock and dam facilities along the Ohio River. There is one lock and dam facility along the Kaskaskia River.

These lock and dam facilities are operated and maintained by the US Army Corps of Engineers (USACE), although they fall under the jurisdiction of several USACE geographical district offices. These district offices are the Chicago District, Rock Island District, St. Louis District, and Louisville District.

Following is a list of the lock and dam facilities along the Illinois River System:

- Chicago Harbor
- T.J. O'Brien
- Lockport
- Brandon Road
- Dresden Island
- Marseilles
- Starved Rock
- Peoria

- LaGrange

The USACE Chicago District has jurisdiction over the Chicago Harbor lock and dam facility. All other eight facilities on the Illinois River System are under the jurisdiction of the USACE Rock Island District.

Following is a list of the lock and dam facilities along the Mississippi River:

- No. 12
- No. 13
- No. 14
- No. 15
- No. 16
- No. 17
- No. 18
- No. 19
- No. 20
- No. 21
- No. 22*
- No. 24*
- No. 25
- Melvin Price (replaced No. 26)
- No. 27

*Proposed Lock and Dam No.23 was determined to be unnecessary and was not constructed.

The USACE Rock Island District has jurisdiction over lock and dam facilities No. 12 through No. 22. The other four facilities on the Mississippi River are under the jurisdiction of the USACE St. Louis District.

Following is a list of the lock and dam facilities along the Ohio River:

- Smithland
- No. 52
- No. 53

The USACE Louisville District has jurisdiction over all three of these lock and dam facilities. However, it should be noted that a new lock and dam facility known as the Olmstead Lock and Dam is currently under construction and is scheduled to be operational in 2018. This new facility is intended to replace Lock and Dam No. 52 and Lock and Dam No. 53.

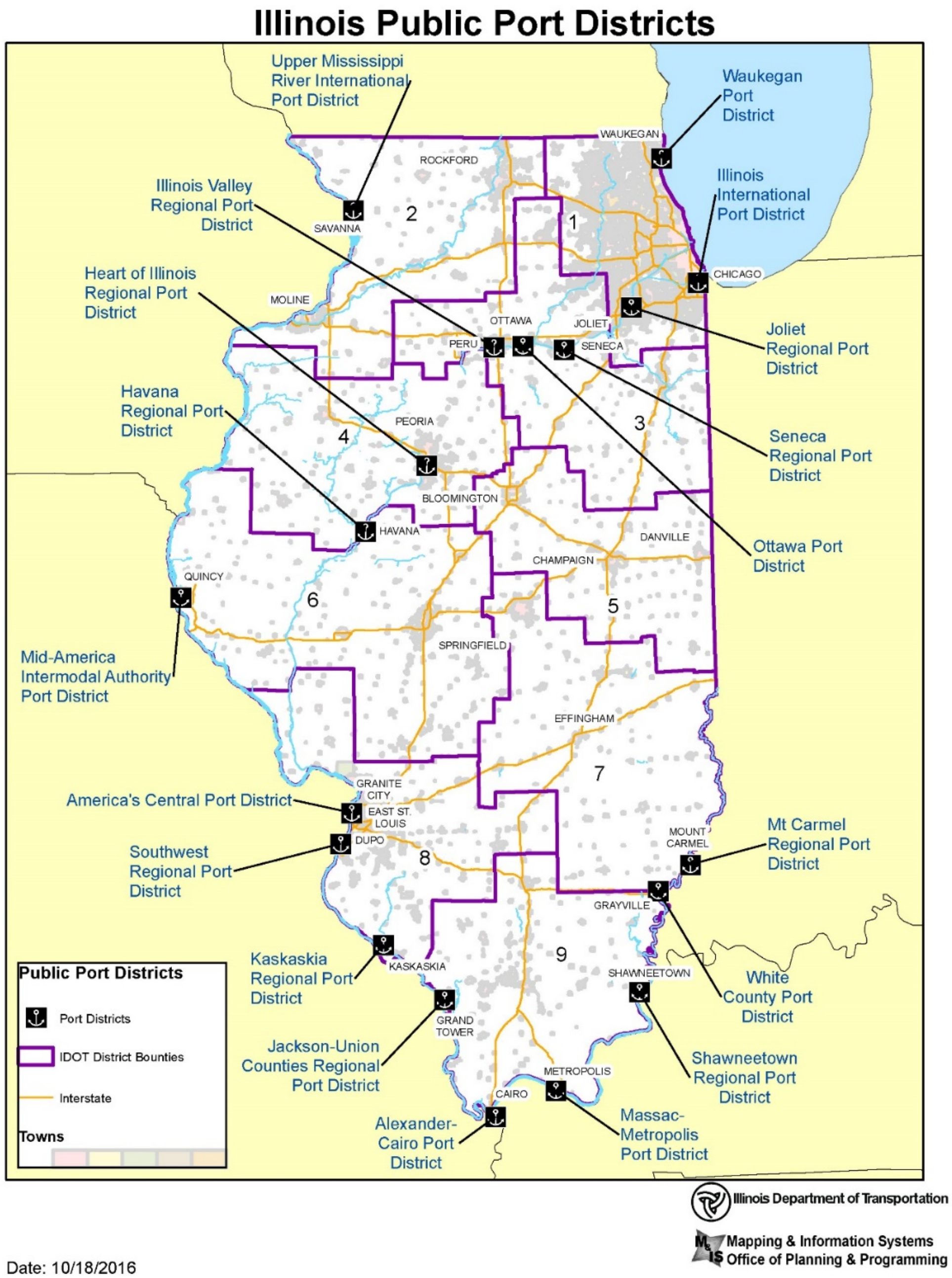
Following is the lock and dam facility along the Kaskaskia River:

- Jerry F. Costello Lock and Dam (formerly known as the Kaskaskia Lock and Dam)

The USACE St. Louis District has jurisdiction over this lock and dam facility.

In Illinois, port development is accomplished through legislatively created port districts. There are 19 such districts in Illinois as shown in Map 1-1: Illinois Public Port Districts. The enabling legislation gives port districts tax-exempt status and the ability to issue bonds for port development. Although port development generally involves private industry, IDOT supports freight movement to and from port facilities by providing access and maintenance of state-maintained roadways.

Map 1-1: Illinois Public Port Districts



Source: IDOT

Illinois also has four federally-designated port intermodal connector roadways which are described further in Chapter 6. These intermodal connectors, which are part of the Primary Highway Freight System (also described further in Chapter 6) are as follows:

- IL29P – Water Terminal 1 – Calumet River
- IL30P – Water Terminal 2 – Lake Calumet
- IL 31P – Water Terminal 3 – KCBX Cluster
- IL37P – Peoria Barge Terminal

Several of the waterways in Illinois are also part of three U.S. Department of Transportation designated Marine Highway Corridors. These corridors are part of the Maritime Administrations Marine Highway Program established in April 2010 and are known and the M-35, M-55, and M-70 Marine Highway Corridors. Following is a description of each of these corridors:

M-35 Marine Highway Corridor

The M-35 Marine Highway Corridor is commonly referred to as the "Waterway of the Saints" due to a northern anchor near St. Paul, Minnesota and a southern anchor near St. Louis, Missouri. The M-35 corridor covers a portion of the upper Mississippi River from Minneapolis, Minnesota to the confluence of the Mississippi and Illinois Rivers in Grafton, Illinois, where it links with the M-55 Marine Highway Corridor (described below). Together, the M-35 and M-55 corridors provide an all-water route from the beginning of the Mississippi River to the Gulf of Mexico. The M-35 corridor is used by bordering states to ship commodities to as many as 15 adjacent or nearby states.

M-55 Marine Highway Corridor

The M-55 Marine Highway Corridor forms a waterway route from Chicago, Illinois to St. Louis, Missouri via the Illinois River and from there to New Orleans, Louisiana via the Mississippi River. The M-55 corridor provides an all-water route form the Great Lakes to the Gulf of Mexico. Due to major truck bottlenecks along the corresponding highway route, the M-55 corridor has the potential to reduce air emissions, conserve energy, lower highway maintenance costs, and enhance safety. Also, as mentioned above, the lower Mississippi River portion of the M-55 corridor connects to the upper Mississippi River via the M-35 corridor.

M-70 Marine Highway Corridor

The M-70 Marine Highway Corridor forms a waterway route between Pittsburgh, Pennsylvania and Kansas City, Missouri, utilizing the Ohio, Mississippi, and Missouri Rivers. For Illinois, this route includes a portion of the Ohio River and a portion of the Mississippi River along the state's southeastern and southwestern borders, respectively. The M-70 corridor connects to the M-55 corridor at St. Louis, Missouri. The corresponding highway route for this corridor also experiences major freight bottlenecks. In addition to the benefits mentioned above, this corridor also has the potential to enhance economic activity by removing barriers to the efficient movement of freight.

Illinois Waterborne Freight Flows

Illinois waterborne traffic totaled 107.8 million tons in 2014, representing 8.8 percent of the freight tonnage in the state.

The Illinois waterway system provides a relatively low cost means of transporting heavy lower-valued commodities such as coal and agricultural products from Illinois producers to domestic and international markets. Likewise, industries in Illinois are able to source needed commodities such as fertilizers and construction material from domestic and international producers at a lower cost than would be possible using alternative transportation modes.

For example, in commodity markets such as those for agricultural products, the delivered cost of goods has a decisive effect on the competitiveness of Illinois farms. By lowering delivered costs, waterway transportation opens more markets to Illinois agriculture and supports its contribution to the economy and well-being of the state. The Illinois waterway system as a whole brings $6.4 billion annually to the state economy and supports nearly 50,000 jobs, according to an assessment for 2013 by the U.S. Chamber of Commerce and the Waterways Council, Inc.[2]

Estimates of Illinois waterborne freight flows are derived from IHS Markit Transearch data, which is based on waterborne commerce statistics published by the U.S. Army Corps of Engineers. Estimates by county and waterway are approximations interpreted from these sources.

It is important to note that "outbound" and "inbound" are defined from the perspective of the originating and terminating facilities on the water, and not from the ultimate origin and destination of the goods. Thus, Illinois outbound coal reflects production by Illinois mines and by mines in other states, which is carried to the waterside by truck and rail. Similarly, the counties of origin and destination are locations on the rivers and lake, and may not be the points of production and consumption of goods.

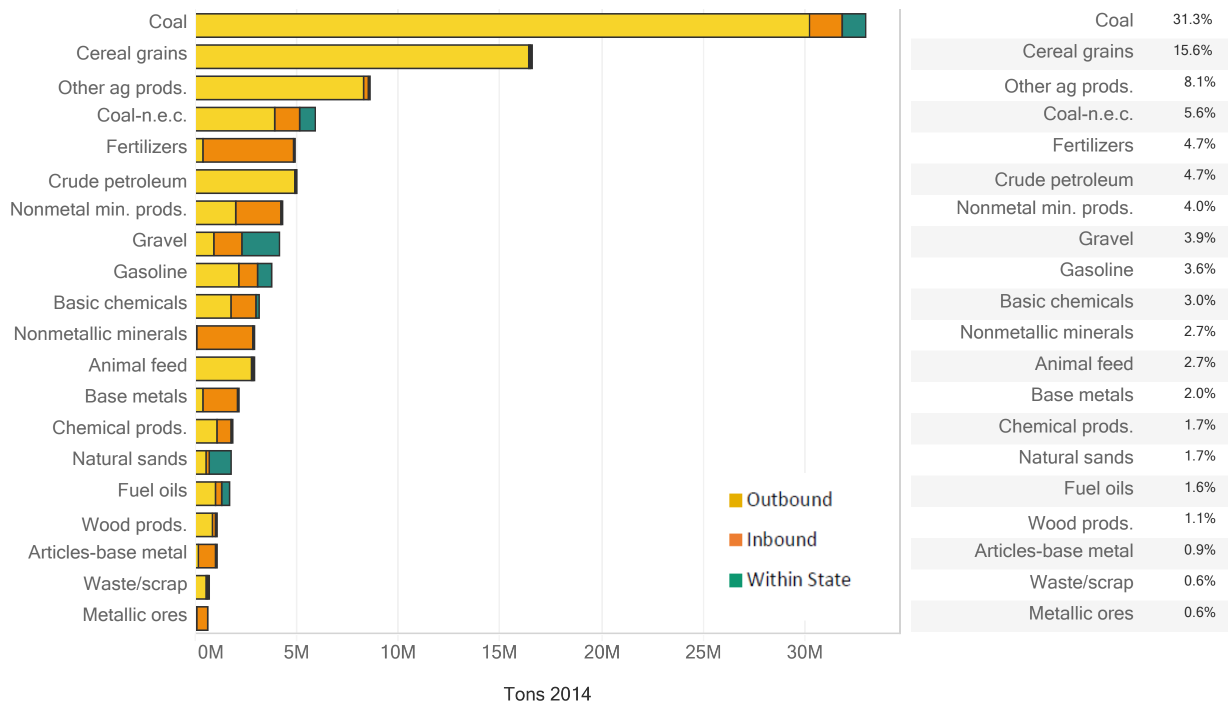
<u>Total Waterborne Freight To, From, and Within Illinois</u>

Illinois' waterborne freight is heavily skewed in the outbound direction, led by coal and agricultural products including cereal grains and other agricultural products heading down the Mississippi River to New Orleans. Of the 107.8 million tons of Illinois waterborne freight in 2014, 74 percent was outbound (80.0/107.8), 20 percent inbound (21.2/107.8), and 6 percent within-state (6.6/107.8). As shown in Figure 1-28: Illinois Waterborne Tons (000) in 2014 for the Top 20 Commodity Groups by Type of Flow, the largest waterborne commodity is coal, almost all of which is outbound. The second and third largest commodity groups, in both total and outbound tons, are cereal grains and other agricultural products. The fourth largest outbound commodity group, and the sixth in total tonnage, is crude petroleum. Coal n.e.c. (other coal and petroleum products) is the fifth largest outbound commodity group and fourth for total tons.

Within the much smaller inbound freight tonnage, fertilizer is the top commodity group followed by nonmetallic minerals and nonmetallic mineral products.

[2] http://waterwayscouncil.org/wp-content/uploads/2013/09/Illinois.pdf2

Figure 1-28: Illinois Waterborne Tons (000) in 2014 for the Top 20 Commodity Groups by Type of Flow



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water
[The corresponding SCTG Commodity Codes for the above are: Coal (15), Cereal grains (02), Other ag. Products (03), Other coal and petroleum (19), Fertilizers (22), Crude petroleum (16), Nonmetal min. prods. (31), Gravel (12), Gasoline (17), Basic chemicals (20), Nonmetallic minerals (31), Animal feed (04), Base metals (32), Chemical prods. (23), Natural sands (11), Fuel oils (18), Wood prods. (26), Articles-base metal (33), Other foodstuffs (07), and Waste/scrap (41.]

Outbound Waterborne Freight Flows

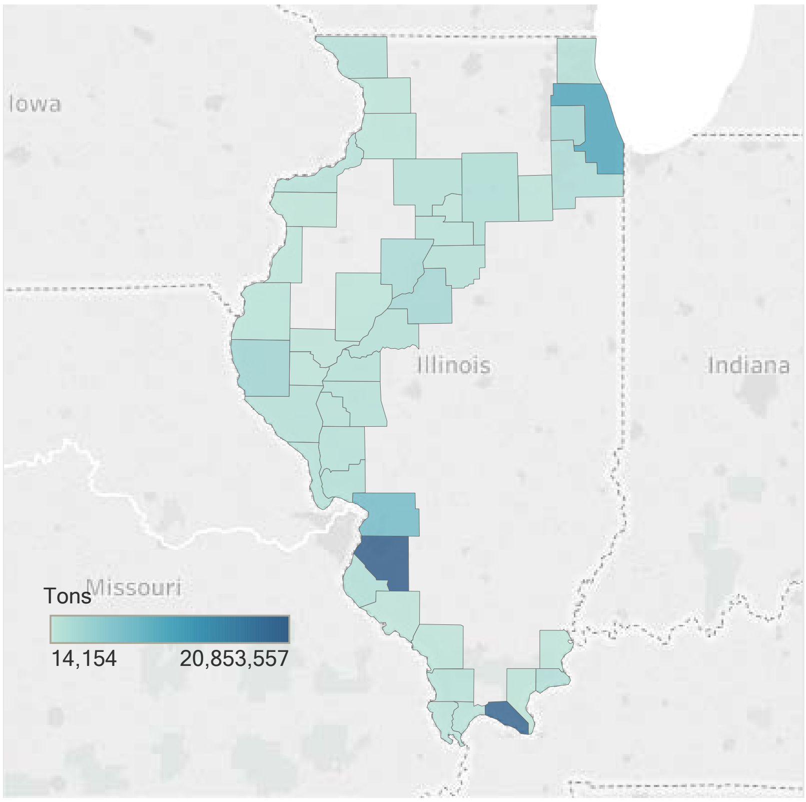
Outbound waterborne freight flows by county include volumes destined for regions outside the state including international exports, as well as smaller freight volumes going to other counties within the state.

As shown in Figure 1-29: Estimated Illinois Waterway Freight Tons by County of Origin, 2014, the top two counties for outbound waterborne freight, by a considerable margin, are both located in Southern Illinois. These are the counties of St. Clair, located on the Mississippi River and Massac on the Ohio River. Together, outbound waterborne freight originating from these two counties totaled 40.5 million tons, or approximately 47 percent of the state's total outbound waterborne tons (40.5/80.0 + 6.6). Outbound volumes from Massac County are almost all coal. Coal is also the top commodity originating from St. Clair County but other top commodities include cereal grains and other agricultural products.

Cook County, located on the shore of Lake Michigan, is the third largest county for outbound tonnage with nearly 10 million tons, accounting for approximately 12 percent of the state total (10.0/80.0 + 6.6).

The top outbound commodity from Cook County is other coal and petroleum products followed by cereal grains, coal, gasoline, gravel, and other agricultural products[3].

Figure 1-29: Estimated Illinois Waterway Freight Tons by County of Origin, 2014



St. Clair County, IL	20,853,557
Massac	19,695,049
Cook County, IL	9,994,849
Madison County, IL	6,912,911
Adams County, IL	2,784,625
Tazewell County, IL	2,343,912
DuPage County, IL	2,133,026
Peoria County, IL	1,662,597
Will County, IL	1,427,213
La Salle County, IL	1,283,681
Monroe County, IL	1,216,157
Hardin County, IL	1,093,619
Jersey County, IL	1,065,942
Jo Daviess County, IL	882,086
Mason County, IL	844,502
Pike County, IL	835,109
Calhoun County, IL	829,399
Lake County, IL	780,437
Woodford County, IL	778,513
Bureau County, IL	774,425

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water (Top counties listed)

Inbound Waterborne Freight Flows

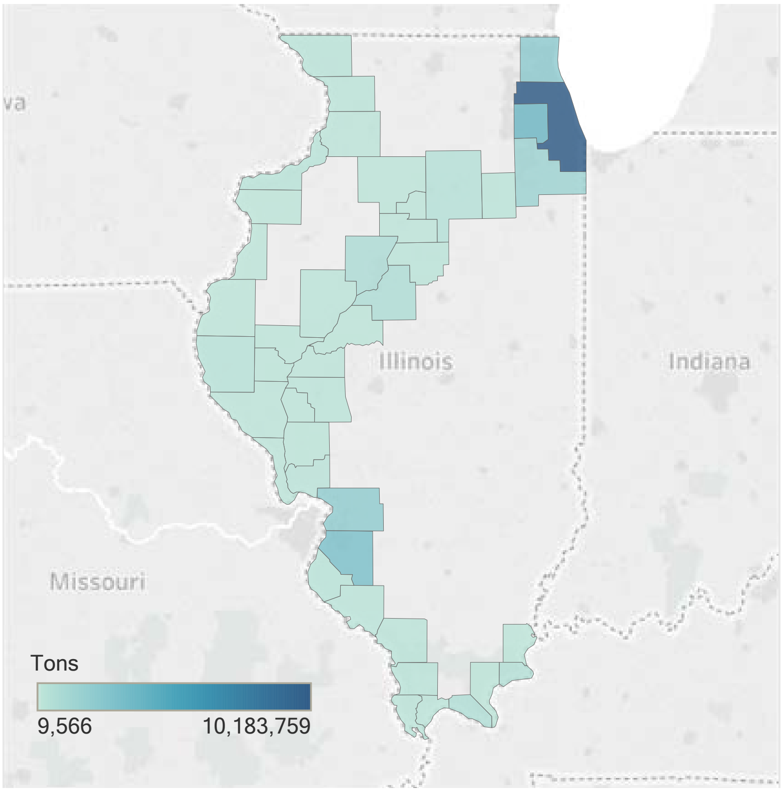
Inbound tonnage is much smaller than outbound. As shown in Figure 1-30: Estimated Illinois Waterway Freight Tons by Destination County, 2014, the destination counties are also more concentrated in Northeastern Illinois with three of the top four, Cook, DuPage and Lake, all located on or near Lake Michigan and at the northern end of the Illinois River system. Inbound tons for these three counties totaled 16.5 million tons in 2014, or approximately 59 of the state's total inbound waterborne tons (16.5/21.2 + 6.6).

The top inbound commodity for all three top counties is fertilizers. The next largest commodities for these three counties include nonmetallic minerals, nonmetallic mineral products, and gravel.

[3] Estimates of Illinois waterborne freight flows are derived from IHS Markit Transearch data, which is based on waterborne commerce statistics published by the U.S. Army Corps of Engineers Estimates by county and waterway are approximations interpreted from these sources. Water tonnages by metropolitan region found in Transearch were disaggregated to the county level using employment shares in economic sectors that ship by water.

The third and fifth largest counties in terms of inbound tons are St. Clair and Madison, both in Southern Illinois and located on the Mississippi River. Top inbound commodities for these two counties include coal, fertilizers, and gravel[4].

Figure 1-30: Estimated Illinois Waterway Freight Tons by Destination County, 2014



Cook County, IL	10,183,759
DuPage County, IL	3,446,625
St. Clair County, IL	2,895,117
Lake County, IL	2,096,661
Madison County, IL	1,928,136
Will County, IL	1,368,599
Peoria County, IL	691,777
Tazewell County, IL	659,424
Massac	566,769
Hardin County, IL	398,160
La Salle County, IL	348,588
Adams County, IL	262,415
Rock Island County, IL	231,991
Monroe County, IL	215,515
Jo Daviess County, IL	203,663
Jersey County, IL	159,549
Woodford County, IL	159,120
Grundy County, IL	144,482
Union County, IL	140,726
Randolph County, IL	134,927

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water(Top counties listed)

Illinois Waterborne Freight by Waterway

The county level estimates of Illinois waterborne shipments described above are associated with major waterways based on proximity. The results are presented in Table 1-4: Illinois Outbound Waterborne Freight by Waterway, 2014 and Table 1-5: Illinois Inbound Waterborne Freight by Waterway, 2014. For this view of waterborne flows waterways are aggregated from counties into four major segments. Lake Michigan includes Cook and Lake Counties which border Lake Michigan and also intersect the northern section of the Illinois River System. The Mississippi River segment includes all counties located on the Mississippi River. The Ohio River segment includes counties bordering the Ohio River. The Illinois River includes all counties on the Illinois River system between the Lake Michigan and Mississippi segments.

4 Estimates of Illinois waterborne freight flows are derived from IHS Markit Transearch data, which is based on waterborne commerce statistics published by the U.S. Army Corps of Engineers Estimates by county and waterway are approximations interpreted from these sources. Water tonnages by metropolitan region found in Transearch were disaggregated to the county level using employment shares in economic sectors that ship by water.

As within state flows moving between counties may ultimately be destined as either outbound or inbound flows, for the purpose of this analysis, the 6.6 million within tons were added to both the outbound tonnage and inbound tonnage. Therefore, the total tonnages in the tables below reflect the addition of the within state flows.

As shown in Table 1-4: Illinois Outbound Waterborne Freight by Waterway, 2014, the Mississippi River segment group was the most significant carrier of outbound waterborne freight with 44.5 percent of outbound tons. As shown in Table 1-5: Illinois Inbound Waterborne Freight by Waterway, 2014, the Lake Michigan segment was the most significant carrier of inbound waterborne freight with 44.2 percent of inbound tons.

Table 1-4: Illinois Outbound Waterborne Freight by Waterway, 2014

Waterway	2014 ('000)	% of Outbound
Lake Michigan	10,775	12.4%
Illinois River	15,882	18.3%
Mississippi River	38,569	44.5%
Ohio River	21,384	24.7%
Total Outbound	***86,610***	***100.0%***

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

Table 1-5: Illinois Inbound Waterborne Freight by Waterway, 2014

Waterway	2014 ('000)	% of Inbound
Lake Michigan	12,280	44.2%
Illinois River	7,571	27.2%
Mississippi River	6,843	24.6%
Ohio River	1,107	4.0%
Total Inbound	***27,802***	***100.0%***

Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

1.3.8 Air Cargo Traffic Highlights

The Bureau of Transportation Statistics' T-100 air database for 2014 was used to provide additional detail on air cargo at Illinois airports. Please note that this air cargo data does not contain commodity level information, so the Freight Analysis Framework (FAF) was relied upon to characterize the commodities that are shipped by this mode.

The tables below present the tonnage of freight inbound and outbound by airport, distinguishing belly cargo[5] from goods moved in all-cargo freighter aircraft. (Please note that due to rounding, small volumes may be reflected as 0.00 percent in the calculations.)

Chicago's O'Hare International Airport is one of the nation's primary air hubs, particularly for international trade, and it stands out as the state's principal air cargo facility. As shown in Figure 1-31:

[5] Goods carried in the baggage hold of passenger flights, mostly limited to wide-body international aircraft

Inbound Air Cargo Shipments to Illinois, 2014, O'Hare handled 91.2 percent of Illinois inbound air tonnage and as shown in Figure 1-32: Outbound Air Cargo Shipments from Illinois, 2014, O'Hare handled 87.5 percent of outbound air tonnage, as well as held equally predominant positions in both belly and freighter activity, with inbound tonnage percentages of 94.5 and 90.1, respectively, and outbound tonnage percentages of 93.3 and 85.6, respectively.

The airport in Rockford (Chicago Rockford International Airport), which is a regional air hub for the United Parcel Service (UPS), is second to O'Hare in both inbound and outbound air cargo, with 5.6 percent of inbound tonnage and 8.6 percent of outbound tonnage. The UPS regional air hub influence is reflected in the belly and freighter percentages at the Rockford Airport. The belly percentages for both inbound and outbound are virtually nonexistent, indicating freighter shipment is predominant at 7.5 percent for inbound tonnage and 11.4 percent for outbound tonnage.

Peoria's General Wayne A. Downing Peoria International Airport and Chicago's Midway International Airport are ranked third and fourth, for both inbound and outbound air cargo. For inbound tonnage, Peoria is at 1.5 percent and Midway at 1.4 percent, with Peoria having slightly more total tons at 15,312, compared to 14,049 for Midway. For outbound tonnage, Peoria is at 1.8 percent and Midway at 1.6 percent, with Peoria having slightly more total tons at 15,532, compared to 14,132 for Midway.

Traffic at other Illinois airports is scattered and light. One reason being, at least for international cargo, O'Hare has high quality and diverse service offerings that other facilities cannot compete with it. For domestic cargo, the domestic air cargo market throughout the U.S. is thoroughly dominated by UPS and FedEx. These two are called integrated carriers because in addition to large fleets of freighter aircraft, they own truck fleets for pickup and delivery and thus control service door to door. Both carriers operate from more than one Illinois airport. UPS relies primarily on its Rockford facility (60.0 percent of inbound tonnage), followed by Chicago O'Hare (28.7 percent of inbound tonnage), and Peoria (11.4 percent of inbound tonnage). FedEx operates primarily from Chicago O'Hare (94.3 percent of inbound tonnage), with smaller activity at Peoria (5.7 percent of inbound tonnage). However, the national air hubs for both carriers – Louisville for UPS and Memphis for FedEx – are within trucking distance from much of Illinois, especially locations downstate from Chicago. Consequently, portions of the air cargo being handled at Louisville and Memphis originated in Illinois but never touch an Illinois airport.

Figure 1-31: Inbound Air Cargo Shipments to Illinois, 2014

	Belly		Freighter		Grand Total	
	Tons	% Tons	Tons	% Tons	Tons	% Tons
ORD - Chicago	242,166	94.5%	705,432	90.1%	947,598	91.2%
RFD - Rockford	119	0.0%	58,497	7.5%	58,616	5.6%
PIA - Peoria	5	0.0%	15,307	2.0%	15,312	1.5%
MDW - Chicago	14,048	5.5%	0	0.0%	14,049	1.4%
CHI - Chicago			3,827	0.5%	3,827	0.4%
MLI - Moline	9	0.0%	18	0.0%	27	0.0%
DPA - West Chicago	0	0.0%	6	0.0%	6	0.0%
CMI - Champaign	5	0.0%	0	0.0%	5	0.0%
BMI - Bloomington	1	0.0%			1	0.0%
SPI - Springfield	1	0.0%			1	0.0%
BLV - Belleville	0	0.0%			0	0.0%
LOT - Lockport	0	0.0%			0	0.0%
Grand Total	256,354	100.0%	783,186	100.0%	1,039,539	100.0%

Source: BTS T-100
Due to statistically small numbers, some percentages above are shown as 0.0%.

Figure 1-32: Outbound Air Cargo Shipments from Illinois, 2014

	Belly		Freighter		Grand Total	
	Tons	% Tons	Tons	% Tons	Tons	% Tons
ORD - Chicago	197,471	93.3%	560,730	85.6%	758,201	87.5%
RFD - Rockford	127	0.1%	74,370	11.4%	74,497	8.6%
PIA - Peoria	4	0.0%	15,529	2.4%	15,532	1.8%
MDW - Chicago	14,132	6.7%	0	0.0%	14,132	1.6%
CHI - Chicago			4,217	0.6%	4,217	0.5%
MLI - Moline	18	0.0%	27	0.0%	45	0.0%
DPA - West Chicago	0	0.0%	30	0.0%	30	0.0%
CMI - Champaign	4	0.0%	15	0.0%	18	0.0%
BMI - Bloomington	1	0.0%			1	0.0%
LOT - Lockport	0	0.0%			0	0.0%
Grand Total	211,755	100.0%	654,930	100.0%	866,685	100.0%

Source: BTS T-100 Segment Database
Due to statistically small numbers, some percentages above are shown as 0.0%.

Focusing on Chicago O'Hare International Airport as the key state air freight facility, Figure 1-34: Tons of Air Cargo Handled by Chicago O'Hare International Airport, shows how its cargo operations have evolved over the past decade. This figure depicts both belly and freighter activity. The graph has four quadrants with inbound activity on the left, outbound activity on the right, domestic cargo on the top, and international cargo on the bottom.

As shown in all four quadrants, freighter operations increased considerably after 2000. As shown in the bottom two quadrants, belly cargo remained steady for international cargo both inbound and outbound, but as shown by the top two quadrants, continued a long term domestic decline in both inbound and outbound, in favor of integrated carriers flying freighters.

As shown in the bottom left quadrant, inbound international cargo increased the fastest, reaching a peak of over 600 thousand tons in 2007. After the Great Recession, inbound and outbound international cargo decreased the fastest. Domestic cargo also saw declines, both inbound and outbound.

Table 1-6: Domestic Tons of Air Cargo Handled at O'Hare, 2014

Domestic	Inbound	Outbound	Totals
Belly	31,833	35,109	66,942
Freighter	140,164	275,967	416,131
Totals	171,997	311,076	483,073

Table 1-7: International Tons of Air Cargo Handled at O'Hare, 2014

International	Inbound	Outbound	Totals
Belly	210,333	162,362	372,695
Freighter	565,268	284,763	850,031
Totals	775,601	447,125	1,222,726

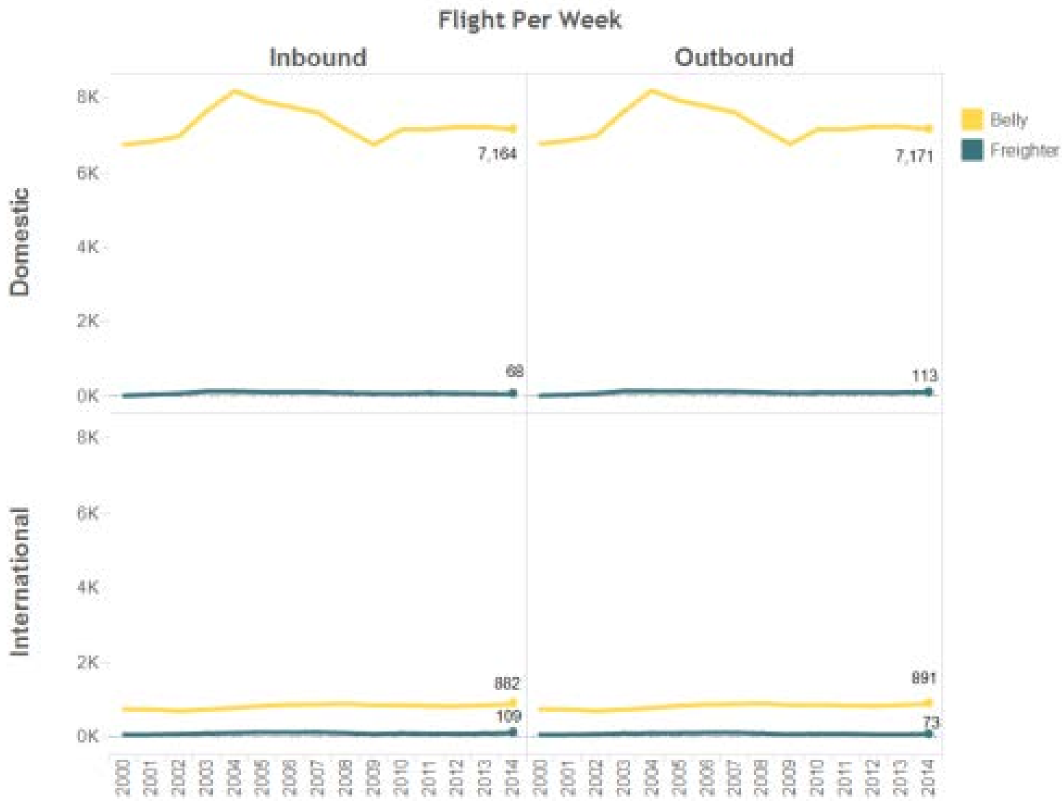
As shown in Table 1-6: Domestic Tons of Air Cargo Handled at O'Hare, 2014 and Table 1-7: International Tons of Air Cargo Handled at O'Hare, 2014, total tonnage at O'Hare in 2014 was 1,705,799 (483,073 + 1,222,726). International cargo represented 71.7 percent of these tons (1,222,726/1,705,799) and domestic cargo represented 28.3 percent of these tons (483,073/1,705,799).

This same year, total Inbound cargo was 947,598 tons (171,997 + 775,601) which represents 55.6 percent of the total (947,598/1,705,799). Total outbound cargo was 758,201 tons (311,076 + 447,125) which represents the other 44.4 percent (758,201/1,705,799).

Freighters carried 1,266,162 tons (416,131 + 850,031), which equates to 74.2 percent (1,266,162/1,705,799). By comparison, belly carried 439,637 tons (66,942 + 372,695) which equates to 25.8 percent (439,637/1,705,799).

Figure 1-33: Flights per Week of Air Cargo Handled by Chicago O'Hare International Airport is also divided into four quadrants that show the flight frequency associated with each of these markets. Flight frequency normally confers a competitive advantage in attracting cargo. In all cases, O'Hare's relatively high frequency has been maintained at steady levels, with only slight fluctuations in the number of domestic inbound flights (upper left quadrant) and domestic outbound flights (upper right quadrant).

Figure 1-33 Flights per week of Air Cargo Handled by Chicago O'Hare International Airport

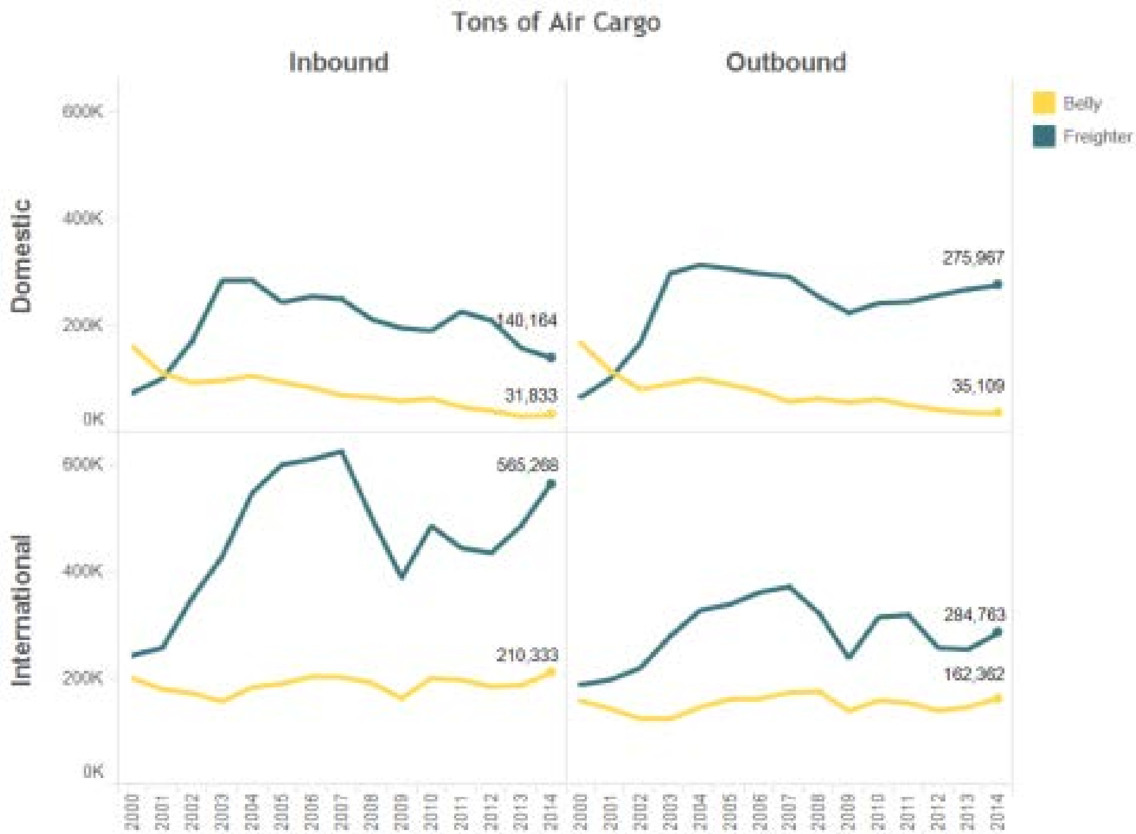


Source: BTS T-100 Segment Database

Turning to air cargo flows to and from Illinois, Table 1-8: Top International Trading Partners of Air Cargo to and from Illinois, 2014, shows the top 15 international trading partners. Domestic trading partners are not shown as their data is obscured by the use of hubs and truck feeds.

Although Ted Stevens International Airport (ANC) is located in Anchorage, Alaska, it was designated as an international trading partner in this analysis (including in Figure 1-33: Flights per Week of Air Cargo Handled by Chicago O'Hare International Airport and Figure 1-34: Tons of Air Cargo Handled by Chicago O'Hare International Airport) because most of the cargo to and from this airport actually heads to and from Asia, with planes simply stopping at ANC for refueling. As such, this cargo is best classified as international.

Figure 1-34: Tons of Air Cargo Handled by Chicago O'Hare International Airport



Source: BTS T-100 Segment Database

Table 1-8: Top International Trading Partners of Air Cargo to and from Illinois, 2014

Top 15 Intl. Origins

	Belly	Freighter	Total
ANC - Anchorage	215	368,523	368,738
FRA - Frankfurt	14,614	72,435	87,048
NRT - Tokyo	40,483		40,483
LHR - London	31,646		31,646
DOH - Doha	4,588	22,519	27,107
PVG - Shanghai	9,613	17,324	26,937
CDG - Paris	8,502	16,713	25,216
SVO - Moscow		24,080	24,080
ICN - Seoul	6,794	16,311	23,105
HKG - Hong Kong	6,774	12,397	19,171
AMS - Amsterdam	12,323	3,219	15,542
PEK - Beijing	10,427		10,427
LUX - Luxemburg		7,668	7,668
MUC - Munich	7,272		7,272
ZRH - Zurich	6,760		6,760
Grand Total	210,413	571,386	781,799

Top 15 Intl. Destinations

	Belly	Freighter	Total
ANC - Anchorage	153	161,800	161,953
FRA - Frankfurt	11,733	24,440	36,172
LHR - London	30,037		30,037
AMS - Amsterdam	10,585	16,511	27,096
NRT - Tokyo	25,633		25,633
DOH - Doha	4,032	20,938	24,970
MEX - Mexico City	439	17,862	18,301
LUX - Luxemburg		14,491	14,491
CDG - Paris	6,586	4,750	11,336
PVG - Shanghai	6,172	2,607	8,779
PIK - Prestwick		7,757	7,757
DUB - Dublin	3,443	3,750	7,193
ICN - Seoul	4,865	2,082	6,947
BRU - Brussels	4,030	2,829	6,859
PEK - Beijing	6,626		6,626
Grand Total	162,376	301,898	464,274

Source: BTS T-100 Segment Database

Thus, with Anchorage included, the left side of the table reveals that air cargo tonnage origins are dominated by Asian traffic, with 488,861 total tons, which equates to 62.5 percent of the total international origins tonnage (488,861/781,799). These Asian origins are as follows:

- Anchorage – 368,738.
- Tokyo – 40,483.
- Shanghai – 26,937.
- Seoul – 23,105.
- Hong Kong – 19,171.
- Beijing – 10,427.

By contrast, the top European origins account for 205,232 total tons, which equates to 26.3 percent of the total international origins tonnage (205,232/781,799). These European origins are as follows:

- Frankfort – 87,048.
- London – 31,646.
- Paris – 25,216.
- Moscow – 24,080.
- Amsterdam – 15,542.
- Luxemburg – 7,668.
- Munich – 7,272.
- Zurich – 6,760.

The right side of the table indicates that the destinations profile is more balanced. In this case, air cargo tonnage destinations for Asian airports is 209,938 tons, which equates to 45.2 percent of the total international destinations tonnage (209,938/464,274). These Asian destinations are as follows:

- Anchorage – 161,953.
- Tokyo – 25,633.
- Shanghai – 8,779.
- Seoul – 6,947.
- Beijing – 6,626.

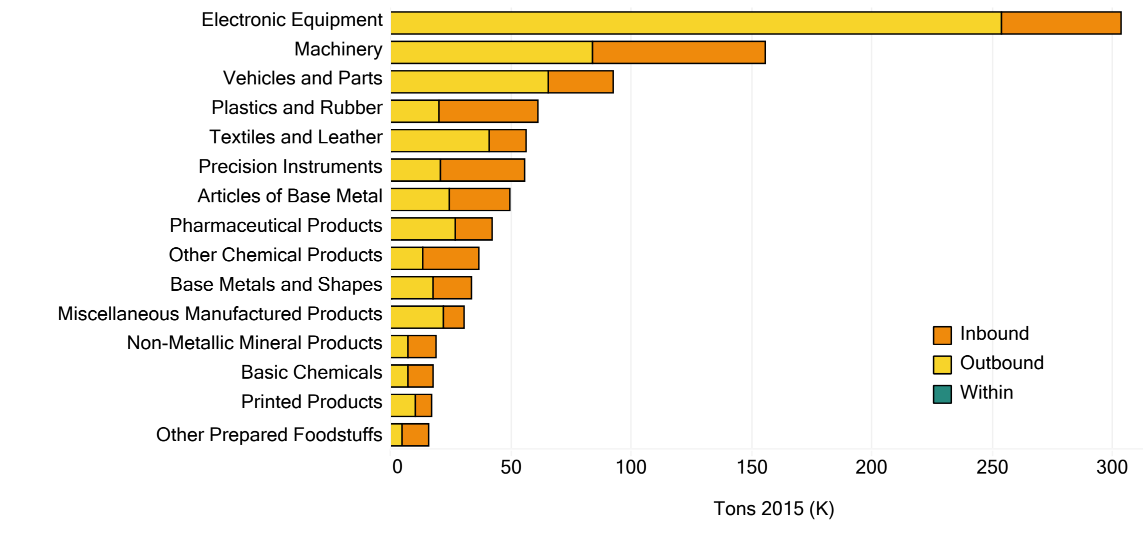
By contrast, the top European destinations account for 140,941 total tons, which equates to 30.4 percent of the total international destinations tonnage (140,941/464,274). These European destinations are as follows:

- Frankfort – 36,172.
- London – 30,037.
- Amsterdam – 27,096.
- Luxemburg – 14,491.
- Paris – 11,336.
- Prestwick – 7,757.

- Dublin – 7,193.
- Brussels – 6,859.

In order to better understand air cargo activity in Illinois, the latest version of the Freight Analysis Framework (FAF) data set was used to characterize the commodities that are shipped by this mode. This data set was not used to answer other questions about air cargo because a more precise source of information was available, namely the BTS T-100 data set. However, because the BTS T-100 data does not have commodity detail, the FAF data is needed to provide a profile of the commodities moved by air. Figure 1-35: Top 15 Commodities by Tonnage Shipped by Air, 2015, shows that the top commodities moved by air in terms of tonnage are electronic equipment, machinery, and vehicles and parts.

Figure 1-35: Top 15 Commodities by Tonnage Shipped by Air, 2015

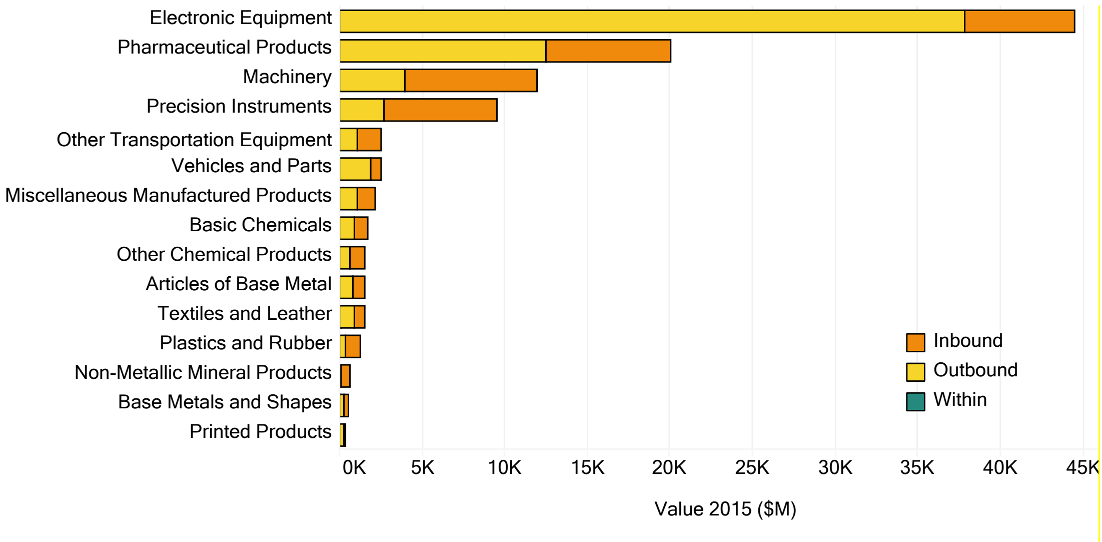


Source: Freight Analysis Framework v4.3

[The corresponding SCTG Commodity Codes for the above are: Electronic equipment (35), Machinery (34), Vehicles and parts (36), Plastics and rubber (24), Textiles and leather (30), Precision instruments (38), Articles of base metal (33), Pharmaceutical products (21), Other chemical products (23), Base metals and shapes (32), Miscellaneous manufactured produces (40), Non-metallic mineral products (31), Basic chemicals (20), Printed Products (29) and Other prepared foodstuffs (07).]

In terms of value, the top commodities shipped by air are electronic equipment, pharmaceutical products, machinery, and precision instruments, as shown by Figure 1-36: Top 15 Commodities by Value Shipped by Air, 2015.

Figure 1-36: Top 15 Commodities by Value Shipped by Air, 2015



Source: Freight Analysis Framework v4.3

[The corresponding SCTG Commodity Codes for the above are: Electronic equipment (35), Pharmaceutical products (21),Machinery (34), Precision instruments (38), Other transportation equipment (37), Vehicles and parts (36), Miscellaneous manufactured products (40), Basic chemicals (20), Other chemical products (23), Articles of base metal (33), Textiles and leather (30), Plastics and rubber (24), Non-metallic mineral products (31), Base metals and shapes (32), and Printed products (29).]

1.4 Major Industry/Commodity Locations and Highway Use

In the previous sections, SCTG commodity groups were used to analyze freight movements by various mode of transportation. This section will focus on truck activity with an analysis of ten notable industry/commodity groups that are vital to the state economy. These ten industry/commodity groups are:

- Gravel and Non-Metallic Minerals.
- Foods and Beverages.
- Plastics and Rubber.
- Base Metals.
- Electronics.
- Grains and Agricultural Products.
- Machinery.
- Motor Vehicles.
- Gasoline.
- Coal.

Together, they represent a selection of a) top commodities by tonnage and value; b) manufactured goods that may benefit from greater domestic production; c) products important to the everyday life of Illinois communities, such as food, fuel, and construction materials; d) heavier loading commodities that can place greater maintenance burdens on infrastructure, as recognized in FAST Act provisions.

The focus is on trucks because they carry the majority of tonnage for Illinois freight and for most of these industry/commodity groups. Trucks also enable shipments by other modes, notably for intermodal rail and waterborne traffic.

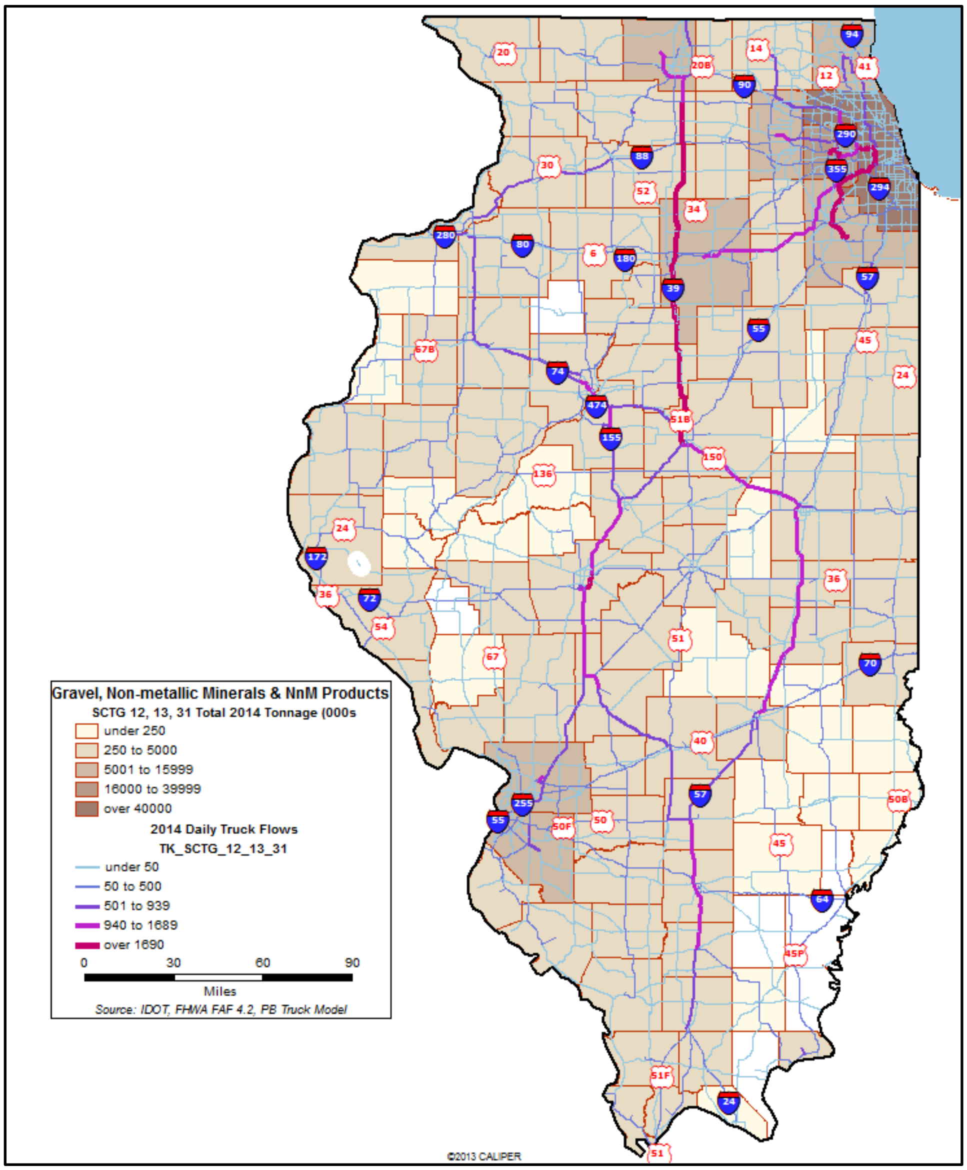
Each industry/commodity group is presented with a state map depicting both its total truck tonnage for Illinois-based shipments (traffic outbound, inbound, and within-state) as it is estimated to move across the highway system, and the industry/commodity tonnage of originated (outbound plus within-state) truck shipments by county. Originated shipping reflects the geographic concentration of industries producing the goods, and the tonnage on highways portrays which corridors are most in use by those industries. The complete set of ten groups thus provides a cross-section of the freight-related industrial base in Illinois, the regions where it is active, and the roadway infrastructure whose condition and performance affects the ability of these industries to reach markets and serve citizens competitively.

The 2-digit SCTG codes of the commodity groups that are included in each industry/commodity group analysis, are shown in the map legends.

1.4.1 Gravel and Non-Metallic Minerals

This group of bulk commodities contains salts and especially construction materials such as cement, gravel and gypsum, as well as clay, ceramics, and glass serving mixed purposes. Figure 1-37: Total Truck Flows and IL Origins: Gravel, Non-metallic Minerals and Products, shows traffic flows concentrating on I-39 between major producing centers in LaSalle County and Winnebago County around Rockford. I-355 south and west of Chicago has significant tonnage, reaching into Will County. Apart from higher volumes around St. Louis, production is generally dispersed around the state, with tonnages building up in central and southern Illinois along sections of I-55 and I-57.

Figure 1-37: Total Truck Flows and IL Origins: Gravel, Non-metallic Minerals and Products

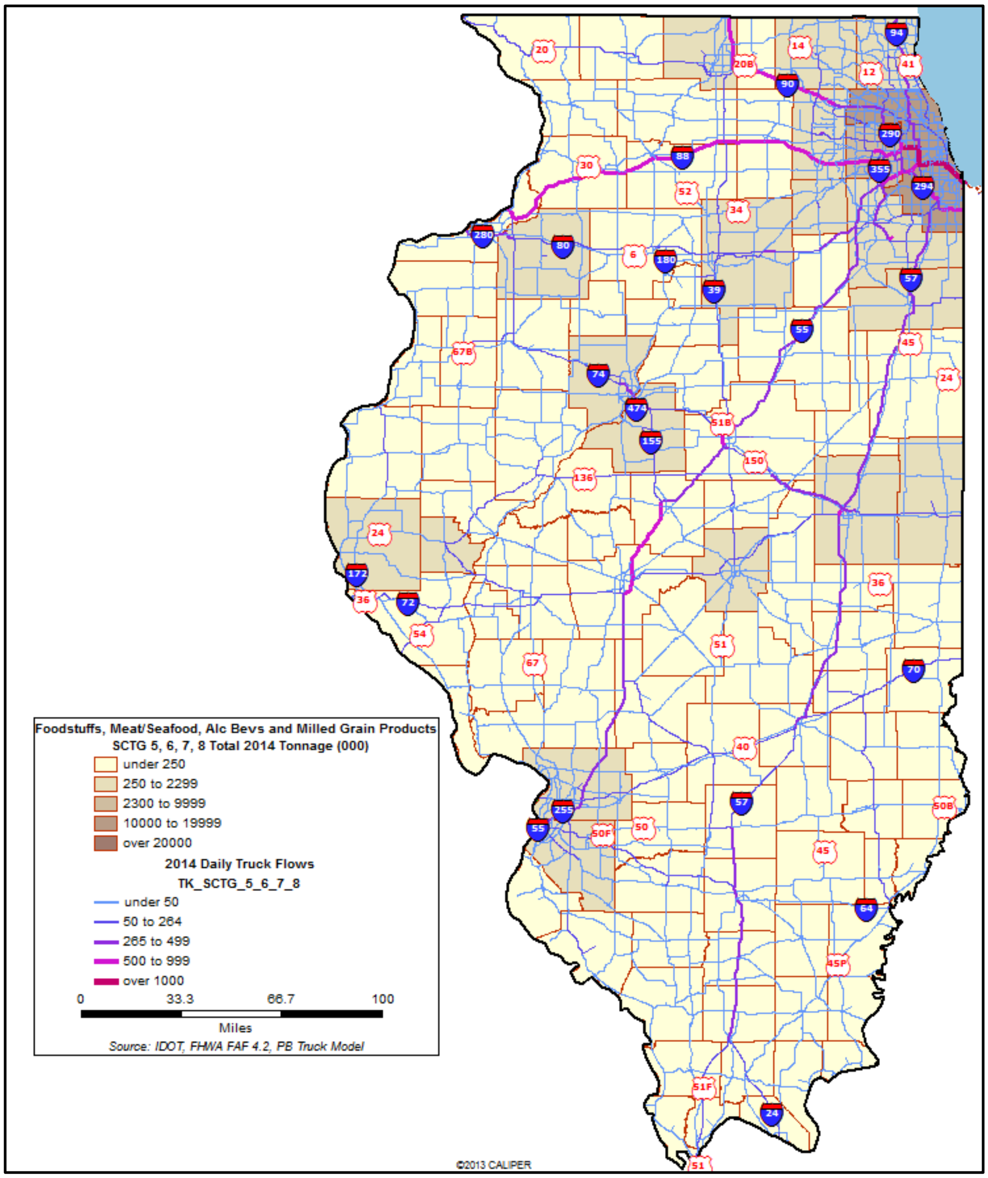


Source: WSP Disaggregated FAF v4.1

1.4.2 Food and Beverages

Food and beverages are important products of Illinois industry, drawing in part from the output of state agriculture production. These products are shipped around the country and supply the population through retail outlets, restaurants and the like. In the data, the category "foodstuffs" includes non-alcoholic beverages, so the group is comprehensive for processed goods. Figure 1-38: Total Truck Flows and IL Origins: Foodstuffs, Meat/Seafood, Alc. Beverages, and Milled Grains, shows multiple producing areas, with the greatest concentration in and radiating from Chicago, but with others near Peoria, Quad Cities, Quincy, Decatur and Champaign/Urbana. The northern Illinois routes I-88, I-90, and I-290 are prominent, with I-57 and I-55 particularly important mid-state and downstate.

Figure 1-38: Total Truck Flows and IL Origins: Foodstuffs, Meat/Seafood, Alc. Beverages, and Milled Grains

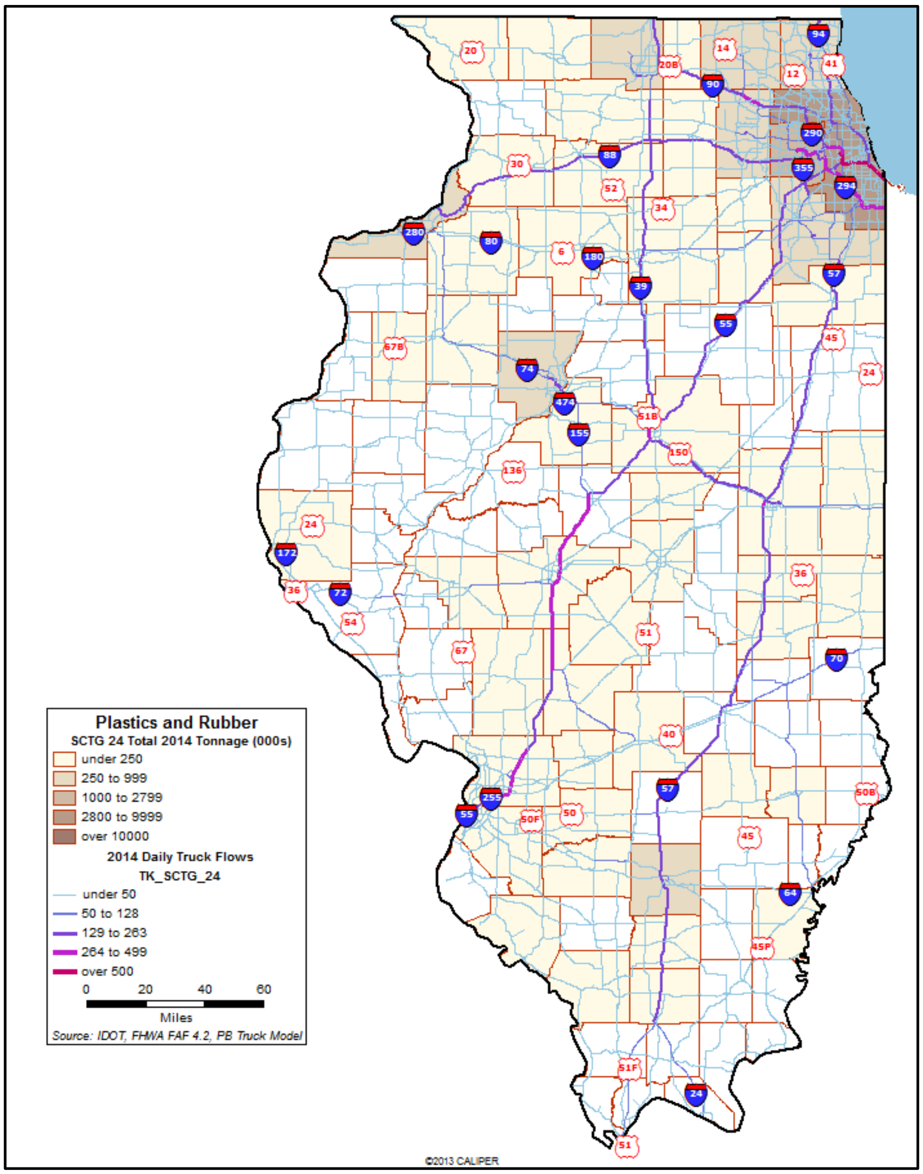


Source: WSP Disaggregated FAF v4.1

1.4.3 Plastics and Rubber

Plastics include a wide range of products. These products include raw materials in used in the manufacturing process, pipe, containers (such as bags and bottles), films and wraps, and furnishings. Tires and hosing are key examples of rubber goods. Figure 1-39: Total Truck Flows and IL Origins: Plastics and Rubber, shows production chiefly surrounding Chicago and extending to Rockford, plus Peoria, Quad Cities, and Mount Vernon. The main routes used are I-88 and I-90, and the north-south highways I-39, I-55, and I-57.

Figure 1-39: Total Truck Flows and IL Origins: Plastics and Rubber

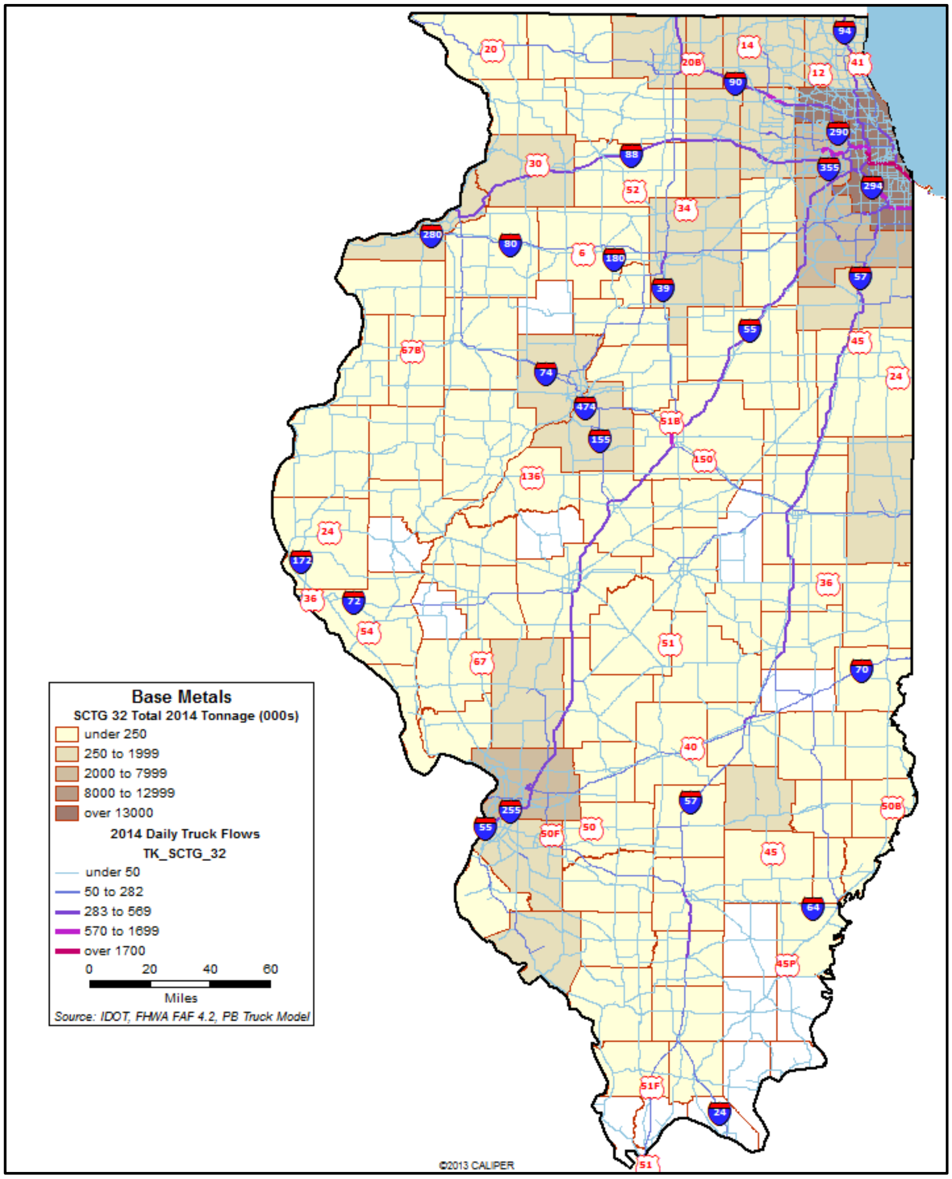


Source: WSP Disaggregated FAF v4.1

1.4.4 Base Metals

Base metals include steel, iron, and aluminum in primary forms and the intermediate molds used in product manufacturing, such as sheets and bars. Figure 1-40: Total Truck Flows and IL Origins: Base Metals, shows manufacturing concentrated across northern Illinois, with other locations including Peoria and a north-south band from Macoupin to Randolph counties near St. Louis. This leads to the main highways accessing Chicago and northern counties to carry the highest tonnages: routes such as I-94, I-90, and I-88, plus I-55 and I-57 linking to St. Louis.

Figure 1-40: Total Truck Flows and IL Origins: Base Metals

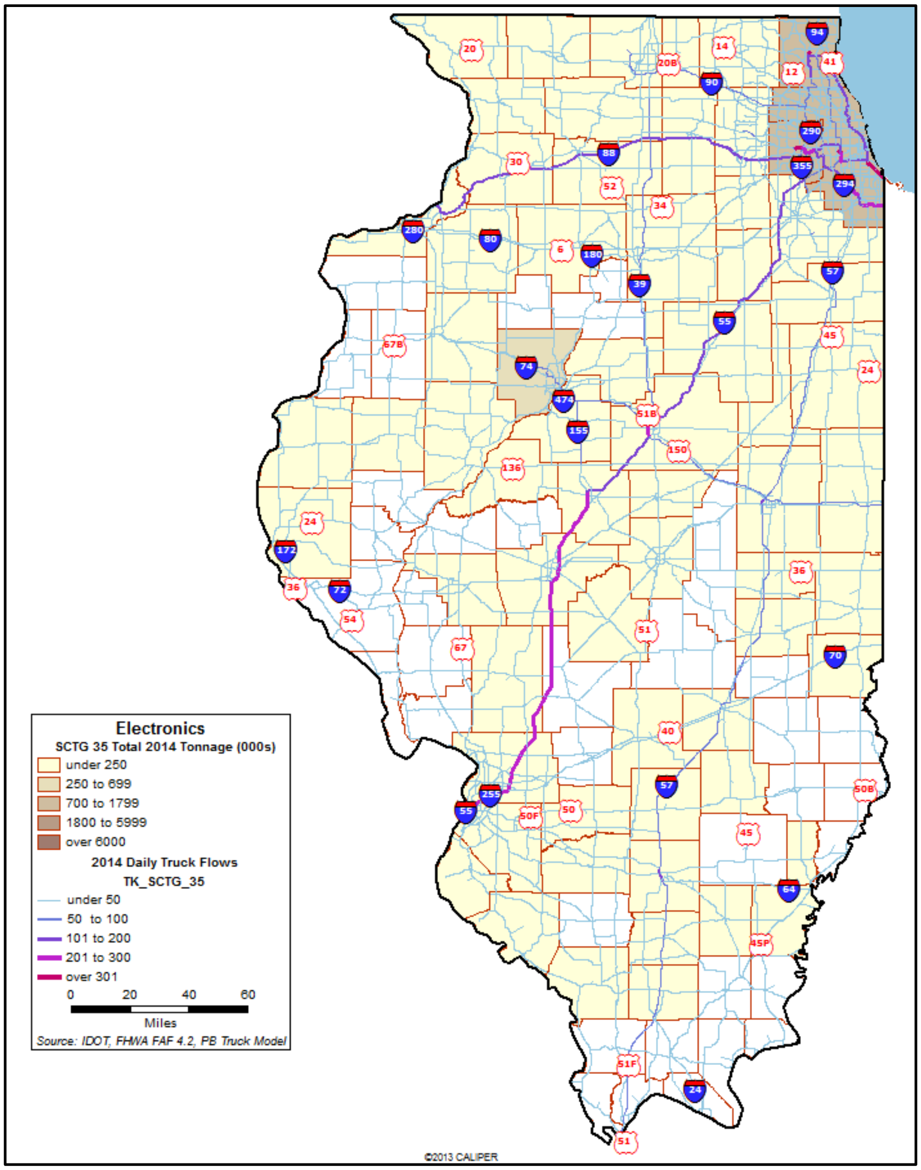


Source: WSP Disaggregated FAF v4.1

1.4.5 Electronics

Electronics range from computers, components, and software, to electric motors and generators, appliances, televisions, and telephones (but not cell phones). Manufacturing is concentrated almost entirely in greater Chicago, with some additional activity near Peoria - as shown in Figure 1-41: Total Truck Flows and IL Origins: Electronics, shows. Key routes are I-94 and I-294 in Chicago, as well as I-88 and I-55 carrying products to markets.

Figure 1-41: Total Truck Flows and IL Origins: Electronics

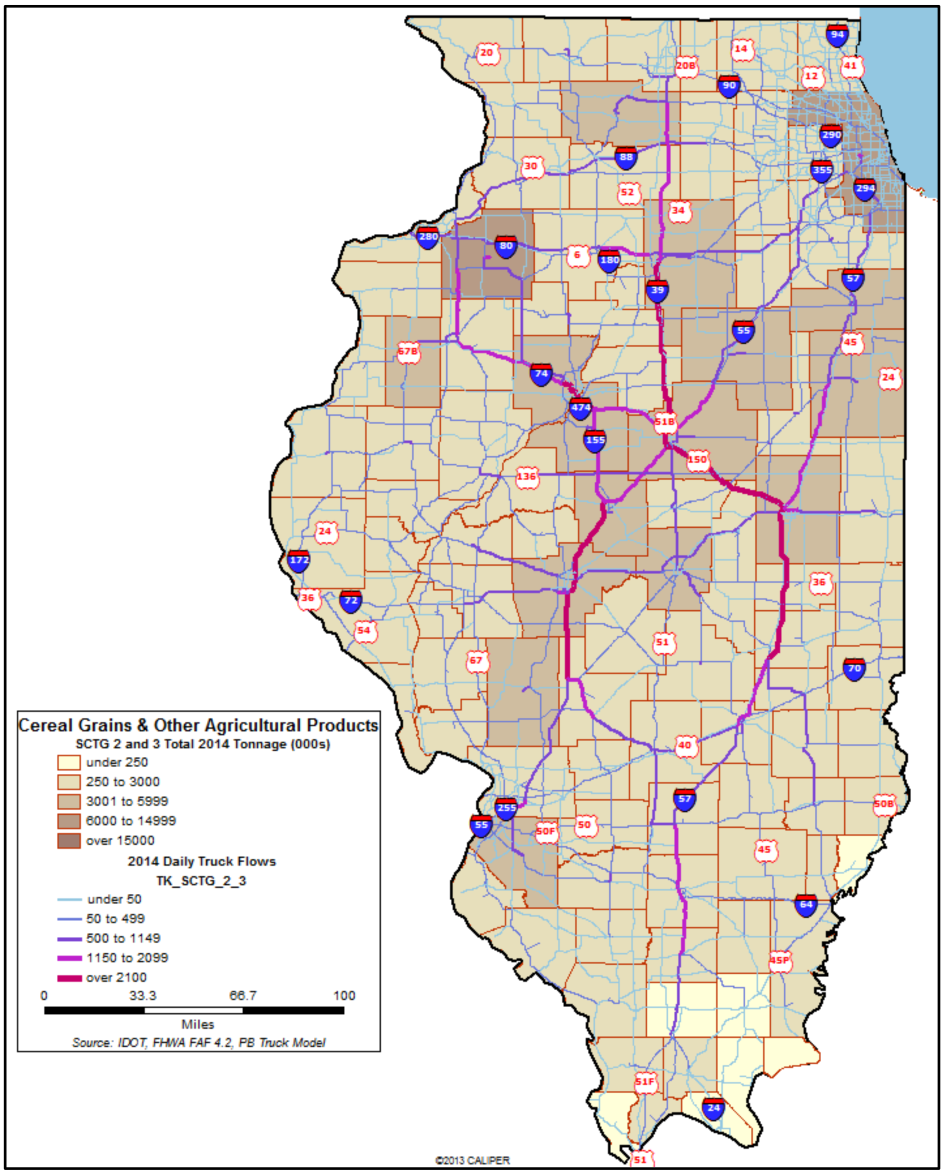


Source: WSP Disaggregated FAF v4.1

1.4.6 Grains and Other Agricultural Products

Agriculture is a primary Illinois industry, with corn and soybeans the principal crops grown in much of the state, especially along the corridor of I-55 and the Illinois River, and around Quad Cities near the Mississippi River. This commodity group also includes fresh fruits, vegetables, and flowers, which accounts for the Chicagoland activity beyond the rural areas of Will County – as shown in Figure 1-42: Total Truck Flows and IL Origins: Cereal Grains and Other Agricultural Products, illustrates. A set of highways in central Illinois are crucial routes, among them I-39, I-55, I-57, and I-74/US-150.

Figure 1-42: Total Truck Flows and IL Origins: Cereal Grains and Other Agricultural Products

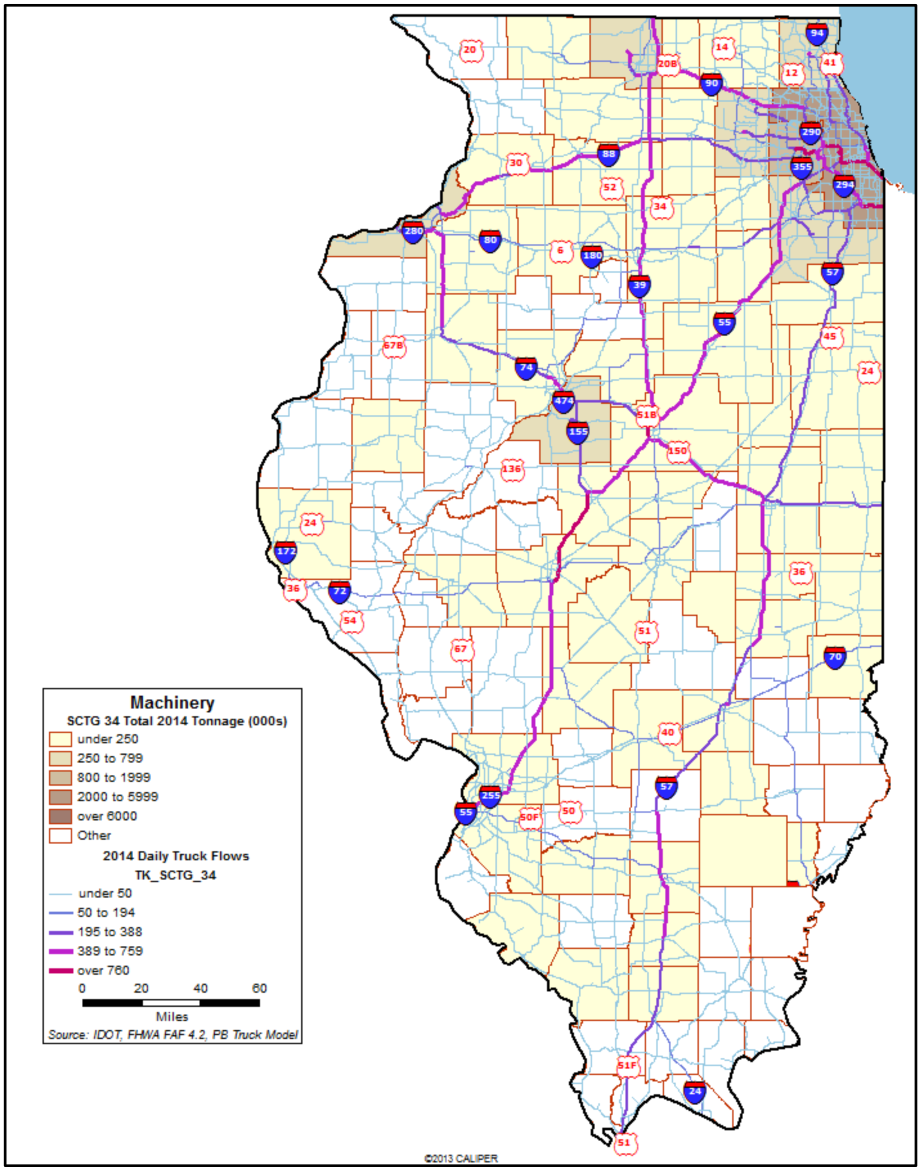


Source: WSP Disaggregated FAF v4.1

1.4.7 Machinery

Machinery is a key high-value product of manufacturing in greater Chicago, with additional centers around Peoria, Rockford, and the Quad Cities. This category consists of various types of goods including machine tools, engines and turbines, pumps, refrigeration equipment, forklifts, some agricultural equipment, and heavy machinery such as the kind produced by Caterpillar. Figure 1-43: Total Truck Flows and IL Origins: Machinery, shows key routes radiating from Chicago – I-90 and I-94, I-88, I-55 and I-57 - as well as I-39 running north-south and I-74 through Quad Cities and Peoria.

Figure 1-43: Total Truck Flows and IL Origins: Machinery

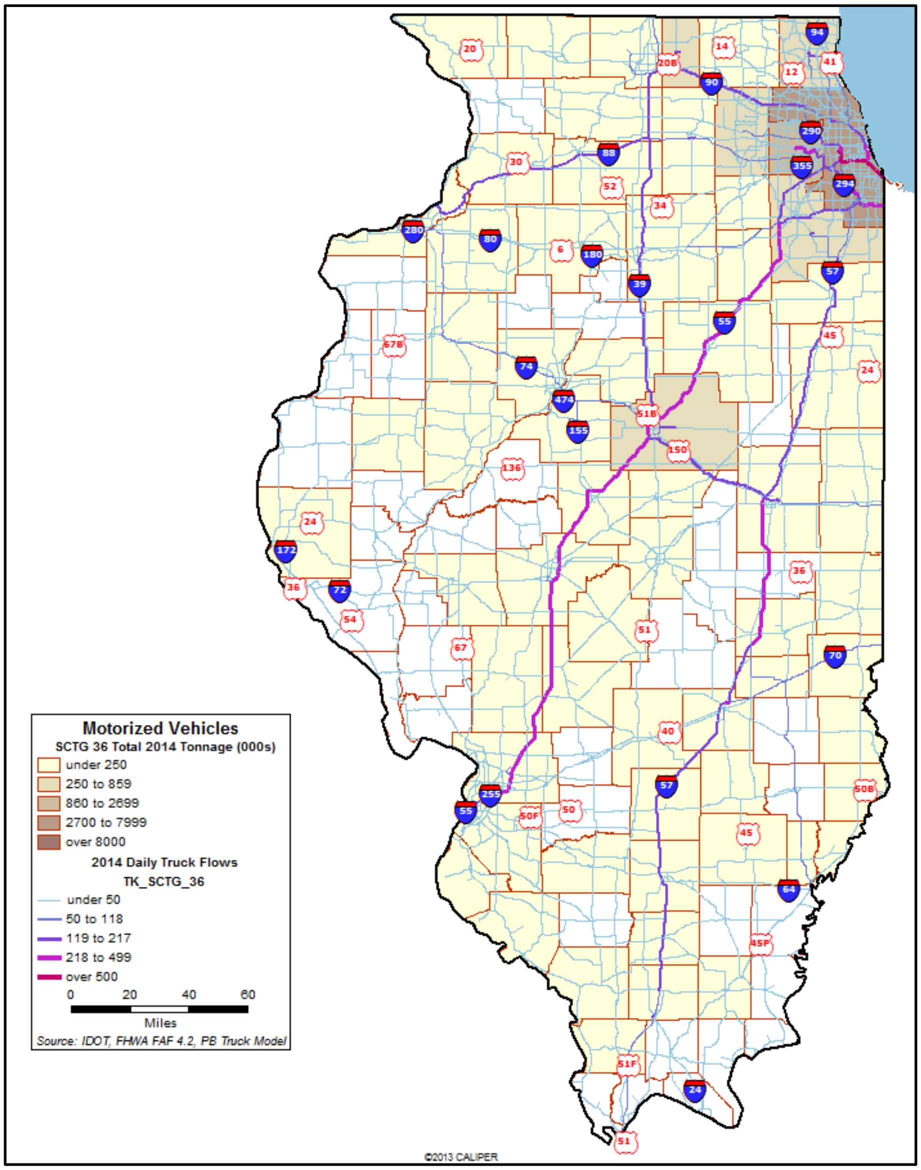


Source: WSP Disaggregated FAF v4.1

1.4.8 Motorized Vehicles

Motorized vehicles include cars and trucks, trailers, tractors, and auto parts. Figure 1-44: Total Truck Flows and IL Origins: Motorized Vehicles, depicts concentration in Northeastern Illinois including auto assembly plants in Chicago and Belvidere, and another pocket around Bloomington. The key corridor is I-55 from Chicago through Bloomington to St. Louis and markets beyond, in addition to I-90 between Chicago and Belvidere, and a variety of others in and radiating from Chicago.

Figure 1-44: Total Truck Flows and IL Origins: Motorized Vehicles

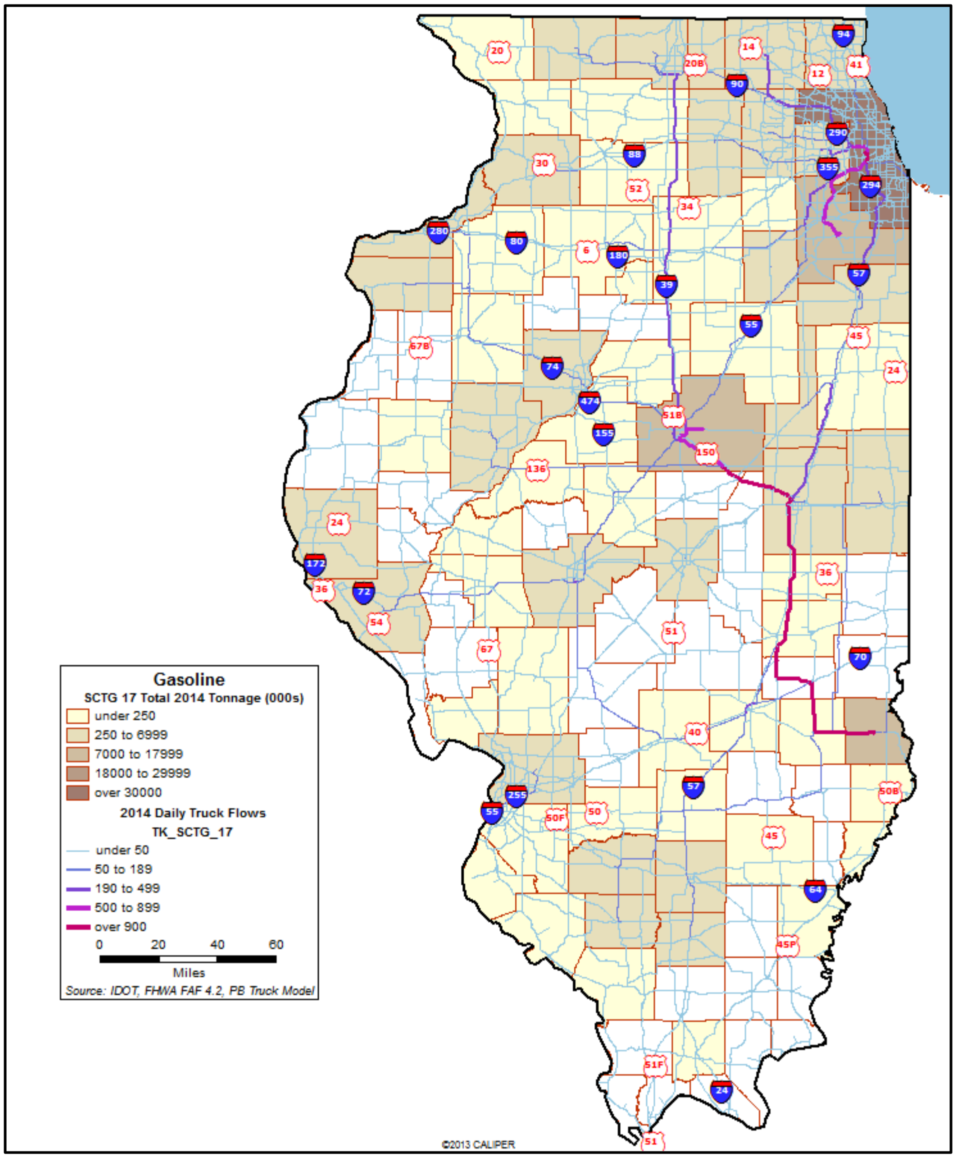


Source: WSP Disaggregated FAF v4.1

1.4.9 Gasoline

Illinois has petroleum refining plants around Chicago and St. Louis and in Robinson in southeast Illinois, but the key sources of gasoline are tank farm terminals where pipelines and sometimes river barges deliver products from plants chiefly on the Gulf Coast. Tank farms are situated to serve population centers, which accounts for the county and route dispersion visible in Figure 1-45: Total Truck Flows and IL Origins: Gasoline. Gasoline is needed everywhere, as neither supply chains nor commuters can function without it. Therefore, trucks travel over many roadways as the means to connect terminals to fueling stations. Although there is this dispersion, a few routes with heavier traffic are I-74/US-150, I-57 and SR-33 between Robinson and Bloomington.

Figure 1-45: Total Truck Flows and IL Origins: Gasoline

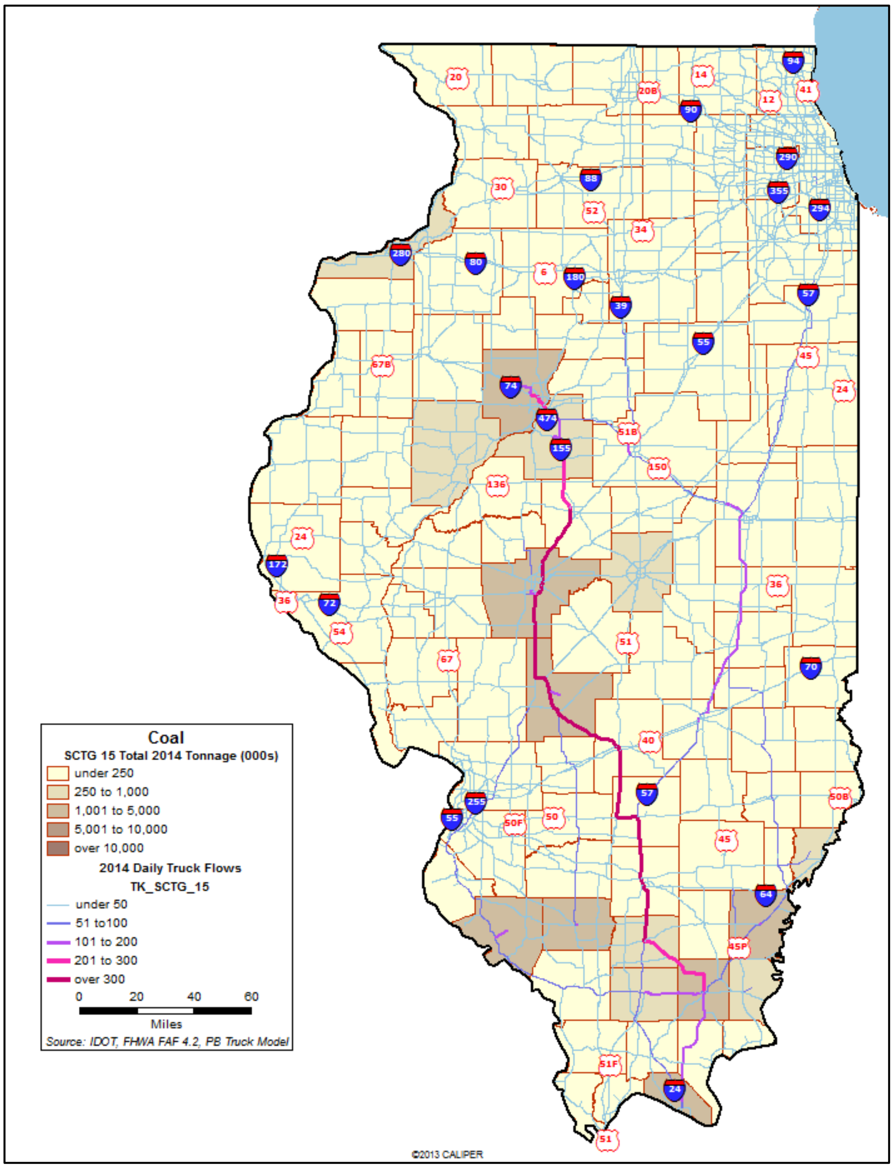


Source: WSP Disaggregated FAF v4.1

1.4.10 Coal

Coal in Illinois is carried primarily by rail and water. Trucking is decidedly secondary, but can be used to connect with the other modes and to reach electric utilities near coal mines. Traffic concentrations shown in Figure 1-46: Total Truck Flows and IL Origins: Coal, principally are near the coal fields across the southern part of the state between Randolph and White counties and further north near Springfield. Additional traffic locations can be found along the rivers. A significant north-south corridor in the southern part of the state uses a combination of I-55, I-155 and such smaller routes as US-51.

Figure 1-46: Total Truck Flows and IL Origins: Coal



Source: WSP Disaggregated FAF v4.1

1.5 Forecast

Forecasts for the composite freight flow database were developed using federal Freight Analysis Framework v4.1 growth rates to project Truck, Rail, and Water tonnages and values out to 2045.[6] It is important to clarify that this represents an unconstrained forecast where projections are driven by changes in the consumption and production of commodities, not changes in the competitiveness of individual modes. In other words, these forecasts reflect econometric projections of the commodity demand for freight transportation, not changes in the supply of freight transportation services, whether from either certain modes improving their service or other modes seeing deteriorations in service (e.g. from congestion). Thus, the mode share for any origin-destination-commodity combination does not change in these forecasts, and modal shifts overall are caused by varying growth rates in commodity flows producing change in in the commodity composition of traffic. In addition, these forecasts are baseline projections that do not model the effects of some major trends described elsewhere in this freight plan. For example, the reduction in coal demand is captured but not the consequences from possible changes in foreign trade policy. Also, as previously mentioned in Section 1.3.5, a vast majority of rail intermodal tonnage is classified in a catch-all category of "mixed freight" which does not provide any detail regarding these shipments.

As mentioned at the beginning of this chapter, in 2014, a total of 1.23 billion tons of inbound, outbound, and within freight was moved in Illinois[7]. The baseline forecast projection for 2045, including inbound, outbound, and within, shows an anticipated increase of 0.49 billion tons, for a total of 1.72 billion tons. This equates to an anticipated 40 percent growth in total tonnage (0.49/1.23).

A mode comparison which shows how the anticipated additional incremental tonnage that will be shipped, is shown on the left side of Figure 1-47: Freight Flow Growth by Mode, 2014 to 2045 (average and yearly growth rates labeled). As shown, shipments by truck are expected to grow the fastest, by far. The anticipated increase in truck tonnage indicates that approximately 340 million of the 490 million additional tons of freight will be moved by truck across the state's roadways. This represents approximately 70 percent of the additional incremental tonnage (340/490), and equates to an average growth rate of 1.4 percent per year (as also seen in Figure 1-47: Freight Flow Growth by Mode, 2014 to 2045 (average and yearly growth rates labeled))[8].

As also mentioned at the beginning of this chapter, in 2014, a total of $2.79 trillion of inbound, outbound, and within freight was moved in Illinois. The baseline forecast projection for 2045, including inbound, outbound, and within, shows an anticipated increase of $1.55 trillion, for a total of $4.34 trillion. This equates to an anticipated 56 percent growth in total value ($1.55/$2.79).

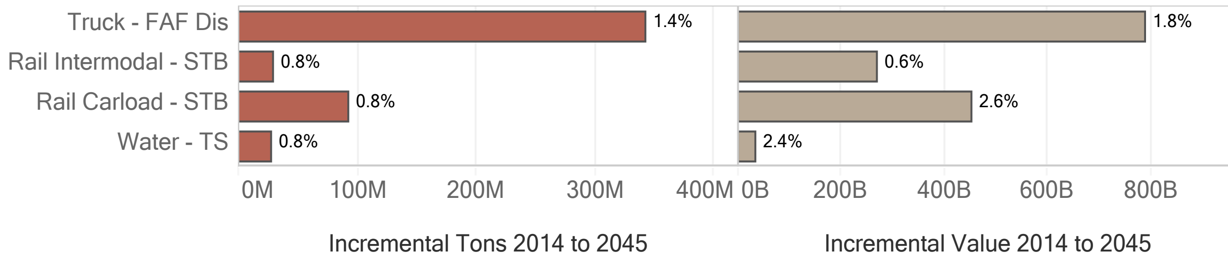
[6] Growth rates were calculated by mode, commodity and type of flow, and missing rates (where not all of these attributes were present) were obtained by examining just mode and type of flow.

[7] The Illinois Freight Plan issued in 2012 reported total freight volume of 1.26 billion tons in 2010, with 1.69 billion tons forecast for 2040. The figures presented here represent a restatement of the previously reported volumes, and do not imply a decline in tonnage between 2010 and 2014. The reason is that the 2012 Plan relied on an earlier generation of FAF data whose base year was 2007, before the Great Recession, and thus its estimates for 2010 were derived from pre-recession conditions. The freight data sources used in this chapter, including the current generation of FAF, are all post-recession and offer a better portrayal of recent freight volumes.

[8] Average yearly growth rates can be calculated through the following formula $\left(\frac{T_{2045}}{T_{2014}}\right)^{\frac{1}{2045-2014}} - 1$, where T_{2045} is the tonnage in 2045 and T_{2014} is the tonnage in 2014.

In terms of incremental value, as shown on the right side of Figure 1-47: Freight Flow Growth by Mode, 2014 to 2045 (average yearly growth rates labeled), rail carload is expected to see very fast growth, at 2.6 percent per year. As will be shown later, this is caused by a change in the composition of commodities transported by this mode, with coal representing a smaller share of rail carload shipments.

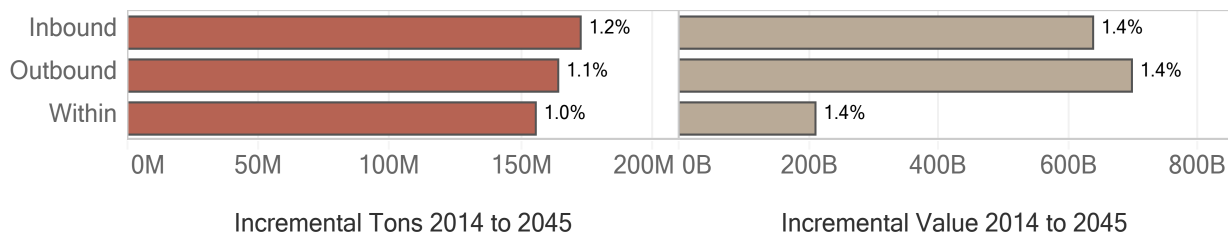
Figure 1-47: Freight Flow Growth by Mode, 2014 to 2045 (average yearly growth rates labeled)



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

Forecasted breakdowns for inbound, outbound, and within-state flows, indicate that each are expected to grow at comparable rates in incremental tonnage and incremental value as shown on the left and right side of Figure 1-48: Freight Flow Growth by Type 2014 to 2045 (average yearly growth rates labeled), respectively.

Figure 1-48: Freight Flow Growth by Type, 2014 to 2045 (average yearly growth rates labeled)



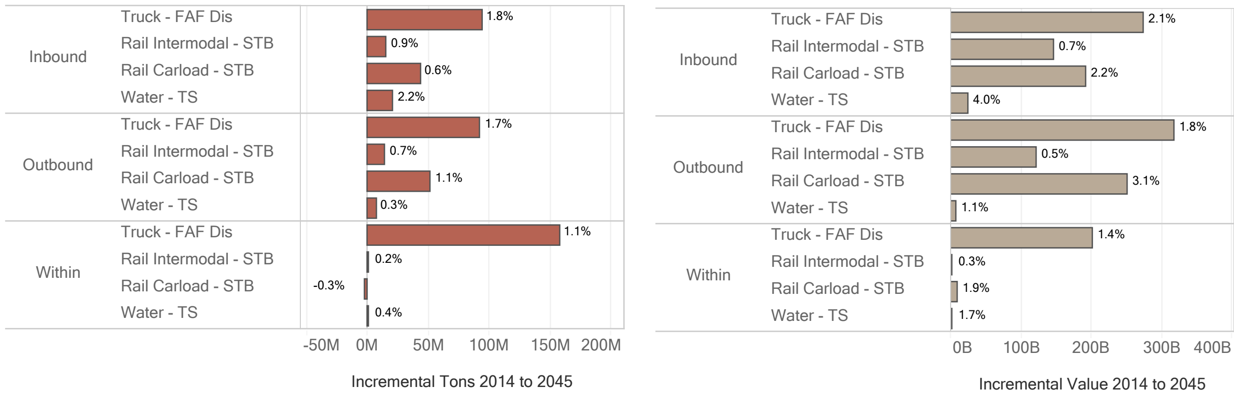
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

However, breaking down flow types by mode renders a different picture, as can be seen in Figure 1-49: Freight Flow Growth by Type by Mode, 2014 to 2045 (average yearly growth rates labeled). For the truck mode, significantly faster growth is expected for inbound and outbound shipments than for shipments within Illinois, in both incremental tonnage and incremental value. For incremental tonnage the anticipated growth rates are 1.8 percent for inbound, 1.7 percent for outbound, and 1.1 percent for within state. For incremental value, these growth rates are 2.1 percent for inbound, 1.8 percent for outbound, and 1.4 percent for within state.

Inbound rail intermodal shipments are expected to grow faster by 0.2 percent than outbound shipments, both for incremental tonnage (0.9 – 0.7) and incremental value (0.7 – 0.5). Within state growth is anticipated to be 0.2 percent by incremental tonnage and 0.3 percent by incremental value.

The opposite is observed for rail carload shipments, with outbound shipments growing faster than inbound shipment, by 0.5 percent for incremental tonnage (1.1 – 0.6) and 0.9 percent by incremental value (3.1 – 2.2). The within state growth rate for incremental tonnage is anticipated to actually show a decrease by 0.3 percent, although, in terms of incremental value, growth is anticipated to be 1.9 percent.

Figure 1-49: Freight Flow Growth by Type by Mode, 2014 to 2045 (average yearly growth rates labeled)



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

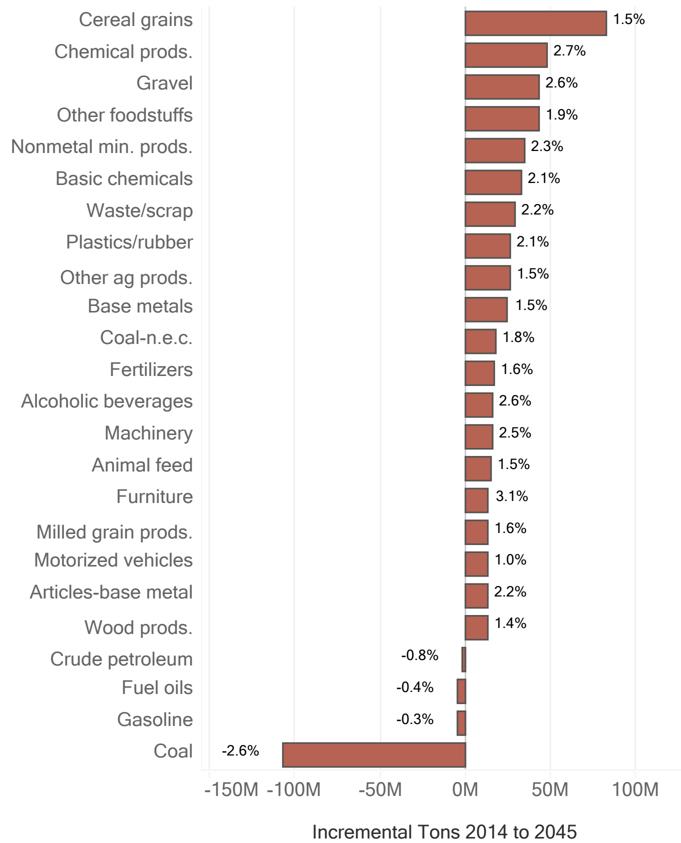
The mode and freight flow that is expected to grow the fastest is inbound water shipments. The anticipated growth rates are 2.2 percent by incremental tonnage and 4.0 percent by incremental value. Outbound water shipments are anticipated to grow at 0.3 percent by incremental tonnage and 1.1 percent by incremental value. The within state growth rate is anticipated to be 0.4 percent by incremental tonnage and 1.7 percent by incremental value.

The following figures show the commodity level forecasts that are driving the trends observed in the previous figures:

As shown in Figure 1-50: Freight Flow Tonnage Growth by Commodity, 2014 to 2045 (average yearly growth rates labeled), the commodities that will generate the most incremental freight tonnages out to 2045 are listed in order from highest to lowest. The commodities that are projected to increase the most by incremental tonnage are cereal grains, chemical products, gravel, other foodstuffs, and nonmetal mineral products. The yearly growth rates associated with these incremental tonnage increases are shown next to the tonnage bars in Figure 1-50: Freight Flow Tonnage Growth by Commodity, 2014 to 2045 (average yearly growth rates labeled).

Of the commodities expected to decrease in incremental tonnage, coal will decline the most, with shipments expected to be over 100 million tons smaller in 2045 than in 2014, representing an average decrease of 2.6 percent per year. Gasoline, fuel oils, and crude petroleum products are also expected to decrease, presumably reflecting changes in fuel efficiency and engine types.

Figure 1-50: Freight Flow Tonnage Growth by Commodity, 2014 to 2045 (average yearly growth rates labeled)



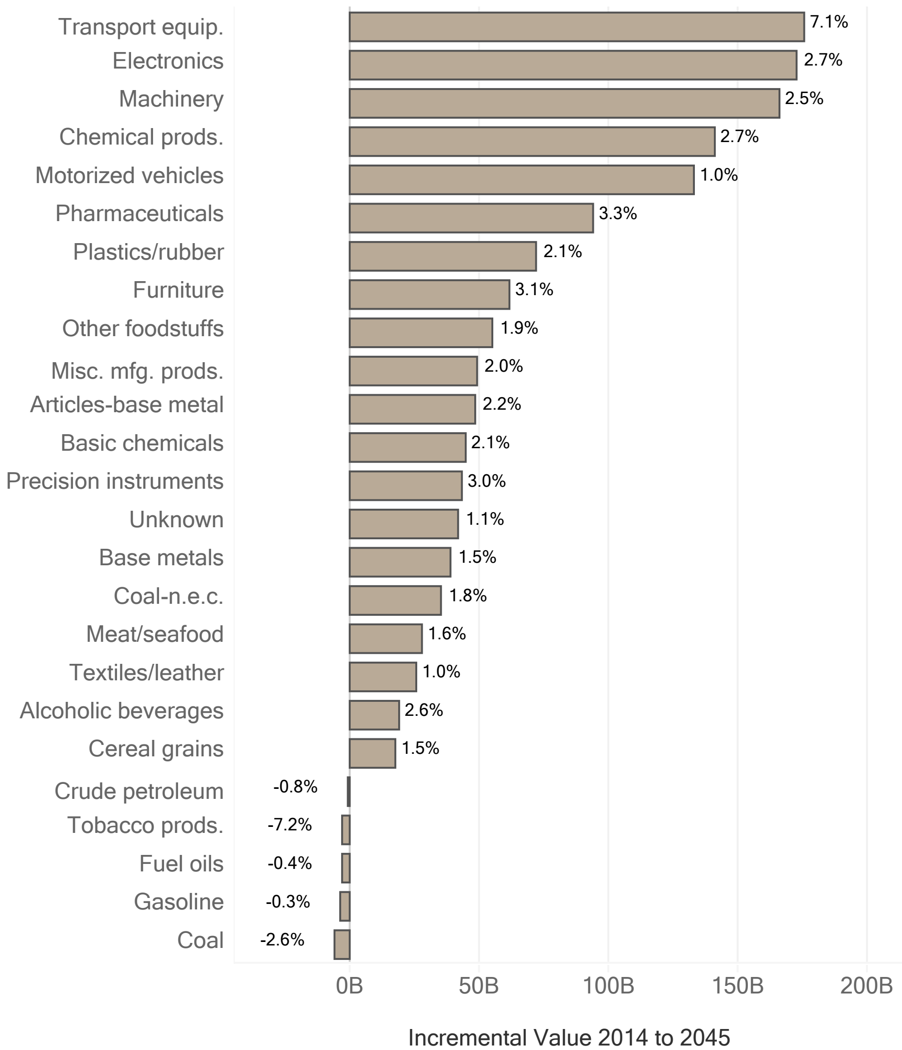
Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Cereal grains (02), Chemical prods. (23), Gravel (12), Other foodstuffs (07), Nonmetal min. prods. (31), Basic chemicals (20), Waste/scrap (41), Plastic/rubber (24), Other ag. prods. (03), Base metals (32), Coal-n.e.c. (19), Fertilizers (22), Alcoholic beverages (08), Machinery (34), Animal feed (04), Furniture (39), Milled grain prods. (06), Motorized vehicles (36), Articles-base metal (33), Wood prods. (26), Crude petroleum (16), Fuel oils (18), Gasoline (17), and Coal (15).]

As shown in Figure 1-51: Freight Flow Value Growth by Commodity, 2014 to 2045 (average real yearly growth rates labeled), the top growing commodities by incremental value are transportation equipment, electronics, machinery, chemical products, and motorized vehicles. Transportation equipment in particular is projected to grow at a very rapid rate of 7.1 percent per year.

Of the commodities expected to decrease in incremental value, tobacco products are expected to see fast declines of 7.2 percent per year out to 2045.

Figure 1-51: Freight Flow Value Growth by Commodity, 2014 to 2045 (average real yearly growth rates labeled)

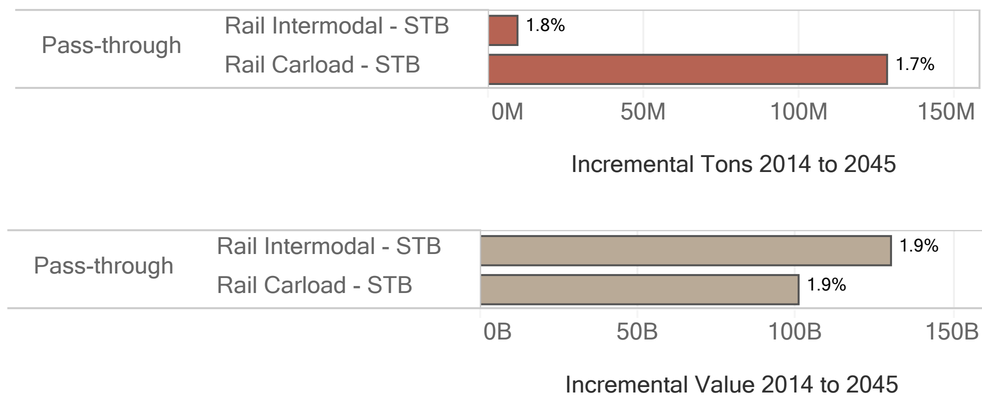


Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

[The corresponding SCTG Commodity Codes for the above are: Transport equip. (37), Electronics (35), Machinery (34), Chemical prods. (23), Motorized vehicles (36), Pharmaceuticals (21), Plastics/rubber (24), Furniture (39), Other foodstuffs (07), Misc. mfg. prods. (40), Articles-base metal (33), Basic chemicals (20), Precision instruments (38), Unknown (N/A), Base metals (32), Coal-n.e.c. (19), Meats/seafood (05), Textiles/leather (30), Alcoholic beverages (08), Cereal grains (02), Crude petroleum (16), Tobacco prods. (09), Fuel oils (18), Gasoline (17), and Coal (15).]

Rail pass-through traffic has also been forecasted out to 2045, as shown in Figure 1-52: Rail Pass-through Forecasts. This forecast indicates that the growth rate in incremental tons for rail intermodal and rail carload are very similar, at 1.8 percent and 1.7 percent respectively, while the growth rate in incremental value is projected to be 1.9 percent for both.

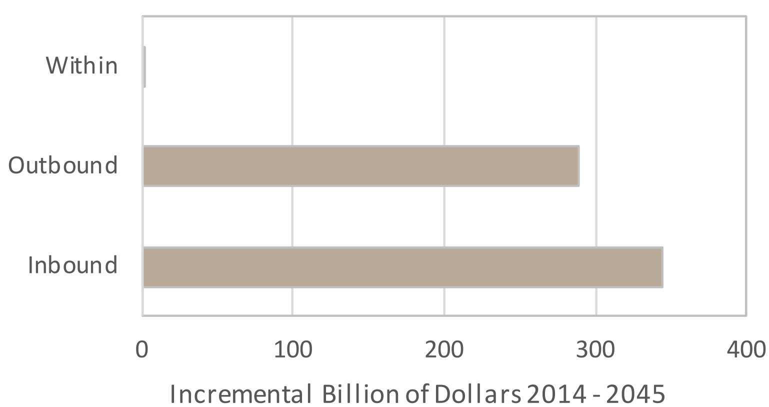
Figure 1-52: Rail Pass-through Forecasts



Source: Freight Analysis Framework v4.3

Air cargo growth was also forecast out to 2045. As with the other modal forecasts, projections for air cargo growth are based on FAF data and the forecast anticipates very substantial expansion of activity. As shown in Figure 1-53: Incremental Billions of Dollars 2014 to 2045, the projections indicate that freight moving to Illinois by air is expected to increase by 352 percent, which equates to an increase of $344.7 billion. Freight moving from Illinois by air is expected to increase by 332 percent, which equates to an increase of $288.8 billion. The high value of goods carried by air contributes to the magnitude of the forecast. In comparison to inbound and outbound movements, freight moving within Illinois by air is expected to increase only negligibly, with a projected value of $2.5 billion.

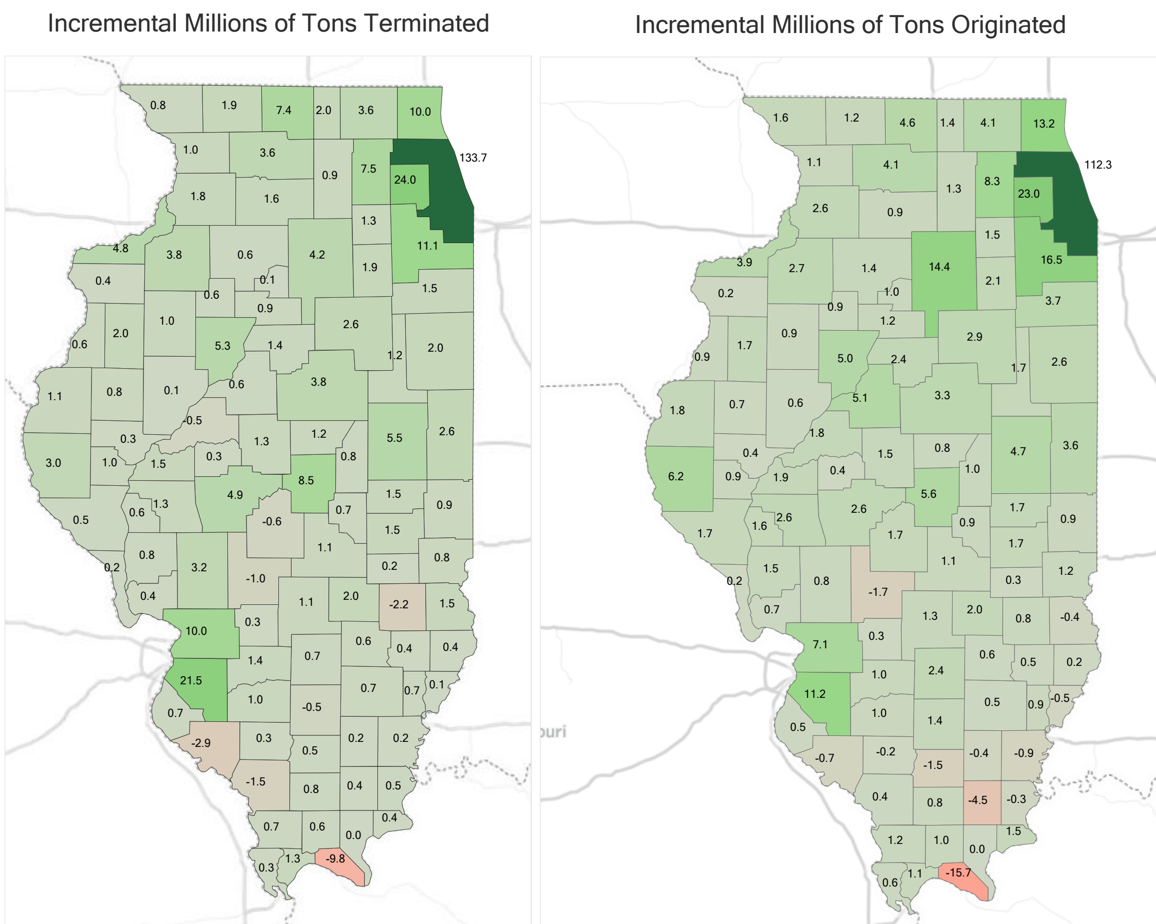
Figure 1-53: Incremental Billions of Dollars 2014 to 2045



Source: Freight Analysis Framework v4.3

A county level perspective of projected freight tonnage growth is shown in Figure 1-54: Incremental Millions of Tons 2014 to 2045 by County. Cook County is expected to see the largest growth, at 133.7 million tons terminated and 112.3 million tons originated. Other counties in Northeastern Illinois with notable projected freight tonnage growth are DuPage County, with 24.0 million tons terminated and 23.0 million tons originated, Will County, with 11.1 million tons terminated and 16.5 million tons originated, Lake County with 10.0 million tons terminated and 13.2 million tons originated, and Kane County, with 7.5 million tons terminated and 8.3 million tons originated. Counties in the St. Louis area that are expected to see substantial tonnage growth are St. Clair County, with 21.5 million tons terminated and 11.2 million tons originated, and Madison County, with 10.0 million tons terminated and 7.1 million tons originated. Other counties with notable projected tonnage growth are La Salle County, with 4.2 million tons terminated and 14.4 million tons originated, Macon County, with 8.5 million tons terminated and 5.6 million tons originated, and Peoria County, with 5.3 million tons terminated and 5.0 million tons originated.

Figure 1-54: Incremental Millions of Tons 2014 to 2045 by County

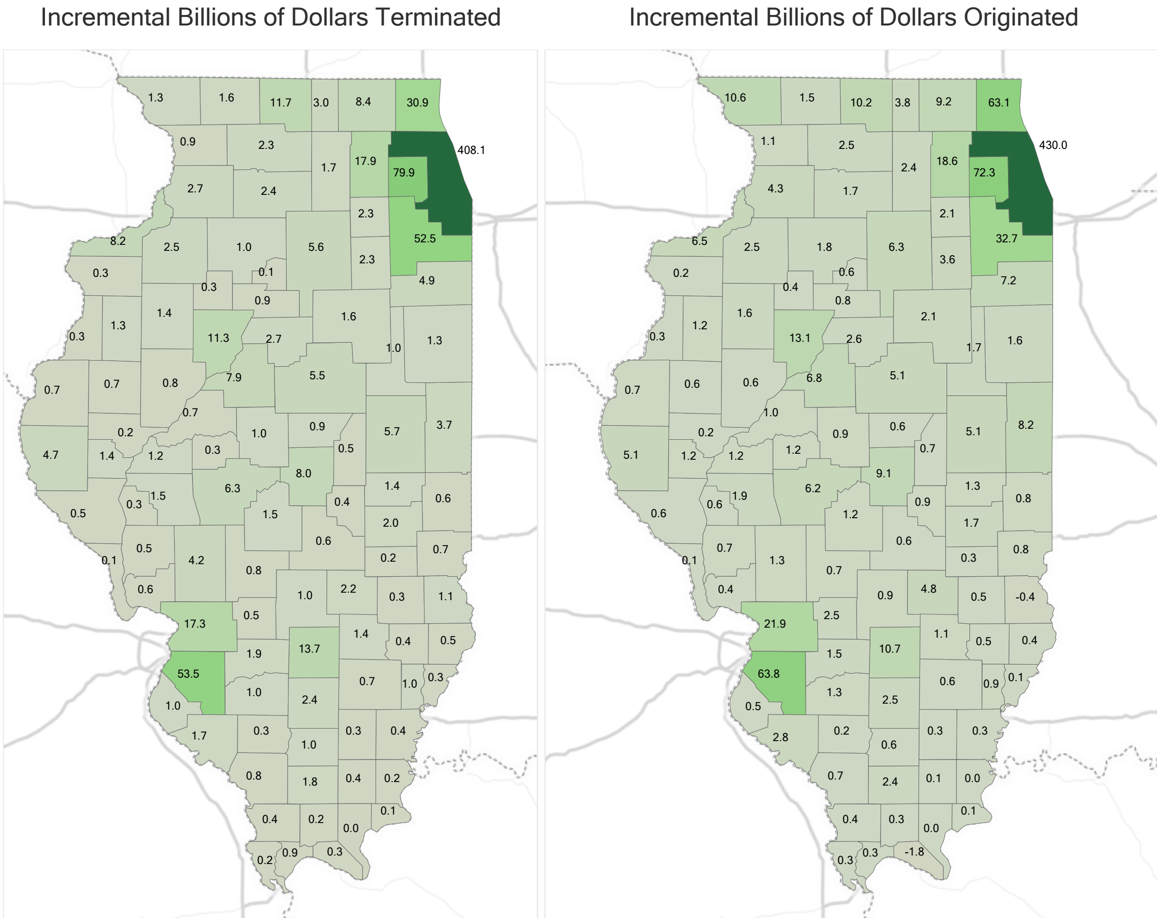


Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

A county level perspective of project freight value growth is shown in Figure 1-55: Incremental Billions of Dollars 2014 to 2045 by County. Cook County is expected to see the largest growth, at $408.1 billion terminated and $430.0 billion originated. Other counties in Northeastern Illinois with notable projected freight value growth are DuPage County, with $79.9 billion terminated and $72.3 billion originated, Will County, with $52.5 billion terminated and $32.7 billion originated, Lake County, with $30.9 billion terminated and $63.1 billion originated, and Kane County, with $17.9 billion terminated and $18.6 billion originated. Counties in the St. Louis area that are expected to see substantial value growth are St. Clair County, with $53.5 billion terminated and $63.8 billion originated, and Madison County, with $17.3

billion terminated and $21.9 billion originated. Other counties with notable projected value growth are Marion County, with $13.7 billion terminated and $10.7 billion originated, Winnebago County, with $11.7 billion terminated and $10.2 billion originated, and Peoria County, with $11.3 billion terminated and $13.1 billion originated.

Figure 1-55: Incremental Billions of Dollars 2014 to 2045 by County



Source: WSP Combined Commodity Flow Dataset, Only Truck, Rail, and Water

Illinois State Freight Plan

Chapter Two:

Freight Trends Affecting the Illinois Multimodal System

Illinois Department of Transportation (IDOT)

2. Freight Trends Affecting the Illinois Multimodal System

2.1 Introduction

This chapter reviews major freight trends affecting and shaping the Illinois multimodal freight system. It covers infrastructure, workforce, and emerging trends, with the latter category incorporating technological advances and market changes. Implications for Illinois are presented, including the shifting context for the freight forecasts presented in the Illinois Freight Flow and Forecast chapter of this plan.

2.2 Infrastructure Trends

2.2.1 State and National Focus

The National Freight Strategic Plan (NFSP) produced by the U.S. Department of Transportation describes six major trends affecting national freight transportation and the challenges presented by them. They are:

1. Expected Growth in Freight Tonnage.
2. Underinvestment in the Freight System.
3. Difficulty in Planning and Implementing Freight Projects.
4. Continued Need to Address Safety, Security, and Resilience.
5. Increased Global Economic Competition.
6. Application and Deployment of New Technologies[9].

Illinois freight stakeholders have identified the top issues facing freight in Illinois as:

- Deteriorating Infrastructure/Infrastructure Funding.
- Technological Advances.
- Workforce Training.

The freight stakeholders also identified these three issues as having the greatest impact on Illinois' freight economy.

A key aspect of the infrastructure issue, raised by of stakeholders, is that roadways are being required to handle freight volumes for which they were never designed. A prime example is the effect of truck traffic associated with major rail intermodal terminals in Will County, traveling on what historically had been rural roads. This issue becomes even more acute when forecasted increases in freight flow are considered. As presented throughout this plan, by 2045, total freight tonnage being shipped in Illinois is projected to grow by 40 percent, with 70 percent of the added tonnage expected to be moved by truck. As also cited in this plan, the pass-through truck traffic on Illinois roads is expected to increase from approximately 38 percent in 2014, to approximately 43 percent in 2045. As deteriorating infrastructure and the need for greater financial investments in freight infrastructure top both national and Illinois

[9] Draft National Freight Strategic Plan, 2015

lists, it is important to point out the critical role that Illinois plays in the overall national freight system and to analyze current funding trends.

2.2.2 Freight System and Conditions

Illinois' freight system includes an extensive multimodal network of roadways, rail lines, airports, waterways and ports as discussed below. Freight commodity flows for each of these modes is discussed in the *Illinois Freight Flow and Forecast* Chapter.

The National Highway System (NHS) in Illinois is the 4th largest in the nation, containing 7,945 miles; only Texas, California, and Florida have more.[10] This includes approximately 2,185 miles of interstate highways.

As will be explained below, IDOT uses a comprehensive evaluation system to determine the condition of roadways and bridges in Illinois. The performance targets are to have 90 percent of roads and 93 percent of bridges in acceptable condition.

Overall, in 2017, the total state highway system consisted of approximately 15,968 miles of roadways.[11]. IDOT evaluates the pavement condition of the state highway system on an annual basis through a Condition Rating Survey (CRS) system. This CRS data is collected annually on alternating halves of the state. In even-numbered years data is collected in Cook County and IDOT Districts 4, 5, 8, and 9. In odd-numbered years, data is collected in the collar counties surrounding Cook County (DuPage, Kane, Lake, McHenry, and Will) and IDOT Districts 2, 3, 6, and 7.

This data is used to classify roadway conditions into the following categories:

- Adequate. The condition of the highway ranges from good to excellent; no improvements are needed at this time.

- Accruing. The condition of the highway is expected to deteriorate to backlog condition with the next six years.

- Backlog. The condition of the highway has deteriorated to the point where an improvement is needed now.

In 2017, the number of backlog miles was 3,292 which equates to approximately 21 percent (3,292/15,968).

In 2017, the number of bridges under IDOT's jurisdiction was 8,135.[12] Like the roadway condition evaluation described above, IDOT also evaluates the condition of these bridges by using structure

[10] FHWA, Office of Planning, 3/25/2015
[11] IDOT FY 2018-2023 Proposed Highway Improvement Program
[12] IDOT FY 2018-2023 Proposed Highway Improvement Program

inspection data and other criteria such as accident data, load limits, and traffic volume, to establish a backlog list.

Once bridges are evaluated, they are classified into the following categories:

- Adequate. The condition of the bridge ranges from good to excellent; no improvements are needed at this time.

- Accruing. The bridge is expected to need improvements during and subsequent to the current highway improvement program time frame (includes both short-term and long-term accruing).

- Backlog. The condition of the bridge has deteriorated to the point where an improvement is needed now.

In 2017, the number of backlog bridges was 664, which equates to approximately 8 percent (664/8135).

Securing adequate funding to maintain this extensive infrastructure is critical and without additional resources, IDOT anticipates that these roadways and bridges will continue to deteriorate faster than the pace at which they can be maintained. According to the IDOT's FY 2018-2023 Proposed Highway Improvement Program, also referred to as the Multi-Year Program (MYP), the backlog of roadway miles is projected to be 5,588 in 2023 and the bridge backlog is projected to be 1,023 in 2023. This equates to a backlog of approximately 35 percent of roadway miles (5,588/15,968) and a backlog of 13 percent of bridges (1,023/8,135).

Viewed from a different perspective, the percentage of roadway miles that are currently in an acceptable condition, is 79 percent (21 percent backlog) and the percentage of bridges in acceptable condition is 92 percent (8 percent backlog). However, by 2023, the percentage of roadway miles in an acceptable condition is expected to drop to 65 percent (35 percent backlog) and the number of bridges in an acceptable condition is expected to drop to 87 percent (13 percent backlog). As can be seen, due to the limited resources that are available, these numbers fall below IDOT's performance targets to have 90 percent of roads and 93 percent of bridges in acceptable condition.

To better align with new federal performance measurement standards regarding performance of National Highway System (NHS) roads and bridges, the core areas by which projects are categorized in the MYP have been updated to the following three classifications: Road Maintenance, Bridge Maintenance, and Congestion Mitigation and Expansion. These categories will continue to be evaluated for possible updating as more experience is gained with reporting on these federal performance measurement requirements.

Illinois' freight rail system is comprised of 45 railroads, including all seven Class I railroads; Burlington Northern Santa Fe Railway (BNSF), Canadian National Railway (CN), Canadian Pacific Railway (CP), CSX Transportation (CSX), Kansas City Southern Railway (KCS), Norfolk Southern Railway (NS), and Union Pacific Railroad (UP). Illinois also has three regional railroads, 26 shortline railroads, nine terminal carriers, and nearly 10,000 miles of tracks. The rail network ranks second among all states in total railroad track mileage. Northeastern Illinois is the hub of the nation's rail system. Estimates are that 25 percent of all rail traffic and 44 percent of all intermodal units in the country pass through Chicago.

Even though freight rail companies and local governments have been investing heavily in their tracks, bridges, and tunnels as well as adding new capacity for freight, substantial investments to the railroad infrastructure in Illinois will need to be made to accommodate the projected growth in freight rail traffic. This includes completion of the remaining projects associated with the Chicago Region Environmental and Transportation Efficiency (CREATE) program, which is described in more detail in the next section .

Illinois' public-use airports generate billions of dollars in total annual economic activity, resulting in hundreds of thousands of jobs that can be traced to the aviation industry. According to a recent Federal Aviation Administration (FAA) report, The Economic Impact of Civil Aviation on the U.S. Economy (2015), the total annual economic output from the Illinois aviation industry is $50.9 billion. Furthermore, the aviation industry in Illinois is responsible for over 366,000 jobs. The study also found that aviation accounts for more than 4.2 percent of Illinois' Gross Domestic Product (GDP) and nearly 5 percent of the State's jobs.

There are 78 airports in Illinois that are publicly owned, open to the public and eligible for public funding. These airports are owned and operated by local sponsors with the State of Illinois acting as a co-sponsor for funding purposes. These airports are eligible for federal funding and all of them, with the exception of Chicago O'Hare International (ORD) Airport and Chicago Midway International (MDW) Airport, are eligible for state airport improvement program funding. In addition to the publicly owned airports, there are 38 privately owned airports which are open to the public, 548 restricted landing areas which are only open to people approved by the owner and 273 heliports which are used mainly by individuals, hospitals and corporations. None of these privately owned facilities are currently eligible for public funding[13].

Illinois' maritime network includes Lake Michigan, 1,095 miles of navigable inland waterways, 28 river locks, and 350 active ports.[14] The maritime system connects Illinois to the Atlantic via the St. Lawrence Seaway / Great Lakes and to the Gulf of Mexico via the Mississippi River.6 Illinois' main maritime freight routes are Lake Michigan, the Illinois River and canal system, as well as the Ohio, Mississippi, and Kaskaskia Rivers.

Movement of waterborne freight through Illinois is predominately north-to-south, since the Illinois River and canal system connects Lake Michigan to the Mississippi River and allows for transport to occur between the Great Lakes and the Gulf of Mexico. Other major freight flows by water in Illinois occur on the Mississippi River along the western border of Illinois and on the Ohio River at the southern end of Illinois. The Kaskaskia River also has freight traffic.

Navigation on the four major rivers in the state is controlled by a series of locks and dams. There are 15 lock and dam structures along the Mississippi River. The Illinois River and canal system have eight lock and dam facilities; on the Ohio River, along the Illinois border with Kentucky, there are currently three lock and dam structures. The final lock and dam in the state is on the Kaskaskia River, in Modoc.[15]

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[13] IDOT 2017 LRTP Aviation Whitepaper
[14] Maritime Performance Measures Report, UIC, 2015
[15] IDOT Transportation System Update, 2017

2.2.3 Funding and Financing Programs

IDOT's primary funding sources are the federal government, state motor fuel taxes, and motor vehicle and operators licenses. Funding amounts from these sources, along with other smaller funding sources, is shown in Table 2-1: Highway Fund Cash Receipts (Millions) below.

Table 2-1: Highway Fund Cash Receipts (Millions)

	2009	2010	2011	2012	2013	2014	2015	2016
Federal Government	1,282.5	1,783.3	1,732.0	1,610.5	1,485.3	1,502.9	1,721.2	1,537.5
Motor Fuel Taxes	1,392.6	1,268.4	1,243.1	1,220.7	1,191.2	1,223.5	1,222.6	1,277.1
Motor Vehicle and Operators Licenses	1,255.0	1,225.5	1,221.4	1,222.8	1,183.6	1,215.4	1,240.0	1,257.5
Title & Inspection Fees and Fines	77.3	74.5	76.0	79.5	125.2	129.4	136.7	138.4
Local Government	65.5	74.9	78.8	66.4	64.6	90.3	140.6	124.3
Miscellaneous	83.9	52.9	51.2	55.7	44.3	63.4	76.9	75.3
Total	**4,156.7**	**4,479.5**	**4,402.5**	**4,255.6**	**4,094.2**	**4,224.7**	**4,538.1**	**4,410.2**

Source: IDOT 2017 Long Range Transportation Plan

As shown, federal funding, much of which comes from the federal motor fuel tax, spiked after the passage of 2009's American Recovery and Reinvestment Act (ARRA), which is also referred to as the "stimulus package". Although revenues from some of the smaller sources have grown, these gains do not offset the overall subsequent decline in the major revenue areas.

Projects are typically financed through bond proceeds. Intermittent capital bills also rely on bond proceeds and provide an infusion of funds for various capital needs including transportation projects. An example is the approximately $12 billion five-year capital program signed in 1999 known as Illinois First. This was followed by two programs signed in 2009 that had a combined total of approximately $31 billion and were designed to last six years. These programs were known as Jump Start and Illinois Jobs Now. However, IDOT desires more sustainable revenue sources rather than the typical boom or busts cycle of capital programs. Innovative financing mechanisms are also be explored, including partnerships with public agencies and private entities, particularly since funds from both motor vehicle registrations and motor fuel taxes continue to dramatically decline as they are not adjusted for inflation.

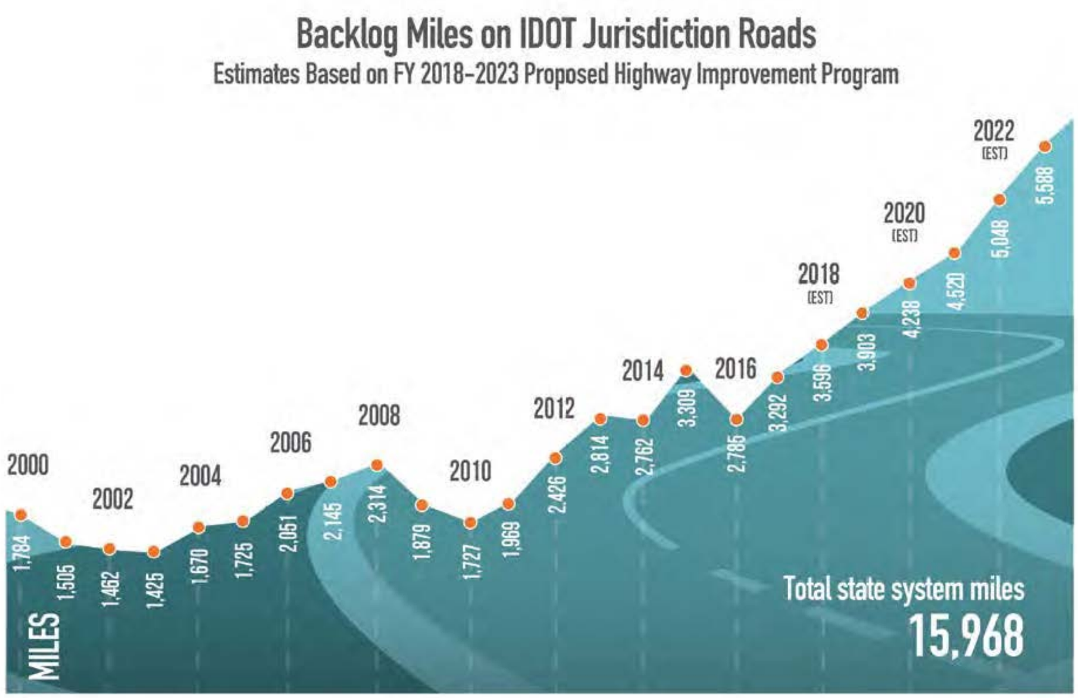
An additional statewide economic program that invests in rail service is the Illinois Rail Freight Loan Program, which was established in 1983. In FY 2017, the General Assembly provided $1.7 million for the Rail Freight Loan Program. The freight program provides grants and low interest financing to capital rail projects that benefit economic development in Illinois. Projects are evaluated based on a benefit/cost ratio.

Another element of IDOT's efforts to support freight and passenger rail service is also an example of a type innovative partnership, as mentioned above. This partnership is the Chicago Region Environmental and Transportation Efficiency (CREATE) program. CREATE is a public-private partnership between the

U.S. Department of Transportation, the Illinois Department of Transportation, the City of Chicago Department of Transportation, Cook County, passenger railroads Amtrak and Metra, and rail freight carriers BNSF Railway, Canadian Pacific Railway, Canadian National Railway, CSX Transportation, Norfolk Southern Railway, Union Pacific Railroad, Belt Railway Company of Chicago, and Indiana Harbor Belt Railroad. CREATE includes 70 projects that will result in increased efficiency, improved safety, and reliability of rail service in the Chicago region. Many of these are grade separation projects that also benefit highway users by creating overpasses or underpasses to separate the railroad from the roadway. To date, the CREATE partners have committed over $1.4 billion to the CREATE program, which is estimated to have a total cost of approximately $4.4 billion.

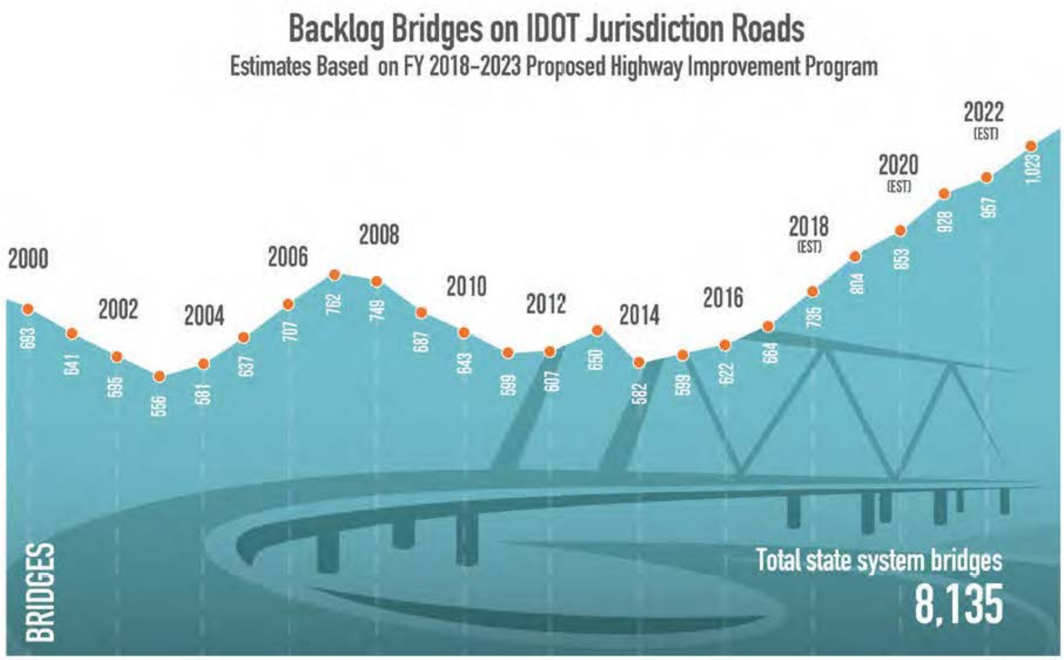
In December 2015, the Fixing America's Surface Transportation (FAST) Act was signed into law, authorizing federal funding for surface transportation through Federal Fiscal Year 2020. The FAST Act did place significant emphasis on freight, including funding for freight projects, however the new Act did not include an increase in federal motor fuel taxes. Federal motor fuel tax rates remain 18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel. The federal motor fuel tax rate was last increased in 1993 and like the Illinois motor fuel tax which was last increased in 1990, it has not been indexed to inflation. Therefore, the purchasing power of these revenues have diminished. Illinois' current expected funding as compared to its system needs can be seen in Figure 2-1: IDOT Annual Program vs Condition of State System and Figure 2-2: IDOT Annual Program vs Condition of State System below.

Figure 2-1: IDOT Annual Program vs Condition of State System



Source: IDOT FY18-23 Proposed Highway Improvement Program, 2017

Figure 2-2: IDOT Annual Program vs Condition of State System



Source: IDOT FY18-23 Proposed Highway Improvement Program, 2017

IDOT's FY 2018 – 2023 Proposed Highway Improvement Program totals $11.65 billion in projects, and while there is not enough funding to address all of the State's needs, it is anticipated that accomplishments will include the following:[16]:

- 2,463 miles of highway maintenance.
- 707 bridges replaced or rehabilitated.
- Safety improvements to railroad crossings throughout the state.
- Targeted safety improvements in fatal and severe crash locations.
- Enhanced public right-of-way accessibility.

2.2.4 Priorities and Performance Based Planning

During these times of diminished funding, IDOT continues to prioritize projects that address Roadway Maintenance, Bridge Maintenance, and Congestion Mitigation and Expansion. In the FY 2018-2023 Proposed Highway Improvement Program, the approximate allocation of funds to address needed improvements to the state's system of roads and bridges is 54 percent for System Maintenance, 32 percent for Bridge Maintenance, and 14 percent for Congestion Mitigation and Expansion. IDOT is focused on making data-driven decisions that prioritize projects based on performance measures in order to maximize the use of available funds by selecting projects that provide the greatest benefits. This is being done through the development of a data-driven performance based project prioritization

[16] IDOT FY 2018-2023 Proposed Highway Improvement Program

tool that can be used to assess project effectiveness. This tool is currently being used to reevaluate long-languishing expansion projects by identifying the primary need of the expansion and determining whether a majority of the need can be accomplished at a significantly reduced cost. The tool helps to identify the most critical factors in the proposed expansion project to see if targeted spot improvements can still deliver measurable benefits without the significantly higher cost of a full expansion. IDOT is also developing an asset management plan to inform investment decisions for maintaining pavement and bridges. IDOT has also worked on developed a performance based project selection tool for capacity projects that evaluates projects based on six evaluation criteria:

- Traffic Operations/Congestion.
- Safety.
- Economic Development.
- Accessibility/Multimodalism.
- Livability/Environmental Impacts.
- Regional Ranking.

2.3 Workforce Trends

2.3.1 Data Sources

This section analyzes the composition of the Transportation and Logistics industry and its related occupations in the State of Illinois. This analysis identifies trends in employment growth, demographic make-up, and the educational profile of the sector. The goal is to provide the state with strategies that enable it to:

- Coordinate and partner with educational institutions, industries, organized labor, workforce boards, and other agencies to address human capital transportation needs.
- Target education, training, and work-force development.

There are three data sources used to capture workforce trends in Illinois.

- **The Bureau of Labor Statistics (BLS)**[17] is a unit of the U.S. Department of Labor. The Bureau of Labor Statistics of the U.S. Department of Labor is the principal Federal agency responsible for measuring labor market activity, working conditions, and price changes in the economy. Its mission is to collect, analyze, and disseminate essential economic information to support public and private decision-making.
- **County Business Pattern (CBP) Data**[18] is an annual series that provides subnational economic data by industry. This series includes the number of establishments, employment during the week of March 12, first quarter payroll, and annual payroll.

[17] Bureau of Labor Statistics, U.S. Department of Labor, https://www.bls.gov/, accessed March 2017.
[18] U.S. Census County Business Patterns, https://www.census.gov/programs-surveys/cbp.html, accessed March 2017.

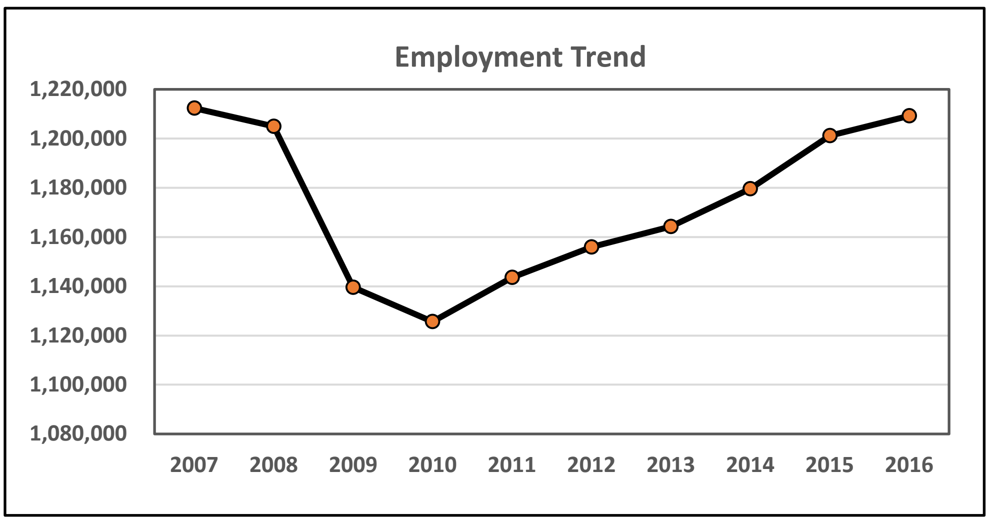
- **U.S. Census Longitudinal Employer-Household Dynamics (LEHD) Program**[19] is part of the Center for Economic Studies at the U.S. Census Bureau. The LEHD program produces new, cost effective, public-use information combining federal, state, and Census Bureau data on employers and employees under the Local Employment Dynamics (LED) Partnership. State and local authorities increasingly need detailed local information about their economies to make informed decisions. The LED Partnership works to fill critical data gaps and provide indicators needed by state and local authorities.

All three sources use the 2012 North American Industry Classification System (NAICS). In some cases, NAICS categories are combined for tabulation.

2.3.2 Worker Trends in Trade, Transportation, and Warehousing

As shown in Figure 2-3: Employment Trends in Trade, Transportation and Utilities, in 2016 the Bureau of Labor Statistics states there are over 1.2 million workers in Illinois employed in the broad category of Trade, Transportation and Utilities (TTU), which includes NAICS 42-49: Retail and Wholesale Trade, Transportation and Warehousing. Between 2007 and 2017 this sector recovered its 2007 levels after hitting a low point in 2010.

Figure 2-3: Employment Trends in Trade, Transportation and Utilities



Source: BLS, 2007-2017 trends

About 20 percent, or 240,000, of this broad sector of employees work in NAICS sector 48-49 representing Transportation and Warehousing. That sector will be the focus of the balance of this analysis.

[19] U.S. Census Longitudinal Employer-Household Dynamics (LEHD), https://lehd.ces.census.gov/, accessed March 2017.

2.3.3 Establishment Size

County Business Pattern (CBP) data is used to tabulate the number of establishments by size. The NAICS system classification is used with a narrower sector, NAICS 48-49 classification, in this tabulation. These workers represent only those in the Transportation and Warehousing group. They make up 240,000 (or 20 percent) of the 1.2 million group but provide a better snapshot of workers related to the freight industry.

Establishment information was then tabulated using transportation and warehousing. As shown in Table 2-2 Establishment Size, Transportation, and Warehousing Firms below, 70 percent of the 240,000 Transportation and Warehousing employees are working in establishments of one to four persons. This finding is consistent with the diverse scale of transportation and warehousing facilities ranging from mega-complexes for package fulfillment to small focused warehouse or transportation firms.

Table 2-2: Establishment Size, Transportation, and Warehousing Firms

# of Employees	# of Establishments	Percent of Total
1 to 4	10,137	70 percent
5 to 9	1,482	10 percent
10 to 19	1,101	8 percent
20 to 49	911	6 percent
50 to 99	387	3 percent
100 to 249	286	2 percent
250 to 499	88	1 percent
500 to 999	30	<1 percent
over 1000	17	<1 percent

Source: BLS, 2007-2017 trends

2.3.4 Freight Modal Profile in Transportation and Warehousing

Within the transportation and warehousing sector, there is a wide range of freight modes represented. Occupational information was tabulated from the LEHD data to better understand this breakout; NAICS 48-49 was again processed for analysis. The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing, and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. Table 2-3: Freight Mode Breakout of Transportation and Warehousing Workers, 2014 shows the breakdown by freight mode of transportation and warehousing workers. Truck transportation and warehousing dominates with 48 percent of the total. Among the most common occupations in the truck sector are driver/sales workers, truck drivers, laborers, and freight/material movers.

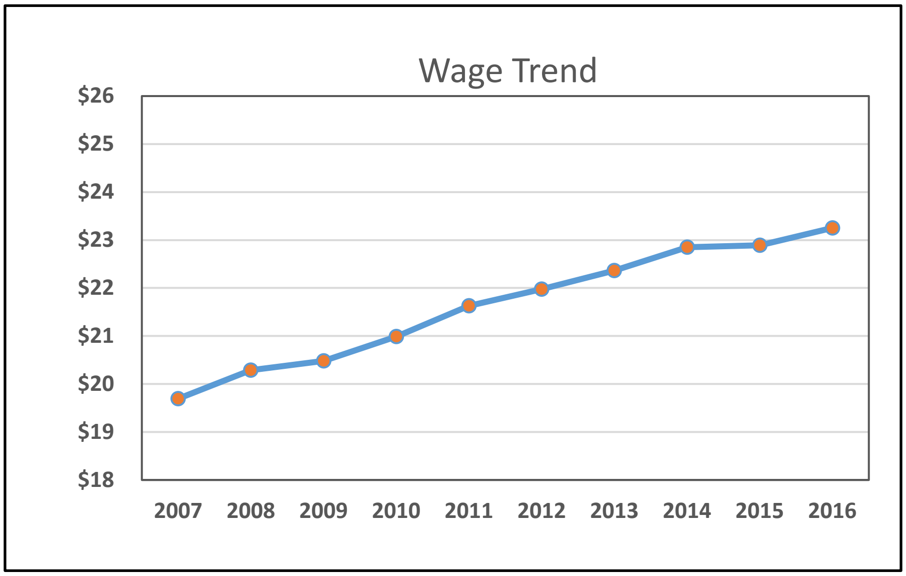
Table 2-3: Freight Mode Breakout of Transportation and Warehousing Workers, 2014

Description	% of Total
Air Transportation	11%
Rail Transportation	5%
Water Transportation	2%
Truck Transportation	48%
Transit and Ground Passenger Transportation	16%
Scenic and Sightseeing Transportation	1%
Support Activities for Transportation	17%
Total	100%

Source: U.S. Census Bureau, LEHD, accessed March 2017

The wages paid to workers in the Transportation and Warehousing sector are of interest as well. In the past ten years, average weekly wages reported by the BLS show an increase from just under $20 per hour to $23.25 per hour, a ten year growth rate of 18 percent (see Figure 2-4: Employment Trends in Transportation and Warehousing). Annual wages calculated directly from the BLS hourly average yield an annual $48,360 wage for this employment sector.

Figure 2-4: Employment Trends in Transportation and Warehousing



Source: BLS, 2007-2016 trends

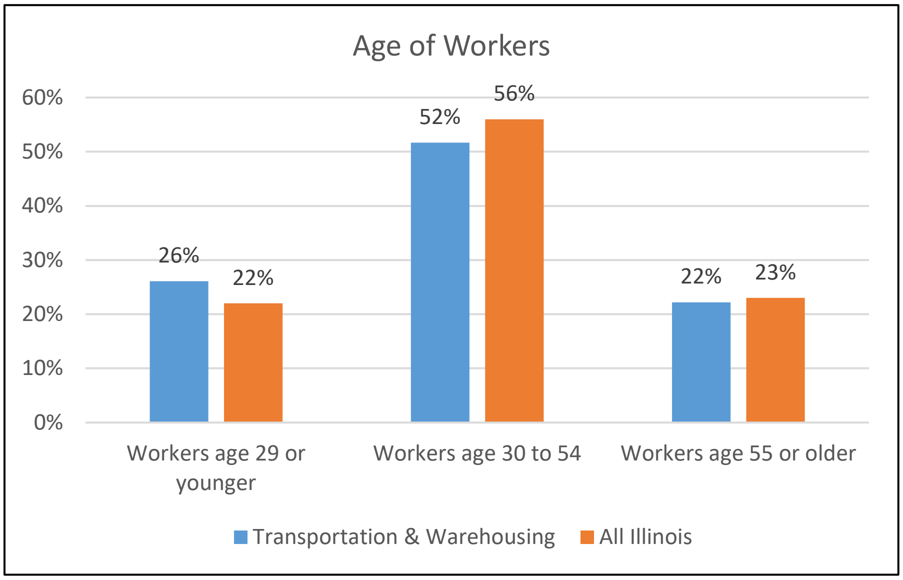
As wages for most occupations in Transportation and Warehousing start above minimum wage and increase to average or above average pay ranges in Illinois, these jobs are providing an economic boost to the workers, their families, and local economies. In addition, the BLS's Consumer Price Index (CPI) calculator indicates that Transportation and Warehousing wages have somewhat outpaced the rate of inflation during this ten year period. Based on inflation, the wages of a worker making $19.61 per hour in June 2007 have the same buying power as wages of $22.68 per hour in June 2016, which when compared to the current hourly rate mentioned above indicates relative wage growth in this sector.

New businesses with job opportunities in the state have promoted economic progress. Clearly, Illinois' unique position in the national transportation and logistics system has contributed to this growth in wages and a stable number of total workers.

2.3.5 Age Distribution

Figure 2-5: Age of Transportation and Warehousing vs. All Illinois Work Categories, Illinois shows a comparison of the age distribution of the transportation and warehouse workers, as compared to all workers in Illinois. This information is available through Longitudinal Employer-Household Dynamics (LEHD) data, provided by the U.S. Census Bureau. As shown, workers 29 or younger compose 26 percent of transportation and warehousing workers and 22 percent of total workers. Most Transportation and Warehousing workers (52 percent) are in the 30 to 54 year old category, which is slightly below the percentage of overall workers in this age group (56 percent). Twenty-two percent are 55 and older, similar to the Illinois percentage for all workers, which is 23 percent. These workers are within retirement range, a fact that represents a harbinger of future challenges. As the workforce ages, important questions arise in terms of succession planning for positions requiring high levels of knowledge and skill, continuing education, upward mobility for mid-career professionals, and advanced education for employees coming into the field.

Figure 2-5: Age of Transportation and Warehousing vs. All Illinois Work Categories, Illinois



Source: U.S. Census Bureau, LEHD, accessed March 2017

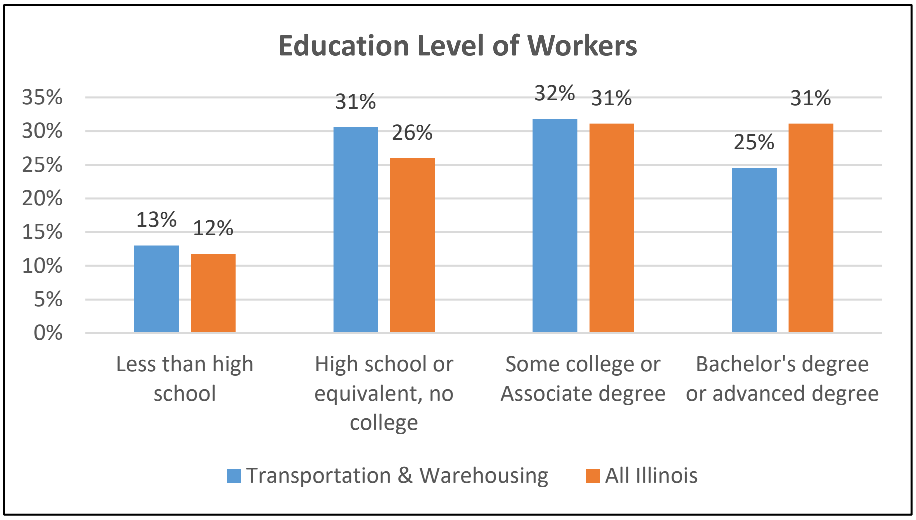
One of these age-related challenges is the shortage of truck drivers that is plaguing the freight industry nationwide. The American Trucking Association reports that nationally 175,000 new drivers will be needed by 2024, almost half the hiring of drivers is done to replace retirees and more than a quarter of the workforce currently is 55 or older.[20] Adding to the challenge is the fact that the minimum age to obtain a Commercial Driver's License is 21, and insurance provisions can make the minimum age effectively 25 – a point in life by which many workers have made career choices outside the industry. Autonomous vehicle technology could eventually reduce the demand for drivers, due to the drivers becoming more productive. This topic is explored further below.

2.3.6 Education Level

The education level of the Illinois workforce by NAICS category is also available from the LEHD data. In this section the NAICS sector 48-49 (Transportation and Warehousing) is compared the entire State of Illinois. Note that tabulations on education do not include workers under 30 years of age - some in this age group are assumed to be completing their education - and LEHD statisticians prefer to drop these workers from their tabulations. As shown in Figure 2-6: Education Level of Transportation and Warehousing TTU vs. All Illinois Work Categories, Illinois, for transportation and warehousing workers, 13 percent have not completed high school compared to 12 percent in all Illinois occupations. The bulk of Transportation and warehousing workers (63 percent) have completed high school (31 percent) or have some college (32 percent). A college degree is less prevalent in the transportation sector (25 percent) than in Illinois in general (31 percent).

[20] "Critical Issues in the Trucking Industry – 2015", American Transportation Research Institute, October 2015.

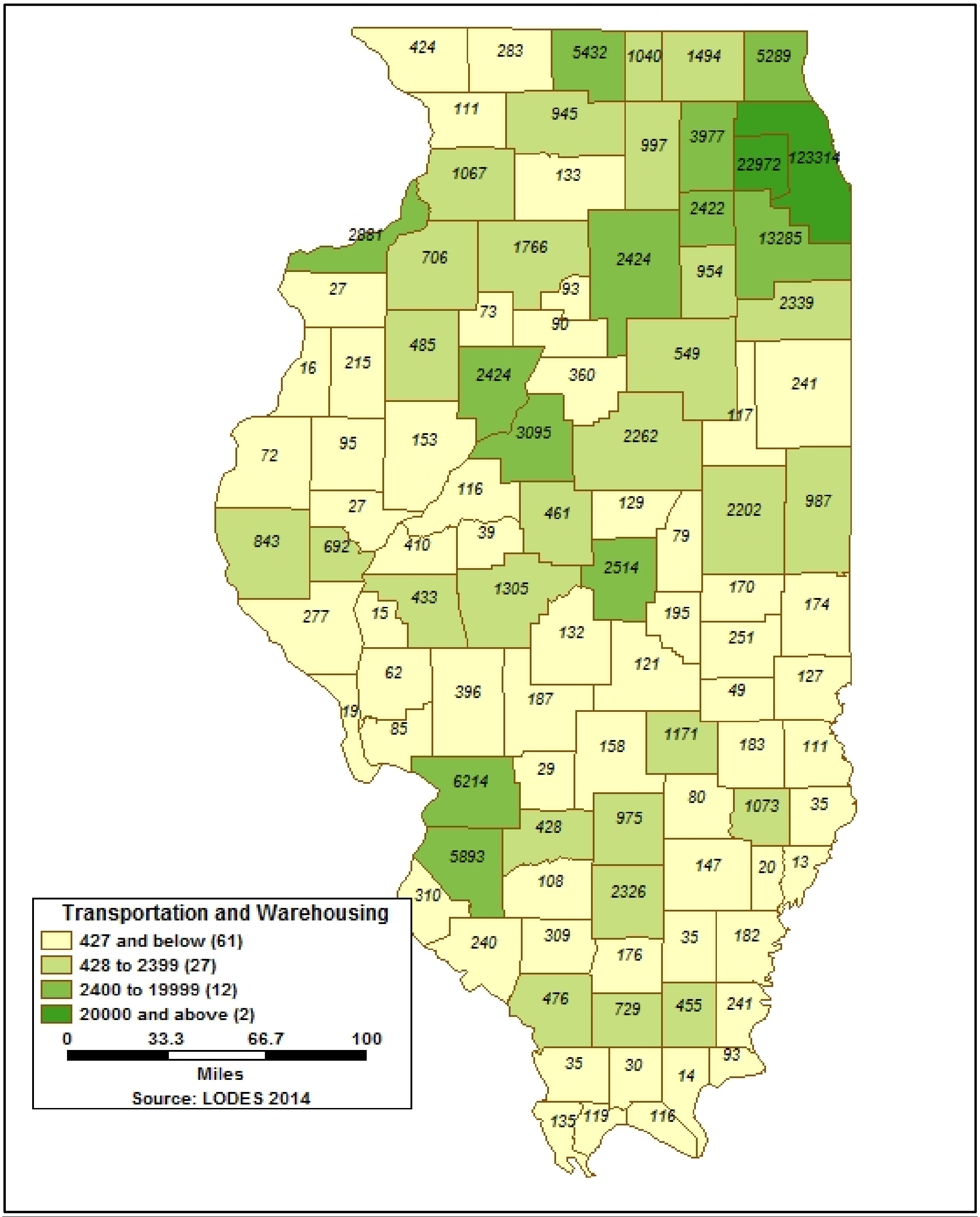
Figure 2-6: Education Level of Transportation and Warehousing TTU vs. All Illinois Work Categories, Illinois



Source: U.S. Census Bureau, LEHD, accessed March 2017

The distribution of transportation and warehouse workers across the state is also of interest in planning for economic growth as well as preparing programs for specialized training and education. Figure 2-7: Geographic Distribution of Transportation and Warehousing Workers in Illinois, 2014 and Table 2-4: Transportation and Warehouse Workers by County, 2014 show that the highest levels of transportation workers is in Northeastern Illinois, in the East St. Louis area, and in the Rockford, Peoria, Moline, and Decatur areas.

Figure 2-7: Geographic Distribution of Transportation and Warehousing Workers in Illinois, 2014



Source: U.S. Census Bureau, LEHD, accessed March 2017

Table 2-4: Transportation and Warehouse Workers by County, 2014

County	FIPS ID	Transportation and Warehouse Workers	County	FIPS ID	Transportation and Warehouse Workers
COOK	17031	123,314	IROQUOIS	17075	241
DUPAGE	17043	22,972	RANDOLPH	17157	240
WILL	17197	13,285	WARREN	17187	215
MADISON	17119	6,214	MOULTRIE	17139	195
ST. CLAIR	17163	5,893	MONTGOMERY	17135	187
WINNEBAGO	17201	5,432	JASPER	17079	183
LAKE	17097	5,289	WHITE	17193	182
KANE	17089	3,977	FRANKLIN	17055	176
TAZEWELL	17179	3,095	EDGAR	17045	174
ROCK ISLAND	17161	2,881	DOUGLAS	17041	170
MACON	17115	2,514	FAYETTE	17051	158
LA SALLE	17099	2,424	FULTON	17057	153
PEORIA	17143	2,424	WAYNE	17191	147
KENDALL	17093	2,422	ALEXANDER	17003	135
KANKAKEE	17091	2,339	LEE	17103	133
JEFFERSON	17081	2,326	CHRISTIAN	17021	132
MCLEAN	17113	2,262	DEWITT	17039	129
CHAMPAIGN	17019	2,202	CLARK	17023	127
BUREAU	17011	1,766	SHELBY	17173	121
MCHENRY	17111	1,494	PULASKI	17153	119
SANGAMON	17167	1,305	FORD	17053	117
EFFINGHAM	17049	1,171	MASON	17125	116
RICHLAND	17159	1,073	MASSAC	17127	116
WHITESIDE	17195	1,067	CARROLL	17015	111
BOONE	17007	1,040	CRAWFORD	17033	111
DEKALB	17037	997	WASHINGTON	17189	108
VERMILION	17183	987	MCDONOUGH	17109	95
MARION	17121	975	HARDIN	17069	93
GRUNDY	17063	954	PUTNAM	17155	93
OGLE	17141	945	MARSHALL	17123	90
ADAMS	17001	843	JERSEY	17083	85
WILLIAMSON	17199	729	CLAY	17025	80
HENRY	17073	706	PIATT	17147	79
BROWN	17009	692	STARK	17175	73
LIVINGSTON	17105	549	HANCOCK	17067	72
KNOX	17095	485	GREENE	17061	62
JACKSON	17077	476	CUMBERLAND	17035	49
LOGAN	17107	461	MENARD	17129	39
SALINE	17165	455	HAMILTON	17065	35
MORGAN	17137	433	LAWRENCE	17101	35
CLINTON	17027	428	UNION	17181	35
JO DAVIESS	17085	424	JOHNSON	17087	30
CASS	17017	410	BOND	17005	29
MACOUPIN	17117	396	MERCER	17131	27
WOODFORD	17203	360	SCHUYLER	17169	27
MONROE	17133	310	EDWARDS	17047	20
PERRY	17145	309	CALHOUN	17013	19
STEPHENSON	17177	283	HENDERSON	17071	16
PIKE	17149	277	SCOTT	17171	15
COLES	17029	251	POPE	17151	14
GALLATIN	17059	241	WABASH	17185	13

Source: U.S. Census Bureau, LEHD, accessed March 2017
(FIPS ID denotes the Federal Information Processing Series code used to ensure federal agencies uniformly define geographic areas.)

2.3.7 Challenges and Opportunities

Challenges facing transportation and warehousing workers in Illinois is the aging of the workforce, particularly among truck drivers, as mentioned previously. Another challenge is the 13 percent portion of the work force with an education featuring less than high school diploma, which restricts further opportunities within the industry unless additional training is received.

On the opportunity side, as discussed in Section 2.3.4, in 2015 workers in this employment sector were paid on average $48,360 annually, based on an hourly rate of $23.25. In addition, as shown in Figure 2-7: Geographic Distribution of Transportation and Warehousing Workers in Illinois, 2014, higher concentrations of transportation and warehouse workers are located in areas of dense population such as the Chicago or East St. Louis metropolitan areas. These areas tend to have greater access to educational institutions as well as on-the-job training.

2.3.8 Workforce Development Efforts

Since early 2000, the transportation and warehousing industry has been a focal point for education and training purposes due in large part to its accelerated growth during that time and its recovery after the Great Recession. Over the last decade and a half, both the public and private sectors have invested energy and funding to develop a workforce that has the skills, knowledge, and ability to obtain employment in careers that are growing, offer successful advancement, and use the workforce's education to their best advantage.

The State of Illinois through the Illinois State Board of Education has been promoting and implementing the National Career Cluster program. This program promotes 16 Career Clusters and related Career Pathways. Through a unified program of study focused on certain pathways, students explore different career options to better prepare for college and a career. The career cluster on Transportation and Logistics emphasizes "the planning, management, and movement of people, materials, and products by road, air, rail, and water." It includes the professional services, logistics, and maintenance aspects of the industry.

Each pathway provides various levels throughout the student's education that introduces the knowledge, skills, and abilities required for careers in each cluster, including programs of study and courses needed to obtain certificates and degrees in the career field.

A new initiative recently launched is Illinois Pathways Initiative[21]. This program, a State of Illinois-led Science, Technology, Engineering, and Mathematics (STEM) education initiative, is designed to support college and career readiness for all students. A key component of this new initiative is the STEM Learning Exchanges. They have been formed for select career clusters to "improve the coordination and delivery of resources, work-based learning opportunities, career guidance, and partnerships that support local STEM programs." A STEM Learning Exchange has been established for the Transportation

[21] https://www.illinoisworknet.com/ilpathways/Pages/default.aspx, accessed 2017.

Distribution and Logistics career cluster and will strive to integrate resources to leverage networks, develop programs for students, and encourage e-learning.

As shown in Figure 2-7: Geographic Distribution of Transportation and Warehouse Workers in Illinois, 2014, the U.S. Census Bureau's LEHD data portal will allow us to monitor the geographic spread of Transportation and Warehouse workers in future freight studies. Currently, the highest concentration can be found in Northeastern Illinois with Cook, DuPage, and Will Counties dominating and in the East St. Louis area with Madison and St Clair Counties also strong (see Table 2-5: Top Ten Counties with Workers in All Sectors having Less than a High School Education). One interesting fact is that the Northeastern Illinois counties generally have the highest number of transportation and warehousing workers while at the same time making the top ten list for the highest number of workers with less than a high school diploma. This occurrence may indicate opportunity for targeted education programs in the transportation and warehousing areas.

Table 2-5: Top Ten Counties with Workers in All Sectors having Less than a High School Education[22]

County	FIPS ID	Workers with Less than High School Education
COOK IL	17031	257,573
DUPAGE IL	17043	53,977
LAKE IL	17097	29,246
KANE IL	17089	22,591
WILL IL	17197	21,008
WINNEBAGO IL	17201	11,594
SANGAMON IL	17167	9,228
MADISON IL	17119	8,120
MCHENRY IL	17111	7,873
PEORIA IL	17143	7,703

Source: U.S. Census Bureau, LEHD, accessed March 2017

[22] Does not include workers under 30 years of age per LEHD methodology; see Section 2.4.

2.4 Emerging Trends

2.4.1 Connected and Automated/Autonomous Vehicles

As shown in Figure 2-8: OTTO Budweiser Driverless Delivery, in October 2016 in Colorado Springs, Colo., the first automated freight delivery was completed by the self-driving truck company OTTO (an Uber company formerly known as Ottomotto, LLC), carrying a 120-mile shipment of Budweiser beer for Anheuser-Busch InBev.[23] This is remarkable not only as a transportation milestone, but for the degree of automation: the beverages rolled off the production line onto the truck and continued from the plant to the delivery point with little or no direct human labor. Effectively, this made the delivery process an extension of the manufacturing process – and OTTO in fact is marketing itself as a "self-driving solution for lean factories".[24]

Figure 2-8: OTTO Budweiser Driverless Delivery

Source: USA Today, (10/16)

This kind of capability redefines the production function for shippers and for freight carriers. The American Transportation Research Institute (ATRI), an arm of the American Trucking Association, reports that an OTTO retrofit can be obtained for trucks now on the road for $30,000[25] – not a small amount, but not a prohibitive one when compared to approximately $130,000 for a new Class 8 truck. ATRI also identifies a graduated series of automated upgrades that can be added to a truck for $13,000-$23,000 – and fleets already employ technology to assist and manage driver performance. Therefore, it does not require a radical reinvestment in new vehicles for the trucking industry to move into automated operations. Considering that a shortage of qualified drivers has vexed the trucking industry for many years, there is ample motivation for carriers to explore it - as there is motivation for non-traditional

[23] "Self-Driving Truck's First Mission: A 120-Mile Beer Run", New York Times, 10/25/16.
[24] www.ottomotors.com, accessed 2/24/17
[25] "Identifying Autonomous Vehicle Technology Impacts on the Trucking Industry", American Transportation Research Institute, November 2016.

companies to enter the industry. OTTO itself was previously acquired by the ride-hailing corporation Uber, while on the passenger side, General Motors has invested in the Uber competitor Lyft and Ford Motor Company is positioning itself as a mobility services business. The concept is that driverless vehicles combined with booking, scheduling, and analytic software will allow vehicle ownership to be supplanted to some degree by automated transportation services.

ATRI estimated the effects of Autonomous Truck (AT) technology on its list of the top ten issues facing the industry, reproduced in the table below (see Figure 2-9: Top Ten Trucking Issues and Key Autonomous Truck Benefits). ATRI assumes that drivers will remain in trucks – much as pilots remain in aircraft operating on autopilot - but will be able to log off duty for part of the trip or undertake non-driving tasks. The effect would be fewer drivers needed by the industry, and a more attractive job description to recruit them. The summary finding by ATRI is that the technology offers benefits on almost every issue. Their report also reviews a series of challenges pertaining to equipment manufacturers and government oversight, especially concerned with liability matters but touching on such other topics as roadway maintenance, cyber security, equipment maintenance, driver and technician training, and fail-safes that prevent unsafe conditions due to equipment failure. Its list on the government side appears in the second table below (see Figure 2-10: Government Impediments to Autonomous Truck Deployment) As shown, the challenges are not simple, yet some states have started to tackle them (examples are Florida, Michigan, and Nevada) and the federal government recognizes the profound significance of the technology for all motor vehicles.[26]

Figure 2-9: Top Ten Trucking Issues and Key Autonomous Truck Benefits

Top Issues	Key Autonomous Truck Benefit
Hours-of-Service	Allows for driver rest and productivity to occur simultaneously.
Compliance, Safety, Accountability	Will decrease raw SMS scores, though percentile scoring needs to change.
Driver Shortage	Driving more attractive with higher productivity, less time away from home, and additional logistics tasks; fewer driver may be needed.
Driver Retention	Companies with autonomous technology may attract and retain drivers.
Truck Parking	If "productive rest" is taken in the cab during operations, less time will be required away from home at truck parking facilities and fewer facilities will be needed.
Electronic Logging Device Mandate	Modifications will be necessary depending on level of autonomy.
Driver Health and Wellness	Driver could be less sedentary; injuries could be reduced.
The Economy	Carriers that use AT may see productivity and cost benefits.
Infrastructure / Congestion / Funding	Urban congestion could be mitigated through widespread use of autonomous vehicles (including cars).
Driver Distraction	Drivers will not be distracted from driving if vehicle in autonomous mode.

Source: ATRI. "SMS" denotes the Safety Management System of the Federal Motor Carrier Safety Administration.

[26] See for example formation of U.S. Department of Transportation's Advisory Committee on Automation, which met for the first time in January 2017; https://www.transportation.gov/briefing-room/dot0717

Figure 2-10: Government Impediments to Autonomous Truck Deployment

Autonomous Truck Issue	Government Impediment	Solution
Autonomous Truck Operational Environment	AT operations require high-quality roadways. Deficient infrastructure, such as potholes and poor lane markings can impede autonomous technology.	Increase infrastructure funding to improve and maintain infrastructure.
Liability for AT-Involved Accidents	Liability across a variety of state laws has not been addressed.	Legal system will, over time, set legal precedent. State liability laws related to vehicle crashes will likely change significantly.
State and Federal Trucking Regulations	State law and the Federal Motor Carrier Safety Regulations (FMCSRs) do not sufficiently address the autonomous environment. Many rules within the FMCSRs currently conflict with or do not address autonomous trucks. For the trucking industry, federal leadership and possibly federal preemption is critical in providing a seamless national transportation system that benefits from autonomous technology.	Major overhaul of state laws pertaining to commercial vehicles as well as the FMCSRs.
Traffic Laws	Following too close is a moving violation. The congestion mitigation aspect of autonomous vehicle technology requires close vehicle proximity during movement. For truck platooning, close proximity is also required to realize fuel savings.	Changes in state law will be required.

Source: ATRI

2.4.2 Truck Platoons

Truck platoons are an aspect of connected and automated/autonomous truck technology that is apt to be especially meaningful in Illinois on major through routes such as I-80/90/94, I-55, and I-70. Platoons (pictured in Figure 2-11: Volvo Truck Platoon) consist of two or more trucks traveling closely behind one another, using automated sensors, and controls to maintain short headway distances between vehicles, which in turn allows the vehicles behind the lead truck to reduce fuel consumption by air drafting. Fuel savings change according to position in the line: the first truck faces wind resistance and saves nothing, while the trucks drafting behind it can improve their miles per gallon. Estimates of fuel savings vary: the Texas A&M Transportation Institute quotes savings of 5-20 percent [27] and a European manufacturer claims an average fuel savings of 10 percent.[28] Coupled with the potential for drivers to switch to autonomous "autopilot" mode (especially in the trailing vehicles, although the lead vehicle could do the same), significant cost savings become available in fuel and labor, which are the two largest cost components in trucking. Live demonstrations of truck platoons have been conducted in the U.S. and

[27] "Autonomous Truck Platooning a Game Changer for Fuel Efficiency, Safety", Texas A&M Today, 2/26/16.
[28] "New NXP Technology Allows Tighter Truck Platooning", Forbes, 11/7/16.

Europe,[29] including a successful 2016 European Union "challenge" that saw half a dozen truck manufacturers run platoons over separate public roadways through five countries – thus testing the regulatory as well as the operational concept.[30] If truck platoons become common practice, the cost savings will be attractive and even compelling to shippers and carriers. Therefore, Illinois should anticipate and prepare for its introduction and testing. However, the use of truck platoons could be concerning to railroads, as their cost profile, particularly in driverless mode, could potentially divert rail traffic to highways.

Figure 2-11: Volvo Truck Platoon

Source: Dutch Ministry of Infrastructure & the Environment

<u>Implications</u>

The implications of automated vehicle technology for Illinois are varied and uncertain. The safety benefits when a driver is present could be substantial, and would accrue from the interaction with technology-enabled automobiles as well as from enabled trucks. Advancements in safety could reduce community concerns about truck traffic and would be especially helpful in the context of home deliveries. However, public perception of a vehicle without a driver actively behind the wheel may be a

[29] "Truck Platooning, Past, Present and Future", TruckingInfo.com, April 2016
[30] "European Truck Platooning Challenge 2016", Dutch Ministry of Infrastructure and the Environment, available at https://www.eutruckplatooning.com/home/default.aspx

factor, even if the safety profile is strong. Public acceptance of reduced-driver operation may be tied to the public's initial acceptance of driverless automobiles.

Among the other implications are these:

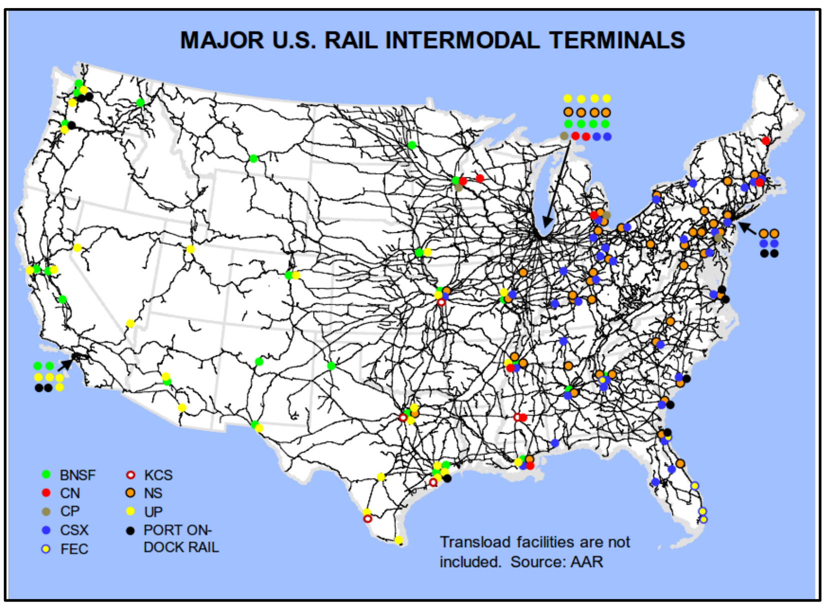
- The legal and commercial liability frameworks to support autonomous operations have yet to be developed, and various interests (e.g., safety, labor, railroads) may oppose them.
- The Chicago area is the nation's rail hub, therefore the state has very large rail volumes and rail is consequential to the Illinois economy. Traffic diversions from rail to highway could influence rail shipments and could impact road capacity and maintenance. Truck platoons could pose a diversion risk because, as multi-vehicle configurations, they approximate small trains.
- If truck platoons are evaluated in Illinois, designated lanes for their operation may be a necessary feature for real or perceived safety reasons. These lanes could become de facto dedicated lanes if automobiles prefer to avoid them, at least in the early stages of acclimatization. Pavement would need investment to withstand the wear from traffic since the technology depends on good quality highways. Coordination of strategy with neighboring states will be valuable, both for policy on the acceptability of platooning and for the conditions for operation.
- Trucks and automobiles are likely to graduate through degrees of automation, and automated operations are likely to coexist with traditional ones for years.
- The safety concerns and the higher operating costs in congested urban settings like the Chicago area make them likely candidates – and even tests – for automation in local and last mile freight carriage, including drayage for rail intermodal terminals. Appropriately equipped trucks with drivers behind the wheel are going to be safer than conventional trucks, but costs will be lower the less the driver must be actively engaged. One way this may evolve is with initially strict requirements for driver attendance that can be loosened as the technology grows and becomes more widely accepted by the public.
- The Budweiser test in which autonomous delivery appeared as an extension of the production line is notable, as it suggests that automation could be sought in every function of the supply chain and delivery process. This could ultimately affect building designs and access as well as roadway infrastructure and operations.
- Views on employment impacts vary. As mentioned above, one scenario is that autonomous trucks would not cause job losses, but would instead lessen the ongoing driver shortage challenge. In this scenario, fewer drivers would be needed if trucks can continue to operate over long distances while the driver is logged off. Although proponents argue that this improves working conditions and makes trucking jobs more attractive, skeptics say this requires drivers to be on a continuous work shift in the vehicle even if not officially on the clock. There is also speculation that autonomous trucks could eliminate the need for drivers and thus trucking jobs would be lost. However, this seemingly would only occur if technology advances to the point where fully autonomous vehicles become a reality, meaning that they can operate without a driver being present. In the near term this does not appear to be the case and the deployment of autonomous truck technology will likely require a driver to remain in the vehicle at all times.

2.4.3 Rail Intermodal Developments

Rail intermodal traffic (containers and trailers on rail flatcars) has been a growth market for freight railroads for many years. It set traffic records in 2015 with 17.5 million units in North America and 13.7 million units in the U.S., and it accounted for nearly a quarter of U.S. Class I railroad revenue, their single largest revenue source.[31] Chicago is the North American hub for this business, the one location where the Canadian and the largest U.S. Class I railroad systems meet with container traffic from the Pacific and Atlantic coasts and from continental producers. Greater Chicago handles more intermodal traffic than Greater Los Angeles[32] despite Los Angeles's ports, and has the largest concentration of intermodal terminals in the country (as shown in Figure 2-12: Major U.S. Rail Intermodal Terminals, below).

Illinois has added six intermodal facilities in the last 20 years, of which four were located in the Chicago region, and there is a new CSX facility slated for Crete in Will County. Intermodals added in the last 20 years include the CSX Chicago – 59th Street (Harvey, Ill.) in 1998, the BNSF Logistics Park – Chicago (Elwood, Ill.) in 2002, the UP Global III (Rochelle, Ill.) in 2003, the UP Global IV (Joliet, Ill.) in 2010, the CN Joliet Intermodal Terminal (Joliet, Ill.) in 2013, and the Archer Daniels Midland (ADM) Intermodal Ramp, which serves NS, CSX, and CN (Decatur, Ill.) in 2013[33]. Major intermodal terminals in Illinois are shown in Figure 2-13: Illinois Intermodal Terminals, below.

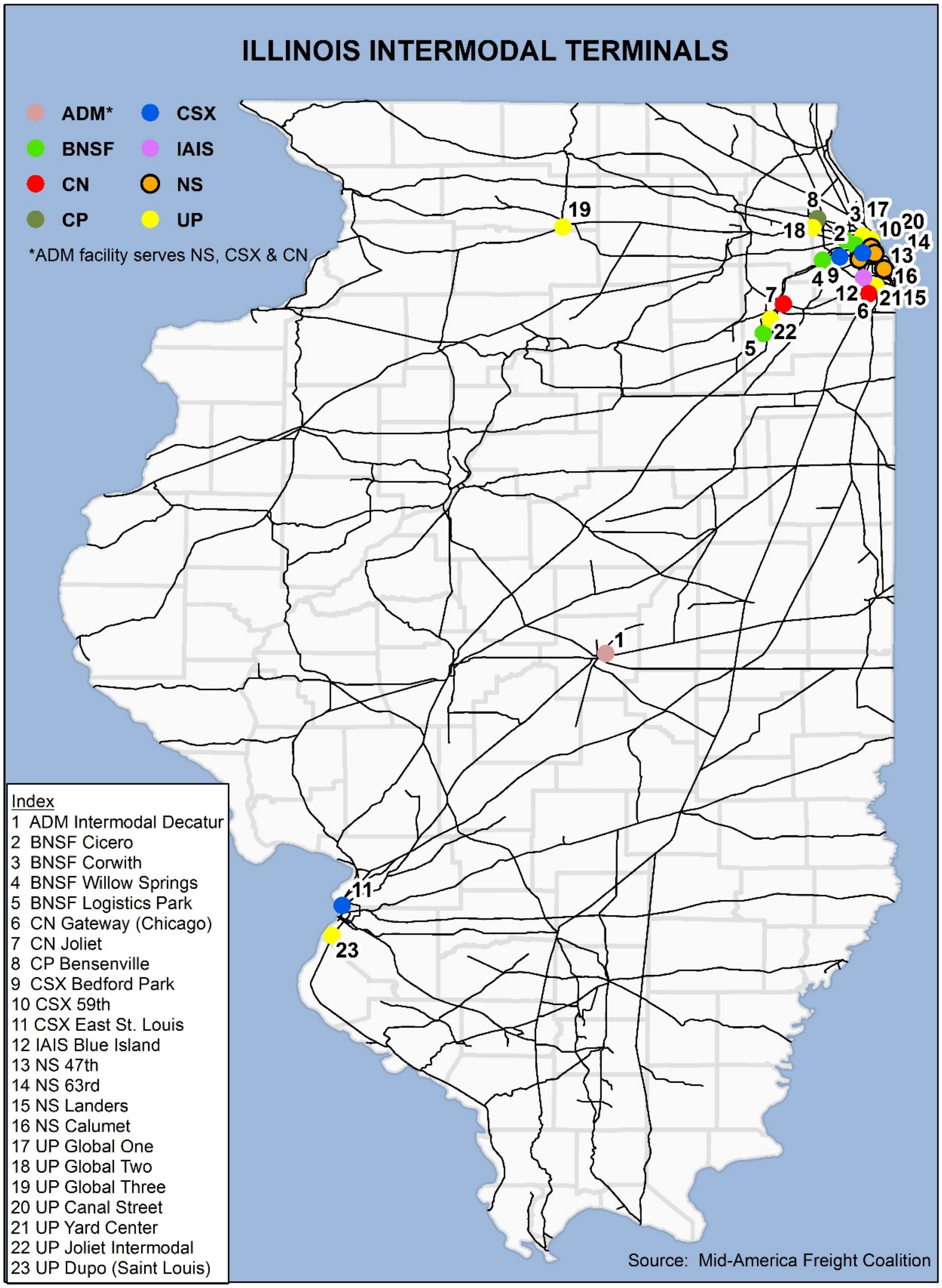
Figure 2-12: Major U.S. Rail Intermodal Terminals



Source: AAR
(Transloading facilities are used to transfer freight from one mode to another.)

[31] "Rail Intermodal Keeps America Moving", Association of American Railroads (AAR), May 2016. The North American figure comes from the Intermodal Association of North America (IANA).
[32] Ibid.
[33] Mid-America Freight Coalition

Figure 2-13: Illinois Intermodal Terminals

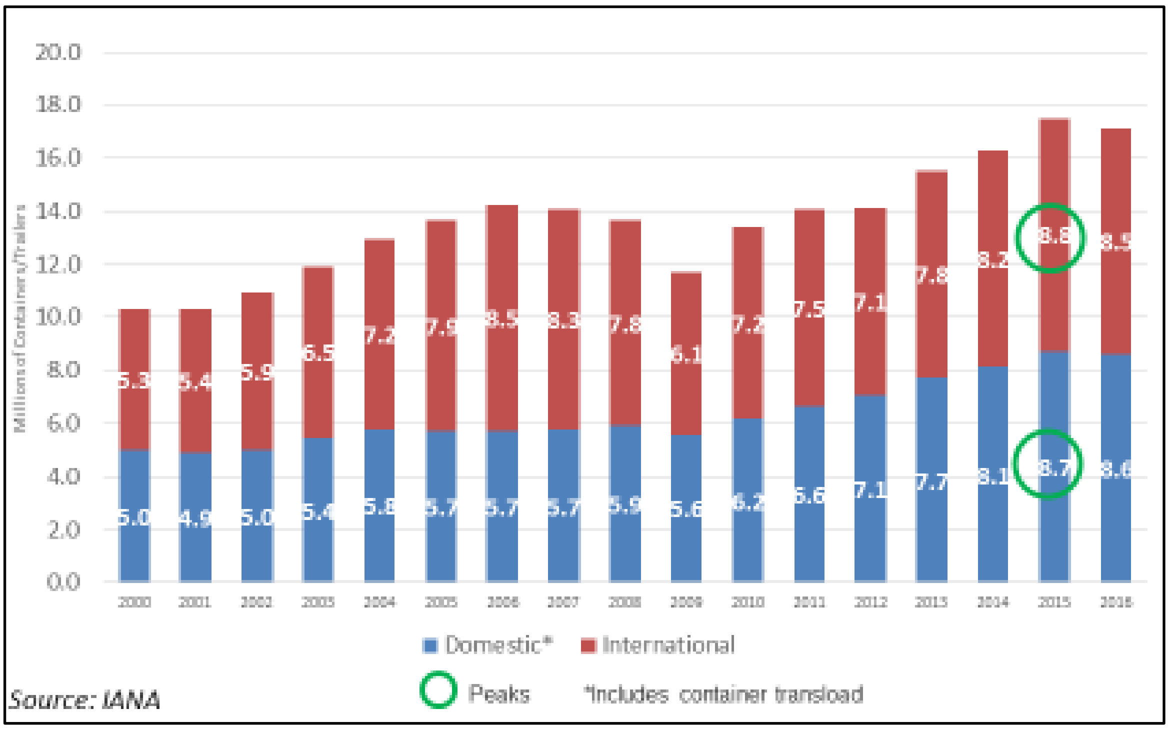


Prior to the Great Recession, which began in December 2007, international trade had been the engine of intermodal traffic growth. Since that point, domestic traffic has grown much faster, as shown in

Figure 2-14: Domestic Intermodal Growth Outstrips International (which includes Canadian traffic). While both international and domestic businesses reached peaks in 2015 and both fell off a little in 2016, international volumes were only a bit ahead of their previous peak in 2006. Domestic businesses set records year after year and surpassed international activity in 2016.

These figures are somewhat misleading in that "domestic" numbers include transloading of 40' international containers into 53' domestic containers, yet the underlying direction of change is accurate, as major domestic motor carriers such as J.B. Hunt have become the top intermodal customers for railroads.

Figure 2-14: Domestic Intermodal Growth Outstrips International



Source: IANA

Another development in intermodal rail derives from the trend in agriculture toward identity preservation of crops. Public interest in organic products and health concerns about genetically modified foods (called GMOs, for Genetically Modified Organisms) originally were the main motivations for this, but in the account of industry participants interviewed for this plan, the demand for identity tracking has intensified. Agribusinesses and others in the food industry are seeking to understand how multiple characteristics affect performance. This entails learning how factors like soil, weather, watering, fertilizers and pest controls - as well as the frequency and methods by which they are applied - affect the chemical, nutritional, and other performance features of crops consumed by people and livestock. Contemporary farm machinery equipped with electronics and farmers armed with laptops can collect large amounts of very specific data about such characteristics, and the desire to segregate crops according to their history and provenance follows. The effect is that bulk goods cannot be shipped in bulk. This has led to growth in volume packaging and containerization of agricultural products, which then move by truck, rail, and container-on-barge, instead of traditional and cheaper bulk transport. Although there may be some opportunity to preserve identity in bulk shipping for markets whose requirements are less strict, generally the trend fosters the use of containers and other methods to unitize goods.

Implications

Intermodal rail traffic should continue to grow. Class I railroads must find new business to replace declining coal traffic (discussed below). Containerized grain presents a further growth opportunity (although to some extent it simply replaces conventional railcar traffic). As described in Section 1.3.5, the Midwest Inland Port in Decatur is the only intermodal terminal in central Illinois and therefore, may be a useful indicator of future trends in containerized grain shipments. The major risks to this outlook stem from automated trucks, especially in platoon formation (described above), and possible shifts in international trade (discussed below).

Among the ramifications for Illinois are these:

- Intermodal capacity in Chicago will remain under pressure, both at the terminals and on the multiple crisscrossing lines that trains travel to reach them. Terminal expansions in the region should be anticipated. The CREATE program of projects will remain an important way to address congestion, bottlenecks, and other capacity constraints.
- There may also be the opportunity to utilize wide-span crane technology which can raise terminal throughput without requiring additional acreage. Wide-span cranes can cross multiple tracks, enabling containers to be transferred between railcars in a rapid and largely automated process. These cranes are also an environmentally cleaner technology, running on electricity instead of the diesel that fuels traditional equipment.

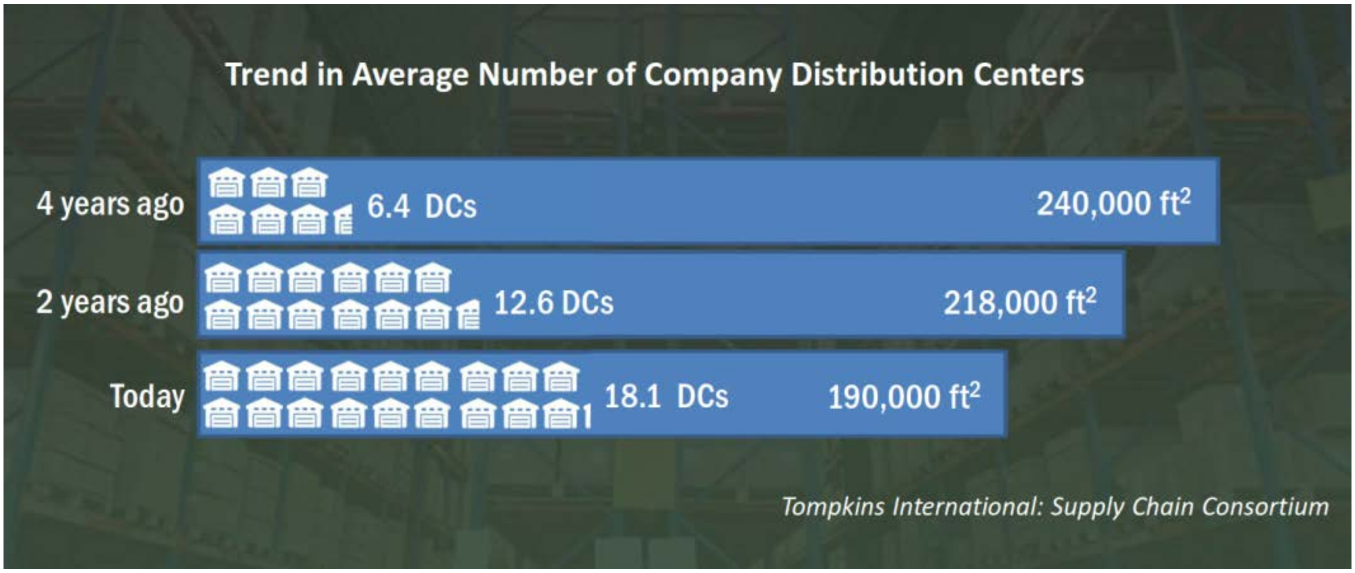
2.4.4 Warehouse Location and Automation

The number of Distribution Centers (DCs) utilized by U.S. supply chains has tripled in the past four years, from an average of six per company to an average of 18, according to data collected by the Tompkins International Supply Chain Consortium.[34] This trend can be seen in Figure 2-15: Proliferation of Distribution Centers below. The Tompkins Consortium is a benchmarking organization of Fortune 500-type companies, approximately half of them retailers and half manufacturers. Tompkins reports that growth in DCs has been pronounced in both sectors, although it is strongest among retailers. The reason for this dramatic increase in facilities is the rising importance of faster time to market, which requires that the staging points for goods be placed closer to the points of consumption. The average square footage of DCs has gone down in parallel, partly because inventory is divided up and some of the added facilities are simple cross-docks where materials are transferred but not stored, and also because

[34] Tompkins International citations here and below are taken from public presentations of the Triangle Regional Freight Plan, Capitol Area MPO, Durham-Chapel Hill-Cary MPO, and North Carolina DOT, December 2015.

warehouse automation has made it possible to reduce the physical footprint of DCs by two-thirds with no sacrifice in throughput.[35]

Figure 2-15: Proliferation of Distribution Centers



Source: Tompkins International

Sixty percent of Tompkins Consortium members report increased use of warehouse automation in the past three years and 80 percent expect increases in the next three years. While automation can mean many things, a key feature is the replacement of forklifts by robotic systems, which enable the aisles between storage racks to be narrower, and the racks to be taller. The effect is greater density of stored product both horizontally and vertically. Ceiling heights in new warehouses can be in the range of 40 to 50 feet, whereas 30 feet was considered high just a few years ago; and the ceiling in one new DC in the Atlanta region reaches 80 feet.[36] The implications are that sites which were not viable for distribution can become viable, because the acreage and cost of land required is smaller, and that facilities designed for more labor-intensive warehouse operations gradually may become obsolete. Research from Tompkins now indicates[37] that regional DCs starting at 100,000 square feet (SF) will be automated facilities in the next few years. A 100,000 SF DC generally requires a land parcel of just 8 acres, indicating an opportunity and a need for redevelopment of existing warehouse building stock.

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[35] Direct experience of a major retailer, reported in "Logistics and Supply Chain Asset Study", Michigan Economic Development Corporation, March 2015.

[36] Reported in "Atlanta Regional Freight Mobility Plan Update, Final Report", Atlanta Regional Commission, May 2016; other citations in this sentence derive from the same source.

[37] Tompkins International national survey for the Triangle Regional Freight Plan, Capitol Area MPO, Durham-Chapel Hill-Cary MPO, and North Carolina DOT, February 2017

Implications

The Chicago area has been one of the nation's primary distribution hubs for decades. It is a top U.S. population center and consumer market. It also has a large manufacturing base and an extensive multimodal freight system, including numerous carrier hubs. This, combined with its central geographic location, make the Chicago area integral to the economy of the northern tier of the United States. These attributes, which are difficult to duplicate elsewhere, have allowed the Chicago area to remain the freight hub of the entire country, even with changes in logistics strategies and distribution centers. The current proliferation of warehousing will not change this, but it can mean that the need for and the viability of satellite facilities elsewhere in the state and surrounding region will grow. Chicago area DCs could ship to more locations, but the volumes to each might be smaller. In addition, the reduction in warehouse footprints enabled by automation can mean less demand for enormous DCs on large land parcels in relatively rural exurbs, and more demand for modern facilities on smaller plots of urban land.

All of this affects land use plans, including the potential for brownfield redevelopment, and underscores the significance of performance on the routes that connect facilities to industrial and consumer markets. Because faster time to market is the purpose of DC proliferation, the corollary is that slow and unreliable performance on transportation networks demands a greater number of distribution facilities to compensate, which adds to cost. The net effect is that Illinois should expect:

- Continued national and regional distribution from the Chicago area, with goods moving from more locations with smaller average volume.
- Local distribution from more localized - and relatively smaller facilities.
- Higher shipping volume per acre, because of greater storage density.
- Less "freight sprawl" and more concentration of facilities toward urban cores.
- Continued emphasis on speed and reliability on the freight network, due to its effect on the requisite number and location of distribution facilities that are necessary.
- Redevelopment of existing facilities to meet contemporary requirements, and to take advantage of lower acreage requirements.

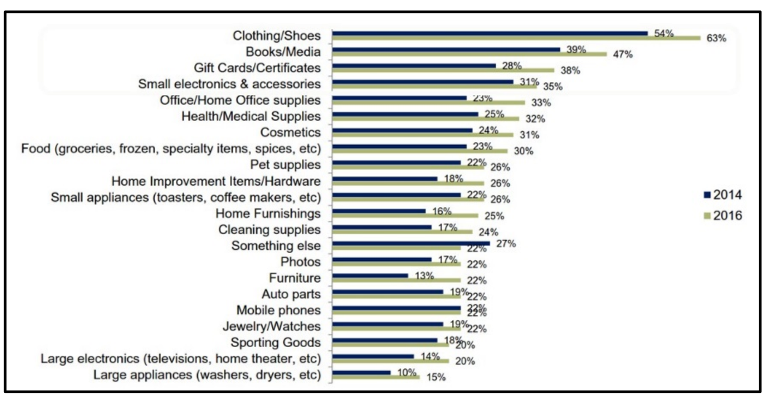
2.4.5 Retail Home Delivery

A major reason for the emphasis on time to market is the growth in consumer home delivery. One hundred percent of Tompkins Consortium members – retailers and manufacturers alike – expect direct to consumer sales to increase in the next three years. In the 10 years from 2004 to 2014 (the latest data fully available) the U.S. Census Retail Trade Survey reports that electronic commerce rose from 2.1 percent of total retail trade to 6.4 percent, climbing at a compound annual growth rate of 17 percent compared to 2.7 percent for traditional retail. This trend underlies fierce competition between electronic and storefront retailers, and has given rise to so-called "omni-channel" retail, which denotes the attempt to merge in-store with online shopping. A department store customer can view merchandise from their smart phone, know which stores have it in stock, examine it in the store, buy it, bring it home or have it delivered, or order something different from another store or DC. This has two advantages: inventory management for the retailer and convenience and choice for the customer.

The Chief Executive Officer of Macy's describes omni-channel as "inventory optimization through technology. Inventory visibility across all stores and channels is the key enabler"[38] – in other words, knowing where everything is in real time so the customer can access it. Having the right merchandise in the right stores according to local tastes is a key objective for retailers, but inventory costs money. A great advantage to online retail is that very large and diverse inventory can be maintained in a central location (or in vendor warehouses), pooling the goods to satisfy the spectrum of local demand. The store-front retailer strives to compete with this by maintaining a custom blend of fast-moving goods in each store, making a greater range of choices available online and visible from mobile devices while shopping, and including in the accessible inventory merchandise from every store as well as from warehouses. This gives the customer as much selection as possible, gets the most utilization from every form of inventory, and manages delivery costs by satisfying demand from the closest location with stock. Even, so, delivery costs are under pressure because of the competition for convenience.

A principal benefit of in-store shopping is the ability to examine merchandise and carry it home. Electronic retailers contend with this through purchase return policies and especially through aggressive home delivery services combining high speed and low cost. Amazon offers Prime members in Chicago free same-day and even two-hour delivery (subject to minimum order quantities), although this service is not yet available elsewhere in Illinois. The Prime program costs $99 a year for membership and brings free 2-day shipping throughout the country virtually for everything. A Walmart program without a membership fee offers free 2-day delivery subject to minimum order quantities, and free pick-up at stores for any size order. The purpose of these programs is to expand the range of products consumers purchase online by making the decision easy and cheap. The consequence is that the delivery company FedEx reports[39] that home deliveries now include such every-day and bulky household items as pet food and paper products. This is borne out in a national 2016 consumer survey by AlixPartners (findings displayed below in Figure 2-16: Product Purchased for Delivery in Past 12 Months), which shows meaningful growth in online purchases for essentially every product type, and indicates that a wide variety of household needs can be met by e-commerce.

Figure 2-16: Product Purchased for Delivery in Past 12 Months



Source: AlixPartners Consumer Survey

[38] "Omni-Channel Logistics", DHL Customer Solutions & Innovation, Deutsche Post DHL Group, 2015
[39] FedEx citations here and below are from interviews reported in the "Atlanta Regional Freight Mobility Plan Update", Atlanta Regional Commission, May 2016

Underlying these marketing strategies are logistics strategies. The more volume an online retailer like Amazon is able to command in the light density lanes into residential areas, the lower its cost and the less room there is for competitors. A light density lane is a transportation origin-destination pair accounting for both legs of a single delivery trip with a relatively low concentration of revenue traffic; this makes it expensive to serve because a truck may make one or two paid deliveries on a given day instead of 10 to 20. However, because the traffic volume is limited, it is easier for a carrier to capture most of it, and the carrier that does becomes the most efficient competitor. The same logic applies to rapid delivery: only a few competitors can attract the volume to afford it, and the speed is designed to approximate the convenience and immediacy of in-store purchases. Moreover, consumer research demonstrates that the demand for next day and same day delivery service rises along with the frequency of online purchases, suggesting that growth in one facilitates growth in the other.[40] Store-front retailers in turn are obliged to match the fast delivery service for customers who prefer it. For both electronic and store-front merchants, the goods must be positioned to fulfill the time commitment, requiring facilities – DCs, stores and other staging points – close enough to accomplish this. Half the respondents in a recent supply chain survey expect the need to have facilities within same day truck delivery range of customers will increase.[41] While consolidation of next day and same day deliveries can be achieved through the networks of such major package carriers as UPS, FedEx, and USPS, smaller time windows reduce the opportunity for it. In addition, traffic, access, and parking conditions affect the ability to meet time commitments and thus influence the number of staging points required.

<u>Implications</u>

This complex and evolving set of factors has a number of implications for Illinois:

- Truck deliveries into residential communities will continue to climb and will carry a greater range of goods. Truck deliveries will also replace some passenger trips to stores, and will occur in urban, suburban, and rural settings. FedEx notes that home deliveries seem to favor higher income districts, which could be due to the relative affordability of $99 Amazon Prime memberships. The Walmart no-membership-fee program can be interpreted as a competitive response reflecting the company's traditional strength in lower income and rural regions. The variety of inventory that can be offered on-line greatly exceeds what can be made available by stores in lower population areas, suggesting that a rural omni-channel strategy affords leverage for Walmart because it can expand the product selection behind its local outlets. An Illinois industry executive compared this to the historical role of catalog retailers such as Sears and Montgomery Ward, who kept farm communities supplied with more goods than the local general store could manage.
- Truck deliveries will originate from a greater variety of locations: carrier terminals and stores as well as new local staging points. Land use policies and zoning will play a role. In addition,

[40] Walker Sands Future of Retail Study, quoted in "Will the Sharing Economy Disrupt Transportation and Logistics", presentation by Richard Metzler of uShip, Stifel, Nicolaus & Co., 6/29/16
[41] From the 2/17 Tompkins International national survey for the Triangle Regional Freight Plan, ibid., which included retailers and manufacturers; retailers would need to be within same day range of consumers, and manufacturers within same day range of retailers and other customers.

retailers report an increase in the frequency of inbound delivery to stores[42] , necessitated by customer pick-up of on-line orders. This will presumably result in a reduction in payloads on the trucks. These additional truck trips will likely occur at other points along the supply chain as well, because of the need to meet time service commitments.

- Trucks will likely remain the preferred vehicle for delivery because they are best suited to handle larger volumes, which thereby increases their economy of scale. However, bicycles, motorized tricycles, and ride-hailing automobiles (such as Uber, Lyft, and taxicabs) are being tested in urban areas. Package vehicles (as used by UPS, FedEx, and USPS) are the workhorse, but Less-Than-Truckload (LTL) carriers that specialize in consolidating several smaller loads from multiple shippers into one truckload (using 28’ trailers and larger trucks) also report increasing home deliveries. As volumes grow across the variety of product types noted above, the carrying capacity as well as the number of delivery vehicles required becomes an issue. A case in point is that of drones, whose capacity generally is a shipment of about five pounds[43]. This can be effective for rural areas and suburban (and commercial) deliveries with infrequent and dispersed demand, but as traffic builds up and shipment types proliferate, they become less well suited due to their low capacity. Therefore, drones may prove to be a niche or a transitional service, but considering that the promise of free shipping and fast delivery will cause the volumes to rise, trucks in various configurations are expected to handle most of the load. The underlying consideration is an efficient production function: what size and speed of vehicle is best adapted to the shipment size and delivery density. There is also the question of service commitments. A retailer promising two-hour delivery expects reliable performance and accountability from its transportation partners.
- While service commitments for rural home delivery allow more time in the schedules, trucks will have greater need to travel on rural roads that may not have been designed to support these truck movements and will need to navigate them in all weather. In urban areas, traffic congestion, residential building access, and parking will come under continual pressure because of their direct effect on delivery speed and cost. Although numerous techniques (e.g., drop boxes, drop-off centers, drive-through pick-up at stores) are being tested, the deciding formulas are likely to be those that make consumer convenience cost-effective. This is because the benefit of convenience is precisely what companies like Amazon are trying to capture with rapid direct-to-door delivery. Therefore, solutions that reduce convenience should be viewed as having limited appeal and probably limited longevity.
- Delivery delays and their causes will be more visible to Illinois residents. This could lead to a higher incidence of complaints, but could also make the challenges of freight delivery more tangible and meaningful to citizens. The belief that “freight doesn’t vote”, meaning that freight issues do not influence voters’ decisions, may diminish as residents’ experience their household supplies failing to arrive when needed and learn the reasons first-hand.
- Concern for the safety and environmental qualities of delivery trucks could go up. Adoption of different and new technology will likely accelerate: natural gas and hybrid electric trucks, and especially the set of safety advances associated with connected and automated/autonomous

[42] “State of the Retail Supply Chain – Outlook for 2016”, Stifel Transportation Research, Jan. 4, 2016
[43] Dr. Michael Lierow, Oliver Wyman, “Digital Turmoil: Digitalization of the Logistics Value Chain”, Stifel, Nicolaus & Co., 10/12/16

vehicles. The ability for drivers to see and vehicles to sense activity and obstacles all around them promises substantial reductions in incidents and accidents, and makes trucks far more neighborhood-friendly.

Figure 2-17: Amazon Air

(Source: Reuters 12/20/16)

- If Amazon succeeds in capturing majority shares of delivery traffic, it may move its volume from package carriers to in-house fleets, potentially raising the cost of service for competitors who remain with package carriers. This would shift the originating points for home deliveries. Amazon already has leased up to 40 air cargo aircraft (See Figure 2-17: Amazon Air) to operate from Cincinnati, Ohio[44] and connect to its fulfillment centers on high volume lanes, including flights to Chicago.

A crucial consideration for planning in this environment is that practices are currently being invented due to the fast pace at which trends continue to emerge and therefore, the ultimately successful models for consumer distribution are necessarily uncertain.

2.4.6 Supply Chain Sourcing

Sourcing relates to where retailers obtain products for sale, where manufacturers obtain materials and components, and relatedly, where manufacturers locate the production that supplies the retailers. The long advancing off-shoring trend shuttered 40 percent of large U.S. factories in the 2000s,[45] even though U.S. manufacturing output was almost 40 percent higher in 2011 than in 2001, and has grown since.[46] To simplify a complex picture, offshoring could be explained by low wage rates in Asia, particularly China, paired with low transportation costs due to favorable fuel prices and larger ships. The growth in U.S. manufacturing output can be explained by higher productivity enabled by automation and information technology as well as lower labor components for some of the production that remained in the U.S.

However, Chinese wages began to rise in the mid-2000s, and fuel prices also climbed, leading to a belief that off-shoring might retract, notably in following seven industry groups where the cost differential seemed promising:[47]

- Computers and Electronics.
- Transportation Goods.

[44] "Amazon Plans Worldwide Cargo Hub, 2700 Jobs at CVG", Cincinnati Enquirer, 1/31/17.
[45] "The Future of Chicago Manufacturing? Fewer People Doing More", Chicago tribune, 9/19/15, quoting from a White House press release of July 2015
[46] U.S. GDP by Industry, issued by Bureau of Economic Analysis, U.S. Department of Census, extracted 2/17.
[47] A key source of this analysis was The Boston Consulting Group, "U.S. Manufacturing Nears the Tipping Point", March 2012.

- Appliances and Electrical Equipment.
- Plastics and Rubber Products.
- Machinery.
- Fabricated Metal Products.
- Furniture.

This contributed to the near-shoring or re-shoring expectation and most of the cited industries were prominent in Illinois manufacturing. (The term “re-shoring” means the return of manufacturing from Asia to U.S. shores, and is contrasted to off-shoring; “near-shoring” means manufacturing returning from Asia to nearby, non-U.S. locations, specifically but not exclusively Mexico). Supporting the phenomenon was the increasing importance of time to market, which contributed to the expectation that production would return to the U.S., or no longer leave. Nevertheless, more recent research from A.T. Kearney indicates that re-shoring has not materialized, apart from a blip in 2011.[48] The reasons given are that production has moved elsewhere in Asia (e.g., Vietnam), Chinese wages moderated under weaker economic conditions and fuel prices fell. The A.T. Kearney report does cite scores of instances where re-shoring occurred in the same industries cited above, with time, cost, and quality factors motivating the shift, but the key message is that there has not been a drastic change.

Even so, other survey research conducted at the same time as the A.T. Kearney report found 31 percent of North American manufacturers considered near-shoring a possible opportunity for their company, with the U.S. and Mexico about equally attractive.[49] This number was down from 49 percent two years before, yet is not inconsequential, leading the researchers to conclude that near-shoring remained viable if not a business priority. Considering the A.T. Kearney findings, the key question should have been not whether near-shoring was a possibility, but to what degree. U.S. production clearly does have advantages in time to market and benefits from automation (e.g. robotics, optics, artificial intelligence, 3D printing). McKinsey & Company[50] finds that 60 percent of the time spent in manufacturing processes is susceptible to automation – which is not good news for jobs, but could influence where factories are located. On the retail side, the top four U.S. importers measured by container volume are all major retail chains and have been for years, with Walmart the largest.[51] Walmart started an “Investing in American Jobs” initiative in 2013, with the goal of purchasing $250 billion in products made, grown, or sourced in the U.S. by 2023, and has held annual conferences with vendors to implement it.[52] The significance of this diminished somewhat by the fact that the company posts global revenues in the range of $500 billion annually, but the goal dollars certainly are meaningful.

Natural Gas: A set of developments in the energy sector is also applicable. The rise of effective hydraulic fracturing and horizontal drilling techniques in the 2000s made new development of domestic petroleum resources economically viable, notably for sources of natural gas. Abundant supplies of low-cost natural gas then precipitated a marked shift in the fuels used for electricity generation away from

[48] “U.S. Re-Shoring: Over Before It Began?, A.T. Kearney, 12/15

[49] “Nearshoring Gaining Popularity in Western Europe While N. American Activity Slows”, AlixPartners, reported by Stifel Nicolaus & Company, 9/9/15

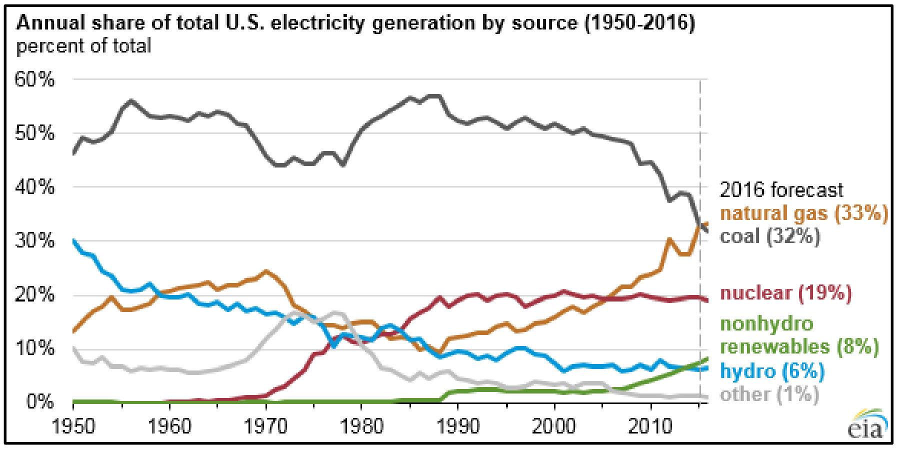
[50] “A Future That Works: Automation, Employment and Productivity”, McKinsey & Company, 1/17.

[51] Top U.S. Importers 2015, Journal of Commerce, reported by Apex Group.

[52] “Walmart Hosts Entrepreneurs at Fourth U.S. Manufacturing Summit”, Joplin Globe, 7/2/16.

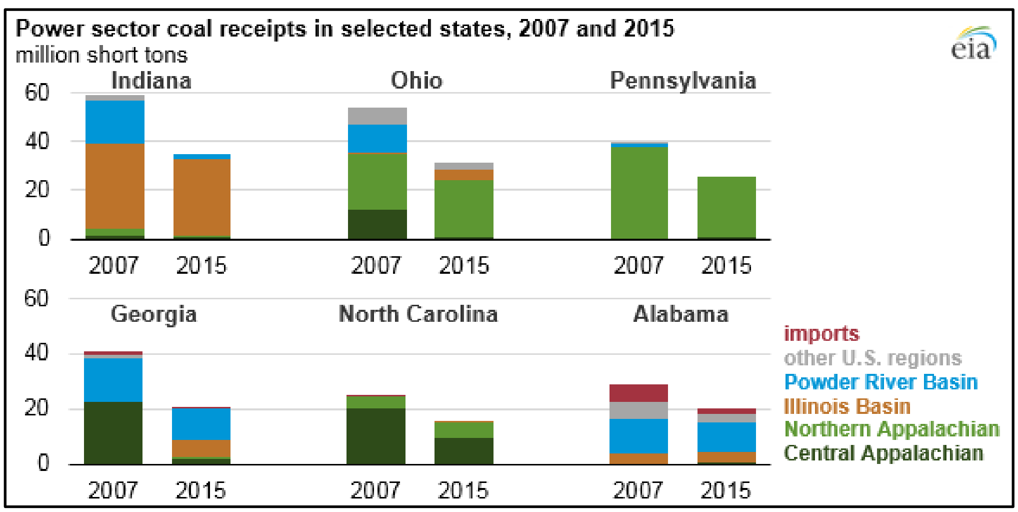
coal and toward natural gas, to the extent that natural gas now has supplanted coal as the nation's primary fuel for electric power (as shown in Figure 2-18 Natural Gas Surpasses Coal for Electricity Generation). The U.S. Energy Information Administration (USEIA) reports that Illinois still was the second largest consumer of coal for electric power in 2015, but its usage had dropped 23 percent since 2007, and national usage fell 29 percent during the same period.[53] Demand for Illinois Basin coal showed some persistence in Eastern states (as shown in Figure 2-19: Illinois Basin Coal Demand in Eastern States), yet this was in the context of a general and substantial decline.

Figure 2-18: Natural Gas Surpasses Coal for Electricity Generation



Source: USEIA

Figure 2-19: Illinois Basin Coal Demand in Eastern States



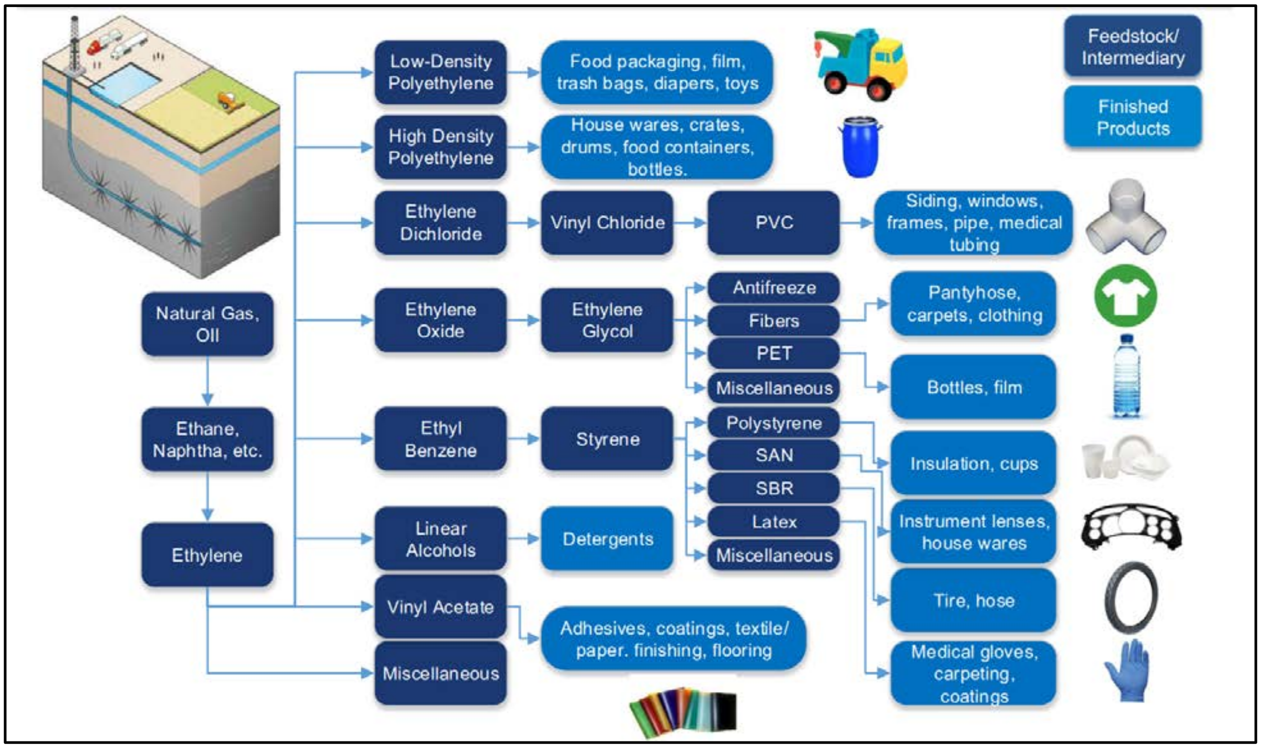
Source: USEIA

Lower cost sources of energy are beneficial to such energy-intensive industries as steel making, but the greater effect in the manufacturing sector comes from feedstocks (as shown in Figure 2-20: Natural Gas-Derived Feedstocks in Manufacturing below) derived from natural gas. This figure shows the very broad array of products using these feedstocks as manufacturing inputs, ranging from everyday household

[53] "Power Sector Coal Demand has Fallen in Nearly Every State Since 2007", U.S. Energy Information Administration, 4/28/16.

items such as plastic bags, diapers, and beverage bottles, to construction materials, automotive products, and adhesives. The diverse manufacturing base in the Chicago area, and in Illinois as a whole, should benefit from this low-cost domestic source of basic industrial materials and can derive competitive advantage from it.

Figure 2-20: Natural Gas-Derived Feedstocks in Manufacturing



Source: PLG Consulting

Implications

As described above, there is a mixed range of factors influencing supply chain sourcing. There are two aspects to consider: one for production and the other for trade. Illinois manufacturing would have grown under the original promise of reshoring. Instead, the outlook is less optimistic: industries are more likely to be retained, especially those that can profit from domestic energy and petrochemical supply, but manufacturing would not enjoy a resurgence. Moreover, the factory automation that helps protect Illinois production, supports fewer jobs per unit of output. The result perhaps is some stability for the manufacturing sector, the goods it ships and the materials it receives, but with less employees to convey a multiplier effect to other areas of the economy.

This provides a backdrop to the uncertainty surrounding U.S. trade policy in 2017. The new U.S. administration wishes to review free trade agreements as a possible way to protect American jobs. This could lead manufacturers to build or keep plants in the U.S. and lead retailers to buy from them. However, foreign governments are likely to respond in unknown ways, and disagreements in one area can spill over into others. As a result, the outlook for supply chain sourcing is speculative. The outcome makes a difference for freight planning. First, it affects Illinois' economic geography – where goods will be shipped from and to, and in what quantities – and second, freight-based investments potentially motivated by economic development could be influenced by the market prospects for the businesses involved. In addition, the freight forecasts discussed elsewhere in this freight plan are subject to the same uncertainty. The outcomes could be positive or negative and will vary with circumstances. For example, consumers will continue to need household supplies and as such domestic producers could benefit.- Yet if consumer prices rise because of costlier sourcing, the level of demand may suffer. Manufacturers or growers exporting goods could face tariff penalties in some countries and not others, altering where they ship and the ports and gateways they need to reach. A dispute over manufactured goods could lead to retaliation in agricultural goods or vice versa. Drops in overseas trade would hurt the rail intermodal business, and traffic losses could reduce the volume economies at the Chicago rail hub. The possibilities are many. The most useful conclusion may be that Illinois planners must observe developments closely, as their partners in industry will. Forums such as the Illinois State Freight Advisory Council (ISFAC) become important ways to gain a better understanding of their implications. This allows opportunities and threats to be recognized, so that investments can be made with an appropriate recognition of risk.

2.4.7 3D Printing

3D printing (or "additive manufacturing") is not a new technology, but its appearance in new applications with advanced materials is bringing it more deeply into manufacturing processes and supply chains. The technology replaces traditional fabrication in factories by using specialized printing devices that manufacture three dimensional solid objects from a digital file using a variety of materials. This is done by laying down successive layers of material until the object is formed. One advantage of 3D printing is that it can be done almost anywhere. Its principal transportation effect is to substitute local production for longer distance transportation from plants and DCs. Currently, 3D printing is best suited to "low volume, moderate valued products that require high customization on short lead times",[54] as illustrated in Figure 2-21: Product Suitability for 3D Printing. These factors apply not only to finished products, but also to product components, and they can correlate with dispersed demand. The top markets today are in consumer electronics, automotive, and medical devices;[55] a new market is developing in food products, particularly in the manufacturing process for foods like pasta, and for specialties like confectionary.[56] A key consideration is the reduction or elimination of inventories required in small amounts that need positioning in many locations. While replacement parts are a prime example of goods that fit the profile, and are an early application of the technology, manufacturing components in general are being evaluated by industry for possible 3D fabrication – recognizing that the process in some ways represents the ultimate in just-in-time production.

[54] Quotation and chart taken from "How 3D Printing Could Disrupt Your Supply Chain", authored by GRA Supply Chain Pty Ltd, reported in Industry Week, Oct. 30, 2015

[55] "3D Printing: The Next Revolution in Industrial Manufacturing", United Parcel Service/Consumer Technology Association, May 2016, available at: https://www.ups.com/media/en/3D_Printing_executive_summary.pdf

[56] "From Pixels to Plate, Food Has Become 3D Printing's Delicious New Frontier", Digital Trends, April 19, 2017.

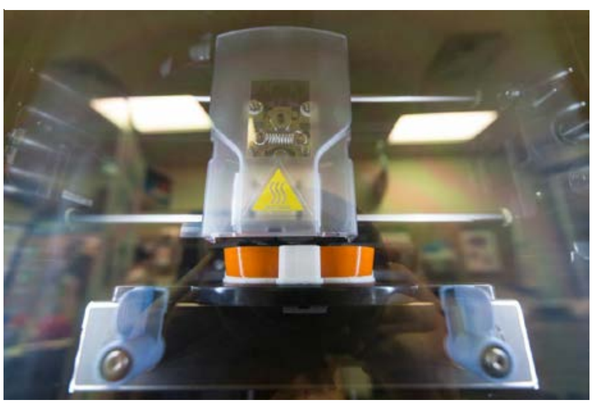
Figure 2-21: Product Suitability for 3D Printing

	High	Moderate	Low
Demand Volumes	✗	●	✓
Customization Requirements	✓	✓	●
Responsiveness Requirements	✓	●	✗
Product Cost	●	✓	●
Product Range	✓	✓	●

Source: GRA Supply Chain Pty Ltd.

Facilitating this development is a new joint venture[57]- launched in May 2016. The venture has three partners: UPS, which is a third party logistics provider (3PL) as well as the world's largest freight carrier; SAP, a leading producer of enterprise software for supply chain management; and Fast Radius, a maker of machine parts using 3D printers. A network of printers has been established at over 60 UPS Store locations nationwide (as shown in Figure 2-22: UPS 3D Printer), including one in Chicago and another in Lisle, Ill., as well as a factory at the UPS global air hub in Louisville, Ky. The partners describe the venture as "distributed on-demand manufacturing" and it can be regarded as an integrated supply chain solution: companies on the SAP system can connect to and optimize their use of the network, schedule production at an appropriate location, and receive next day UPS delivery from the Louisville hub or a store location in their region. Both SAP and UPS have large numbers of users, rendering the venture a platform for many of the nation's supply chains to acquire experience with 3D applications and a catalyst for growth and development.

Figure 2-22: UPS 3D Printer (Source: UPS)



<u>Implications</u>

The long-term implications of 3D printing cannot be predicted with any level of certainty at this point. However, the near-term consequences of 3D printing in Illinois will be new regional truck flows of manufactured product from UPS locations in the Northeastern Illinois, replacing truck flows from other

[57] "UPS to Launch On-Demand 3D Printing Manufacturing Network", UPS Press Room, May 18, 2016

locations, and initially moving in small volumes. Printers are not proprietary to UPS and can be expected to be installed elsewhere in the region, supporting various forms of low volume production. Longer term, 3D printing substitutes local traffic for interregional traffic, but it also can stimulate new kinds of manufacturing activity with lower capital costs and viability in more and different locations – potentially a boon for production In Illinois and other regions. UPS currently estimates 5-10 percent of manufacturing capacity[58] could move to a 3D platform, although penetration will vary by industry based on the considerations outlined above.

[58] The 5 percent factor is of global manufacturing capacity and is quoted in "3D Printing: The Next Revolution in Industrial Manufacturing", ibid.; however, the study's UPS author Derrick Johnson quoted 9-10 percent as an upward bound at a presentation to the Transportation Research Board, 2/10/17.

Illinois State Freight Plan

Chapter 3:

Illinois Truck Bottlenecks

Illinois Department of Transportation (IDOT)

3. Illinois Truck Bottlenecks

3.1 Truck Bottleneck Identification

Congestion imposes significant costs on the movement of freight. This chapter presents the results of an analysis that identified the locations in the roadway network that are bottlenecks to the movement of freight. This was done to inform project selection in ongoing planning processes and to also meet FAST Act requirements related to performance based system evaluation.

3.2 Approach

Different definitions of a "bottleneck" have been used in previous analyses, however for this application a bottleneck was defined as a part of the roadway network that causes a disproportionately high cost in the movement of freight in terms of unreliability and delay. Two elements of this definition deserve closer attention.

First, roads in Illinois were compared against other roads in Illinois only. In this case, the identification of a bottleneck in Illinois does not depend on the roadway conditions in other states or metropolitan areas outside of Illinois. This is important for prioritizing investments within the state.

A second component of this definition that deserves closer attention is the use of delay and unreliability measures as a method for understanding the costs of moving freight. These costs cannot be observed directly and would be difficult to estimate with any level of precision. Therefore, this planning effort relies on measures of delay and unreliability to find places in the system that are creating frictions in the movement of freight. This analysis uses metrics that are relevant to the freight users of the system, namely motor carriers and shippers, to make planning decisions that are responsive to their priorities. This approach follows general guidance regarding bottleneck analysis published by the Federal Highway Administration (FHWA).[59] It should also be noted that this analysis was conducted for the purpose of providing a statewide assessment of problem locations and does not look in detail at localized areas where problems may exist, but are not apparent in this higher-level statewide analysis. Narrower studies, such as freight plans conducted by local jurisdictions or Metropolitan Planning Organizations, can help supplement the information contained in this statewide assessment.

The FHWA guidance also stresses the need to delve into additional data sources to investigate potential causes of apparent performance issues. Therefore, in addition to the unreliability and delay measures, this analysis included other indicators such as crashes and pavement conditions in order to have further data that could be useful in the development of potential solutions and investment priorities.

In addition to evaluating performance based on quantitative measures, it is also important to consider the experience and comments of stakeholders who use the roadway network every day. System users

[59] Federal Highway Administration. August 2015. *Freight Performance Measure Approaches for Bottlenecks, Arterial, and Linking Volumes to Congestion*. U.S. Department of Transportation, Washington, D.C.

can identify issues not captured by the data. A similar approach was adopted by the Oregon Department of Transportation as was found to be useful.[60]

3.3 Data Sources

The data sources used in this analysis were:

- **NPMRDS:** The data set used to characterize the performance of roads is the National Performance Management Research Data Set (NPMRDS). This is a product developed by the FHWA that reports travel times on individual roadway segments on the National Highway System (NHS) at five minute intervals. Each individual roadway segment is called a Traffic Message Channel (TMC). Travel times on these TMCs are reported for both passenger traffic and truck traffic. Truck records came from an analysis of trucks that had been instrumented with Global Positioning System (GPS) recorders by the American Trucking Association. The travel time data analyzed came from calendar year 2016.
- **Truck Volume:** The data used to characterize trucking activity on the roadway network came from the Freight Analysis Framework (FAF) v4 Network File. This file contains estimates of truck Annual Average Daily Traffic (AADT) volumes on the roads that come from the Highway Performance Monitoring System (HPMS).
- **Freight Flow Forecasts:** A disaggregation of the FAF v4 data set was performed, and this data was assigned to the FAF network. This resulted in detailed forecasts of where trucking activity is expected to grow the fastest out to the year 2045.
- **Safety:** Data that provided a yearly average on collisions, injuries, and fatalities for 2010 to 2014 was utilized in this analysis.
- **Pavement Condition:** The data used was the International Roughness Index as shown in IDOT's 2018 – 2023 MYP.

All of the datasets described above use different networks. Therefore, a conflation process was used to as closely as possible relate one network to another, and bring all of the data into a single consistent network. The master network was defined as the NPMRDS network. The TMC (from NPMRDS) was adopted as the roadway analysis segment. Although TMCs are typically longer in rural areas, their shorter distances in urban areas provide more detail when traffic conditions are often most variable.

3.4 Average Delay Measure

The average delay measure describes how much worse travel times are on average relative to free flow conditions. Therefore, this measure indicates the additional number of hours that trucks spend traversing a roadway segment because of recurring congestion. This type of truck delay translates directly into additional costs due to unproductive time spent by drivers in congested conditions and increased expenses related to vehicle operation and fuel consumption. Additionally, the longer that it

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[60] Oregon Department of Transportation. March 14, 2017. *Oregon Freight Highway Bottleneck Project Final Report*. WSP | Parsons Brinckerhoff.

takes on average to deliver goods, the larger the fleet size that will be required to make on-time deliveries, which imposes additional costs on trucking companies.

Average truck delay was calculated for the NHS network by using the NPMRDS data set and the truck AADT. The specific average truck delay measure was calculated as:

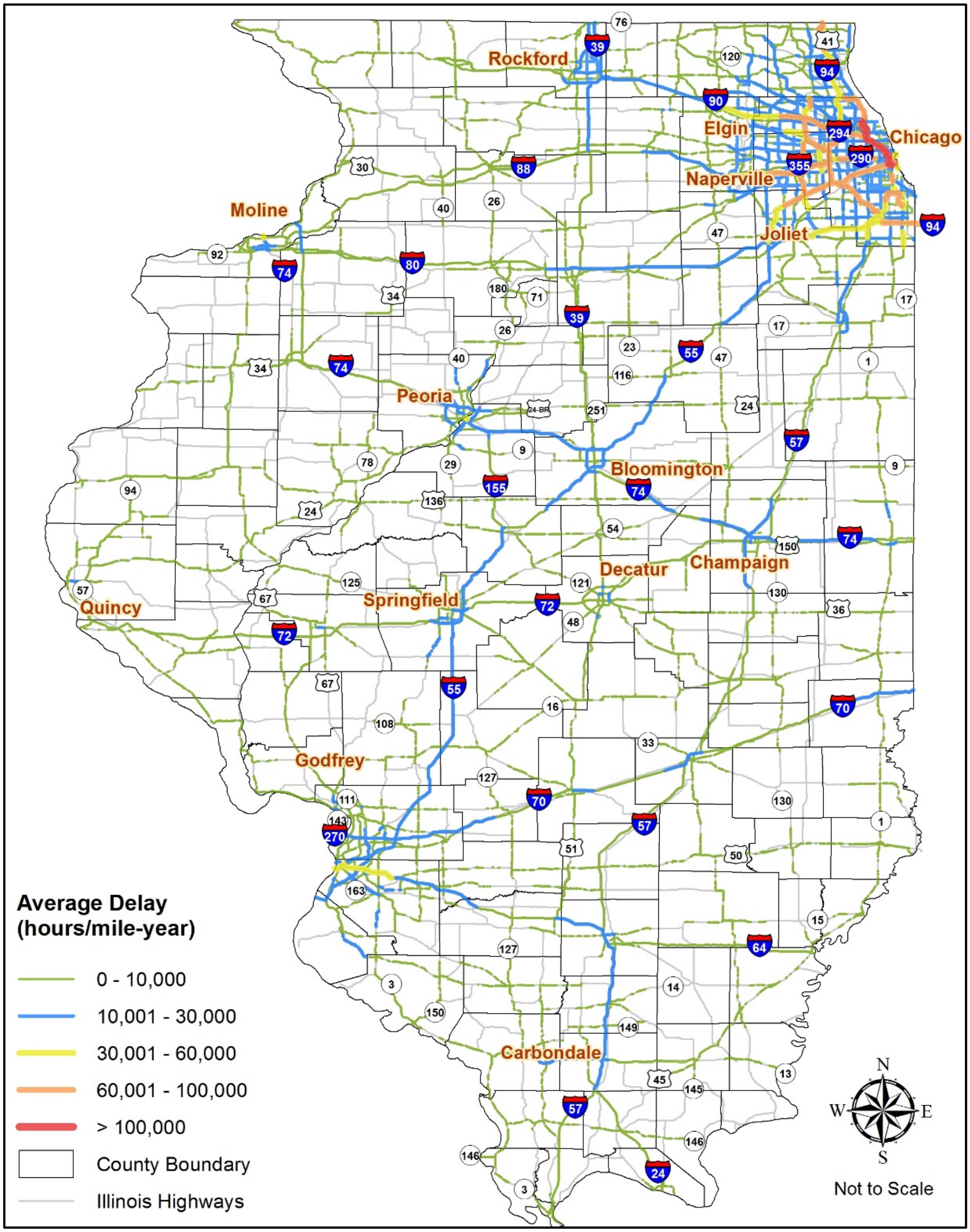
Average truck delay per segment (hour/mile-year) =
(Average travel time - 10th percentile travel time)*(Truck AADT)*365/(segment length)

Where 10th percentile travel time is taken to represent free flow conditions.[61]

Figure 3-1: Average Truck Delay, Northbound and Eastbound, shows the delay estimate (hours of delay per mile per year for all trucks) for the state for the north and east directions and Figure 3-2: Average Truck Delay, Southbound and Westbound shows the same results for the state for the south and west directions.

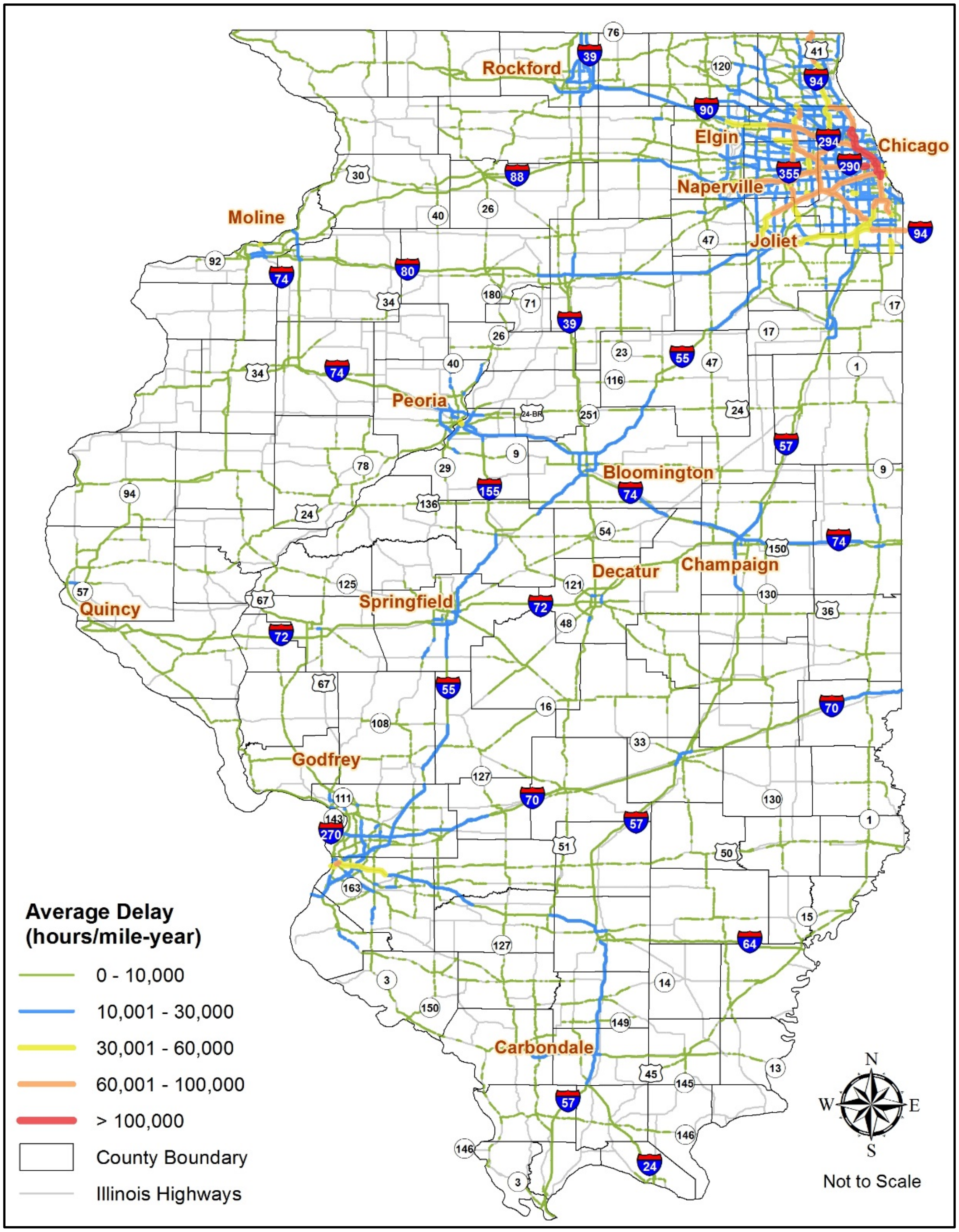
[61] The 10th percentile travel time was used since it captures the typical fastest travel times across a segment, while excluding the very fastest vehicles. This is a standard assumption often used in travel time analyses.

Figure 3-1: Average Truck Delay, Northbound and Eastbound



Source: Calculations by WSP

Figure 3-2: Average Truck Delay, Southbound and Westbound



Source: Calculations by WSP

3.5 Unreliability Measure

The unreliability measure captures how bad conditions can get on occasion relative to typical conditions. It is calculated as the ratio of the worst case travel time (95^{th} percentile travel time) to the median travel time. This measure relates more directly to a different set of costs than the ones captured in the delay measure. The unreliability measure correlates more strongly with the frequency of severe non-recurring congestion, which in turn imposes a different set of costs and risks on supply-chains. Missing scheduled delivery windows could lead to production line stoppages or missed intermodal transfers, among other negative outcomes.

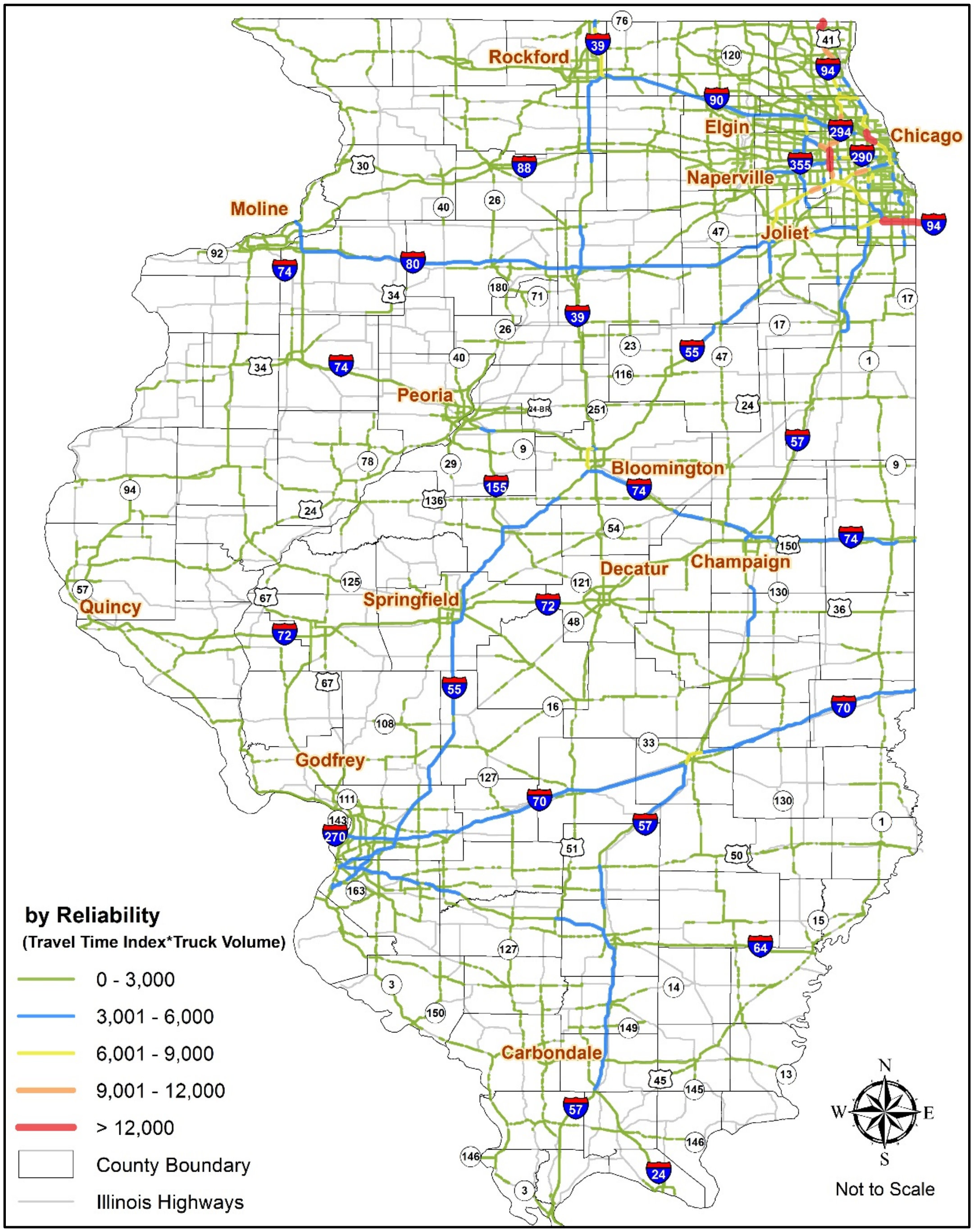
Using a combination of the delay measure and the unreliability measure is critical in this bottleneck analysis, as it takes into account both recurring and non-recurring congestion.

The unreliability measure is calculated from the same data sources as the average delay measure. The unreliability measure – like the delay measure – incorporates truck volume in order to focus the analysis on roads that are used most extensively by trucks. The reliability index equation is:

> Reliability Index (unitless) = (95th percentile travel time)/(50th percentile travel time) * (Truck AADT)
>
> *Where*: The 95^{th} percentile travel time represents the time that shippers and carriers must consider to arrive on time 95 percent of the time (worst conditions).
>
> *Where*: The comparison to the 50^{th} percentile (median) travel time shows the variability of travel times on that particular segment. As the index gets higher, it indicates greater reliability problems on that segment.

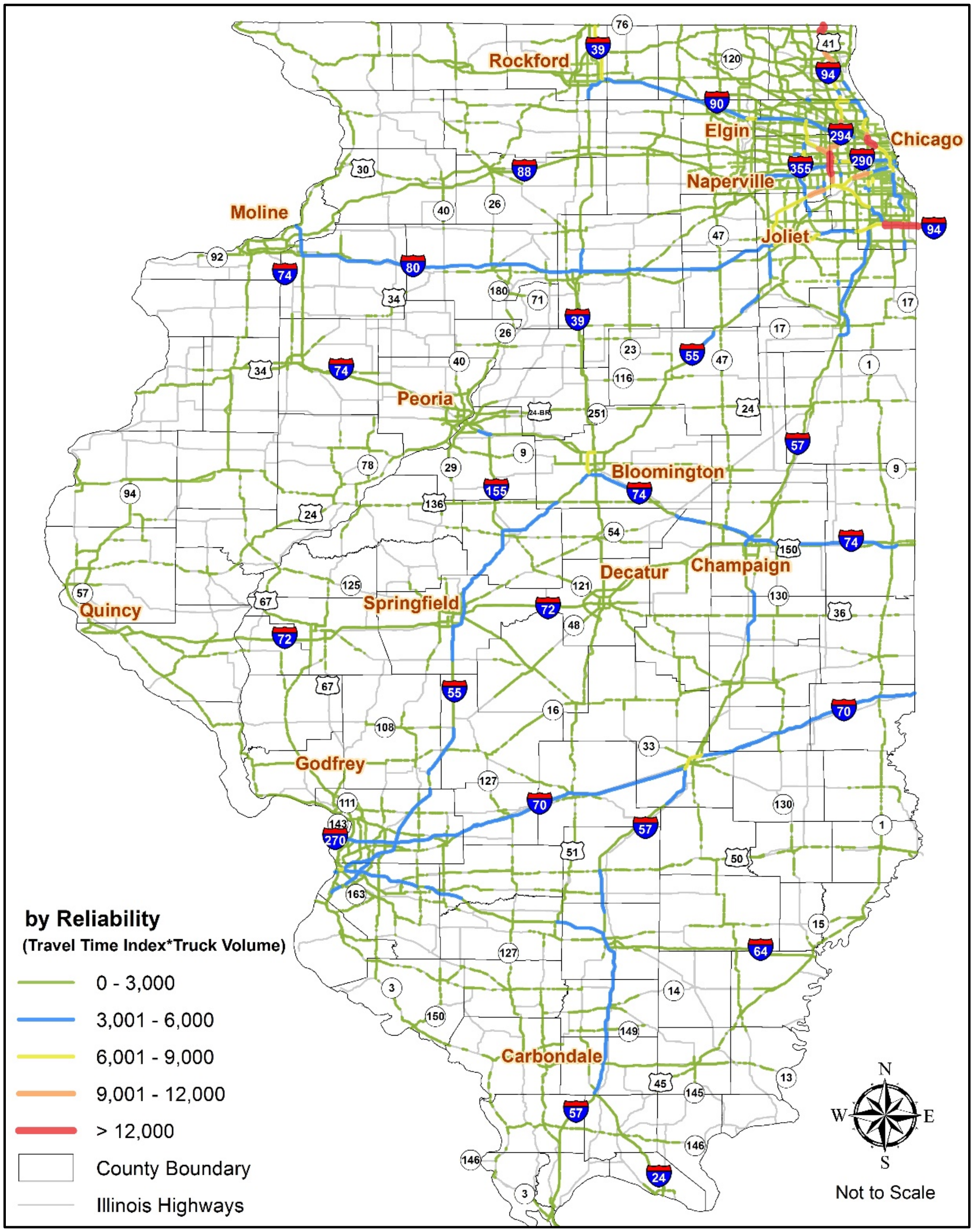
Figure 3-3: Truck Travel Time Unreliability, Northbound and Eastbound and Figure 3-4: Truck Travel Time Unreliability, Southbound and Westbound, show the results of the reliability measure for the NHS network throughout the state for the North and West directions of travel, and the South and East directions of travel, respectively.

Figure 3-3: Truck Travel Time Unreliability, Northbound and Eastbound



Source: Calculations by WSP

Figure 3-4: Truck Travel Time Unreliability, Southbound and Westbound



Source: Calculations by WSP

3.6 Bottleneck Identification

Highway freight bottlenecks in the state were identified by selecting the roadways performing the worst in terms of truck delay or unreliability. A roadway segment was categorized as a bottleneck if it ranked in the top five percent of all roadway segments analyzed in terms of truck delay, unreliability, or both. The thresholds for truck delay and unreliability were 33,398 (hr/mile-yr) and 10,800 respectively. These thresholds were calculated by rank ordering all segments first by delay, and then by unreliability, and determining the level at which only five percent of segments had higher delay and unreliability. Even though there was considerable overlap between these two metrics, there were many roadways that placed in the top five percent of only one of these metrics, which is caused if there is a greater influence of recurring congestion versus non-recurring congestion.

Overall, 516.9 miles of roads in Illinois were classified as bottlenecks to freight operations (counting both directions of travel), which represents 2.4 percent of the roadway miles analyzed. Only roads on the NHS in Illinois with a sufficiently high number of travel time records were analyzed. The results of this analysis are shown in Figure 3-5: Truck Bottleneck Locations by Severity, Statewide. Bottleneck locations were classified by severity, where severity was defined as the summation of the percentile rank of the bottleneck segments in terms of delay and unreliability. In other words, based on classifications of High, Medium, and Low, a location classified as a "High" would tend to rank in the top third of bottleneck locations in both delay and unreliability. See Appendix B: Illinois Truck Bottlenecks for segment specific data by County.

As might be expected, the vast majority of bottleneck locations are located in and around the Chicago metropolitan area. To be precise, 474.2 miles of the 516.9 bottleneck miles (91.7 percent) are located in counties represented by the Chicago Metropolitan Agency for Planning (CMAP).[62] This result is not surprising since many highways in this part of the state are congested and carry high truck volumes. Nonetheless, 42.7 miles of bottlenecks were identified outside of this region, representing 8.3 percent of the bottleneck miles identified. In many cases, delay and unreliability in these locations was similar to some of the worst performing roads in the metropolitan Chicago region.

Bottleneck locations identified in Northeastern Illinois are shown in greater detail in Figure 3-6: Truck Bottleneck Locations by Severity, Northeastern Illinois. Locations on the NHS with many bottlenecks classified as medium or high severity included:

- Kennedy Expressway (I-94/I-90) between the I-94/I-90 interchange and the I-290 interchange.
- Edens Expressway (I-94) north of the I-94/I-90 interchange to Dempster (Illinois Route 58).
- I-290 between the I-294 interchange and the I-90 interchange.
- Interchange between I-294 and I-90, near O'Hare International Airport.
- I-90/I-94 from 63rd Street South to the I-290 interchange.
- I-55 from Illinois Route 171 to US Route 41 (Lake Shore Drive).
- Interchange between I-294 and I-80.

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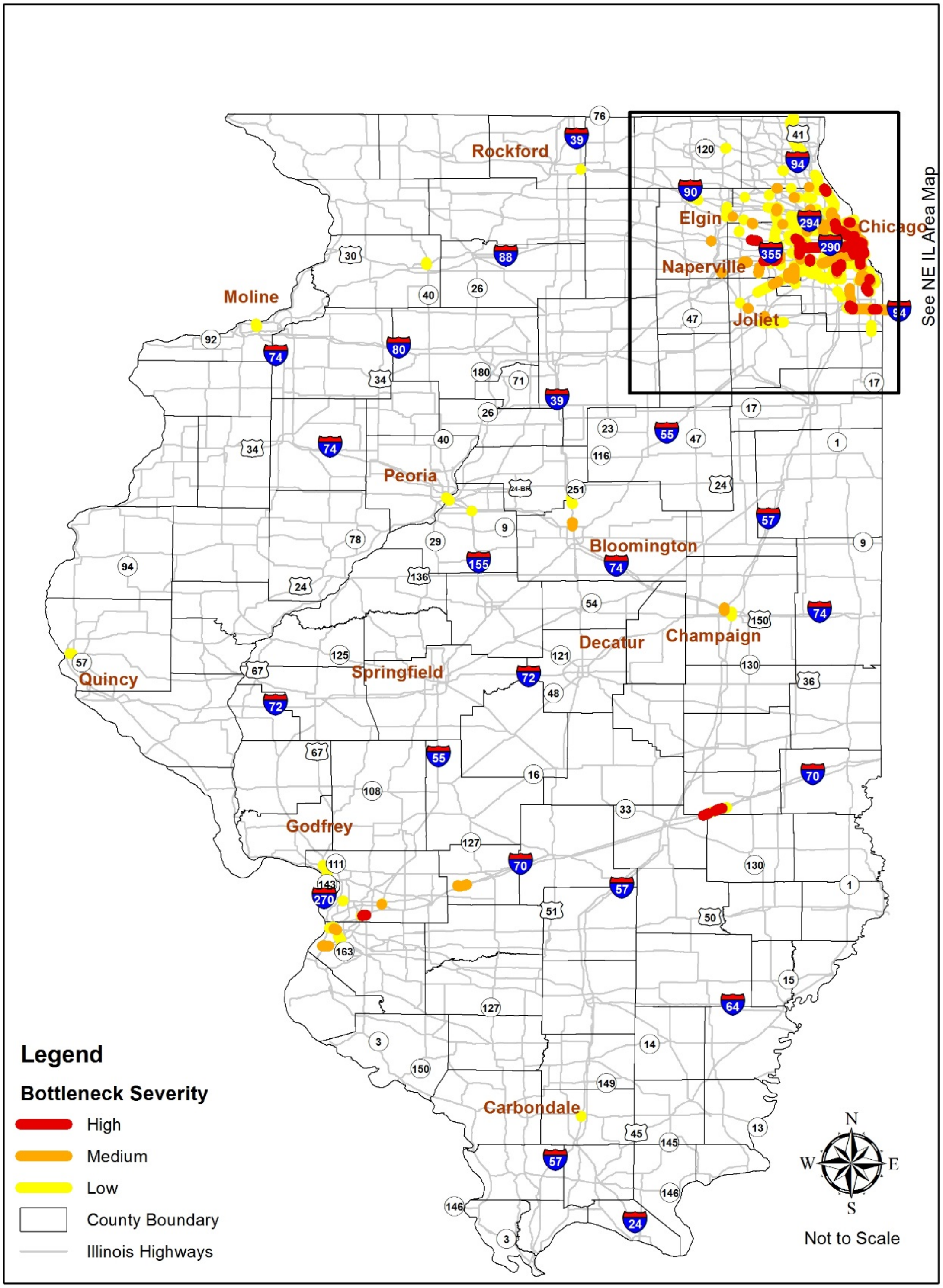
[62] Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties.

- I-80 from the Indiana border to the Dixie Highway.
- State Route 50 from 79th Street South to I-290.
- State Route 64/North Avenue (Carol Stream).
- US Route 45/12/LaGrange Road (LaGrange).
- US Route 83 Interchange at I-55.

Outside of the Chicago metropolitan region the following major bottlenecks were also identified:

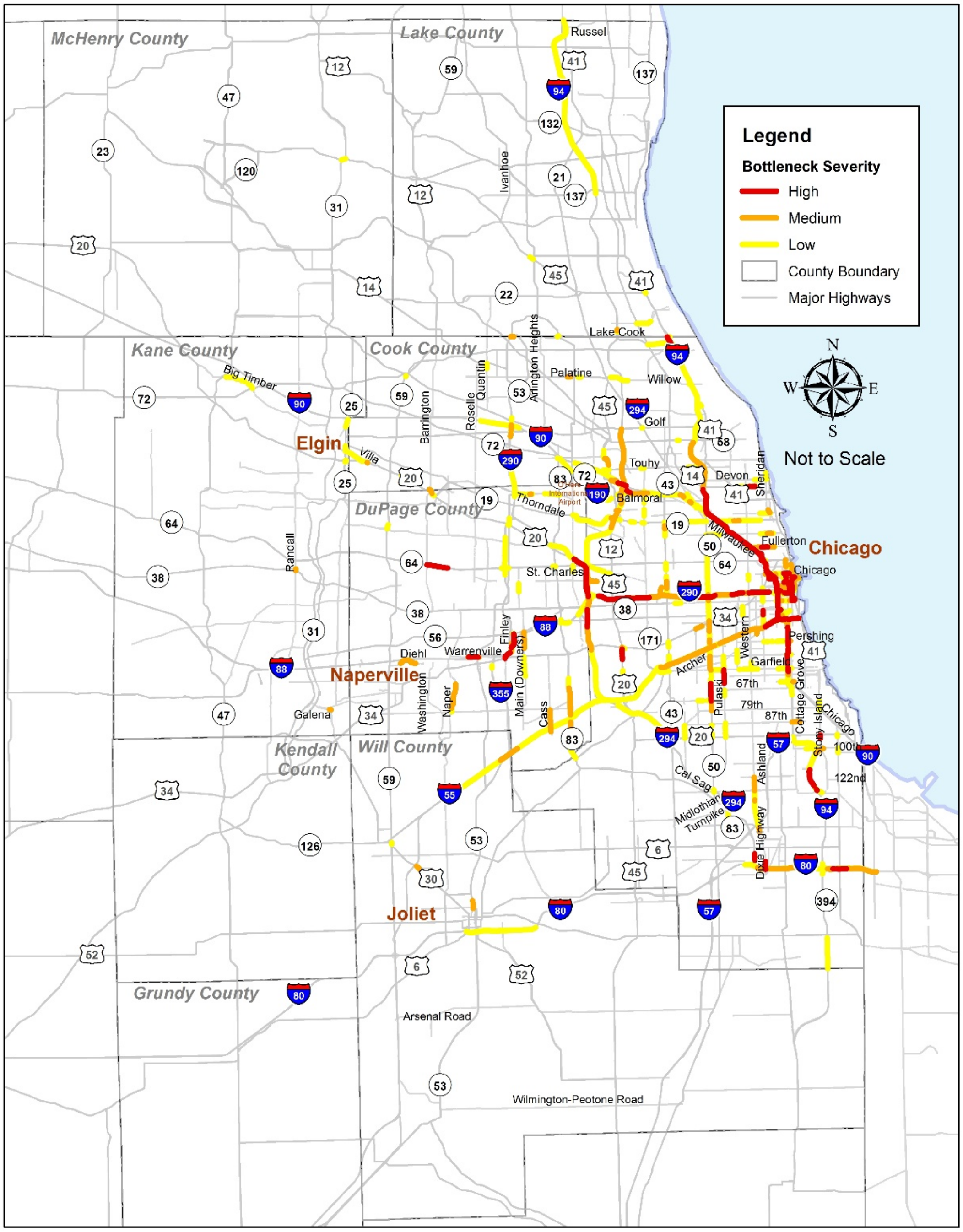
- US-40 at Pocahontas, Ill.
- I-64 and I-70 interchange in the St. Louis area.
- I-57 at W Deyoung St. in Marion, Ill.
- Broadway St. in Quincy, Ill.
- IL-8 in Peoria, Ill. at Cedar St. Bridge.
- I-74 In Moline, Ill.
- IL-40 in Sterling, Ill.

Figure 3-5: Truck Bottleneck Locations by Severity, Statewide



Source: Calculations by WSP

Figure 3-6: Truck Bottleneck Locations by Severity, Northeastern Illinois



Source: Calculations by WSP

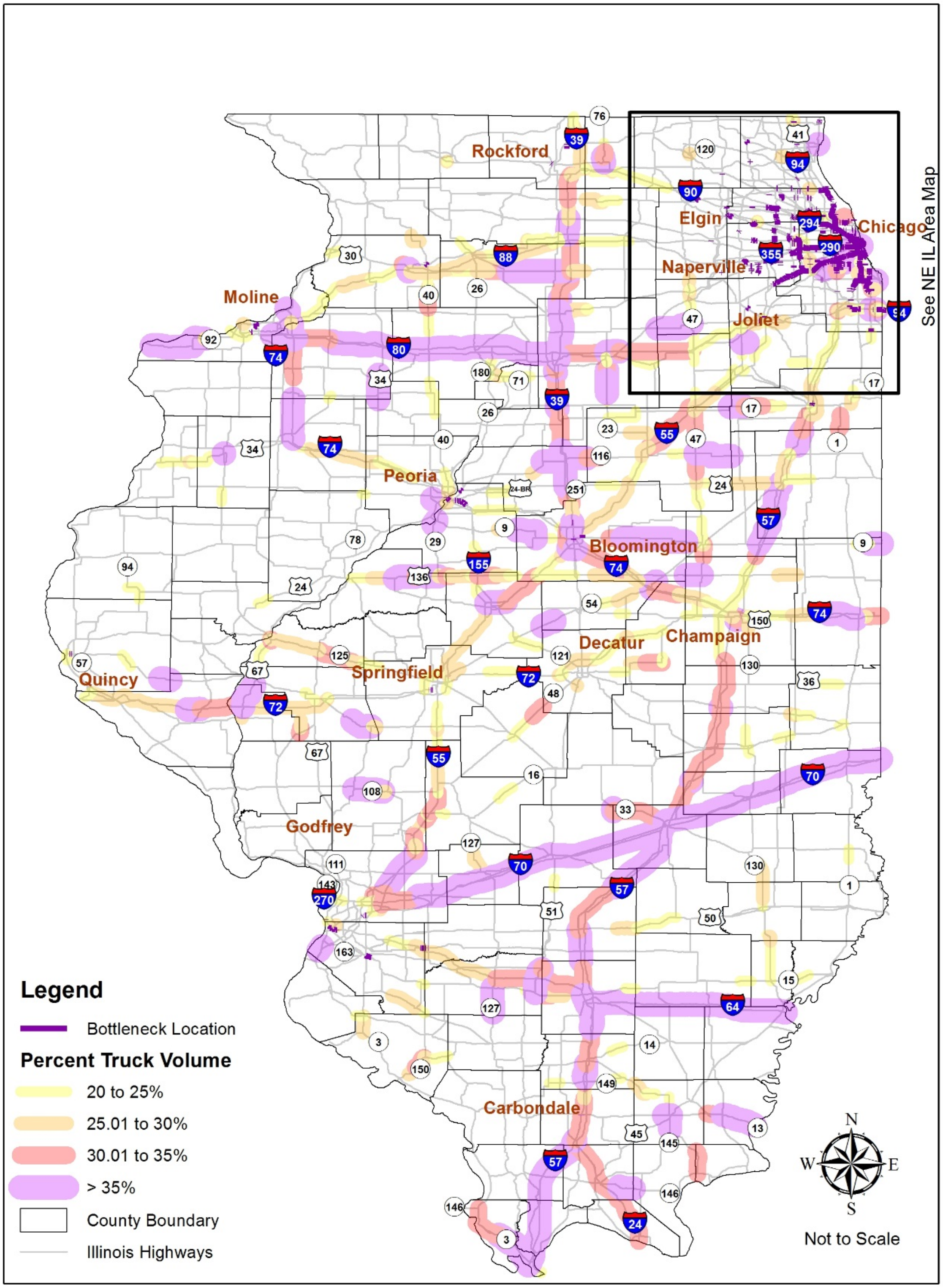
3.7 Bottlenecks Caused by Truck-Freight

It is important to examine where freight is contributing to congestion on the roadways. Bottlenecks induced by truck freight were examined by identifying all bottlenecks in Illinois (truck and passenger), coupled with defining the intensity of freight near those bottlenecks through examination of high truck percentages on Illinois routes, and by looking at major truck generators like intermodal facilities.

The intensity of trucks travelling along routes in Illinois as they relate to all bottlenecks throughout the state is demonstrated Figure 3-7: All Vehicle Bottlenecks Compared to High Truck Volumes Statewide, Figure 3-8: All Vehicle Bottlenecks Compared to High Truck Volumes Northeastern Illinois, and Figure 3-9: All Vehicle Bottlenecks Compared to High Truck Volumes Chicago. As can be observed from these figures, although truck traffic is contributing to all bottlenecks, passenger vehicle use is also extensive along most of the same portions of road where the truck-only bottlenecks are shown.

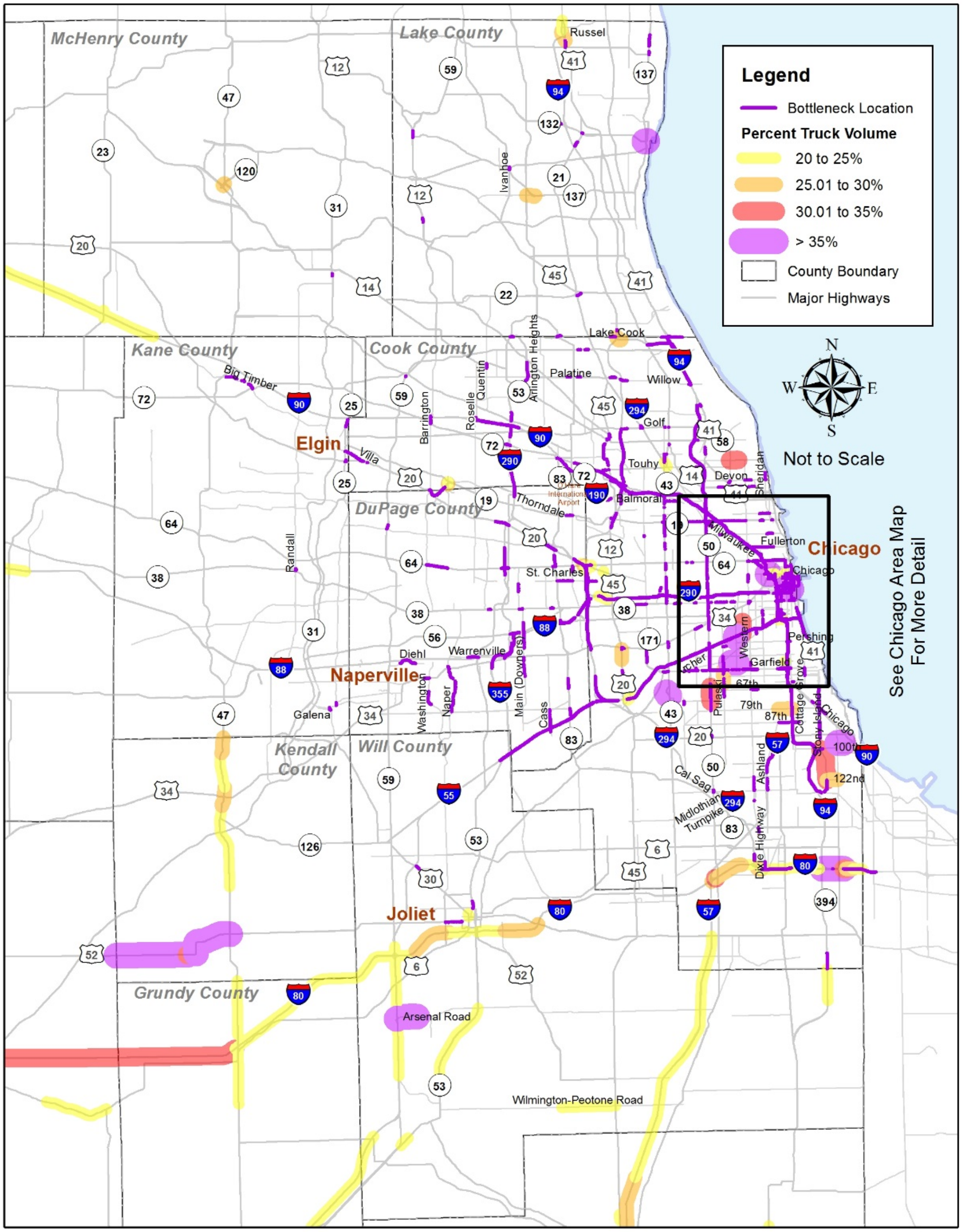
Intermodal facilities located throughout Illinois in comparison to the areas of high truck volumes and all vehicle bottlenecks are shown in Figure 3-10: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Statewide, Figure 3-11: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Northeastern Illinois, Figure 3-12: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Chicago, and Figure 3-13: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Will County. These figures depict the relationship between major truck generators, high truck volumes on the roadway network, and all traffic bottleneck areas, and indicate that in most cases, intermodal facilities cannot be directly linked to all traffic bottlenecks. Collectively, the figures in this section show that while most of the transportation network in Illinois accommodates a very high volume of trucks, truck freight is not conclusively the main cause of all bottleneck areas throughout state.

Figure 3-7: All Vehicle Bottlenecks Compared to High Truck Volumes Statewide



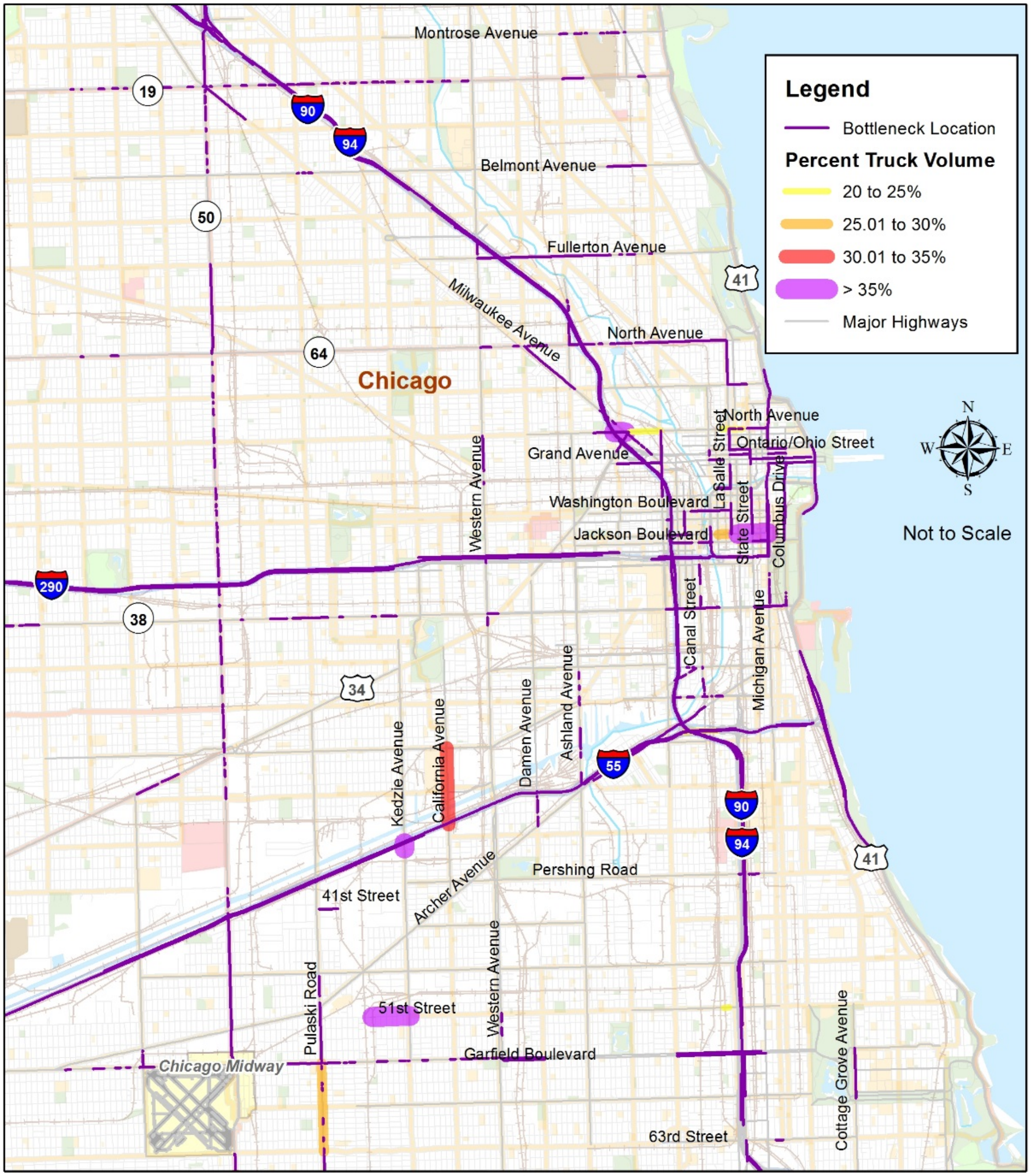
Source: Calculations by WSP

Figure 3-8: All Vehicle Bottlenecks Compared to High Truck Volumes Northeastern Illinois



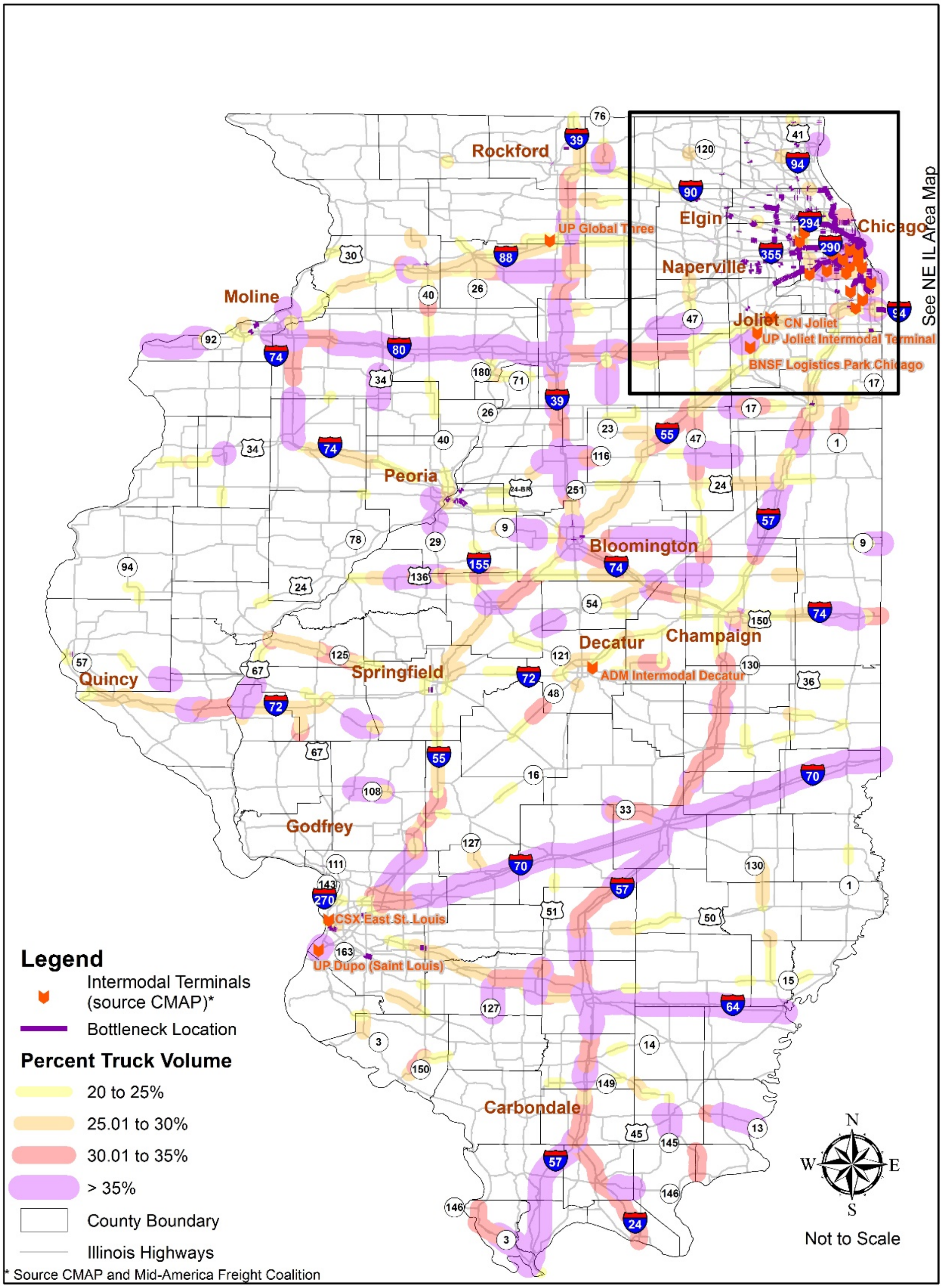
Source: Calculations by WSP

Figure 3-9: All Vehicle Bottlenecks Compared to High Truck Volumes Chicago



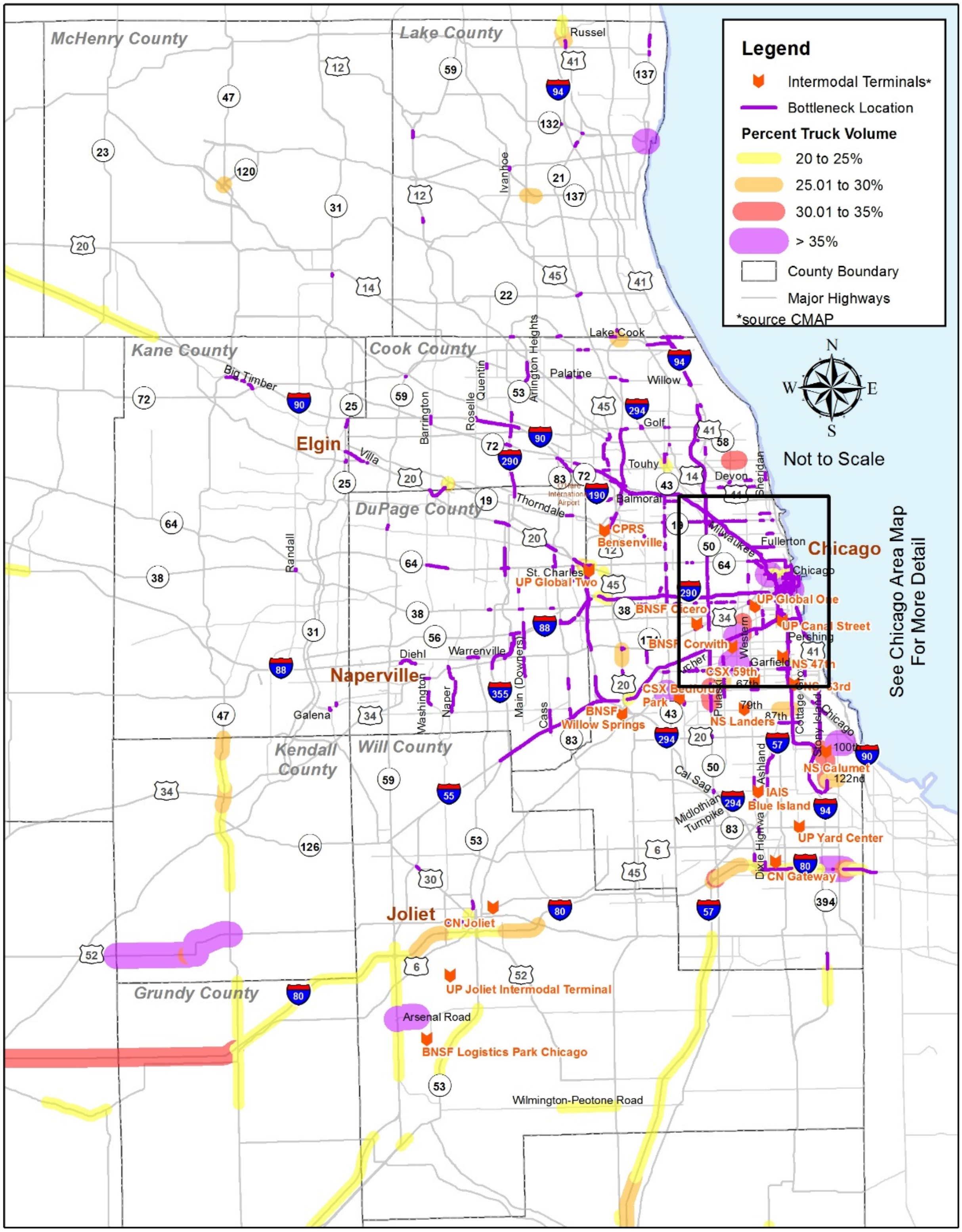
Source: Calculations by WSP

Figure 3-10: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Statewide



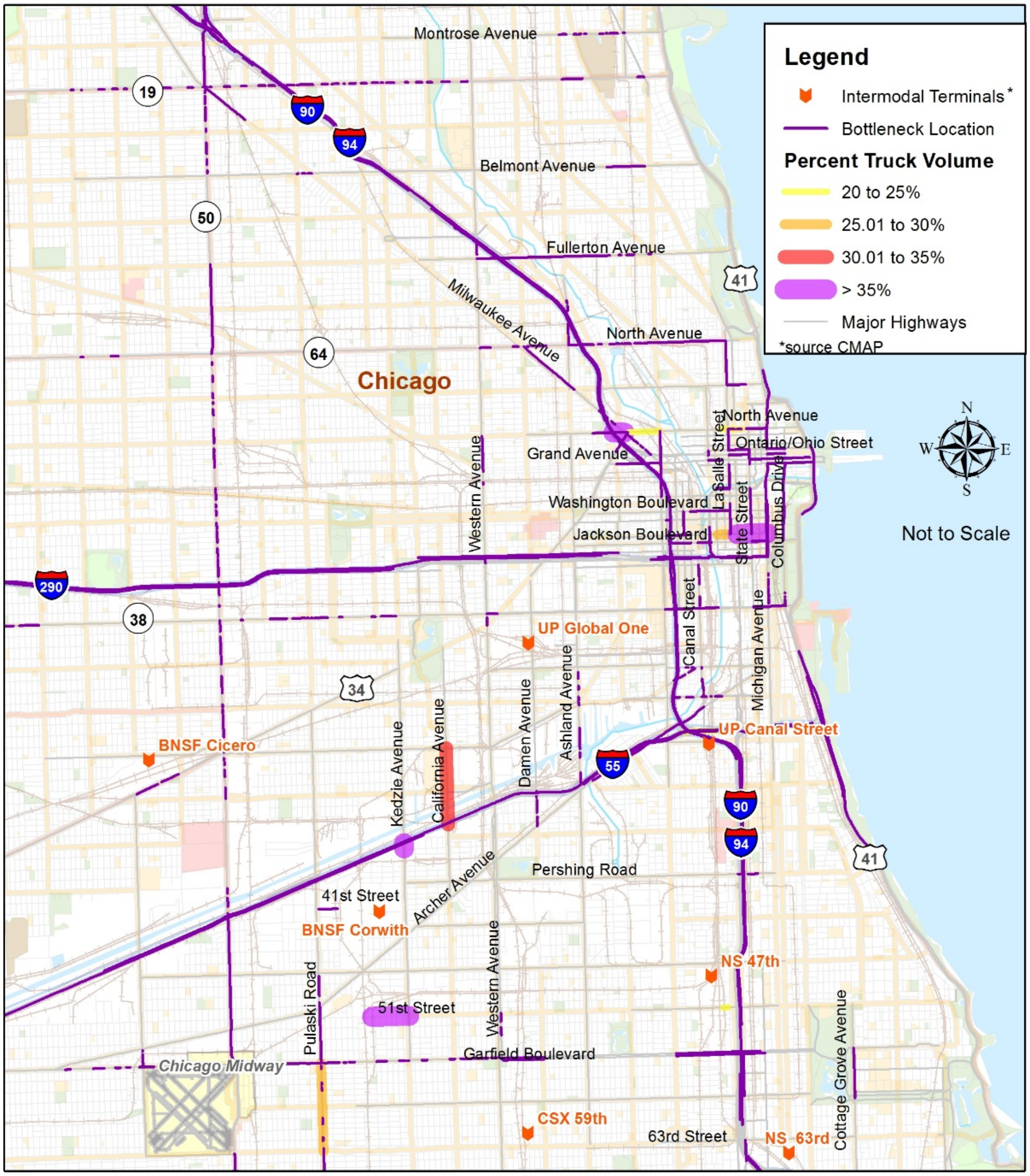
Source: Calculations by WSP

Figure 3-11: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Northeastern Illinois



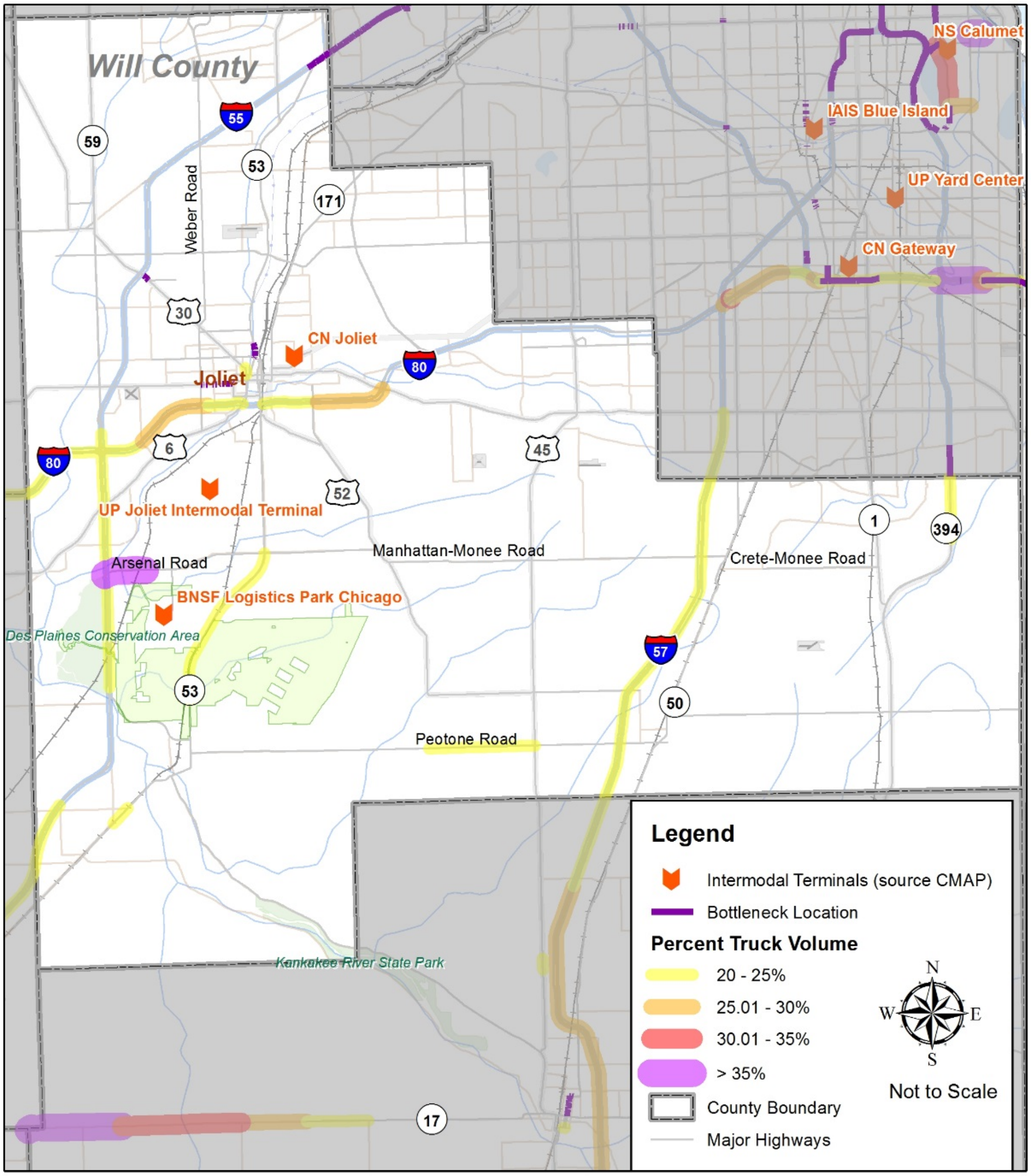
Source: Calculations by WSP

Figure 3-12: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Chicago



Source: Calculations by WSP

Figure 3-13: All Bottlenecks Compared to Truck Volumes and Intermodal Facilities Will County



Source: Calculations by WSP

3.8 Illinois Core Roadway Freight Network

It is useful to define a core roadway freight network to help direct limited financial resources to the portions of the system that are most important for the movement of freight. Typically, in other states, this is a blend of interstates with U.S. and state highways, but in Illinois the interstate highway system is truly the core network. The interstate highway system blankets the state with routes radiating from Northeastern Illinois in every direction, with additional routes throughout the state that cross and connect these radials. The interstate highway system serves diverse production locations including factories, farms and mines, and distribution facilities that supply populations in-state and regionally. The interstate highway system also bears large volumes of trucks passing through the state between other parts of the country. While it might be expected that the interstate highway system would function as workhorse for freight movement in Illinois, the very extent of the network and the functions it performs underscores its importance to the state and its economy.

This point can be seen in the large volume of trucks traveling across the state, as shown in Figure 3-14: Illinois Roadway Truck Volumes. However, this point is also emphasized by the percentages of trucks compared to total traffic, which was described earlier in this chapter and is shown further in Figure 3-15: Illinois High Truck Percentage Roadways Statewide and Figure 3-16: Illinois High Truck Percentage Roadways Northeastern Illinois.

Interstates where trucks are a quarter or a third of the volume are everywhere in the state. In fact, more than half of the interstate highway miles in Illinois – 55 percent – have truck proportions of 25 percent or greater. This contrasts with other roadways in the state, which reach 25 percent trucks on just four percent of their total miles. From these figures, 12 interstate highways along with associated bypasses can be considered as the core roadway freight network for the State of Illinois. These 12 interstate highways are: I-24, I-39, I-55, I-57, I-64, I-70, I-72, I-74, I-80, I-88, I-90, and I-94.

Figure 3-14: Illinois Roadway Truck Volumes

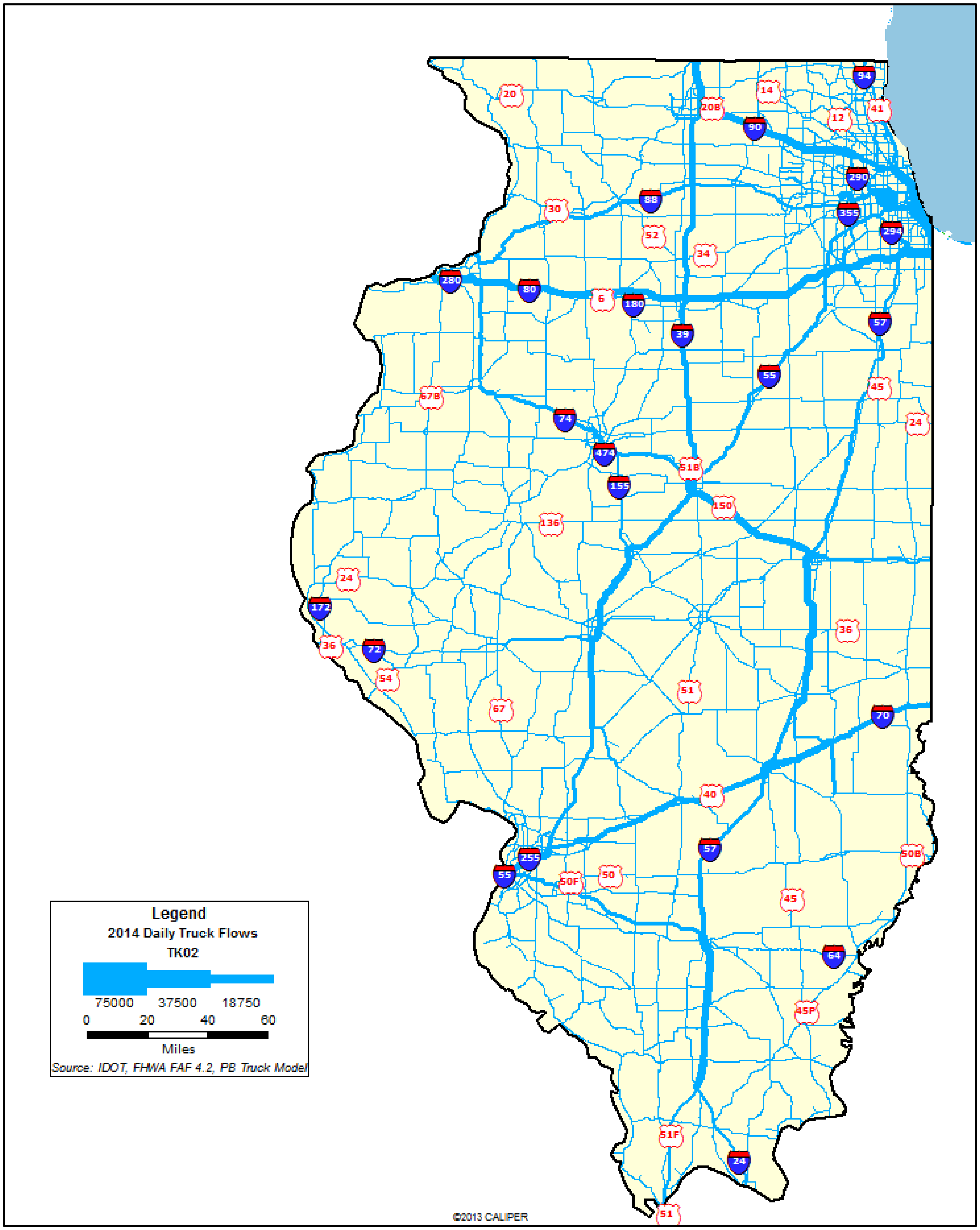
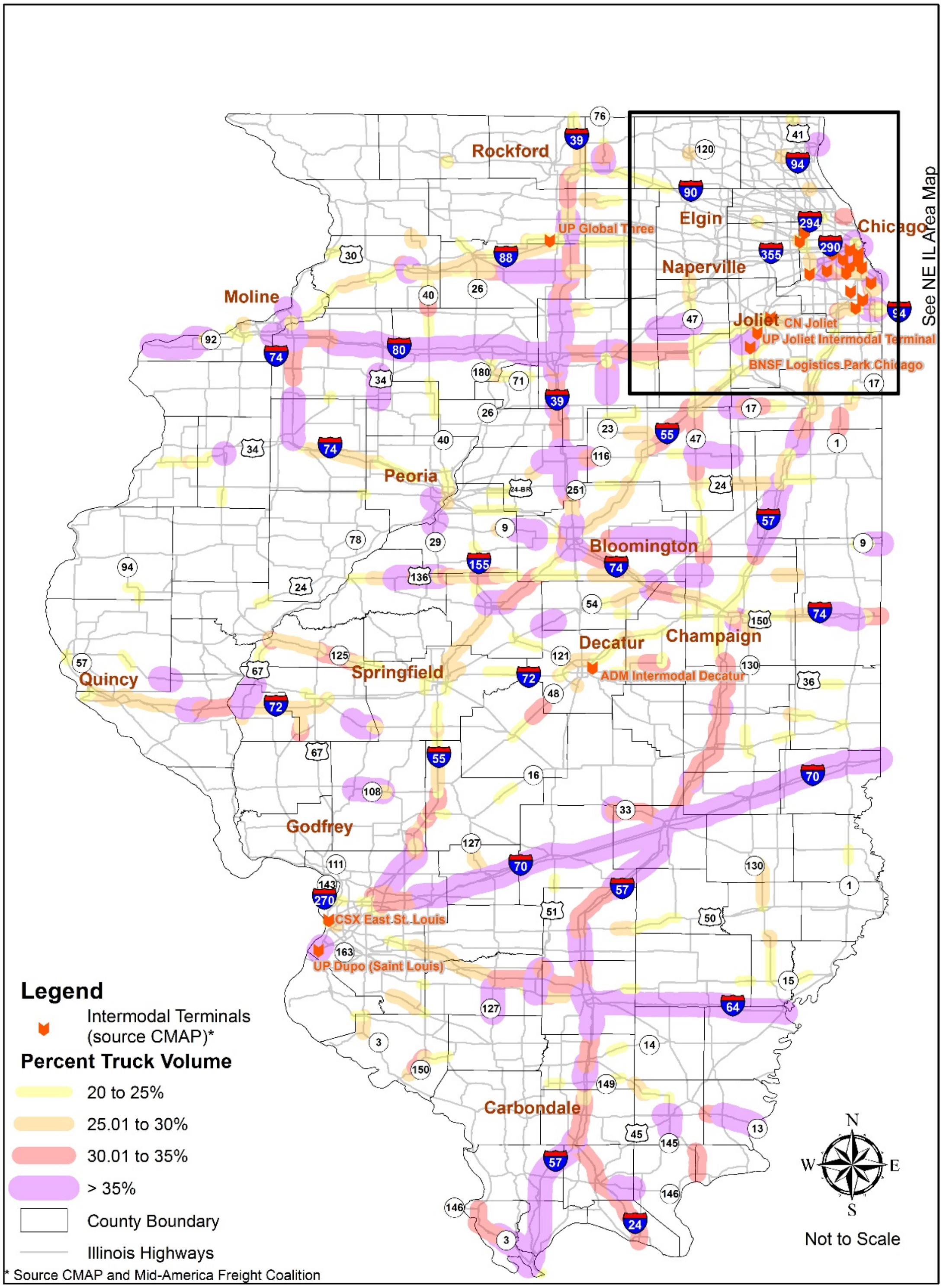
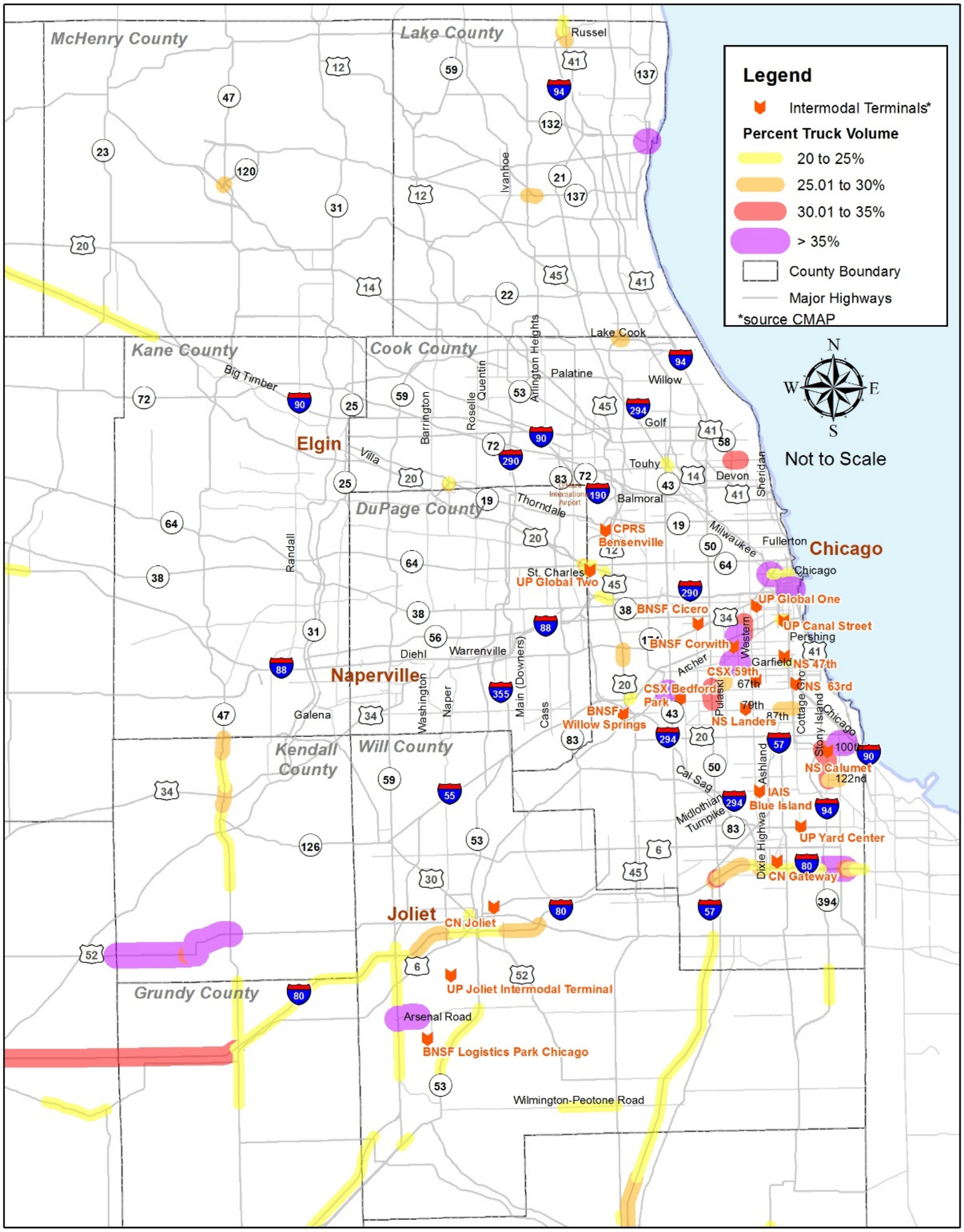


Figure 3-15: Illinois High Truck Percentage Roadways Statewide



Source: Calculations by WSP

Figure 3-16: Illinois High Truck Percentage Roadways Northeastern Illinois



Source: Calculations by WSP

Illinois State Freight Plan

Chapter Four:

Freight Strategies

Illinois Department of Transportation (IDOT)

4. Freight Strategies

4.1 Overview

Illinois is the third largest state in the nation for volume of freight, whether measured by tonnage or by value of goods.[63] Tonnage is the more important measure for demand on infrastructure; Illinois ranks second in the U.S. for tons originated and for tons terminated. These volumes underscore the role of the state as the nation's freight hub, which is due not only to its geographic central location and the convergence of the country's modal networks, but also to its population and productive capacity.

As noted elsewhere in this plan, truck traffic accounts for approximately 54 percent of Illinois' freight tonnage, which is considerably less than the national average of approximately 80 percent. However, Illinois is the third largest state for truck freight.

This seeming disparity comes about because Illinois is also the third largest state for rail tonnage. As also noted elsewhere in this plan, approximately 37 percent of Illinois freight volume moves by rail, which is triple the national average. The rail freight volume includes both rail carload and rail intermodal tonnages.

Proportions of traffic by water and air exceed the national average as well and confirm the fully multimodal character of the Illinois system.

In addition, as reported elsewhere in this plan, approximately 38 percent of truck Vehicle Miles Traveled (VMT) is highway freight passing through Illinois. This too is a substantial quantity of traffic, yet its significance is masked by the great volumes of truck freight that Illinois ships and receives. In other words, Illinois is a national freight center both because it is a major trading partner with other states and because it is a major bridge between other states. This is precisely how a freight hub operates, and the consequences are borne out by the high percentages of trucks reported on the interstate highway network throughout Illinois. Although freight is important to every state because of its economic impact, in Illinois freight carriage is also a central function of the transportation system.

In the 2012 Freight Mobility Plan, IDOT set forth three institutional steps to strengthen its ability to respond to freight needs and prepare for a changing future. One key step was the expansion of multimodal planning through the establishment of the Illinois State Freight Advisory Council (ISFAC). The establishment of ISFAC advanced the objectives of a second key step, which was enhancement of IDOT's knowledge of industry trends and requirements, as displayed by the wide range of expertise contributed by ISFAC members, a list of whom can be found on the IDOT website. A third key step was the implementation of freight performance measures, including improved tracking of freight bottlenecks, as described in Section 5.3.

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[63] Rankings are based on U.S. Department of Transportation Freight Analysis Framework (FAF4) data, excluding volumes by pipeline and unidentified modes.

The following sections will address a set of proposed freight strategies that fall broadly into three categories: Institutional Strategies, Network Development Strategies, and Economic Development Strategies. Together, these strategies are designed to preserve the position of Illinois as the nation's freight hub and leverage the state's many assets, including its population, production capacity, geographic location, and multimodal network.

4.2 Institutional Strategies

Two institutional strategies are being undertaken as part of this plan. The first is the mainstreaming of freight considerations in project evaluations. The second is the development of a competitive grant program model which will be utilized to establish a freight investment plan.

4.2.1 Mainstreaming

Mainstreaming refers to the fact that freight activity exists virtually everywhere in the roadway network, as well as in all modes of the transportation system and that freight factors should be explicitly incorporated into routine project analysis, rather than viewing freight as a side issue, or as a subject relegated to special studies. Given that significant freight volumes are widespread in Illinois, this is an important strategy to adopt.

A direct expression of this strategy is the inclusion of freight elements in IDOT's new Performance Based Project Selection tool for project prioritization. Among the elements that can be addressed with this project prioritization tool are freight volumes, proximity to prominent industries, and responses to freight bottlenecks. The procedures developed in this plan, coupled with the availability of relevant data from the federal NPMRDS database, allow the routine tracking of freight bottlenecks. The application of the freight project prioritization tool is still in the development phase, but as mentioned above, its implementation will contribute to the mainstreaming of freight into the evaluation of priority projects.

4.2.2 Competitive Grant Program Model for Freight Investment Plan

A competitive grant program model is being developed which will be used to select projects for the freight investment plan required by the FAST Act. The freight investment plan will identify how freight formula funds allocated in the National Highway Freight Program (NHFP) will be used. The competitive grant program will allow stakeholders to submit projects based on a defined set of criteria. This approach to the allocation of NHFP funds is similar to those being followed by the states of California and Minnesota.

A competitive grant program will:

- Support objectivity, equity, and transparency of outcomes.
- Reinforce freight performance goals.
- Reward local and public-private participation to leverage federal and state funds.
- Involve ISFAC in development of the program.
- Allow set-asides, such as for rural and small projects.

The implementation of this competitive grant program is planned to be launched in the first half of 2018, with awards to follow in the second half of 2018. The freight investment plan identifying projects selected through the competitive grant program will be finalized following the award process.

4.3 Network Development Strategies

Five network development strategies will help the Illinois freight system adapt to performance requirements and growth. These strategies are as follows: establish district and corridor plans, assure supply chain fluidity, continue multimodal programs, cultivate public-private partnerships, and provide for truck parking.

4.3.1 District and Corridor Programs

This plan has identified multiple clusters of Illinois industry and the key routes by which their supply chains move to market. IDOT should identify districts and corridors for granular analysis of freight movements and conditions, where systematic investment in capacity and operations is likely to improve performance for important industry and/or mitigate the negative effects of freight carriage. This can be accomplished by working with IDOT's nine geographic districts, MPOs, county departments of transportation, neighboring states, the Mid-America Freight Coalition, and ISFAC, to identify corridors to be targeted for improvement using data-driven processes. Examples might include distribution corridors between upstate warehouses and downstate communities, multimodal access corridors for agriculture, and clean fuel corridors with natural gas supply stations. These types of partnerships can also be used to help review roadway functional classifications and intermodal freight connectors.

4.3.2 Supply Chain Fluidity

Freight performance in supply chains is measured end-to-end. This means that the performance of long distance freight movement on interstate corridors *combined* with the performance of pick-up, delivery, and transfer carriage on first and last mile routes is the metric that matters to supply chain competitiveness. The FHWA is developing a new National Freight Fluidity Monitoring Program to measure, track, and ultimately improve multimodal performance from this perspective. The term "supply chain fluidity" describes the transportation performance of private freight operations flowing across public and private infrastructure, measured across logistical stages from end to end. The new FHWA program is developing multimodal metrics to capture this in the dimensions of speed, reliability, and cost. The program has a national and a regional component. The latter calls for pilots in cooperation with local agencies for two large urban regions: metropolitan New York and northeastern Illinois. IDOT should participate in this pilot to understand the challenges for vital industries and the critical facilities inside and connecting to the region where the challenges must be addressed. This should include assessment of the resiliency of supply chains in the face of severe weather events and other forms of disruption, and plans to protect them. In addition, as first and last mile routes are often located on local roads, IDOT should continue to support the Truck Access Route Program (TARP). TARP helps local governments upgrade roadways to accommodate large trucks.

4.3.3 Multimodal Programs

This plan supports multimodal distribution to take advantage of the many modal assets available to freight shippers throughout the state. Multimodal programs not only support Illinois' strength as a multimodal freight hub, but also help to relieve congestion on state' highways by encouraging use of alternate modes whenever possible.

Rail: The rail mode is a key component of the Illinois freight system. IDOT has provided institutional and financial support to the CREATE program to improve throughput, efficiency, reliability, and safety in the nation's rail center in and around Chicago. Support and funding for the CREATE Program should continue and could be enhanced through a variety of means, including improvements on short and long distance access roads to facilities, and through support to new and/or downstate facilities that can offer capacity relief and shorter, less costly transport distances for some shippers. IDOT should also continue to support the Rail Freight Loan Program which provides assistance to communities, railroads, and shippers to preserve and improve rail freight service in Illinois.

Waterways: A challenge for waterways management in Illinois is that multiple state and federal agencies have various oversight responsibilities, which fragments the management process. IDOT should continue to work with its agency partners to seek funding for waterway system capital needs. One method to accomplish this is to aggressively pursue United States Maritime Administration (MARAD) Marine Highway grants, particularly, since three marine highways (M-35, M-55, and M-70) have been designated in Illinois.

Air: Pick-up and delivery routes for key air cargo facilities such as Chicago O'Hare International Airport and Rockford's Chicago Rockford International Airport should be monitored for performance and improved for more efficient operation. Signal prioritization, introduced on access roads at sensitive times of day for flight connections, is an example of an operational enhancement that could be coordinated with local agencies for the benefit of region-wide service.

4.3.4 Public-Private Partnerships

Freight performance is the joint product of public and private management and investment, meaning that both sectors contribute substantially to the result. Partnership for performance is a central purpose of ISFAC, which can also offer a venue where partnerships for investment may begin. Private capital can be available where project timelines are not prolonged, revenue streams are apparent, and risks are appropriately shared. The FAST Act Infrastructure for Rebuilding America (INFRA) competitive grant program is one of the chief sources of additional federal money for freight projects, and INFRA places special emphasis on the leveraging of private funds. Due to budgetary constraints on IDOT's capital resources, the ability to attract private and federal capital is a valuable commodity. IDOT has relevant public-private partnership experience through the CREATE Program and with other, non-freight partnerships. IDOT should build on this with formal efforts to cultivate relationships and identify opportunities as a public sponsor and/or a public partner where the benefits of market access and improved performance can be monetized.

IDOT should also explore other mutually beneficial project partnerships through its Bureau of Innovative Project Delivery. One such example is the recent agreement between several governmental entities and CenterPoint Properties to build a tolled Houbolt Road bridge over the Des Plaines River and the BNSF railroad tracks. This agreement provides a creative solution to fund infrastructure improvements that will provide a link between the CenterPoint intermodal facility and I-80 in Will County. This link will provide access to the largest inland port in the nation and is being accomplished through contributions from multiple partners. In this case, IDOT will widen Houbolt Road and reconfigure an existing interchange at I-80 to a Diverging Diamond Interchange design. (This design is described in further detail in the next chapter.) The City of Joliet will help IDOT implement and oversee the improvements. Will County will pass a resolution allowing tolls to be issued and collected by CenterPoint Properties. CenterPoint Properties will build and operate the toll bridge. The project is anticipated to relieve congestion and safety issues in the area related to the large volume of trucks that access the intermodal facility.

4.3.5 Truck Parking

The safe and productive operation of trucks on our nation's highways depends on the ability of drivers to have reliable access to truck parking locations without sacrificing hours of work. Drivers nationwide will be required to use electronic log books as of January 2018 - a practice many of the larger truck fleets already follow. Electronic reporting brings greater accuracy and better safety enforcement, however, it also can bring about lost work time if parking is not available when needed. According to the FHWA, Illinois relies on private and public facilities to supply approximately 11,000 truck parking spots statewide, of which public facilities contribute about 15 percent. This number represents the designated parking capacity for trucks at locations that offer to serve them. However, truck drivers also make informal use of roadsides and automobile parking lots to supplement the formally designated facilities such as those available at truck stops. The "Jason's Law" provisions of federal MAP-21 legislation require states to ensure the adequacy of commercial motor vehicle parking capacity. IDOT is currently conducting a rest area study to help evaluate existing truck park facilities and additional truck parking needs. One responsive initiative undertaken by some states in the Mid America Association of State Transportation Officials (MAASTO) region is a Truck Parking Information Management System (TPIMS), which will track available parking in real time and communicate it to drivers through a variety of electronic means. IDOT should review the possibility of joining these MAASTO states to implement a TPIMS program and should also explore other available options for strengthening statewide capacity including participation in existing programs and encouraging or partnering with private initiatives. Assuring the supply of electric power sources at truck parking facilities is also an important feature to encompass, as electricity replaces the idling of diesel engines when trucks are at rest and reduces the potential harm to public health from diesel air emissions.

4.4 Economic Development Strategies

Four economic development strategies will help Illinois sustain the freight driven economic engine that generates and distributes essential goods to the state, region, country, and world. These strategies are: job training, freight-driven development, efficient distribution, and technology pilots.

4.4.1 Job Training

Access to skilled labor is a prominent need for industries that manufacture and distribute goods. Promoting practical and economical ways for labor pools to reach workplaces is a crucial role for IDOT. While it is not directly a freight-related responsibility, it contributes to the supply of goods to Illinois and complements efforts to attract and preserve jobs through freight transportation. Job training is not typically a transportation function, but support for programs that include job training considerations can continue to provide benefits. In addition to workforce matters, three strategies will help to advance economic development: supporting freight-driven development, ensuring efficient distribution, and conducting technology pilots.

4.4.2 Freight-Driven Development

Logistics centers that have grown up around rail intermodal terminals in Northeastern Illinois are testaments to the power of high-grade freight transportation to draw industry and catalyze growth. As new intermodal service lanes – including shorter distance services – are introduced at terminals, they meet a greater variety of needs and appeal to more businesses. The general strategy at work in this is freight-driven or cargo-oriented development, which harnesses a portfolio of modal and logistics services for job creation and industrial competitiveness, and connects it further to housing and skills. This general strategy can be applied to the development of new greenfield sites and the redevelopment of existing infill sites. Greenfield sites typically have larger available tracts of land and allow for simpler implementation, whereas, infill sites typically have access to existing infrastructure, a workforce in close proximity, and shorter shipping distances to markets. Freight-driven or cargo-oriented development is an effective strategy particularly for hubs like Illinois that have many of the ingredients for efficient operations already in place. IDOT can pursue this strategy opportunistically, supporting sensible new developments and redevelopments as they arise, or proactively, working in concert with transportation and economic development agencies around the state.

4.4.3 Efficient Distribution

The rise of automated warehouses brings more freight generation per acre and makes distribution centers viable in locations closer to markets. This is an important dynamic for Illinois because it affects the national and regional distribution for which the state is a hub, as well as the local patterns of supply. New development and redevelopment, which may include reuse of brownfield sites, will need to occur simply to keep Illinois building stock competitive with other states. At a minimum, IDOT should track and plan for higher freight volumes on existing infrastructure caused by higher freight density. Freight volumes can be tracked using the FAF database and travel times can be monitored using the NPMRDS database. IDOT should also recognize that stakeholder expectations for speed and reliability may be tied to same day and next day delivery requirements. Understanding the service radius for distribution centers will allow IDOT to track how urban and rural areas are being served by conventional retail and home delivery, and determine which routes are significant. The possible use of warehouses as staging points for drone delivery will also be useful to track, to determine the demand on air space and the way these facilities may function. For example, low density locations like rural areas might seem suited for drone use, however, the 15 mile round trip operating range that has been cited for Amazon drones is a major limitation in a rural environment.

4.4.4 Technology Pilots

Adoption of low-emissions vehicles such as natural gas powered trucks has slowed since diesel prices have fallen in recent years. While this may reverse, the more significant technology to be prepared for today is connected and automated vehicles. In the freight sector – and assuming that it will take a number of years for driverless operation to be implemented, – IDOT's strategic focus should be in the following areas.

The first of these is safety programs to capitalize on the ability of sensors to automatically correct for conditions, hazards, and the proximity of other vehicles in the operating environment. Components could encompass maintenance of road striping to keep it detectable, installation of vehicle-to-infrastructure technology to issue and receive electronic signals, and low cost financing to help owner operators and fleets dependent on older trucks to upgrade to safer equipment. IDOT should explore options to design and test such a piloting program, with likely candidates being locations with high volume intermodal terminals and low capacity roads.

A second focus area that could be combined with the first is traffic signal prioritization (mentioned above), which can improve reliability and throughput around facilities with fixed schedules (such as train and aircraft departures) or high service requirements (such as assembly plants).

The third focus area is truck platooning. This could emerge in short distance shuttle operations, but the push from industry – truck lines, shippers, and truck manufacturers – will most likely be for long distance travel on interstate highways. Although platooning can provide fuel efficiency benefits and frees road capacity through reduced headroom between trucks, it can also introduce a competitive threat for railroads that are a principal provider of freight carriage in Illinois. The best strategy is most likely a cooperative one with neighboring states, partly because coordinated policy makes for more efficient operations, and partly to allow resources and knowledge to be pooled in addressing an issue common to states in the region. As Illinois is a member of the 10 state Mid-America Freight Coalition (MAFC), this provides an opportunity to develop partnerships with neighboring states to explore truck platooning strategies.

Illinois State Freight Plan

Chapter Five:

Goals and Performance Measures

Illinois Department of Transportation (IDOT)

5. Goals and Performance Measures

5.1 Strategic Goals

5.1.1 National Freight Program Goals

When the FAST Act was signed into law on Dec. 4, 2015, Section 1116, entitled "National Highway Freight Program", amended Section 167 of Title 23, United States Code, to establish the following National Highway Freight Program Goals:

- To invest in infrastructure improvements and to implement operational improvements on the highways of the United States that:
  - Strengthen the contribution of the National Highway Freight Network to the economic competitiveness of the United States.
  - Reduce congestion and bottlenecks on the National Highway Freight Network.
  - Reduce the cost of freight transportation.
  - Improve the year-round reliability of freight transportation.
  - Increase productivity, particularly for domestic industries and businesses that create high-value jobs.
- To improve the safety, security, efficiency, and resiliency of freight transportation in rural and urban areas.
- To improve the state of good repair of the National Highway Freight Network.
- To use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Highway Freight Network.
- To improve the efficiency and productivity of the National Highway Freight Network.
- To improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address highway freight connectivity.
- To reduce the environmental impacts of freight movement on the National Highway Freight Network.

5.1.2 State Freight Program Goals

In order to contribute to the success of the National Highway Freight Program established pursuant to the FAST Act, Strategic Goals for this plan were established that align as closely as possible with the national freight goals, while also addressing the individual needs of the State of Illinois. The following six Strategic Goals were identified as being most important to freight movement in the state:

- Improve Safety.
- Improve Efficiency.
- Grow the Economy.
- Preserve Existing Infrastructure.
- Expand Infrastructure Strategically.

- Support Freight Multimodal Transportation.

Table 5-1: National Freight Goals with Corresponding State Freight Goals, shows how these six Strategic Goals align with the national freight goals described above:

Table 5-1: National Freight Goals with Corresponding State Freight Goals

	State Freight Goals					
National Freight Goals	**Improve Safety**	**Improve Efficiency**	**Grow the Economy**	**Preserve Existing Infrastructure**	**Expand Infrastructure Strategically**	**Support Multimodal Distribution**
Increase Economic Competitiveness and Reliability		●	●	●	●	
Improve Safety, Security, and Resiliency	●			●	●	●
Improve State of Good Repair			●	●	●	
Use Innovation and Advanced Technology	●	●	●	●	●	●
Improve Efficiency and Productivity	●	●	●	●	●	●
Improve Freight Corridor Planning		●	●		●	●
Reduce Environmental Impacts		●	●			●

In order to establish a mechanism for achieving the strategic freight plan goals, objectives were formulated, together with corresponding strategies and measures to gauge performance.

Table 5-2: Strategic Goals, Objectives, and Performance Measures, shows the freight plan's six strategic goals, together with the corresponding objectives, strategies, and performance measures that were developed to help meet these goals.

Table 5-2: Strategic Goals, Objectives, and Performance Measures

Strategic Goal	Objective	Strategy	Performance Measure
Improve Safety	Minimize roadway incidents involving freight vehicles	Provide safety alerts to drivers through IDOT in Motion	Number of fatalities/injuries involving freight vehicles
	Ensure IDOT's Intelligent Transportation System (ITS) has adequate safety notification protocols	Evaluate ITS procedures for the delivery of safety messages and explore other innovative ITS uses to improve safety	Completion of ITS architecture plan update
Improve Efficiency	Establish performance measure to evaluate efficiency of freight movement	Establish procedures to use the National Performance Management Research Data Set (NPMRDS) to calculate performance	Truck Travel Time Reliability (TTTR) Index performance measure using NPMRDS traffic data
	Update IDOT's Illinois Transportation Automated Permits (ITAP) truck permitting process	Secure funding to proceed with an update of the ITAP system	Completion of upgrade (Phase 3) to the ITAP platform
Grow the Economy	Secure stable dedicated state funding source for freight projects	Establish a funding source that can be used on freight projects that provide economic benefits to the state and local economies	Dollar amount of funds secured with regional breakdown of projects
	Improve international competitiveness of Illinois	Support freight projects that enhance access to global markets	Volume and value of commodities shipped to foreign markets
Preserve Existing Infrastructure	Perform routine maintenance in order to control deterioration of roadways and lessen number of critical repairs	Monitor pavement condition to identify roadways maintenance needs	Pavement Condition Rating Survey (CRS) assessments
	Reduce stress on roadway system by supporting multimodal alternatives for freight shipments	Explore scenarios where modal connections can be improved to facilitate shipments by rail, water, and air	Modal breakdown of shipping volumes

Strategic Goal	Objective	Strategy	Performance Measure
Expand Infrastructure Strategically	Optimize the limited funds that are available for new construction projects	Utilize a performance-based project prioritization tool to evaluate projects	Evaluation criteria which determines the return on investment of each project
	Ensure design policies encourage innovation and design flexibility to support multi-modal transportation goals	Update design policies and provide training related to freight-friendly design elements (e.g. Diverging Diamond Interchanges)	Number of design policy updates issued, together with training seminars/presentations given
Support Multimodal Distribution	Enhance coordination of multimodal planning with Illinois Metropolitan Planning Organizations (MPOs), local jurisdictions, and adjoining states	Engage with MPOs, local jurisdictions, and adjoining states on corridor planning that includes and encourages the use of all modes of transportation	Level of planning engagement with other entities, including joint projects and studies
	Encourage mode shifting to lessen environmental impacts	Reduce vehicle emissions from freight vehicles by promoting more environmentally friendly modes, such as rail, water, and air	Volume of greenhouse gas emissions

5.1.3 Long Range Transportation Plan Goals

Simultaneously with the development of this freight plan, IDOT is also updating its Long Range Transportation Plan (LRTP). The LRTP has established a set of overarching goals pertaining to transportation in the State of Illinois. As such, the intent of this plan is to also contribute to achieving these five overarching LRTP goals, which are as follows:

- **Economy:** Improve Illinois' economy by providing transportation infrastructure that supports the efficient movement of people and goods.
- **Livability:** Enhance quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment.
- **Mobility:** Support all modes of transportation to improve accessibility and safety by improving connections between all modes of transportation.
- **Resiliency:** Proactively access, plan and invest in the state's transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions.
- **Stewardship:** Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois' transportation system.

Table 5-3: Long Range Transportation Plan Goals with corresponding State Freight Goals, shows how the six Strategic Goals of the Freight Plan align with the five Long Range Transportation Plan goals:

Table 5-3: Long Range Transportation Plan Goals with corresponding State Freight Goals

	State Freight Goals					
LRTP Goals	**Improve Safety**	**Improve Efficiency**	**Grow the Economy**	**Preserve Existing Infrastructure**	**Expand Infrastructure Strategically**	**Support Multimodal Distribution**
Economy		●	●		●	●
Livability	●			●	●	●
Mobility	●	●			●	●
Resiliency	●			●	●	
Stewardship			●	●	●	

5.2 Improve Safety

Safety is a core principle of IDOT's overall mission to enhance the quality of life for the traveling public. Although this applies to all modes of transportation, it is most easily demonstrated by the safety data which is gathered by IDOT pertaining to roadway vehicle crashes. This includes statistics regarding the number of crashes in which a freight vehicle was involved. IDOT also maintains statistics on the number of fatalities and injuries which result annually from vehicle crashes on Illinois roadways.

In 2015, which is the most recent year that statistics are available, there were 11,769 crashes in Illinois involving tractor-trailers. Although this number accounts for only 3.8 percent of the total number of vehicle crashes, additional efforts to further reduce the number of accidents is worthwhile due to the potential safety risks associated with crashes involving large freight vehicles. In 2015, the 11,769 crashes involving tractor-trailers resulted in 90 fatalities and 2,651 injuries.

IDOT currently utilizes a web-based service entitled “IDOT in Motion,” which provides information regarding upcoming projects and road construction. This service also provides alerts regarding road closures or extreme weather events affecting travel. Although this service is not exclusively for trucker subscribers, IDOT may be able to find platforms that can target truckers in order to promote additional usage of these services. Subscribers to this service have the option of receiving notices for the entire state or can select specific geographic regions based on IDOT’s nine districts. These notifications allow IDOT to be proactive in its goal of improving safety, as drivers can be made aware in advance when caution may be needed due to roadway construction or other adverse driving conditions. IDOT should also continue to use social media as a way to provide real time safety alerts regarding crashes and other roadway incidents.

As an additional layer of notification for drivers who do not subscribe to the “IDOT in Motion” alerts, IDOT also has an extensive Intelligent Transportation Systems (ITS) infrastructure designed to provide real-time conditions and travel times. Currently, this system includes the following components:

- 119 dynamic message signs on expressways and 21 arterial highway dynamic message signs.
- 586 cameras on 15 interstates throughout Illinois, covering almost all of the Chicago area and Metro East (St. Louis) expressways.
- 61 roadway weather information stations that measure atmospheric, pavement and/or water level conditions, including: air temperature and humidity, visibility distance, wind speed and direction, precipitation, pavement temperature, pavement freezing point, salt concentration, and soil temperature.
- 20 highway advisory radio sites in Northeastern Illinois and the Metro East (St. Louis) area where motorists can receive traffic reports if they are traveling in close proximity to the radio frequency. Motorists are informed of the availability of these sites by signs located along the roadways.
- The Getting Around Illinois (www.gettingaroundillinois.com) and Travel Midwest (www.travelmidwest.com) websites allow users to find information on winter road conditions, traffic, and road construction, trucking routes, and planned road projects. In April 2017, IDOT announced the launch of a redesigned version of this website which is mobile-friendly and continuously updated.

This ITS infrastructure is another way for IDOT to improve safety as roadway conditions can be monitored and relayed to travelers in real time. Therefore, travelers can be provided with up-to-date safety alerts regarding accidents and adverse roadway conditions, including any recommended detours.

IDOT’s existing ITS Architecture and Strategic Plan was originally adopted in 2006. In the decade since this original plan was adopted, rapid advances in technology have occurred. As such, efforts are currently underway to update the ITS Architecture and Strategic Plan. As part of this update, IDOT will examine whether improvements can be made to more effectively communicate travel information that can help improve safety in the freight industry. The status of the ITS Architecture and Strategic Plan can be found at: https://ilitsupdate.net/.

5.3 Improve Efficiency

After much debate that followed the publication of proposed freight performance measures in April 2016 and after additional postponements due to the change in administration resulting from the 2016 presidential election, on May 19, 2017, the FHWA announced that effective May 20, 2017, a performance measure related to truck travel time reliability was being enacted. This performance measure is known as the Truck Travel Time Reliability (TTTR) Index and uses five time periods to calculate overall truck reliability for the entire interstate system. These time periods are as follows:

- AM Peak — Monday through Friday — 6 a.m. to 10 a.m.
- Mid-Day — Monday through Friday — 10 a.m. to 4 p.m.
- PM Peak — Monday through Friday — 4 p.m. to 8 p.m.
- Overnight — Sunday through Saturday — 8 p.m. to 6 a.m.
- Weekend — Saturday through Sunday — 6 a.m. to 8 p.m.

For each of the above time periods, IDOT must calculate the TTTR Index by using the National Performance Management Research Data Set (NPMRDS), which provides data on travel times for individual roadway segments. IDOT must first establish a Normal Truck Travel Time based on the 50^{th} percentile, which is the time in which 50 percent of the times are shorter in duration and 50 percent are longer in duration. A second calculation is then performed in the same manner as above, in order to determine the 95^{th} percentile, in which 95 percent of the times are shorter in duration. The TTTR Index is then calculated by dividing the 95^{th} percentile travel time by the Normal Truck Travel Time.

Now that this performance measure has become a federally mandated requirement, IDOT is working to find the most feasible method to utilize the NPMRDS data to perform and implement TTTR Index calculations as part of the freight system evaluation process.

Another opportunity to improve efficiency is IDOT's process for issuing truck permits for Over-Size/Over-Weight (OSOW) loads. This process has continued to evolve to meet the needs of the freight industry. Previous functions that required time-consuming review of paper submittals have been updated to allow automated approval of routine applications. This is accomplished through IDOT's Illinois Transportation Automated Permits (ITAP) system, which allows participants to apply for permits online. This streamlined process has resulted in cost savings for IDOT due to less staff time needed to process permits, which as of September 2017 was able to process 99.2 percent of permits without further review. Since the inception of the ITAP system approximately five years ago, staff time required to process permits has been reduced by approximately 30 percent.

IDOT is continuing its efforts to improve the truck permitting process for greater ease of use by external industry partners, as funding becomes available. Mapping improvements have recently been made and IDOT anticipates that in early 2018 the current Silverlight-based software will be replaced with a new web-based software that includes smart phone capabilities. IDOT also plans additional account improvements and local road permitting improvements, as part of the transition.

5.4 Grow the Economy

As mentioned in the Freight Investment Plan and Priority Projects chapter, the FAST Act established a funding plan that provided IDOT with freight formula funds over a five-year period in the amount of $225,960,873. Although these federal funds are a much-needed funding source in IDOT's effort to improve freight movement throughout the state, Illinois does not currently have a separate state funding source for freight-related projects. Therefore, in most cases, IDOT's highway improvement program is used to fund the majority of infrastructure improvements that are constructed. Arguably, any project that improves the roadway network in Illinois can be considered freight-related, though these improvements benefit all system users and not just freight users.

For example, there are published reports from various sources, such as the American Transportation Research Institute (ATRI) and the American Highway Users Alliance (AHUA) that rank the worst truck bottlenecks in the country. Typically Illinois, and more specifically the Chicago area, have several bottleneck locations that are identified in these lists. The most notable example is the I-290 at I-90/I-94 interchange, which is also known as the Jane Byrne Interchange. This interchange is currently undergoing a major reconstruction and although marginal, improvement can be seen in the 2017 list provided ATRI, by moving down one position from being the second-worst truck bottleneck in the country last year, to currently being the third worst.

However, the establishment of a separate dedicated state freight funding source would benefit not only freight movement on the highways, but would also allow freight projects from the rail, water, and air modes to be considered and prioritized based on their overall impact on freight movement. In order to secure approval of a dedicated state freight project funding source, the importance of freight movement to the Illinois economy needs to be emphasized and promoted in future transportation budgeting discussions. These projects could be used to enhance freight movement for one particular mode or could be multimodal in nature by enhancing connections between modes.

The addition of a separate dedicated state freight funding source would also be an enhancement to the Chicago Region Environmental and Transportation Efficiency (CREATE) Program in the Chicago area. This unique partnership between the U.S. Department of Transportation, the Illinois Department of Transportation, the City of Chicago Department of Transportation, Cook County, passenger railroads Amtrak and Metra, and rail freight carriers BNSF Railway, Canadian Pacific Railway, Canadian National Railway, CSX Transportation, Norfolk Southern Railway, Union Pacific Railroad, Belt Railway Company of Chicago, and Indiana Harbor Belt Railroad has identified 70 projects that are designed to increase the efficiency of passenger and freight rail movements in Northeastern Illinois. Freight rail movements in the Chicago area are of national and international importance. To date, approximately 40 percent of the projects have been completed and as might be expected, efforts to secure the necessary funds to complete the entire slate of projects is a challenge. The CREATE program will provide tremendous benefits to enhance freight rail movement, but is not strictly a freight program, as it also seeks to improve passenger rail service and vehicle movements through grade separations that eliminate bottlenecks and increase safety with elimination of rail-roadway conflicts.

In addition, the State of Illinois is a crossroads in the movement of freight due to its extensive network of transportation assets and its central geographic location with access to the Great Lakes and the

Mississippi River. These attributes allow multiple options for the movement of freight (i.e. highways, railroads, waterways, and airports) and multiple destinations, including foreign markets.

As described elsewhere in this document, in 2014, the state's international trade volumes were heavily imbalanced, with 71.8 million tons of imports compared to 35.1 million tons of exports, although 42.0 million tons of imports were attributable to crude oil imports from Canada. The top four exports in 2014 were:

- Cereal grains
- Coal
- Other agricultural products
- Animal feed

As shown, three of the top four exports were agricultural products.

Considering the state's strong agricultural base, efficient movement of these products to foreign markets helps to enhance the state's international competitiveness. Therefore, this benefit should be considered when identifying projects that enhance freight movement by highway, rail, water and air that have the ability to reach global markets. This could, for example, include projects that utilize multiple modes, such as container on barge grain shipments involving truck, rail and water elements that have the ability to ship Illinois products to international markets.

5.5 Preserve Existing Infrastructure

Funding for infrastructure improvements at the national, state, and local levels is often uncertain due to budgetary constraints. This funding uncertainty can make it difficult for transportation agencies to make long range plans for infrastructure projects. However, in general, it is typically more cost effective to perform periodic routine maintenance on infrastructure improvements, than to allow these improvements to deteriorate until they are in critical need of repair.

The Illinois state highway system consists of approximately 16,000 miles of roadways, including approximately 2,185 miles of interstate highways. Major east-west interstate corridors include I-90, I-88, I-80, I-74, I-72, I-70 and I-64. Major north-south interstate corridors include I-39, I-55 and I-57.

Every year, IDOT conducts a Condition Rating Survey (CRS) to assess pavement condition on the state highway system. The CRS assigns a value to each segment of roadway which indicates the current condition of the pavement. A lower CRS value means the pavement is in worse condition, whereas a higher CRS value indicates a better condition. IDOT began collecting CRS data in 1974. By continuing to monitor the annual CRS data, IDOT can determine whether it is meeting its performance target, which is to have 90 percent of roadways in acceptable condition. IDOT also utilizes a rating system known as the International Roughness Index (IRI) which utilizes a value measured in inches per mile. In the IRI rating system, a higher value indicates a rougher pavement. However, as mentioned above, unless additional funding is secured, IDOT anticipates that it will not be able to meet this target and the backlog of road maintenance will continue to grow.

In addition to the extensive highway network in Illinois, the state also has a multimodal system of railroads, waterways, and airports. The rail system consists of approximately 7,119 miles of railroad tracks, making it the second largest in the country, behind only Texas. All seven Class I railroads have a presence in Illinois, six of which are partners in the CREATE program. The Illinois waterway system consists of approximately 1,095 miles of navigable waterways within the state and along its borders. Illinois is bordered by the Mississippi River and the Ohio River, and is connected to the Great Lakes via the Illinois River. The Illinois aviation system consists of approximately 107 public use airport facilities. The state's central location lends itself to being a critical transfer point for the movement of freight, providing efficient air service to both the east and west coast.

Although, as described above, the State of Illinois has an extensive transportation infrastructure, usage can outpace the capacity of the various modes to handle the traffic being generated, which can result in bottlenecks and inefficiency. This can be seen in the example described previously regarding the trucking bottleneck at the Jane Byrne Interchange in Chicago. Although market demands and shipment costs tend to influence the mode a shipper selects to move goods, there may be scenarios where certain commodities could be shifted from one mode to another. The intent of establishing multimodal shipping alternatives is not to support one type of business interest over another, but simply to find a workable balance that reduces stress on the highway system and allows underutilized transportation assets to be used to their full advantage.

5.6 Expand Infrastructure Strategically

The uncertainty of consistent funding, at both the federal and state level, has created a situation where it is difficult to establish long-term construction schedules, particularly for major infrastructure projects. Although the FAST Act provides a five-year window where freight formula funds have been identified, these amounts are insufficient to pay for the multitude of infrastructure needs of the state.

Due to there being less funds available than are needed to complete the entire backlog of infrastructure projects, project prioritization decisions must be made by using data and anticipated project outcomes to further the goals for Illinois as identified in the Long Range Transportation Plan and this plan.

Particularly with freight formula funds that have been allocated under the FAST Act, another consideration is to determine which projects are eligible to receive formula funds. The first step is to review the various roadway classifications established by the FAST Act.

The FAST Act establishes a National Highway Freight Network (NHFN). The NHFN is comprised of four elements which are:

- Primary Highway Freight System (PHFS)
- Other Interstate portions not on the PHFS
- Critical Rural Freight Corridors (CRFCs)
- Critical Urban Freight Corridors (CUFCs)

The PHFS in Illinois consists of 1.685.40 miles of highways and intermodal connectors that have been determined to be the most critical portions of the national freight transportation system. The vast majority of these miles (1,589.07) are on the interstate, with the balance being made up of intermodal connectors and other federal, state, and local roads. Chapter 6 contains additional information and a map of the PHFS.

There are also 586.89 miles of “Non-PHFS” interstate miles in Illinois. This will be discussed in further detail below. Chapter 6 contains additional information and a map of the “Non-PHFS” interstates.

CRFCs and CUFCs must be designated by IDOT. Illinois is allowed to designate 337.08 miles of CRFCs and 168.54 miles of CUFCs.

Based on Illinois being considered a “high mileage” state under the FAST Act, IDOT is limited to using freight formula funds on the PHFS, the CRFCs, and the CUFCs. Therefore, freight formula funds cannot be used on the “Non-PHFS” interstate (unless certain portions are designated as CRFCs or CUFCs).

Another factor that should be considered when developing new infrastructure projects is that certain design elements can be beneficial to the efficient movement of freight. One example of design that benefits freight movement is the Diverging Diamond Interchange (DDI). The DDI can be beneficial from both an efficiency and safety standpoint. The effect of this type of interchange is the reduction in the number of crossing conflicts for arterial traffic entering a freeway, by having the traffic cross over to the left side of the roadway between the nodes of the interchange. These crossovers are controlled by traffic signals. Traffic that has now been moved to the left side of the arterial roadway can move on to the freeway entrance ramp without stopping or causing a conflict with through traffic.

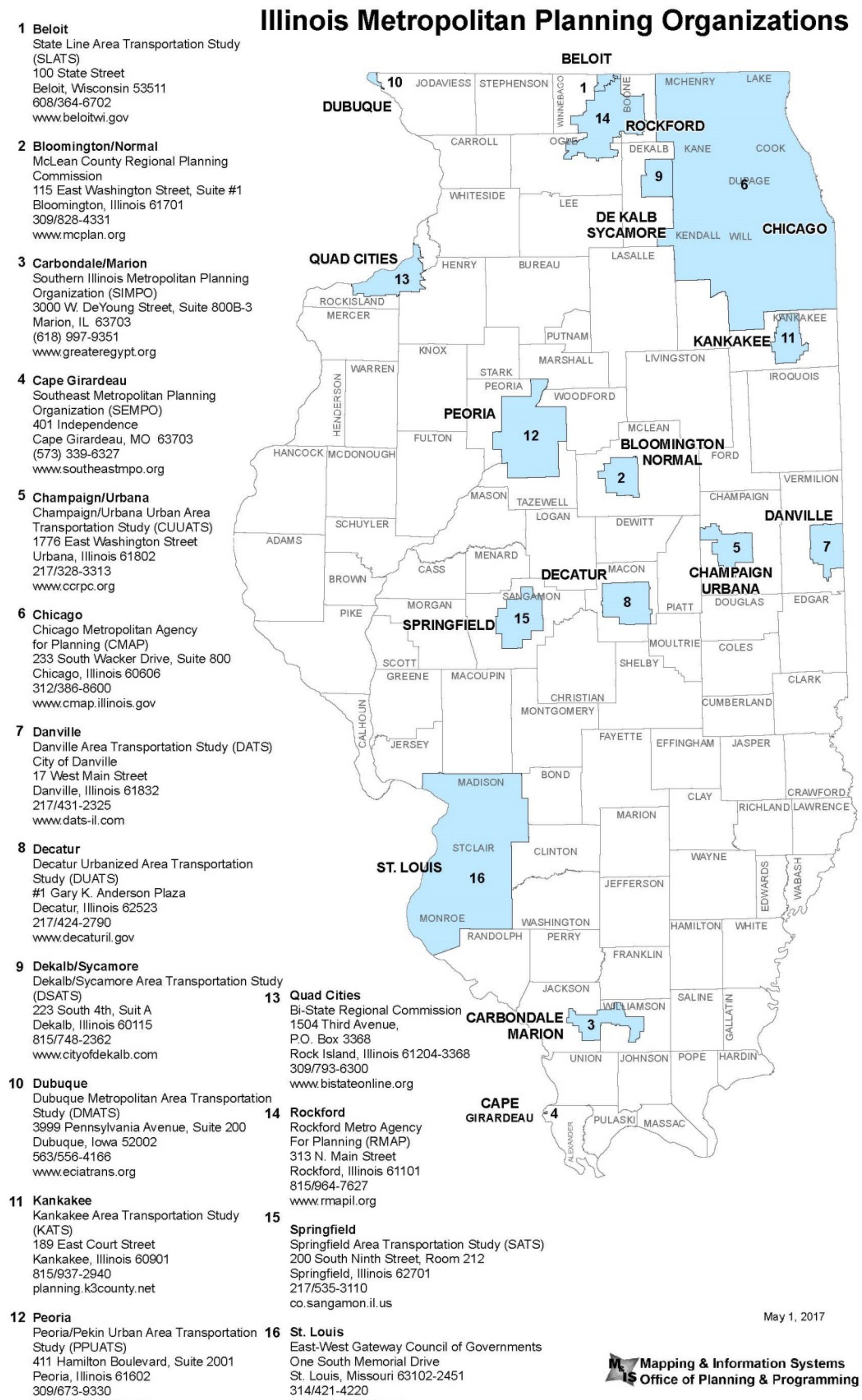
The State of Illinois has previously incorporated this design in two locations. The first is located on I-57 and Morgan Avenue in Marion. The second is located on the I-88 Reagan Memorial Tollway at Illinois Route 59 in Naperville. There are also plans to install DDIs on I-55 at Weber Road in the Romeoville/Bolingbrook area and on I-80 at Houbolt Road in the Joliet area as part of the proposed Houbolt Road bridge project mentioned in Chapter 4 . In addition, the Illinois State Toll Highway Authority is constructing a DDI at I-90 (Jane Addams Memorial Tollway) and Elmhurst Road in the Des Plaines/Arlington Heights area.

As designs are being completed for new roadways or the reconstruction of existing roadways, consideration can be given for the use of freight-friendly designs, particularly if the roadway has or is expected to have a high volume of freight traffic. IDOT can assist in this effort by ensuring that its design policies encourage innovation and design flexibility and by providing training on how these policies accommodate the use of freight-friendly designs.

5.7 Support Multimodal Distribution

There are 16 MPOs in Illinois, as shown in Figure 5-1: Illinois MPOs, below:

Figure 5-1: Illinois MPOs



IDOT's Bureau of Planning works with these MPOs to ensure that all federal guidelines are followed, including the preparation of a Transportation Improvement Plan (TIP). The MPO's TIP is a four year short term planning document that includes member agency transportation projects.

Each MPO focuses on transportation needs in their own individual region and is composed of members of local agencies, transit providers, and IDOT. Typically, IDOT projects are the majority of highway projects in the MPO's TIP. In some cases, freight-related projects may not be seen as a top priority in the region or freight planning may focus only on highway projects. However, as IDOT is in a position to see the planning strategies of all the MPOs, an opportunity exists to utilize this knowledge to look for commonalities, best practices and multimodal freight planning options. This would allow IDOT to incorporate a statewide perspective into the freight planning process of the individual MPOs and would also benefit the MPOs by being able to learn from each other. This sharing of information regarding freight planning will provide a measure of consistency for the entire state.

From a planning perspective, there is recognition that freight movement does not end at the city limits or at state border lines. Typically, freight crosses multiple local jurisdictional and state lines before reaching its final destination. Therefore, planning for infrastructure improvements, regardless of mode, should take into account how freight flows in, out and through the state. Collaboration between jurisdictions and surrounding states can help to identify common needs and issues, which will assist in finding solutions that can benefit all parties.

As a first step in this process, IDOT should continue its participation in the Mid-America Freight Coalition. This coalition, originally known as the Mississippi Valley Freight Coalition, has been in existence since 2006. The coalition includes: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Ohio and Wisconsin. The coalition states work together in the planning, operation, preservation and improvement of transportation infrastructure in the region.

As part of the FAST Act and the development of a national freight strategic plan, there is also increased emphasis on developing a process to address multistate projects and encourage jurisdictions to collaborate. Therefore, IDOT should pursue opportunities to partner with neighboring states on freight-oriented projects. This can either be done through the forum provided by the Mid-America Freight Coalition, through coordination with the Mid America Association of State Transportation Officials (MAASTO) that has the same member states as the Mid-America Freight Coalition, or in individual discussions with surrounding states.

Planning that encourages mode shifting can also help to alleviate traffic congestion and bottlenecks on the highways. Reducing traffic congestion and bottlenecks helps to lessen greenhouse gas emissions, as there are fewer vehicles sitting in traffic and idling in place for long periods of time. This is particularly true of larger vehicles such as freight delivery trucks. Planning that is able to incorporate several modes of transportation, such as a highway-rail-water connection, can encourage mode shifting by providing multiple transportation options to freight shippers. IDOT should explore all possible modal alternatives in its statewide freight planning activities, including planning discussions with MPOs, ISFAC, local jurisdictions and adjoining states.

Illinois State Freight Plan

Chapter Six:

Freight Investment Plan and Priority Projects

Illinois Department of Transportation (IDOT)

6. Freight Investment Plan and Priority Projects

6.1 Freight Formula Funds

The FAST Act provided a five-year allocation of National Highway Freight Program (NHFP) formula funds to each state, for the fiscal years 2016 through 2020. For the State of Illinois, the allocated amount of these freight formula funds is shown in Table 6-1: National Highway Freight Program formula funds: Illinois.

Table 6-1: National Highway Freight Program formula funds: Illinois

Year	Amount
2016	$41,246,826
2017	$39,453,486
2018	$43,040,166
2019	$48,420,187
2020	$53,800,208
Total	**$225,960,873**

6.1.1 Use of Freight Formula Funds

The FAST Act also requires that states adopt a fiscally constrained Freight Investment Plan indicating how their freight formula funds will be used. In general, the term "fiscally constrained" means that funding for completion can be reasonably anticipated to be available within the time period identified in the Freight Investment Plan.

The FAST Act provides a number of options for the use of these freight formula funds. Eligible uses of freight formula funds include the following:

- Development phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, and other preconstruction activities.
- Construction, reconstruction, rehabilitation, acquisition of real property (including land relating to the project and improvements to land), construction contingencies, acquisition of equipment, and operational improvements directly relating to improving system performance.

- Intelligent transportation systems and other technology to improve the flow of freight, including intelligent freight transportation systems.
- Efforts to reduce the environmental impacts of freight movement.
- Environmental and community mitigation for freight movement.
- Railway-highway grade separation.
- Geometric improvements to interchanges and ramps.
- Truck-only lanes.
- Climbing and runaway truck lanes.
- Adding or widening of shoulders.
- Truck parking facilities eligible for funding under section 1401 (Jason's Law) of MAP–21.
- Real-time traffic, truck parking, roadway condition, and multimodal transportation information systems.
- Electronic screening and credentialing systems for vehicles, including weigh-in-motion truck inspection technologies.
- Traffic signal optimization, including synchronized and adaptive signals.
- Work zone management and information systems.
- Highway ramp metering.
- Electronic cargo and border security technologies that improve truck freight movement.
- Intelligent transportation systems that would increase truck freight efficiencies inside the boundaries of intermodal facilities.
- Additional road capacity to address highway freight bottlenecks.
- Physical separation of passenger vehicles from commercial motor freight.
- Enhancement of the resiliency of critical highway infrastructure, including highway infrastructure that supports national energy security, to improve the flow of freight.
- A highway or bridge project, other than a project described above, to improve the flow of freight on the National Highway Freight Network (NHFN).
- Any other surface transportation project to improve the flow of freight into and out of an eligible intermodal freight facility [23 U.S.C. 167(i)(5)(C)].
- Diesel retrofit or alternative fuel projects under the Congestion Mitigation and Air Quality Improvement program (CMAQ) for Class 8 vehicles.
- Conducting analyses and data collection related to the NHFP, developing and updating freight performance targets to carry out Section 167 of Title 23, and reporting to the Administrator to comply with the freight performance target under Section 150 of Title 23 [23 U.S.C. 167(i)(6)].

The above list addresses the eligible use freight formula funds. However, there are also some restrictions on the use of these funds. In general, freight formula funds can only be used on projects that are on the National Highway Freight Network (NHFN). The NHFN has been established by the FHWA Administrator and consists of the following four elements:

1. Primary Highway Freight System (PHFS).
2. Other Interstate Portions Not On The PHFS.
3. Critical Urban Freight Corridors (CUFCs).

4. Critical Rural Freight Corridors (CRFCs).

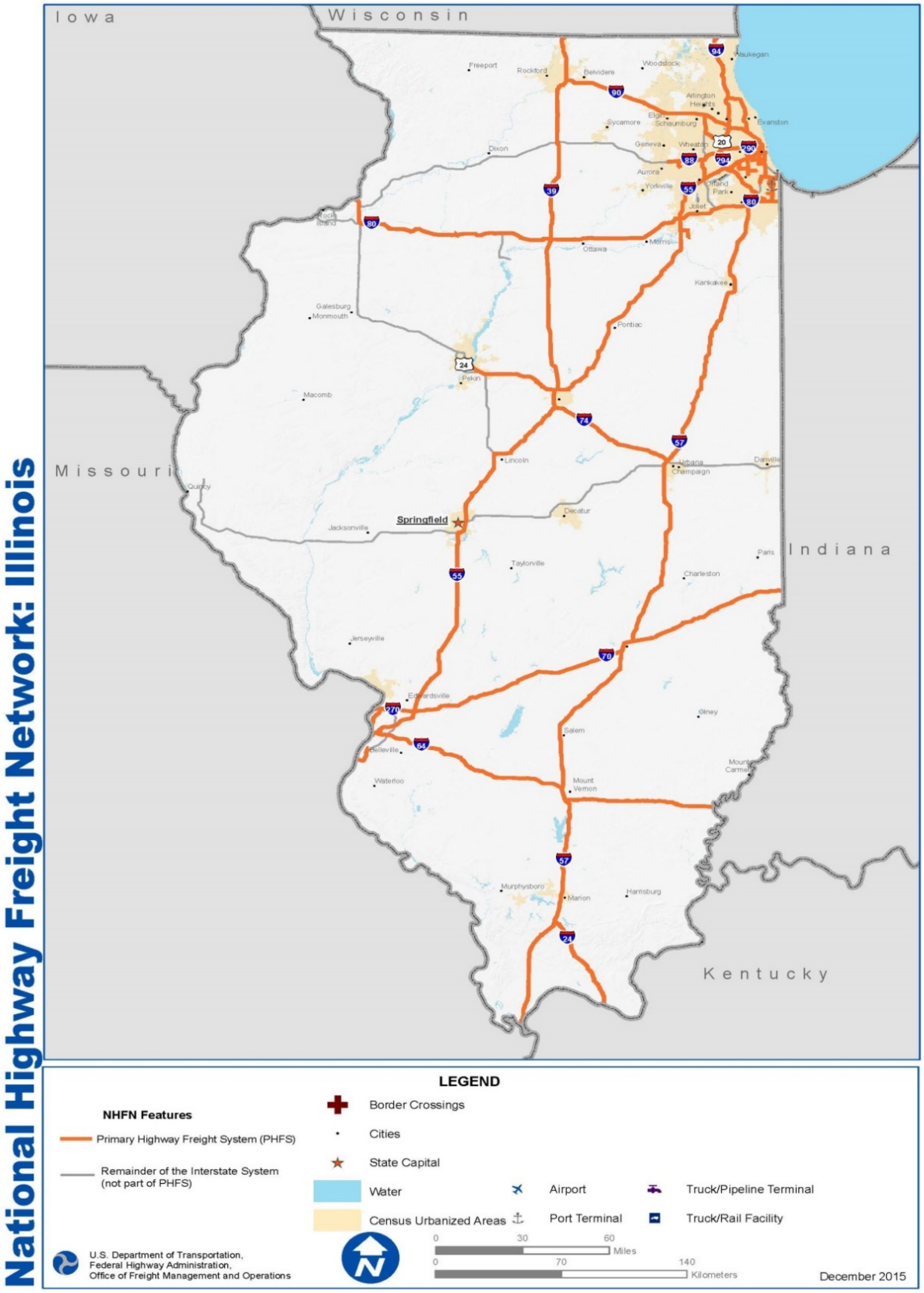
These four elements are described below:

Primary Highway Freight System (PHFS)

The PHFS is a national network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measurable national data. The initial network consists of 41,518 centerline miles, including 37,436 centerline miles of interstate and 4,082 centerline miles of non-interstate roads.

The designated PHFS network in Illinois is shown in Figure 6-1: National Highway Freight Network: Illinois.

Figure 6-1: National Highway Freight Network: Illinois



Source: U.S. Department of Transportation

The designated PHFS network in Illinois contains the roadways shown in Table 6-2: Primary Highway Freight System (PHFS) Routes.

Table 6-2: Primary Highway Freight System (PHFS) Routes

Route No.	Start Point	End Point	Length (Miles)
I24	I-57	IL/KY Line	37.98
I255	IL 36R	IL/MO Line	5.47
I270	MO/IL Line	I55	14.59
I290	I-90	I-90	29.86
I294	I-94	I-80	48.26
I355	I-55	I-88	7.43
I39	I-55	I-90	122.18
I55	MO/IL Line	U 41	293.71
I57	MO/IL Line	I-80	344.87
I57	IL 21R	I-94	4.06
I64	I-55	I-57	70.74
I64	I-57	IL/KY Line	52.77
I70	I-55	I-57	78.2
I70	I-57	IL/IN Line	56.79
I74	U 150	I-55	33.33
I74	I-55	I-57	44.36
I80	IA/IL Line	IL/IN Line	163.44
I88	I-290	0.16 Miles west of Farnsworth Avenue	21.54
I90	WI/IL Line	I-94	100.51
I94	I-90	I-80	58.99

Route No.	Start Point	End Point	Length (Miles)
S21*	IL 4R	IL 3R	2.7
S29	U 24	U 150	1.62
S3	IL 33R	I-270	7.55
S43	IL 19R	I-55	2.63
S50	I-290	U 12	10.72
S59	IL 27R	I-88	2.34
Torrence Ave	IL 29P	IL 31P	0.75
U150	S 29	I-74	0.68
U24	IL 37P	S 29	1.42
		Subtotal	**1,619.48**
Source: U.S. Department of Transportation			

***US 12/45 (Mannheim Road)**

The designated PHFS network in Illinois also contains the intermodal connectors shown in Table 6-3: PHFS Intermodal Connectors.

Table 6-3: PHFS Intermodal Connectors

Facility ID	Facility Name	Facility Description	Length (Miles)
IL 10R	26th St. (Union Pacific)	Canal St. (Entrance to Archer Avenue), Archer Avenue, (Canal Street to Cermak Road), Cermak Road (Archer Avenue to I-90/94). Canal Street (Entrance to Archer to 18th St.), 18th Street (Canal St. to I-90/94).	2.16
IL 11R	Railport - Canadian National	43rd Street (Entrance to Ashland Avenue), Ashland Avenue (43rd Street to I-55). Ashland Avenue. (43rd Street to 47th Street), 47th Street (Ashland Avenue to I-90/94). 47th Street (Ashland to Western Avenue), 43rd Street (Entrance to Western Avenue).	5.39
IL 121R	CSXI 59th St.	59th Street (Entrance to Western and Wentworth@ I-90/94).	2.72

Facility ID	Facility Name	Facility Description	Length (Miles)
IL122R	Gateway	West (Entrance to 159th Street.), West (Entrance to 157th Street), 157th Street (West to Park), Park (157th Street to 159th Street). Halsted (159th Street to 167th Street).	1.53
IL123R	BNSF Logistics Park Chicago	Arsenal Road (Relocated I-55 Interchange to Baseline Road), Baseline Road (Arsenal Road to terminal exit gate).	5.28
IL14R	Corwith (BN/SF)	Kedzie Avenue (Entrance @ 41st St. to I-55). Kedzie Avenue (41st Street to 47th Street), 47th Street (Kedzie Avenue to Western Avenue). 47th Street (Kedzie Avenue to Pulaski Road), Pulaski Road (47th Street to I-55), 41st Street (Entrance at Hamlin Avenue to Pulaski Road).	4.82
IL15R	47th Yard (Norfolk Southern)	51st Street (Exit to Wentworth Avenue at I-90/94). 47th Street (Normal Avenue to I-90/94), Wentworth Avenue (47th Street to I-90/94 ramps).	0.65
IL16R	63rd Yard - Conrail	63rd Street (Entrance @ Indiana to I-90/94 @ Well). 61st Street (Entrance to State); along Wells, 59th Street.	2.44
IL17R	Forest Hill - CSX Intermodal	79th Street (Entrance to Western Avenue).	0.18
IL18R	Landers - Norfolk Southern	79th St. (Cicero Avenue to Western Avenue).	3.01
IL19R	Bedford Park - CSX Intermodal	71st Street (Entrance to IL 43). Frontage Road. (Entrance to IL 43). Sayer (71st Street to 73rd Street), 73rd (Sayer to Cicero Avenue). Naragansett Avenue (Entrance to 73rd Street).	3.72
IL1R	Schiller Park East	Lawrence Avenue (Entrance to US 45).	0.43
IL20R	Willow Springs/Hodgkins (BN/S)	75th Street (Entrance to I-294). Santa Fe Drive (Entrance to 67th Street), 67th Street (Santa Fe to US 45).	2.49

Facility ID	Facility Name	Facility Description	Length (Miles)
IL21R	Iowa Interstate	119th Street (Wolcott to I-57).	0.35
IL22R	Yard Center (Union Pacific)	Sibley Road (IL 83): from Indiana to I-94; Indiana: from Entrance to Sibley Road.	2.05
IL23R	Moyers International (IC/UP/WC)	Center Street (Entrance to 167th St.), 167th Street (Center Street to Halsted Street), Halsted Street (167th Street to I-80). Center Street (167th to 159th). Center Street (Entrance to 171st Street), 171st Street (Center to Halsted Street).	3.24
IL25R	IMX (Union Pacific)	Damen Street (30th Avenue to I-55).	0.14
IL26R	Triple Crown - Norfolk Southern	103rd Street (Stoney Island Road to I-94).	0.78
IL27R	Auto-Transload - BN/Santa Fe	Fort Hill (Entrance to Jefferson Avenue), Jefferson Avenue. (Fort Hill IL 59).	0.65
IL29P	Water Terminal 1 - Calumet River	103rd Street (Torrence Avenue to Stoney Island, then to I- 94). 106th Street (Indianapolis Boulevard to Torrence Avenue).	2.20
IL30P	Water Terminal 2 - Lake Calumet	Stoney Island (130th St. to 103rd St./I-94 Ramps). 122nd St. (Stoney Island to Torrence Avenue.) Stoney Island (Entrance to 130th St.)	4.23
IL31P	Water Terminal 3 - KCBX Cluster	100th St. (Entrance to Indianapolis Avenue), Indianapolis Avenue (100th Street to US 12/20). 100th Street (Entrance to Torrence Avenue).	1.34
IL32R	Peoria & Pekin Union Intermodal	Oxford Place (Entrance to Wesley Road), Wesley Road (Oxford Place to Main Street), Main Street (Wesley Road to IL 8/116).	1.13

Facility ID	Facility Name	Facility Description	Length (Miles)
IL33R	Gateway Western Intermodal Yard	Main Street (Entrance to IL 3).	0.62
IL34R	Rose Lake Intermodal Yard	Collinsville Road (Entrance to IL 203), IL 203 (Collinsville Road to I-55).	1.33
IL36R	Union Pacific Motor Freight Intermodal Yard	E. Carondelet (Entrance to Main Street), Main Street (Carondelet to IL 3).	2.87
IL37P	Peoria Barge Terminal	Sanger Street (Entrance to US 24),	0.26
IL3R	Bensenville (Canadian Pacific)	Entrance on Franklin Avenue to Williams Drive to Belmont Avenue to US 45.	0.97
IL4R	Global Two	US 20 (Entrance to IL-64/Railroad Avenue /US 45). Railroad Avenue. (US 20 to Il 64).	2.17
IL5R	Cicero 26th St. (BN/SF)	26th Street (Entrance to IL 50)	1.03
IL8R	Global One	15th Street (Entrance to Ashland Avenue), Ashland Avenue (15th to Frontage Road), Frontage Road (Ashland to I- 290), Ashland Avenue (15th Street to I-55).	3.11
IL9R	Western Avenue(Burlington Northern)	Blue Island Avenue (Western Avenue to Ashland Avenue), Damen Avenue (Blue Island Avenue to 30th Street), Blue Island. 31st Street (Western to California Avenue), California Avenue (31st Street to I-55) - proposed.	2.64
		Subtotal	**65.91**

Source: U.S. Department of Transportation

As shown above the total number of designated PHFS miles in Illinois is as follows:

- PHFS Routes – 1619.48 miles.
- PHFS Intermodal Connectors – 65.91 miles.
- Combined Total – 1,685.39 miles (Rounded to 1,685.40).

Other Interstate Portions Not On The PHFS (Non-PHFS Interstates)

These highways consist of the remaining portion of interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities and include approximately 9,511 centerline miles of interstate, nationwide. This number is expected to fluctuate due to additions and deletions to the Interstate Highway System.

In Illinois, Table 6-4: Interstates not on the PHFS, shows the interstate roads that are not included in the PHFS:

Table 6-4: Interstates not on the PHFS

Route No	Start Point	End Point	Length (Miles)
I155	I-55	I-74	32.00
I172	I-72 (East)	U 24	25.68
I180	I-80	S 26	13.24
I190	I-90	O'Hare Terminal	1.94
I255	South Main Street, Dupo Ill.	I-270	21.82
I280	IA/IL Line	I-74	8.21
I355	I-80	I-55 (West)	12.66
I355	I-88	I-290	11.68
I474	I-74 (West)	I-74 (East)	14.22
I57	I-80	119th Street, Chicago	9.46
I70	0.84 Miles East of MO/IL Line	I-55	2.77
I72	MO/IL Line	I-172	4.38
I72	S 57	I-55 (South)	86.47
I72	I-55 (North)	I-57	78.69

Route No	Start Point	End Point	Length (Miles)
I74	IA/IL Line	U 150	95.08
I74	I-57	IL/IN Line	41.10
I88	I-80	2.00 Miles East of S 31	118.96
I90	I-94	I-90	0.91
I90	I-94	IL/IN Line	7.33
I94	I-94	I-294	0.28
		Total	**586.89**
Source: U.S. Department of Transportation			

As will be described in more detail below, Illinois has been designated as a High Mileage State. This designation prohibits FAST Act freight formula funds from being used on these non-PHFS interstate segments, unless IDOT uses a limited allocation of roadway miles that it may designate as Critical Urban Freight Corridors and Critical Rural Freight Corridors. This will also be described in further detail below.

Critical Urban Freight Corridors (CUFCs)

These are public roads in urbanized areas that provide access and connection to the PHFS and the interstate with other ports, public transportation facilities or other intermodal transportation facilities.

Under the FAST Act, a state may designate a maximum of 75 miles of highway, or 10 percent of the PHFS mileage in the state, whichever is greater, as CUFCs. As described above, Illinois has a total of 1,685.40 PHFS miles, which allows for a maximum designation of 168.54 miles of CUFCs (1,685.40 x .10).

A public road designated as a CUFC must be in an urbanized area and meet one or more of the following four elements:

(A) connects an intermodal facility to:
   1. the PHFS.
   2. the interstate system.
   3. an intermodal freight facility.

(B) is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement.

(C) serves a major freight generator, logistic center, or manufacturing and warehouse industrial land.

(D) is important to the movement of freight within the region, as determined by the MPO or the state.

States are encouraged to consider first or last mile connector routes from high-volume freight corridors to freight-intensive land and key urban freight facilities, including ports, rail terminals and other industrial-zoned land, when making CUFC designations. In addition, CUFC routes must be within the boundaries of an urbanized area. The minimum population of an urbanized area is 50,000.

The actual population of the urbanized area is also a consideration. In an urbanized area with a population of less than 500,000, the state, in consultation with the MPO, is responsible for designating the CUFC. In an urbanized area with a population of more than 500,000, the MPO, in consultation with the state, is responsible for designating the CUFC.

IDOT asked for stakeholder recommendations of roadways that are candidates for CUFC designation. This resulted in recommendations for CUFCs that were well above the allotted 168.54 miles. Therefore, in order to prioritize these CUFC recommendations, IDOT used several factors to evaluate its overall contribution to the freight network. This evaluation included whether the roadway segment had a multimodal component, such as being in close proximity to a railroad, port or airport. Another factor was whether the roadway had truck counts in excess of 1,000 multi-unit trucks per day. An additional important factor was whether the roadway segment was already part of an identified project with IDOT's Multi-Year Program (MYP). It should be noted that since IDOT can change CUFC designations as it deems necessary, having a project already in the MYP was an important consideration as freight formula funds could be used on these projects immediately, instead of designating a CUFC that might require several years of project development and could be designated when these plans were completed.

IDOT is currently finalizing its list of recommended CUFCs. When finalized, the list of recommended CUFCs will be posted on IDOT's website.

Critical Rural Freight Corridors (CRFCs)

These are public roads in rural areas, to be designated by the states, which provide access and connection to the PHFS and the interstate with other important ports, public transportation facilities or other intermodal freight facilities.

Under the FAST Act, a state may designate a maximum of 150 miles of highway, or 20 percent of the PHFS mileage in the state, whichever is greater, as CRFCs. As described above, Illinois has a total of 1,685.40 PHFS miles, which allows for a maximum designation of 337.08 miles of CRFCs (1,685.40 x .20).

A public road designated as a CRFC cannot be in an urbanized area (as described above) and must meet one or more of the following seven elements:

(A) is a rural principal arterial roadway and has a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks (Federal Highway Administration vehicle class 8 to 13).
(B) provides access to energy exploration, development, installation, or production areas.
(C) connects the PHFS or the interstate system to facilities that handle more than:
    1. 50,000 20-foot equivalent units per year; or
    2. 500,000 tons per year of bulk commodities.

(D) provides access to:
1. a grain elevator.
2. an agricultural facility.
3. a mining facility.
4. a forestry facility.
5. an intermodal facility.

(E) connects to an international port of entry.

(F) provides access to significant air, rail, water, or other freight facilities in the state.

(G) is determined by the state to be vital to improving the efficient movement of freight of importance to the economy of the state.

States are encouraged to consider first- or last-mile connector routes from high-volume freight corridors to key rural freight facilities, including manufacturing centers, agricultural processing centers, farms, intermodal and military facilities when making CRFC designations.

IDOT asked for stakeholder recommendations of roadways that should be candidates for CRFC designation. Although a number of recommendations were received, IDOT conducted additional outreach to gather data that would help identify and evaluate roadway segments based on their overall contribution to the freight network. As with the CUFC reviews, this evaluation also included consideration of whether the roadway was already in the MYP, as changes to CRFC designations can also be made, as necessary.

IDOT is currently finalizing its list of recommended CRFCs. When finalized, the list of recommended CRFCs will be posted on IDOT's website.

6.1.2 Restrictions on the Use of Freight Formula Funds

A further distinction made by the FAST Act regarding the use of freight formula funds is the establishment of classifications regarding "High Mileage States" and "Low Mileage States." In this context, a High Mileage State is one that has PHFS mileage greater than or equal to 2 percent, based on the proportion of total designated PHFS mileage in the state to the total mileage of the PHFS in all states A Low Mileage State is one in which this calculation yields a result of less than 2 percent.

To better understand the practical application of this calculation, Table 6-5: Designation of High Mileage and Low Mileage States, shows this breakdown.

Table 6-5: Designations of High Mileage and Low Mileage States

High Mileage States (PHFS ≥ 2%)		**Low Mileage States (PHFS < 2%)**	
Alaska		Alabama	
Arizona		Arkansas	
California		Colorado	

High Mileage States (PHFS ≥ 2%)	Low Mileage States (PHFS < 2%)
Florida	Connecticut
Georgia	Delaware
Illinois	Hawaii
Indiana	Idaho
Missouri	Iowa
Montana	Kansas
New Mexico	Kentucky
New York	Louisiana
North Carolina	Maine
Ohio	Maryland
Pennsylvania	Massachusetts
Tennessee	Michigan
Texas	Minnesota
Utah	Mississippi
Virginia	Nebraska
	Nevada
	New Hampshire
	New Jersey
	North Dakota
	Oklahoma
	Oregon
	Rhode Island
	South Carolina

High Mileage States (PHFS ≥ 2%)		Low Mileage States (PHFS < 2%)	
		South Dakota	
		Vermont	
		Washington	
		West Virginia	
		Wisconsin	
		Wyoming	
		(Also includes the District of Columbia and Puerto Rico)	
Source: U.S. Department of Transportation			

The distinction between having a High Mileage State designation and a Low Mileage State designation is important, as it affects where a state can use its freight formula funds. The FAST Act provides that Low Mileage States can obligate their freight formula funds on all portions of the NHFN (PHFS, Other Interstate Portions Not On The PHFS, CRFCs, and CUFCs), whereas, High Mileage States, such as Illinois, can only obligate their freight formula funds for projects on the PHFS, CRFCs and CUFCs. Therefore, Illinois is excluded from using freight formula funds on the roadways that are part of the Other Interstate Portions Not On The PHFS subsystem, unless certain roadway segments within this classification are ultimately designated as a CRFC or a CUFC.

6.1.3 Use of Freight Formula Funds for Multimodal Projects

The FAST Act further provides that a portion of a state's freight formula funds can be used for multimodal freight projects; however, the amount that can be used for such projects is capped at 10 percent for each fiscal year. This provision allows a state allocate up to 10 percent of its freight formula funds to freight intermodal or freight rail projects, including projects within the boundaries of public or private freight rail or water facilities, including ports, in order to provide surface transportation infrastructure necessary to facilitate direct intermodal interchange, transfer, and access into or out of the facility.

Table 6-6: Maximum Allocation of Freight Formula Funds for Multimodal Projects, shows the allocated freight formula funds that were presented at the beginning of this chapter and also shows the maximum amount that can be utilized on multimodal freight projects, based on an annual distribution of 10 percent.

Table 6-6: Maximum Allocation of Freight Formula Funds for Multimodal Projects

Year	Amount	10 Percent Multimodal

2016	$41,246,826	$4,124,682
2017	$39,453,486	$3,945,348
2018	$43,040,166	$4,304,016
2019	$48,420,187	$4,842,018
2020	$53,800,208	$5,380,020
Total	**$225,960,873**	**$22,596,087**

Although the use of 10 percent of freight formula funds on multimodal freight projects can be a useful component in the effort to more fully utilize all modes of transportation, it is important to also understand the nature of the freight network in Illinois. Due to the state's central location and its proximity to the Great Lakes and Mississippi River, Illinois is a continental crossroad of freight movement, with an extensive system of highways, railroads, waterways and airports.

As mentioned elsewhere in this plan, Illinois has an extensive freight network, including a roadway system of approximately 2,185 miles of interstate highways. Major east-west interstate corridors include 1-90, I-88, I-80, I-74, I-72, I-70 and I-64. Major north-south interstate corridors include I-39, I-55 and I-57.

The Illinois rail system is extensive and consists of approximately 7,119 miles of railroad tracks. This rail network is the second largest in the country, behind only Texas. All seven Class I railroads have a presence in Illinois.

The Illinois waterway system consists of approximately 1,095 miles of navigable waterways within the state and along its borders. Illinois is bordered by the Mississippi River and the Ohio River, as well as being connected to the Great Lakes via the Illinois River.

The Illinois air system consists of approximately 107 public use airport facilities. The state's central location lends itself to being a critical transfer point for the movement of freight.

Therefore, considering the size of this extensive multimodal network and the amount of freight that originates, terminates, or passes through Illinois (as described elsewhere in this plan), from a funding perspective, a 10 percent allocation from the freight formula funds does not adequately address the multimodal freight needs of the state.

6.2 Allocation of Freight Formula Funds

6.2.1 Obligation Amounts to Date

As mentioned in Section 6.1, the FAST Act allocated a total of $225,960,873 in freight formula funds to Illinois for the fiscal years 2016-2020. As of June 1, 2018, a total of $68,625,580 has been obligated to fund the freight projects shown in *Table 6-7: Obligations of FAST Act Freight Formula Funds*.

Table 6-7: Obligations of FAST Act Freight Formula Funds

Earliest Authorization Date	Project No.	Project Description	Obligation Amount	State Funds	Local Funds	Total Cost
05/05/2016	C-91-189-14	Interchange and bridge reconstruction on I-90/94/290 [Jane Byrne (Circle) Interchange at I-290 Bridge Westbound (East of Des Plaines) and I-290 Westbound over I-90/94]	$22,484,992	$2,531,419	$0	$25,016,411
05/05/2016	C-91-188-14	Interchange reconstruction on I-90/94 at I-290 [Jane Byrne (Circle) Interchange Ramp, Northbound I-90/94 to Eastbound Congress Parkway]	$9,684,669	$1,088,040	$0	$10,772,709
06/23/2016	C-91-129-16	0.104 miles of the reconstruction of the ramp at the interchange of I 90/94 and I 290 including lighting upgrades in Chicago	$7,967,005	$893,786	$0	$8,860,791
05/31/2017	C-91-186-14	0.27 mile bridge replacement on I-90/94 at I-290 Congress Parkway, also retaining wall, roadway work, lighting within the city of Chicago	$20,444,341	$2,271,594	$0	$22,715,935
07/12/2013	C-20-009-13	CREATE - Construction on CREATE project WA-4 plan no WA4-BNSF-TSB-003-B-BD	$8,044,573	$0	$8,044,573	$16,089,146
		Grand Total	**$68,625,580**	**$6,784,839**	**$8,044,573**	**$83,454,992**

6.2.2 Obligation Plan for Balance of Funds

As described above, as of June 1, 2018, $68,625,580 of the $225,960,873 FAST Act freight formula funds has previously been obligated, leaving a remaining unobligated balance of $157,335,293. To ensure the most benefit from these remaining funds, a competitive freight program proposal was presented to, and endorsed by, the Illinois State Freight Advisory Council (ISFAC) in September 2017.

The primary goals of the competitive freight program were to:

- support objectivity, equity, and transparency in project selection
- reinforce the use of freight performance goals
- provide opportunities for local or private participation to leverage funds
- provide the opportunity for ISFAC to provide input into the development and delivery of the program

The competitive freight program allowed stakeholders throughout Illinois to submit freight projects that were evaluated and ranked based on a transparent set of criteria that was developed out of this plan. As provided in the FAST Act, this program will also allow a maximum of 10 percent of the available funds to be used for multimodal freight projects.

IDOT made the assumption that federal funding for freight projects will continue beyond the 2016-2020 time period provided for in the FAST Act. Therefore, the competitive freight program provides the following annual funding levels:

- 2018 - $43,040,166
- 2019 - $48,420,187
- 2020 - $53,800,208 (Subject to rescission)

- 2021 - $45,000,000 (Approximate annual average of FAST Act funding)
- 2022 - $45,000,000 (Approximate annual average of FAST Act funding)

The Illinois Competitive Freight Program sought to improve freight mobility throughout Illinois by implementing the goals of this Plan, to improve safety, efficiency, and to grow the economy. The program focused on achieving the following outcomes:

- Bottleneck Reduction
- Improving Commercial Motor Vehicle (CMV) related safety
- Improve intermodal accessibility to/from freight corridors – "last mile"
- Technology deployment

Scoring criteria include:

- Bottleneck Reduction
  - Truck Travel Time Reliability
  - Freight Hours of Delay
  - Bottleneck Severity
  - Removes a Geometric Barrier
  - Improves Reliability of Delay
- Improving Commercial Motor Vehicle (CMV) related safety
  - Rate of fatalities involving freight vehicles
  - Rate of serious injuries involving freight vehicles
  - Improves rate of fatalities or serious injuries
  - Safer Road Index
- Improve intermodal accessibility to/from freight corridors – "last mile"
  - Project located within three miles of an intermodal facility
  - Increase freight volume
  - Facility Gate Count
  - Current Hours of Truck Delay
  - Rail or Port Project Highway Relief
  - Improvement in Truck Travel Time Reliability or Hours of Delay
- Technology Deployment
  - Improved data transfer/communication
  - Signal timing
  - Improved traffic flow (weigh in motion)
  - Technology application development
- Cross-Cutting Measures
  - Truck Volume (AADT)
  - Percent Truck
  - CRS Rating
  - Financial Partnerships
  - Cost Effectiveness
  - Project Readiness

These project categories and criteria were presented to the Illinois State Freight Advisory Council for their input. Stakeholder outreach for the competitive freight program was launched in January 2018. Applications were accepted through early April 2018. Notice of awards were announced June 5, 2018.

The projects selected from the Illinois Competitive Freight Program are shown below in *Table 6-8: Illinois Competitive Freight Program FFY 2018-2022.*

Table 6-8: Illinois Competitive Freight Program FFY 2018-2022

Sponsor Name	Project Name	Project Type	Phase	Federal Fiscal Year	Federal Amount	Match Amount	Match Source	Total Project Cost	Using Intermodal Set Aside
IDOT-District 1	I-80 at US 30 Interchange Reconstruction	BR	Construction	2018	$ 38,703,000	$ 4,300,000	State Funds	$ 43,003,000	
CDOT	Columbus Avenue & Belt Railway Company of Chicago (BRC) Grade Separation (a.k.a. GS-11)	IA	Phase II	2018	$ 1,400,000	$ 1,600,000	State Funds	$ 3,000,000	
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES) Intermodal	IA	Phase II	2018	$ 94,417	$ 62,945	City of Peru, Private Funds	$ 157,362	X
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES) Road	IA	ROW Acquisition	2018	$ 120,000	$ 80,000	City of Peru, Private Funds	$ 200,000	
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES)	IA	Utility Relocation	2018	$ 60,000	$ 40,000	City of Peru, Private Funds	$ 100,000	
City of Chicago Department of Transportation	Cicero Avenue (IL Rt 50) Bridge over the Sanitary and Ship Canal	BR	Phase I	2018	$ 800,000	$ 200,000	State Funds	$ 1,000,000	
City of Decatur	Brush College Road/Faries Parkway Grade Separation Project	IA	Phase II	2018	$ 2,400,000	$ 700,000	City of Decatur	$ 4,100,000	
IDOT	Intelligent Truck Parking Availability Information System	TD	Phase I	2018	$ 96,000	$ 24,000	State Funds	$ 120,000	
City of Pekin	City of Pekin Front Street	BR	Phase II	2018	$ 469,000	$ 118,000	City of Pekin	$ 587,000	
City of Benton	I-57/ILL 14 Benton Interchange Modifications	BR	Phase I	2018	$ 2,400,000	$ 600,000	City of Benton	$ 3,000,000	
Village of Justice	88th/Cork Avenue at I-294 Interchange	BR	ROW Acquisition	2019	$ 1,443,680	$ 360,920	Village of Justice General Funds; ISTHA Interchange Matching	$ 1,804,600	
Village of Sauget	IL Rte. 3 Diversion Loop & Grade Separation	BR	Phase I	2019	$ 1,103,040	$ 1,654,560	ICC Funds	$ 2,757,600	
CDOT	Columbus Avenue & Belt Railway Company of Chicago (BRC) Grade Separation (a.k.a. GS-11)	IA	ROW Acquisition	2019	$ 4,900,000	$ 980,000	State Funds	$ 5,880,000	
CDOT	Columbus Avenue & Belt Railway Company of Chicago (BRC) Grade Separation (a.k.a. GS-11)	IA	Utility Relocation	2019	$ 664,000	$ 166,000	State Funds	$ 830,000	
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES) Intermodal	IA	Construction	2019	$ 1,466,791	$ 977,861	City of Peru, Private Funds	$ 2,444,652	X
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES) Road	IA	Construction	2019	$ 902,855	$ 601,903	City of Peru, Private Funds	$ 1,504,758	
CDOT	North Ave. (IL Route 64) UPRR and I-90/94 Viaducts	BR	Phase I	2019	$ 560,000	$ 140,000	State Funds	$ 700,000	
City of Decatur	Brush College Road/Faries Parkway Grade Separation Project	IA	ROW Acquisition	2019	$ 3,800,000	$ 600,000	City of Decatur	$ 6,400,000	
City of Decatur	Brush College Road/Faries Parkway Grade Separation Project	IA	Utility Relocation	2019	$ 2,000,000	$ 600,000	City of Decatur	$ 3,600,000	
Illinois Department of Transportation	Interstate 57 Freight Safety and Bottleneck Reduction Project FY19	BR	Construction	2019	$ 17,100,000	$ 1,900,000	State Funds	$ 19,000,000	
IDOT	Intelligent Truck Parking Availability Information System	TD	Phase II	2019	$ 160,000	$ 40,000	State Funds	$ 200,000	
IDOT	Intelligent Truck Parking Availability Information System	TD	Utility Relocation	2019	$ 48,000	$ 60,000	State Funds	$ 108,000	
IDOT	Intelligent Truck Parking Availability Information System	TD	Construction, Implementation	2019	$ 2,064,000	$ 516,000	State Funds	$ 2,580,000	
City of West Frankfort	Interstate 57 - Route 149 Interchange Modification	FRS	Phase I	2019	$ 1,200,000	$ 300,000	City of West Frankfort	$ 1,500,000	
City of Pekin	City of Pekin Front Street	BR	Construction	2019	$ 4,664,000	$ 1,167,000	City of Pekin	$ 5,831,000	
Bi-State Development	Re-Establish M&O Junction and Conologue Main	BR	Construction	2019	$ 1,932,592	$ 483,148	Private	$ 2,415,740	X
Cook County Department of Transportation and Highways, on behalf of the Illinois International Port District	Butler Drive/Stony Island Avenue reconstruction project	IA	Phase II	2019	$ 480,000	$ 120,000	State Funds, City of Chicago	$ 600,000	X
IDOT	Funks Grove Rest Area Truck Parking Expansion	FRS	Construction	2019	$ 1,440,000	$ 360,000	State Funds	$ 1,800,000	
Village of Cahokia	Cargill Elevator Road	BR	Construction	2019	$ 800,000	$ 1,900,000	State Funds, Private	$ 3,225,000	
Village of Justice	88th/Cork Avenue at I-294 Interchange	BR	Construction	2020	$ 12,000,000	$ 1,874,052	Village of Justice General Funds; ISTHA Interchange Matching	$ 27,748,103	
CDOT	Columbus Avenue & Belt Railway Company of Chicago (BRC) Grade Separation (a.k.a. GS-11)	IA	Construction	2020	$ 43,016,000	$ 10,754,000	State Funds	$ 53,770,000	
America's Central Port District	America's Central Port District Granite City Industrial District Roadway Improvement Project	IA	Construction	2020	$ 1,590,340	$ 410,000	America's Central Port District	$ 2,000,340	X
America's Central Port District	America's Central Port District Granite City Harbor Dock Improvement Project	IA	Construction	2020	$ 1,092,130	$ 275,000	America's Central Port District	$ 1,367,130	X
Village of Franklin Park	Franklin Avenue Reconstruction	BR	Utility Relocation	2021	$ 2,400,000	$ 600,000	Cook County, Franklin Park	$ 3,000,000	
IDOT	I-270 at IL 111 Interchange Reconstruction	BR	Construction	2021	$ 13,600,000	$ 3,800,000	State Funds	$ 19,000,000	
City of Decatur	Brush College Road/Faries Parkway Grade Separation Project	IA	Construction	2021	$ 16,800,000	$ 1,000,000	City of Decatur	$ 25,800,000	
IDOT	Intelligent Truck Parking Availability Information System	TD	Construction, Implementation	2021	$ 4,528,000	$ 1,132,000	State Funds	$ 5,660,000	
Cook County Department of Transportation and Highways, on behalf of the Illinois International Port District	Butler Drive/Stony Island Avenue reconstruction project	IA	Construction	2021	$ 10,457,853	$ 2,614,463	State Funds, City of Chicago	$ 13,072,316	X
IDOT	Trail of Tears Rest Area Truck Parking Expansion	FRS	Construction	2021	$ 1,600,000	$ 400,000	State Funds	$ 2,000,000	
Village of Franklin Park	Franklin Avenue Reconstruction	BR	Construction	2022	$ 20,560,000	$ 4,086,000	Cook County, Franklin Park	$ 24,646,000	
Village of Plainfield	Illinois Route 126 Re-route - 143rd Street Extension	BR	Wetland Mitigation/Contingency, Construction	2022	$ 20,328,000	$ 8,582,000	Village of Plainfield	$ 28,910,000	
IDOT	Intelligent Truck Parking Availability Information System	TD	Construction, Implementation	2022	$ 4,404,000	$ 1,101,000	State Funds	$ 5,505,000	
				Grand Total:	**$ 245,647,699**	**$ 57,280,852**		**$ 330,927,602**	

Total project cost may differ than a summed federal and match amount due to overmatch.
Rounding may affect federal and match amount sums.

(BR-Bottleneck Reduction, IA-Intermodal Accessibility, TD-Technology Deployment, FRS-Freight Related Safety)

As shown in *Table 6-1: National Highway Freight Program formula funds*: Illinois, a total of $80,700,312 ($41,246,826 + $39,453,486) was allocated to Illinois for fiscal years 2016 and 2017. However, as shown in *Table 6-7: Obligations of FAST Act Freight Formula Funds*, only $68,625,580 has previously been obligated. Therefore, the unallocated balance of $12,074,732 will be programmed toward the selected freight projects shown in *Table 6-8: Illinois Competitive Freight Program FFY 2018-2022*.

As mentioned in Section 6.1.3, up to 10 percent of the freight formula funds can be used for multimodal freight projects. In the Illinois Competitive Freight Program these types of projects were classified as Intermodal Accessibility (IA) projects and are included in the complete listing of selected projects shown in *Table 6-8: Illinois Competitive Freight Program FFY 2018-2022*. However, a separate list highlighting these projects is contained in *Table 6-8a: Illinois Competitive Freight Program Intermodal Set Aside FFY 2018-2022*, below.

Table 6-8a: Illinois Competitive Freight Program Intermodal Set Aside FFY 2018-2022

Sponsor Name	Project Name	Project Type	Phase	Federal Fiscal Year	Federal Amount	Match Amount	Match Source	Total Project Cost	Using Intermodal Set Aside
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES) Intermodal	IA	Phase II	2018	$ 94,417	$ 62,945	City of Peru, Private Funds	$ 157,362	X
City of Peru, IL	Peru Intermodal, Safety, Congestion, and Energy Security Project (PISCES) Intermodal	IA	Construction	2019	$ 1,466,791	$ 977,861	City of Peru, Private Funds	$ 2,444,652	X
Bi-State Development	Re-Establish M&O Junction and Conologue Main	BR	Construction	2019	$ 1,932,592	$ 483,148	Private	$ 2,415,740	X
Cook County Department of Transportation and Highways, on behalf of the Illinois International Port District	Butler Drive/Stony Island Avenue reconstruction project	IA	Phase II	2019	$ 480,000	$ 120,000	State Funds, City of Chicago	$ 600,000	X
America's Central Port District	America's Central Port District Granite City Industrial District Roadway Improvement Project	IA	Construction	2020	$ 1,590,340	$ 410,000	America's Central Port District	$ 2,000,340	X
America's Central Port District	America's Central Port District Granite City Harbor Dock Improvement Project	IA	Construction	2020	$ 1,092,130	$ 275,000	America's Central Port District	$ 1,367,130	X
Cook County Department of Transportation and Highways, on behalf of the Illinois International Port District	Butler Drive/Stony Island Avenue reconstruction project	IA	Construction	2021	$10,457,853	$ 2,614,463	State Funds, City of Chicago	$ 13,072,316	X
				Grand Total:	**$17,114,124**	**$ 4,943,417**		**$ 22,057,541**	

Total project cost may differ than a summed federal and match amount due to overmatch.
Rounding may affect federal and match amount sums.

6.3 Freight Grant Funds Under the FAST Act

6.3.1 Infrastructure for Rebuilding America (INFRA) Grants

In order to better understand the INFRA Grant program, it is necessary to provide some background as to the program's origination in the FAST Act. In addition to freight formula funding allocations described above, the FAST Act also established the Nationally Significant Freight and Highway Projects (NSFHP) program which introduced a competitive grant program for freight projects. The competitive grant program was originally titled the Fostering Advancements in Shipping and Transportation for the Long Term Achievement of National Efficiencies (FASTLANE) program. This grant program was established to provide assistance for nationally or regionally significant freight and highway projects and allocated a total of $4.5 billion in funding over a five-year period (fiscal years 2016-2020). As established, the annual amount was to increase incrementally by $50 million for each year of the program, as shown in Table 6-9: FASTLANE Grants Annual Allocations.

Table 6-9: FASTLANE Grants Annual Allocations

Year	Amount
2016	$800,000,000
2017	$850,000,000
2018	$900,000,000
2019	$950,000,000
2020	$1,000,000,000
Total	**$4,500,000,000**

Two project thresholds were established under the FASTLANE Grant program, which were defined as Large Projects and Small Projects. Each fiscal year, 90 percent of FASTLANE Grants were to be reserved for Large Projects and 10 percent was to be reserved for Small Projects. The minimum grant amount that could be awarded under the FASTLANE Grant program was $25 million for Large Projects and $5 million for Small Projects.

Two application rounds for FASTLANE Grants were announced. The first announcement was in February 2016 for the $800 million in funding allocated for Fiscal Year 2016. The second announcement occurred in October 2016 for the $850 million in funding allocated for Fiscal Year 2017.

Grants for the first round of the program which covered Fiscal Year 2016, were awarded in September 2016. Approximately $759 million was awarded to 18 projects in 15 states. However, to highlight the significant amount of unfunded infrastructure needs that exist throughout the country, it is noteworthy that a total of 212 applications were submitted, seeking $9.8 billion in funding. Therefore, the needs far exceeded the amount of grant funding that was available.

As mentioned above, a second round of applications for Fiscal Year 2017 was solicited in October 2016. The October 2016 project solicitation, which had a Dec. 15, 2016 deadline for submitting applications, occurred during the same time period as the presidential election in November 2016 and the subsequent inauguration of President Donald J. Trump on Jan. 20, 2017. Following the change in administration, the U.S. Department of Transportation announced in a Jun. 29, 2017 press release that the FASTLANE Grant program was being modified and was also being rebranded as INFRA. The U.S. Department of Transportation also announced that instead of awarding the $850 million that had been announced for the second round of FASTLANE Grants, only approximately $79 million would be awarded under the Small Project category. The INFRA Grant Program retained a good deal of the guidelines established under the FASTLANE Grant Program but places greater emphasis on leveraging the funds being made available under the program with non-federal investments from state, local, and private sources. The program used the balance of the funds not awarded under the second round of the FASTLANE Grants, plus additional funding, for a total of approximately $1.5 billion in grant awards.

The new program also emphasizes innovation in the project delivery and permitting process, including public-private partnerships. In addition, the new program promotes innovative safety solutions that improve the transportation system and focuses on performance and accountability in project delivery and operations.

As mentioned above, the INFRA Grant Program will target projects that have significant investments from other state, local, or private sponsors and those that can begin construction immediately. Eligible project costs include reconstruction, rehabilitation, land acquisition, environmental mitigation, construction contingencies, equipment acquisition, and operation improvements directly related to system performance.

For additional information regarding the differences in the selection criteria under the two grant programs, please see Table 6-10: Side-By-Side Comparison of the Merit Criteria Used in FASTLANE and INFRA Grants, below:

Table 6-10: Side-By-Side Comparison of the Merit Criteria Used in FASTLANE and INFRA Grants

FASTLANE	INFRA

Merit criteria
• Economic outcomes.
• Mobility outcomes.
• Safety outcomes.
• Community and environmental outcomes.
 	
Other review criteria
• Cost share.
• Partnership and innovation.
 	
Additional considerations
• Geographic diversity among recipients.
• Project readiness.
	Merit criteria
	• National and regional economic vitality.
	• Potential for innovation.
	  ▪ Safety.
	  ▪ Environmental review and permitting.
	  ▪ Project delivery approach.
	• Leveraging of federal funding.
	• Performance and accountability.
	
	Additional considerations
	• Geographic diversity among recipients.
	• Project readiness.

Source: US DOT

6.3.2 INFRA Grant Application

INFRA applications were due Nov. 2, 2017. IDOT, in cooperation with its CREATE partners, submitted an application requesting $160 million for a network of projects identified as the 75th Street Corridor Improvement Project (75th Street CIP) and Argo Connections (CREATE Project B9). 75th Street is the primary east-west route through the Chicago area and the only one with the physical potential to add significant capacity. The Argo project will also add capacity needed to feed additional traffic the east-west corridor.

The 75th Street CIP is made up of a network of four closely related individual projects which are the Forest Hill Flyover (CREATE Project P3), the 71st Street Grade Separation (CREATE Project GS19), the Belt Junction and 80th Street Junction Replacement (CREATE Project EW2), and the Metra Rock Island Connection (CREATE Project P2). For operational reasons Projects P3 and GS19 must be completed prior to Projects EW2 and P2. Therefore, the grant application requested full funding of Projects P3 and GS19 for final design, utility relocation, and construction, whereas, funding for design only was requested for Projects EW2 and P2. As the fifth project, Argo Connections (CREATE Project B9) already has substantially completed final design, full funding for construction was requested. The application emphasizes that from a design standpoint, innovative technology solutions are a key component of each element, incorporating emerging technologies to improve performance, safety, and security. The application further commits to meeting element-specific design and construction milestones and points to all past projects having been successful completed on time, with 90 percent at or under budget.

This application highlights complexity of the of the Chicago area rail network where six Class I railroads converge and the significance of this rail hub to the national economy. The application emphasizes that as the nation's rail hub, one-fourth of the nation's freight rail traffic and one-half of all intermodal trains pass through the Chicago area. The goal of the proposed improvements is to reduce travel time and expand railroad capacity through the Chicago area, resulting in a doubling of corridor capacity and operational benefits that extend beyond the region to a national scale.

The application seeks federal support to leverage the significant local public funding and private funding commitments to fix what is described as the most complex and congested segment of railroad in North America. The $160 million in requested INFRA funding is roughly 35 percent of the total $473.7 million needed. The additional 65 percent includes an $111.4 million commitment from several of the Class I railroads and Amtrak, and an additional $202.4 million from other non-federal sources, including $20 million from Metra. The application also highlights the composite benefit-cost ratio of the proposed improvements which is anticipated to have a ratio of 7:1 or better. As a result of reduced congestion and additional capacity to accommodate anticipated growth in freight traffic, the monetized benefits, including travel time, shipping costs, safety, and emissions are anticipated to have a net present value of $3.8 billion.

The application also confirms that the proposed improvements perform strongly on the INFRA Merit Criteria shown above, particularly in the following areas:

- Support for National and Regional Vitality;
- Potential for Innovation;
- Leveraging of Federal Funding;
- Performance and Accountability.

INFRA grant project selections have not yet been announced as of the completion of this document.

6.4 Grant Application Strategies

The INFRA Grant Program is competitive based and there is a limited amount of funding available each fiscal year. Although the U.S. Department of Transportation will evaluate all applications based on their individual merits, for future INFRA Grant submissions there are still certain methodologies that the IDOT can use to help ensure that its applications meet the intent of the grant program in order to have the greatest possibility of success.

One possible strategy is to seek support from the Illinois State Freight Advisory Council for projects that are to be submitted for an INFRA Grant request. This backing may provide some additional weight to the application when the projects are being evaluated, which could include projects in which IDOT partners with a local agency.

In addition, under the new INFRA Grant guidelines, the U.S Department of Transportation specifically allows applicants to resubmit project applications that were previously submitted under the FASTLANE Grant program, if they believe their project aligns with the new INFRA criteria. In such cases, applicants may resubmit their application with an appendix that includes any additional supplemental information that supports their project and describes how the project aligns with the new INFRA criteria.

Another factor that may lend more weight to an application is project readiness. The U.S. Department of Transportation wants INFRA Grant funds to have an immediate impact and for Large Projects, in particular, expects construction to begin within 18 months after the date of obligation. Therefore, to help improve the chances of an application being selected to receive an INFRA grant, in general IDOT should only submit applications for projects that are far enough along in the design process that they can reasonably be expected to meet the 18-month time constraint.

IDOT should also carefully consider the number of applications it submits for INFRA Grant funding. The INFRA Grant guidelines allow each applicant to submit a maximum of three applications. Although it could be argued that more applications will result in a greater likelihood of success in the selection process, other factors should also be considered, including cost. From a practical standpoint, preparing applications for INFRA Grants requires a great deal of resources, including staff time. In addition, although there are numerous worthwhile projects for which applications could be submitted, it may be a better strategy to rank these potential projects and focus the available resources on the one that is considered to be the top priority. This allows the IDOT to concentrate its efforts and attention on compiling one strong application instead of possibly diluting the chance for selection by submitting multiple applications that not only complete with other applicants, but with each other.

Illinois State Freight Plan

Appendix A:

Data Sets for Commodity Flow Chapter Figures

Illinois Department of Transportation (IDOT)

Figure 1-1: Freight Flow Overview, 2014

	% of Total Tons 2014	Tons 2014 (M)
Inbound	32.2%	395.33
Outbound	32.6%	400.36
Within	35.2%	432.31

	% of Total Value 2014	Value 2014 (B)
Inbound	42.0%	1,2499.99
Outbound	45.3%	1,346.19
Within	12.7%	377.75

Figure 1-2: Modal Overview, 2014

	% of Total Tons 2014 along Mode	Tons 2014
Truck – FAF Dis	54.1%	664.2
Rail Intermodal – STB	8.6%	105.1
Rail Carload – STB	28.4%	348.9
Water – TS	8.8%	107.8
Air – BTS T-100	0.2%	1.9

	% of Total Value 2014 (USD)	Value 2014 (USD)
Truck – FAF Dis	36.1%	1072.3
Rail Intermodal – STB	44.2%	1313.6
Rail Carload – STB	12.5%	371.2
Water – TS	1.1%	31.5
Air – BTS T-100	6.2%	185.4

Figure 1-3: Top 15 Commodities by Tonnage by Type of Flow, 2014

			% of Total Value 2014 (USD)	Value 2014 (USD)
		Inbound	Outbound	Within
1	Coal	100,531,593	59,703,417	22,804,711
2	Cereal grains	13,462,496	41,686,998	75,517,251
3	Gravel	4,330,931	8,461,913	80,278,688
4	Mixed freight	33,407,896	34,516,284	4,600
5	Other foodstuffs	20,002,418	21,924,791	14,652,192
6	Gasoline	3,430,281	6,526,155	45,276,956
7	Basic chemicals	21,534,921	22,415,599	5,548,527
8	Other ag. prods.	10,104,788	15,198,194	18,545,163
9	Chemical prods.	20,110,316	16,267,603	4,476,693
10	Nonmetal min. prods.	11,862,141	6,522,851	21,737,023
11	Base metals	17,515,898	15,699,720	6,676,510
12	Waste/scrap	5,210,433	9,879,141	16,053,224
13	Motorized vehicles	15,186,862	13,117,630	2,301,313
14	Fuel oils	1,185,180	3,039,293	25,583,260
15	Fertilizers	10,601,778	9,609,477	9,374,889

		Share of Tons
1	Coal	14.93%
2	Cereal grains	10.66%
3	Gravel	7.59%
4	Mixed freight	5.54%
5	Other foodstuffs	4.61%
6	Gasoline	4.50%
7	Basic chemicals	4.04%
8	Other ag. prods.	3.58%
9	Chemical prods.	3.33%
10	Nonmetal min. prods.	3.27%
11	Base metals	3.25%
12	Waste/scrap	2.54%
13	Motorized vehicles	2.50%
14	Fuel oils	2.43%
15	Fertilizers	2.41%

Figure 1-4: Top 15 Commodities by Value by Type of Flow, 2014

		Type of Flow IL (2014 USD)		
		Inbound	Outbound	Within
1	Mixed freight	459,305,148,253	476,482,317,405	51,647,799
2	Motorized vehicles	192,636,752,967	134,796,640,548	21,518,117,316
3	Machinery	35,505,980,892	80,922,814,490	27,727,296,842
4	Electronics	41,016,617,189	64,283,380,758	31,255,006,465
5	Chemical prods.	50,410,846,270	50,823,444,280	9,206,075,706
6	Unknown	21,495,319,381	47,605,506,177	34,021,995,777
7	Plastics/rubber	28,310,611,186	36,098,153,473	13,261,443,005
8	Textiles/leather	45,418,418,369	24,547,308,690	2,407,402,645
9	Other foodstuffs	29,396,069,540	27,485,035,318	14,779,621,804
10	Base metals	24,768,210,120	28,325,308,709	10,516,527,807
11	Misc. mfg. prods.	26,954,614,467	20,023,461,887	9,871,341,079
12	Pharmaceuticals	11,991,435,591	21,999,704,754	19,799,754,142
13	Articles-base metal	14,201,648,053	28,055,115,259	8,504,658,803
14	Gasoline	2,226,660,133	4,595,024,171	43,937,929,401
15	Basic chemicals	21,750,874,696	22,243,568,440	4,442,124,927

		Share of Value
1	Mixed freight	33.56%
2	Motorized vehicles	12.51%
3	Machinery	5.17%
4	Electronics	4.90%
5	Chemical prods.	3.96%
6	Unknown	3.70%
7	Plastics/rubber	2.79%
8	Textiles/leather	2.60%
9	Other foodstuffs	2.57%
10	Base metals	2.28%
11	Misc. mfg. prods.	2.04%
12	Pharmaceuticals	1.93%
13	Articles-base metal	1.82%
14	Gasoline	1.82%
15	Basic chemicals	1.74%

Figure 1-5: Mode Share of Top 15 Commodities by Tonnage, 2014

	Water - TS	Rail Carload - STB	Rail Intermodal - STB	Truck - FAF Dis	Grand Total
Coal	33,029,170	140,605,949	31	9,404,516	183,039,667
Cereal grains	16,526,012	29,091,017	4,267,513	80,782,101	130,666,642
Gravel	4,137,419	8,739,664	39,540	80,154,901	93,071,524
Mixed freight	33,257	195,604	67,699,920		67,928,781
Other foodstuffs	853,474	10,744,672	3,044,231	41,937,023	56,579,400
Gasoline	3,772,724	2,498,174	44,215	48,918,268	55,233,380
Basic chemicals	3,169,861	31,508,122	1,088,394	13,732,659	49,499,036
Other ag. prods.	8,522,817	6,257,652	1,658,686	27,408,941	43,848,095
Chemical prods.	1,826,910	16,979,921	2,695,627	19,352,150	40,854,608
Nonmetal min. prods.	4,261,814	1,615,937	408,022	33,836,271	40,122,044
Base metals	2,068,968	3,513,734	661,556	33,647,886	39,892,143
Waste/scrap	662,172	3,179,636	647,769	26,653,221	31,142,798
Motorized vehicles	4,045	15,570,995	6,673,473	8,357,293	30,605,806
Fuel oils	1,664,616	1,102,254	19,509	27,021,347	29,807,725
Fertilizers	4,945,486	6,230,485	72,420	18,337,794	29,586,185

	Water - TS	Rail Carload - STB	Rail Intermodal - STB	Truck - FAF Dis	Grand Total
Coal	18.0%	76.8%	0.0%	5.1%	100.0%
Cereal grains	12.6%	22.3%	3.3%	61.8%	100.0%
Gravel	4.4%	9.4%	0.0%	86.1%	100.0%
Mixed freight	0.0%	0.3%	99.7%	0.0%	100.0%
Other foodstuffs	1.5%	19.0%	5.4%	74.1%	100.0%
Gasoline	6.8%	4.5%	0.1%	88.6%	100.0%
Basic chemicals	6.4%	63.7%	2.2%	27.7%	100.0%
Other ag. prods.	19.4%	14.3%	3.8%	62.5%	100.0%
Chemical prods.	4.5%	41.6%	6.6%	47.4%	100.0%
Nonmetal min. prods.	10.6%	4.0%	1.0%	84.3%	100.0%
Base metals	5.2%	8.8%	1.7%	84.3%	100.0%
Waste/scrap	2.1%	10.2%	2.1%	85.6%	100.0%
Motorized vehicles	0.0%	50.9%	21.8%	27.3%	100.0%
Fuel oils	5.6%	3.7%	0.1%	90.7%	100.0%
Fertilizers	16.7%	21.1%	0.2%	62.0%	100.0%

Figure 1-6: Mode Share of Top 15 Commodities by Value, 2014

	Water - TS	Rail Carload - STB	Rail Intermodal - STB	Truck - FAF Dis	Grand Total
Mixed freight	73,800,791	373,121,476	935,392,192,661		935,839,114,928
Motorized vehicles	12,324,681	172,329,135,693	101,727,176,692	74,882,878,499	348,951,515,565
Machinery	79,372,504	6,578,735,488	37,648,233,749	99,849,746,175	144,156,087,917
Electronics	31,913,292	1,060,561,803	48,364,088,393	87,098,455,852	136,555,019,340
Chemical prods.	3,487,442,850	45,174,342,302	20,464,388,705	41,314,185,835	110,440,359,692
Unknown				103,122,821,336	103,122,821,336
Plastics/rubber	4,014,005	17,489,419,765	7,840,532,559	52,336,248,327	77,670,214,657
Textiles/leather	392,193	22,750,948,189	35,049,960,544	14,571,833,900	72,373,134,825
Other foodstuffs	807,069,247	7,651,993,599	3,731,654,348	59,470,012,622	71,660,729,816
Base metals	2,957,709,418	2,558,487,174	1,369,669,831	56,724,215,683	63,610,082,105
Misc. mfg. prods.	57,533,181	26,094,237	21,941,254,331	34,824,552,588	56,849,434,338
Pharmaceuticals		431,412,274	9,301,802,641	44,057,679,572	53,790,894,486
Articles-base metal	1,389,996,937	4,121,135,057	13,175,279,695	32,075,033,504	50,761,445,193
Gasoline	976,243,144	1,845,259,860	29,183,698	47,908,920,972	50,759,607,674
Basic chemicals	2,013,811,839	21,579,149,137	9,612,224,782	15,231,373,527	48,436,559,284

	Water - TS	Rail Carload - STB	Rail Intermodal - STB	Truck - FAF Dis	Grand Total
Mixed freight	0.0%	0.0%	100.0%	0.0%	100.0%
Motorized vehicles	0.0%	49.4%	29.2%	21.5%	100.0%
Machinery	0.1%	4.6%	26.1%	69.3%	100.0%
Electronics	0.0%	0.8%	35.4%	63.8%	100.0%
Chemical prods.	3.2%	40.9%	18.5%	37.4%	100.0%
Unknown	0.0%	0.0%	0.0%	100.0%	100.0%
Plastics/rubber	0.0%	22.5%	10.1%	67.4%	100.0%
Textiles/leather	0.0%	31.4%	48.4%	20.1%	100.0%
Other foodstuffs	1.1%	10.7%	5.2%	83.0%	100.0%
Base metals	4.6%	4.0%	2.2%	89.2%	100.0%
Misc. mfg. prods.	0.1%	0.0%	38.6%	61.3%	100.0%
Pharmaceuticals	0.0%	0.8%	17.3%	81.9%	100.0%
Articles-base metal	2.7%	8.1%	26.0%	63.2%	100.0%
Gasoline	1.9%	3.6%	0.1%	94.4%	100.0%
Basic chemicals	4.2%	44.6%	19.8%	31.4%	100.0%

Figure 1-7: Rail Pass-through Overview, 2014

	% of Total Value 2014 (USD)	Value 2014 (USD)
Rail Intermodal – STB	55.31%	160,705,690,894
Rail Carload – STB	44.69%	129,866,087,421

	% of Total Tons 2014	Tons 2014
Rail Intermodal – STB	6.61%	12,822,344
Rail Carload – STB	93.39%	181,249,121

Figure 1-9: Millions of Tons Terminated by County and Mode Shares, 2014

Dest County	Tons 2014
Adams	5,237,750
Alexander	626,090
Bond	592,616
Boone	3,580,766
Brown	1,611,780
Bureau	1,606,500
Calhoun	289,827
Carroll	1,940,644
Cass	2,555,551
Champaign	9,671,335
Christian	6,566,325
Clark	1,451,412
Clay	1,191,143
Clinton	3,374,827
Coles	2,743,361
Cook	276,139,559
Crawford	2,783,134
Cumberland	350,676
De Witt	1,830,890

DeKalb	2,566,025
Douglas	2,719,571
DuPage	44,708,109
Edgar	1,552,007
Edwards	1,164,976
Effingham	3,707,273
Fayette	1,919,145
Ford	2,888,913
Franklin	1,072,262
Fulton	3,707,238
Gallatin	804,410
Greene	1,218,004
Grundy	3,172,187
Hamilton	561,794
Hancock	1,742,915
Hardin	1,170,044
Henderson	989,425
Henry	6,449,537
Iroquois	3,505,589
Jackson	5,680,363

Jasper	5,190,529
Jefferson	5,450,303
Jersey	813,517
Jo Daviess	2,936,999
Johnson	937,265
Kane	14,157,877
Kankakee	7,466,748
Kendall	2,378,084
Knox	1,875,539
La Salle	6,897,360
Lake	21,657,200
Lawrence	625,729
Lee	2,760,191
Livingston	4,630,657
Logan	2,210,512
Macon	17,637,247
Macoupin	5,732,145
Madison	24,035,396
Marion	13,304,311
Marshall	1,575,712

Mason	4,276,597
Massac	19,091,304
McDonough	1,358,276
McHenry	7,069,399
McLean	18,751,078
Menard	478,496
Mercer	1,516,308
Monroe	1,242,270
Montgomery	6,100,591
Morgan	2,645,418
Moultrie	1,314,129
Ogle	6,660,224
Peoria	19,257,058
Perry	1,586,722
Piatt	1,306,227
Pike	1,793,643
Pope	68,622
Pulaski	1,941,668
Putnam	843,108
Randolph	10,736,500

Richland	676,671
Rock Island	9,090,668
Saline	700,540
Sangamon	10,225,628
Schuyler	402,417
Scott	972,491
Shelby	1,753,423
St. Clair	34,420,643
Stark	925,619
Stephenson	4,199,771
Tazewell	23,734,217
Union	1,291,016
Vermilion	5,397,738
Wabash	655,403
Warren	3,516,564
Washington	2,709,411
Wayne	1,228,427
White	536,394
Whiteside	3,602,911
Will	35,309,680

Williamson	2,920,403
Winnebago	14,240,248
Woodford	2,331,063

	Tons 2014 (M)	%
Cook	276.1	33.41%
DuPage	44.7	5.41%
Will	35.3	4.27%
St. Clair	34.4	4.16%
Madison	24	2.91%
Tazewell	23.7	2.87%
Lake	21.7	2.62%
Peoria	19.3	2.33%
Massac	19.1	2.31%
McLean	18.8	2.27%
Macon	17.6	2.13%
Winnebago	14.2	1.72%
Kane	14.2	1.71%
Marion	13.3	1.61%
Randolph	10.7	1.30%

Sangamon	10.2	1.24%
Champaign	9.7	1.17%
Rock Island	9.1	1.10%
Kankakee	7.5	0.90%
McHenry	7.1	0.86%
La Salle	6.9	0.83%
Ogle	6.7	0.81%
Christian	6.6	0.79%
Henry	6.4	0.78%
Montgomery	6.1	0.74%
Macoupin	5.7	0.69%
Jackson	5.7	0.69%
Jefferson	5.5	0.66%
Vermilion	5.4	0.65%
Adams	5.2	0.63%
Jasper	5.2	0.63%
Livingston	4.6	0.56%
Mason	4.3	0.52%
Grand Total	826.6	100.00%

County	Truck - FAF Dis	Rail Intermodal - STB	Rail Carload - STB	Water - TS
Cook	52.10%	14.10%	30.10%	3.70%
DuPage	83.90%		8.30%	7.70%
Will	47.30%	23.10%	25.70%	3.90%
St. Clair	37.00%	3.50%	51.10%	8.40%
Madison	62.30%	0.80%	28.90%	8.00%
Tazewell	49.00%		48.20%	2.80%
Lake	75.90%		14.50%	9.70%
Peoria	59.40%		37.00%	3.60%
Massac	8.40%		88.70%	3.00%
McLean	99.60%		0.40%	
Macon	58.90%	0.60%	40.40%	
Winnebago	98.80%		1.20%	
Kane	97.00%		3.00%	
Marion	23.00%	0.10%	76.90%	
Randolph	28.60%		70.10%	1.30%
Sangamon	98.80%		1.20%	
Champaign	92.20%		7.80%	
Rock Island	91.00%		6.50%	2.60%

Kankakee	58.70%		41.30%	
McHenry	97.50%		2.50%	
La Salle	75.50%		19.40%	5.10%
Ogle	88.60%	4.20%	7.20%	
Christian	36.40%		63.60%	
Henry	100.00%		0.00%	
Montgomery	45.80%		54.20%	
Macoupin	99.70%		0.30%	
Jackson	26.80%		71.40%	1.70%
Jefferson	49.70%		50.30%	
Vermilion	92.70%		7.30%	
Adams	90.40%		4.60%	5.00%
Jasper	23.50%		76.50%	
Livingston	99.20%		0.80%	
Mason	41.30%		57.20%	1.50%
Grand Total	64.20%	5.90%	26.50%	3.40%

Figure 1-10: Millions of Tons Originated by County and Mode Shares, 2014

Orig County	Tons 2014
Adams	10,080,915
Alexander	1,813,363
Bond	753,824
Boone	3,633,368
Brown	1,388,205
Bureau	3,260,273
Calhoun	1,331,544
Carroll	2,102,902
Cass	2,759,753
Champaign	10,678,586
Christian	3,327,057
Clark	2,474,249
Clay	1,048,750
Clinton	2,283,627
Coles	3,221,242
Cook	248,432,690
Crawford	22,326,703
Cumberland	664,255
De Witt	1,420,676

DeKalb	3,401,189
Douglas	3,393,133
DuPage	35,915,057
Edgar	1,632,159
Edwards	1,681,272
Effingham	3,544,807
Fayette	2,426,970
Ford	3,242,870
Franklin	7,499,756
Fulton	1,202,704
Gallatin	576,866
Greene	2,009,078
Grundy	3,524,774
Hamilton	3,288,378
Hancock	2,929,175
Hardin	4,787,222
Henderson	1,544,133
Henry	4,855,118
Iroquois	4,791,612
Jackson	1,118,694

Jasper	1,552,936
Jefferson	3,020,868
Jersey	1,722,737
Jo Daviess	4,417,053
Johnson	2,464,341
Kane	14,643,048
Kankakee	9,680,408
Kendall	2,923,299
Knox	1,707,538
La Salle	25,231,174
Lake	19,468,098
Lawrence	691,235
Lee	1,752,307
Livingston	5,893,396
Logan	2,740,155
Macon	10,674,666
Macoupin	4,228,300
Madison	20,416,283
Marion	4,309,111
Marshall	1,990,981

Mason	2,683,122
Massac	20,139,196
McDonough	1,692,287
McHenry	12,879,328
McLean	9,756,783
Menard	625,378
Mercer	587,104
Monroe	3,564,443
Montgomery	8,272,639
Morgan	4,498,230
Moultrie	1,533,768
Ogle	8,381,963
Peoria	8,956,015
Perry	2,739,037
Piatt	1,757,549
Pike	2,867,875
Pope	62,902
Pulaski	2,761,570
Putnam	1,909,844
Randolph	5,479,309

Richland	913,090
Rock Island	7,173,971
Saline	10,371,207
Sangamon	7,660,034
Schuyler	490,762
Scott	2,285,912
Shelby	2,066,464
St. Clair	45,649,009
Stark	1,626,218
Stephenson	2,401,016
Tazewell	8,340,031
Union	2,955,042
Vermilion	6,728,426
Wabash	1,549,506
Warren	3,088,378
Washington	1,808,957
Wayne	1,001,320
White	3,139,743
Whiteside	4,770,917
Will	44,753,174

Williamson	1,426,613
Winnebago	10,370,766
Woodford	4,214,306

County	Tons 2014 (M)	%
Cook	248.4	29.87%
St. Clair	45.6	5.49%
Will	44.8	5.38%
DuPage	35.9	4.32%
La Salle	25.2	3.03%
Crawford	22.3	2.68%
Madison	20.4	2.45%
Massac	20.1	2.42%
Lake	19.5	2.34%
Kane	14.6	1.76%
McHenry	12.9	1.55%
Champaign	10.7	1.28%
Macon	10.7	1.28%
Saline	10.4	1.25%
Winnebago	10.4	1.25%
Adams	10.1	1.21%

McLean	9.8	1.17%
Kankakee	9.7	1.16%
Peoria	9.0	1.08%
Ogle	8.4	1.01%
Tazewell	8.3	1.00%
Montgomery	8.3	0.99%
Sangamon	7.7	0.92%
Franklin	7.5	0.90%
Rock Island	7.2	0.86%
Vermilion	6.7	0.81%
Livingston	5.9	0.71%
Randolph	5.5	0.66%
Henry	4.9	0.58%
Iroquois	4.8	0.58%
Hardin	4.8	0.58%
Whiteside	4.8	0.57%
Morgan	4.5	0.54%
Jo Daviess	4.4	0.53%
Marion	4.3	0.52%
Grand Total	831.8	100.00%

County	Truck - FAF Dis	Rail Intermodal - STB	Rail Carload - STB	Water - TS
Cook	54.30%	17.10%	24.60%	4.00%
St. Clair	19.30%	3.00%	32.10%	45.70%
Will	69.70%	25.30%	1.80%	3.20%
DuPage	93.60%		0.50%	5.90%
La Salle	53.30%		41.60%	5.10%
Crawford	94.60%		5.40%	
Madison	50.70%	1.60%	13.90%	33.90%
Massac	2.20%			97.80%
Lake	95.70%		0.30%	4.00%
Kane	99.60%		0.40%	
McHenry	98.50%		1.50%	
Champaign	78.10%		21.90%	
Macon	41.40%	1.20%	57.40%	
Saline	37.40%		62.60%	
Winnebago	98.20%		1.80%	
Adams	67.90%		4.50%	27.60%
McLean	88.80%		11.20%	
Kankakee	71.40%		28.60%	
Peoria	69.80%		11.60%	18.60%

Ogle	77.80%	7.30%	15.00%	
Tazewell	69.40%		2.50%	28.10%
Montgomery	43.00%		57.00%	
Sangamon	93.90%	0.00%	6.10%	
Franklin	18.80%		81.20%	
Rock Island	78.50%		11.80%	9.70%
Vermilion	88.00%		12.00%	
Livingston	91.40%		8.60%	
Randolph	43.70%		53.30%	3.10%
Henry	94.40%		5.60%	
Iroquois	76.80%		23.20%	
Hardin	77.20%			22.80%
Whiteside	77.90%		15.60%	6.50%
Morgan	42.80%		40.40%	16.80%
Jo Daviess	63.20%		16.90%	20.00%
Marion	58.80%	0.20%	41.00%	
Grand Total	64.30%	6.80%	18.50%	10.40%

Figure 1-11: Billions of Dollars Terminated by County and Mode Shares, 2014

Destination County	Value 2014 (USD)
Adams	6,423,106,303
Alexander	271,448,128
Bond	689,518,729
Boone	4,019,981,536
Brown	1,971,369,515
Bureau	1,467,525,062
Calhoun	122,907,364
Carroll	1,244,165,018
Cass	1,883,255,414
Champaign	8,551,390,954
Christian	2,202,916,009
Clark	973,832,954
Clay	1,799,173,654
Clinton	2,541,505,168
Coles	2,830,212,035
Cook	855,847,040,638
Crawford	1,876,318,950
Cumberland	300,200,549
De Witt	1,226,569,506

DeKalb	2,862,610,918
Douglas	2,082,278,401
DuPage	84,150,373,202
Edgar	876,374,927
Edwards	1,136,266,332
Effingham	3,630,675,939
Fayette	1,618,882,764
Ford	2,177,450,792
Franklin	1,382,088,145
Fulton	1,956,237,927
Gallatin	223,302,684
Greene	646,311,759
Grundy	3,277,350,566
Hamilton	343,772,043
Hancock	946,865,682
Hardin	256,408,010
Henderson	471,316,952
Henry	3,847,237,316
Iroquois	2,115,126,163
Jackson	1,522,156,250

Jasper	988,256,935
Jefferson	3,125,043,879
Jersey	672,943,248
Jo Daviess	1,787,672,005
Johnson	406,237,064
Kane	21,793,772,756
Kankakee	6,132,596,744
Kendall	2,794,936,200
Knox	2,027,104,773
La Salle	6,907,612,156
Lake	33,851,018,222
Lawrence	658,478,449
Lee	3,216,451,266
Livingston	2,725,852,860
Logan	1,564,137,372
Macon	11,999,982,170
Macoupin	5,698,025,430
Madison	22,884,974,454
Marion	15,181,186,436
Marshall	1,064,158,736

Mason	1,125,066,335
Massac	896,216,907
McDonough	995,458,164
McHenry	10,295,968,016
McLean	19,240,428,994
Menard	349,578,921
Mercer	1,345,408,820
Monroe	1,039,755,406
Montgomery	1,390,895,923
Morgan	2,272,552,835
Moultrie	827,224,535
Ogle	7,864,854,436
Peoria	12,700,655,047
Perry	1,387,046,587
Piatt	725,978,420
Pike	1,559,407,950
Pope	42,055,025
Pulaski	997,808,364
Putnam	414,243,028
Randolph	2,838,909,376

Richland	675,332,712
Rock Island	11,002,497,087
Saline	561,841,385
Sangamon	10,502,688,236
Schuyler	216,396,675
Scott	411,920,679
Shelby	956,052,565
St. Clair	70,694,519,687
Stark	402,794,829
Stephenson	3,293,138,981
Tazewell	9,384,630,093
Union	705,251,601
Vermilion	5,932,771,496
Wabash	757,376,546
Warren	2,117,354,416
Washington	2,275,990,867
Wayne	1,032,643,076
White	606,715,035
Whiteside	4,048,732,398
Will	156,287,107,932

Williamson	2,940,287,431
Winnebago	15,951,272,117
Woodford	3,070,504,984

	B USD	%
Cook	855.8	56.00%
Will	156.3	10.20%
DuPage	84.2	5.50%
St. Clair	70.7	4.60%
Lake	33.9	2.20%
Madison	22.9	1.50%
Kane	21.8	1.40%
McLean	19.2	1.30%
Winnebago	16.0	1.00%
Marion	15.2	1.00%
Peoria	12.7	0.80%
Macon	12.0	0.80%
Rock Island	11.0	0.70%
Sangamon	10.5	0.70%
McHenry	10.3	0.70%
Tazewell	9.4	0.60%

Champaign	8.6	0.60%
Ogle	7.9	0.50%
La Salle	6.9	0.50%
Adams	6.4	0.40%
Kankakee	6.1	0.40%
Vermilion	5.9	0.40%
Macoupin	5.7	0.40%
Whiteside	4.0	0.30%
Boone	4.0	0.30%
Henry	3.8	0.30%
Effingham	3.6	0.20%
Stephenson	3.3	0.20%
Grundy	3.3	0.20%
Lee	3.2	0.20%
Jefferson	3.1	0.20%
Woodford	3.1	0.20%
Williamson	2.9	0.20%
Grand Total	**1,529.40**	**100.00%**

County	Truck - FAF Dis	Rail Intermodal - STB	Rail Carload - STB	Water - TS
Cook	26.00%	59.10%	14.40%	0.50%
Will	17.20%	76.60%	5.80%	0.40%
DuPage	92.90%		5.20%	1.80%
St. Clair	17.40%	23.10%	58.10%	1.40%
Lake	95.90%		1.20%	2.90%
Madison	78.20%	12.60%	6.90%	2.30%
Kane	97.80%		2.20%	
McLean	99.40%		0.60%	
Winnebago	99.00%		1.00%	
Marion	14.30%	1.10%	84.60%	
Peoria	88.20%		7.80%	4.00%
Macon	63.50%	14.30%	22.10%	
Rock Island	94.40%		4.30%	1.20%
Sangamon	98.70%		1.30%	
McHenry	98.20%		1.80%	
Tazewell	92.10%		3.30%	4.60%
Champaign	94.50%		5.50%	
Ogle	37.50%	56.80%	5.70%	
La Salle	76.10%		21.50%	2.40%

Adams	95.50%		2.60%	2.00%
Kankakee	75.90%		24.10%	
Vermilion	92.60%		7.40%	
Macoupin	99.80%		0.20%	
Whiteside	97.70%		0.90%	1.40%
Boone	86.90%		13.10%	
Henry	100.00%		0.00%	
Effingham	77.60%		22.40%	
Stephenson	99.90%		0.10%	
Grundy	57.90%		40.10%	2.00%
Lee	100.00%			
Jefferson	93.20%		6.80%	
Woodford	95.80%			4.20%
Williamson	98.60%		1.40%	
Grand Total	**43.00%**	**42.60%**	**13.70%**	**0.80%**

Figure 1-12: Billions of Dollars Originated by County and Mode Shares, 2014

Orig County	Value 2014 (USD)
Adams	7,424,682,611
Alexander	476,024,172
Bond	2,139,651,783
Boone	10,016,463,928
Brown	1,792,616,008
Bureau	2,812,103,880
Calhoun	311,292,834
Carroll	1,481,581,250
Cass	1,911,281,599
Champaign	10,984,989,777
Christian	1,899,996,267
Clark	1,437,733,963
Clay	2,045,806,112
Clinton	1,758,547,278
Coles	3,117,453,457
Cook	909,583,692,941
Crawford	21,054,272,542
Cumberland	515,405,647
De Witt	1,063,476,394

DeKalb	4,452,987,330
Douglas	2,388,555,558
DuPage	86,261,575,406
Edgar	1,221,446,770
Edwards	1,737,471,921
Effingham	5,000,851,069
Fayette	1,595,181,655
Ford	2,501,240,176
Franklin	1,495,146,932
Fulton	1,018,624,327
Gallatin	82,030,904
Greene	876,349,731
Grundy	3,397,234,390
Hamilton	507,677,441
Hancock	1,128,449,155
Hardin	351,064,059
Henderson	521,266,250
Henry	3,932,009,850
Iroquois	2,596,087,107
Jackson	1,210,894,943

Jasper	818,861,593
Jefferson	3,815,481,171
Jersey	687,345,199
Jo Daviess	3,251,968,368
Johnson	747,524,283
Kane	26,556,660,990
Kankakee	8,271,990,435
Kendall	2,789,094,988
Knox	1,774,602,748
La Salle	8,016,892,127
Lake	63,469,333,828
Lawrence	951,410,798
Lee	2,932,519,172
Livingston	4,122,972,609
Logan	1,599,739,162
Macon	13,614,647,156
Macoupin	2,732,145,413
Madison	24,986,128,330
Marion	11,353,674,165
Marshall	1,191,460,663

Mason	1,227,184,332
Massac	4,784,656,333
McDonough	1,274,793,049
McHenry	18,506,738,250
McLean	12,974,041,861
Menard	412,213,347
Mercer	478,724,892
Monroe	959,917,915
Montgomery	1,640,787,752
Morgan	3,069,405,474
Moultrie	1,377,678,709
Ogle	11,500,465,007
Peoria	15,810,055,108
Perry	649,123,891
Piatt	943,253,417
Pike	996,338,526
Pope	38,292,648
Pulaski	553,389,058
Putnam	710,201,358
Randolph	3,115,354,428

Richland	758,898,892
Rock Island	10,363,460,521
Saline	1,085,411,056
Sangamon	8,599,090,195
Schuyler	247,797,001
Scott	909,089,780
Shelby	1,002,680,017
St. Clair	63,567,503,019
Stark	738,549,296
Stephenson	2,663,840,981
Tazewell	9,795,561,536
Union	822,496,837
Vermilion	6,396,002,308
Wabash	404,203,819
Warren	2,068,625,757
Washington	2,195,800,922
Wayne	1,033,284,268
White	613,104,304
Whiteside	4,493,255,317
Will	127,395,886,538

Williamson	2,619,356,054
Winnebago	15,999,510,824
Woodford	3,717,287,390

	B USD	%
Cook	909.6	55.60%
Will	127.4	7.80%
DuPage	86.3	5.30%
St. Clair	63.6	3.90%
Lake	63.5	3.90%
Kane	26.6	1.60%
Madison	25	1.50%
Crawford	21.1	1.30%
McHenry	18.5	1.10%
Winnebago	16.0	1.00%
Peoria	15.8	1.00%
Macon	13.6	0.80%
McLean	13.0	0.80%
Ogle	11.5	0.70%
Marion	11.4	0.70%

Champaign	11.0	0.70%
Rock Island	10.4	0.60%
Boone	10.0	0.60%
Tazewell	9.8	0.60%
Sangamon	8.6	0.50%
Kankakee	8.3	0.50%
La Salle	8.0	0.50%
Adams	7.4	0.50%
Vermilion	6.4	0.40%
Effingham	5.0	0.30%
Massac	4.8	0.30%
Whiteside	4.5	0.30%
DeKalb	4.5	0.30%
Livingston	4.1	0.30%
Henry	3.9	0.20%
Jefferson	3.8	0.20%
Woodford	3.7	0.20%
Grundy	3.4	0.20%
Jo Daviess	3.3	0.20%
Grand Total	1,636.30	100.00%

	Truck - FAF Dis	Rail Intermodal - STB	Rail Carload - STB	Water - TS
Cook	28.80%	60.40%	10.50%	0.30%
Will	30.60%	68.20%	1.00%	0.30%
DuPage	98.60%		0.70%	0.70%
St. Clair	13.10%	25.20%	53.80%	7.90%
Lake	99.50%		0.20%	0.30%
Kane	98.70%		1.30%	
Madison	58.90%	17.80%	16.90%	6.40%
Crawford	97.40%		2.60%	
McHenry	99.70%		0.30%	
Winnebago	99.60%		0.40%	
Peoria	87.70%		9.40%	2.90%
Macon	56.70%	10.80%	32.50%	
McLean	91.50%		8.50%	
Ogle	29.10%	69.80%	1.00%	
Marion	26.00%	1.70%	72.30%	
Champaign	93.90%		6.10%	
Rock Island	92.10%		6.70%	1.10%
Boone	55.30%		44.70%	
Tazewell	90.30%		3.00%	6.70%
Sangamon	96.20%	2.10%	1.60%	

Kankakee	91.20%		8.80%	
La Salle	81.50%		14.00%	4.50%
Adams	81.30%		10.00%	8.60%
Vermilion	88.20%		11.80%	
Effingham	81.40%		18.60%	
Massac	9.30%			90.70%
Whiteside	82.90%		16.00%	1.10%
DeKalb	100.00%			
Livingston	96.90%		3.10%	
Henry	89.30%		10.70%	
Jefferson	99.10%		0.90%	
Woodford	92.70%		1.00%	6.30%
Grundy	54.50%		42.20%	3.30%
Jo Daviess	59.10%		33.90%	6.90%
Grand Total	47.40%	40.70%	10.60%	1.30%

Figure 1-13: Millions of Tons Sent to Illinois by State, 2014

Orig State code	% of Total Tons 2014 along Orig State	Tons 2014
Null*	5.21%	20,560,511
AK	0.01%	20,622
AL	0.77%	3,053,105
AR	0.47%	1,842,932
AZ	0.22%	856,274
CA	5.29%	20,873,601
CO	0.78%	3,065,727
CT	0.05%	193,067
DC	0.00%	2,599
DE	0.04%	144,369
FL	0.86%	3,405,648
GA	1.01%	3,989,840
IA	5.23%	20,627,937
ID	0.32%	1,252,085
IN	7.95%	31,343,362
KS	0.98%	3,876,219
KY	1.35%	5,319,356
LA	3.96%	15,617,772
MA	0.30%	1,187,883
MD	0.23%	889,151
ME	0.05%	210,163
MI	3.02%	11,896,594
MN	4.31%	17,009,006
MO	5.82%	22,946,188
MS	0.31%	1,218,818
MT	0.30%	1,187,379
NC	0.77%	3,019,235
ND	2.07%	8,163,818
NE	1.03%	4,077,518
NH	0.02%	81,203
NJ	1.45%	5,724,258
NM	0.17%	665,868
NV	0.06%	247,084
NY	0.71%	2,806,274
OH	3.44%	13,549,776
OK	0.22%	849,942
OR	0.81%	3,185,713
PA	1.63%	6,413,948
RI	0.02%	68,321
SC	0.33%	1,287,399
SD	0.74%	2,922,531
TN	1.03%	4,061,855
TX	4.88%	19,241,669
UT	0.29%	1,152,720
VA	0.57%	2,227,955
VT	0.01%	55,553
WA	1.77%	6,960,519
WI	3.82%	15,048,524
WV	0.17%	684,701
WY	25.16%	99,195,728

*Null: No state assignment

Figure 1-14: Millions of Tons Received from Illinois by State, 2014

Dest State	% of Total Tons 2014 along Dest State	Tons 2014
Null*	1.90%	7,525,584
AK	0.00%	836
AL	2.30%	9,209,186
AR	1.20%	4,904,553
AZ	0.30%	1,295,934
CA	8.30%	33,006,534
CO	0.70%	2,704,704
CT	0.10%	385,369
DC	0.00%	52,786
DE	0.10%	394,326
FL	2.20%	8,852,093
GA	2.70%	10,622,326
IA	2.90%	11,457,571
ID	0.10%	235,751
IN	11.00%	43,800,303
KS	0.70%	2,651,803
KY	3.20%	12,677,617
LA	14.30%	56,984,380
MA	0.60%	2,568,720
MD	0.60%	2,335,098
ME	0.00%	170,854
MI	5.70%	22,767,189
MN	1.70%	6,794,182
MO	3.50%	14,075,525
MS	0.80%	3,008,364
MT	0.10%	408,718
NC	1.70%	6,966,832
ND	0.50%	2,184,839
NE	0.50%	2,040,279
NH	0.00%	90,776
NJ	2.90%	11,628,356
NM	0.20%	860,613
NV	0.10%	546,901
NY	2.00%	7,977,040
OH	4.80%	19,264,959
OK	0.60%	2,284,152
OR	0.60%	2,310,576
PA	3.90%	15,776,759
RI	0.10%	381,360
SC	0.60%	2,201,952
SD	0.10%	444,041
TN	2.10%	8,236,863
TX	6.30%	25,204,640
UT	0.30%	1,306,437
VA	1.60%	6,425,938
VT	0.00%	74,472
WA	1.30%	5,158,982
WI	4.30%	17,138,989
WV	0.50%	1,819,814
WY	0.10%	298,941

*Null: No state assignment

Figure 1-15: Billions of Dollars Sent to Illinois by State, 2014

Orig State code	% of Total Value 2014 (USD) along Orig State1	Value 2014
Null*	6.80%	78,786,156,127
AK	0.00%	68,906,318
AL	0.60%	6,607,703,449
AR	0.30%	3,702,117,222
AZ	0.60%	6,570,812,278
CA	20.20%	233,117,739,369
CO	0.70%	8,029,683,425
CT	0.10%	1,038,504,364
DC	0.00%	15,743,152
DE	0.00%	266,632,196
FL	1.10%	12,380,467,452
GA	2.10%	23,894,078,994
IA	2.70%	31,068,500,721
ID	0.10%	1,305,807,933
IN	4.60%	53,079,561,890
KS	1.00%	11,625,561,248
KY	2.10%	23,645,846,242
LA	1.50%	17,145,367,724
MA	0.90%	10,801,359,988
MD	0.40%	4,845,817,651
ME	0.00%	280,687,713
MI	4.30%	49,078,961,539
MN	2.30%	26,251,930,358
MO	3.30%	38,099,962,589
MS	0.30%	3,405,035,523
MT	0.00%	526,418,646
NC	1.30%	15,393,803,694
ND	0.50%	5,625,382,123
NE	0.60%	7,162,271,532
NH	0.00%	433,707,330
NJ	4.90%	56,386,221,429
NM	0.40%	4,567,734,550
NV	0.10%	1,176,753,582
NY	1.70%	19,222,078,666
OH	6.50%	74,791,791,460
OK	0.20%	2,050,246,721
OR	1.40%	16,683,641,116
PA	3.90%	44,382,126,571
RI	0.00%	393,226,129
SC	0.40%	4,615,484,287
SD	0.20%	2,706,370,818
TN	1.20%	14,339,969,100
TX	9.00%	103,662,698,454
UT	0.60%	7,361,295,501
VA	1.50%	16,825,324,695
VT	0.00%	138,240,356
WA	6.60%	76,457,595,410
WI	2.40%	27,438,841,985
WV	0.10%	1,033,172,058
WY	0.30%	3,848,948,585

*Null: No state assignment

Figure 1-16: Billions of Dollars Received from Illinois by State, 2014

Dest State code	% of Total Value 2014 (USD) along Dest State code	Value 2014 (USD)
Null*	3.00%	38,241,552,991
AK	0.00%	4,398,948
AL	0.40%	5,172,453,472
AR	0.30%	4,318,190,017
AZ	0.90%	11,671,388,961
CA	20.50%	258,694,184,929
CO	1.30%	16,721,038,254
CT	0.10%	1,206,857,772
DC	0.00%	183,086,629
DE	0.10%	702,362,132
FL	2.80%	35,065,349,918
GA	2.60%	32,329,579,914
IA	1.90%	23,799,946,730
ID	0.10%	821,487,366
IN	4.60%	58,285,407,590
KS	0.90%	11,167,216,487
KY	2.00%	24,622,348,304
LA	1.50%	19,410,004,085
MA	1.30%	16,745,730,467
MD	1.00%	12,595,587,565
ME	0.00%	464,320,870
MI	4.50%	56,302,684,232
MN	2.60%	32,263,890,054
MO	2.40%	30,259,759,634
MS	0.30%	3,785,691,553
MT	0.10%	1,405,102,518
NC	1.10%	14,206,999,626
ND	0.70%	8,349,924,397
NE	0.60%	7,257,207,513
NH	0.00%	273,649,394
NJ	4.50%	56,770,521,737
NM	0.30%	3,968,299,221
NV	0.40%	5,450,170,751
NY	2.20%	27,522,722,494
OH	6.10%	76,307,883,914
OK	0.40%	5,531,053,583
OR	1.90%	24,423,642,079
PA	5.60%	70,254,690,903
RI	0.10%	788,839,824
SC	0.50%	5,945,702,741
SD	0.10%	1,459,259,730
TN	1.40%	17,978,267,437
TX	8.30%	105,111,397,785
UT	0.90%	11,306,594,869
VA	2.30%	28,942,406,908
VT	0.00%	122,134,521
WA	3.50%	44,550,673,062
WI	3.50%	43,685,992,900
WV	0.20%	2,163,949,898
WY	0.10%	642,604,369

*Null: No state assignment

Figure 1-17: State Imports by Regions & Mode, 2014

	Foreign Region							
Dms Mode	**Canada**	**Mexico**	**Eastern Asia**	**Europe**	**Rest of Americas**	**SE Asia & Oceania**	**SW & Central Asia**	**Africa**
Air (include truck-air)	2	1	12	14	4	4	1	0
Multiple modes & mail	121	44	1,636	956	874	375	128	32
No domestic mode	12,135							
Other and unknown	17	4	63	357	44	0	21	0
Pipeline	28,296			0			9	
Rail	6,639	3,261	719	1,385	1,655	64	100	118
Truck	4,198	1,685	1,466	1,605	1,113	184	222	19
Water	341	1	834	348	126	322	226	14

Figure 1-18: State Exports by Region and Mode, 2014

	Foreign Region							
Dms Mode	**Canada**	**Eastern Asia**	**Europe**	**Mexico**	**SE Asia & Oceania**	**Rest of Americas**	**SW & Central Asia**	**Africa**
Air (include truck-air)	15	15	20	2	6	25	5	1
Multiple modes & mail	655	3,727	2,755	0	942	553	324	151
Other and unknown	470	0	0	1	0	0	0	0
Pipeline	2,846							
Rail	2,610	3,728	1,926	1,597	240	1,195	228	337
Truck	3,546	2,185	361	2,034	1,407	671	251	194
Water	7	8	48		2	4	8	1

Figure 1-19: Top Ten Import Commodities

Domestic Mode							
Commodity	Air (include truck-air)	Multiple modes & mail	Other and unknown	Rail	Truck	Water	21,674
Base metals	1	892		2,140	1,785	106	4,923
Alcoholic beverages	0	21		2,643	307	67	3,038
Fertilizers	0	29	372	1,887	364	82	2,733
Nonmetallic minerals	0	1		667	1,210	251	2,129
Basic chemicals	1	213		1,483	239	1	1,938
Machinery	6	652	0	35	956	42	1,690
Plastics/rubber	2	230	0	623	546	207	1,608
Other foodstuffs	0	184		302	669	147	1,302
Articles-base metal	2	355	0	151	769	18	1,295
Motorized vehicles	0	156	0	103	543	216	1,018

Figure 1-20: Top Ten Export Commodities

Domestic Mode								
Commodity	Air (include truck-air)	Multiple modes & mail	Other and unknown	Pipeline	Rail	Truck	Water	27,821
Cereal grains	0	787			3,442	746	0	4,974
Coal		2,815			1,824	2	0	4,642
Other ag. prods.	0	545	0		2,049	1,220	21	3,836
Animal feed	1	1,581	0		514	1,674	0	3,770
Fuel oils	0	5	1	2,846	749	44		3,644
Waste/scrap	1	2,105	0		172	84	13	2,375
Other foodstuffs	3	180	1		254	853	3	1,294
Coal-n.e.c.	3	23	462		421	366	7	1,282
Machinery	24	111	1		68	883	4	1,090
Natural sands	0	0	0		837	76	0	913

Figure 1-21: Origination and Termination of Truck Tons, 2014

Originating (M Tons)	
County (Originating)	Tons 2014
Adams	6,844,900
Alexander	1,231,737
Bond	753,824
Boone	3,053,375
Brown	1,231,603
Bureau	2,481,848
Calhoun	502,145
Carroll	1,902,663
Cass	1,949,858
Champaign	8,339,133
Christian	2,983,887
Clark	1,900,607
Clay	1,048,750
Clinton	2,283,627
Coles	2,624,429
Cook	134,812,725
Crawford	21,112,023
Cumberland	506,733
DeKalb	3,401,189
De Witt	1,356,940
Douglas	2,690,551
DuPage	33,610,372
Edgar	1,233,137
Edwards	1,436,596
Effingham	2,991,612
Fayette	1,819,758
Ford	1,981,640
Franklin	1,409,850
Fulton	902,661
Gallatin	556,000
Greene	1,281,709
Grundy	2,063,681
Hamilton	343,255
Hancock	2,462,949
Hardin	3,693,603
Henderson	1,293,448
Henry	4,581,440
Iroquois	3,681,993
Jackson	894,165
Jasper	1,348,595
Jefferson	2,747,562
Jersey	656,796
Jo Daviess	2,790,066
Johnson	2,464,341
Kane	14,578,540
Kankakee	6,916,121
Kendall	2,923,299
Knox	1,667,118
Lake	18,637,310
La Salle	13,443,101
Lawrence	691,235
Lee	1,752,307
Livingston	5,385,296
Logan	2,544,551
McDonough	1,618,073
McHenry	12,685,707

McLean	8,667,158
Macon	4,419,632
Macoupin	2,800,399
Madison	10,342,735
Marion	2,532,174
Marshall	1,421,222
Mason	1,792,954
Massac	444,142
Menard	620,782
Mercer	520,519
Monroe	2,348,285
Montgomery	3,560,485
Morgan	1,924,926
Moultrie	1,134,636
Ogle	6,519,208
Peoria	6,254,236
Perry	2,722,469
Piatt	1,448,242
Pike	1,722,312
Pope	48,748
Pulaski	2,182,814
Putnam	1,750,760
Randolph	2,392,844
Richland	558,963
Rock Island	5,633,175
St. Clair	8,788,635
Saline	3,880,962
Sangamon	7,192,732
Schuyler	309,073
Scott	1,131,338
Shelby	2,053,704
Stark	1,626,218
Stephenson	2,367,221
Tazewell	5,789,736
Union	2,369,066
Vermilion	5,919,199
Wabash	731,785
Warren	3,088,378
Washington	1,808,957
Wayne	979,611
White	1,446,390
Whiteside	3,715,322
Will	31,187,219
Williamson	1,375,230
Winnebago	10,184,404
Woodford	3,315,752

Terminating (M Tons)	
County (Terminating)	Tons 2014
Adams	4,733,953
Alexander	236,431
Bond	581,405
Boone	3,484,849
Brown	1,543,284
Bureau	1,537,901
Calhoun	203,889
Carroll	1,833,392

Cass	2,465,498
Champaign	8,917,034
Christian	2,388,007
Clark	1,351,816
Clay	1,183,063
Clinton	3,374,827
Coles	2,566,921
Cook	143,995,988
Crawford	2,583,025
Cumberland	350,676
DeKalb	2,531,373
De Witt	1,717,504
Douglas	2,660,983
DuPage	37,529,834
Edgar	1,509,660
Edwards	1,136,932
Effingham	3,168,801
Fayette	1,919,145
Ford	2,885,029
Franklin	1,072,262
Fulton	2,452,329
Gallatin	786,879
Greene	1,137,059
Grundy	2,186,834
Hamilton	439,750
Hancock	1,696,597
Hardin	771,884
Henderson	934,289
Henry	6,448,301
Iroquois	3,280,465
Jackson	1,525,091
Jasper	1,221,660
Jefferson	2,707,242
Jersey	653,967
Jo Daviess	1,649,388
Johnson	937,265
Kane	13,733,017
Kankakee	4,382,620
Kendall	2,266,044
Knox	1,834,851
Lake	16,429,945
La Salle	5,208,162
Lawrence	625,729
Lee	2,760,191
Livingston	4,595,257
Logan	2,151,400
McDonough	1,358,276
McHenry	6,895,294
McLean	18,667,619
Macon	10,395,294
Macoupin	5,717,028
Madison	14,968,953
Marion	3,058,548
Marshall	1,393,016
Mason	1,768,205
Massac	1,596,239
Menard	478,496
Mercer	1,493,930
Monroe	1,026,755

Montgomery	2,794,481
Morgan	2,340,935
Moultrie	1,295,449
Ogle	5,902,439
Peoria	11,437,005
Perry	1,569,309
Piatt	1,306,227
Pike	1,703,837
Pope	59,055
Pulaski	893,870
Putnam	829,378
Randolph	3,075,057
Richland	676,671
Rock Island	8,271,492
St. Clair	12,731,901
Saline	688,612
Sangamon	10,100,036
Schuyler	337,609
Scott	919,061
Shelby	1,610,303
Stark	925,619
Stephenson	4,196,694
Tazewell	11,629,555
Union	1,150,289
Vermilion	5,005,520
Wabash	655,403
Warren	3,516,564
Washington	2,709,411
Wayne	1,228,427
White	536,394
Whiteside	3,434,356
Will	16,695,469
Williamson	2,886,828
Winnebago	14,064,602
Woodford	2,171,943

Figure 1-22: Commodities Moving by Truck, 2014

	Type of Flow IL (Tons 2014)		
	Inbound	Outbound	Within
Cereal grains	4,768,675	4,273,488	71,739,937
Gravel	1,930,851	989,812	77,234,238
Gasoline	1,424,166	2,984,793	44,509,309
Other foodstuffs	12,968,668	14,795,429	14,172,926
Nonmetal min. prods.	8,579,126	3,567,990	21,689,155
Base metals	13,889,476	13,146,194	6,612,216
Other ag. prods.	6,372,255	3,310,168	17,726,517
Fuel oils	300,033	1,476,759	25,244,555
Waste/scrap	3,566,022	7,183,560	15,903,639
Unknown	5,431,106	9,452,655	9,696,463
Chemical prods.	10,350,409	5,103,313	3,898,428
Natural sands	568,347	1,077,626	17,059,122
Coal-n.e.c.	2,968,823	11,080,293	4,412,924
Fertilizers	2,442,534	6,770,514	9,124,746
Basic chemicals	3,552,535	5,563,965	4,616,159
Wood prods.	3,314,749	2,267,777	7,986,671
Plastics/rubber	4,160,841	5,347,281	3,305,121
Animal feed	3,648,511	4,763,385	2,824,166
Milled grain prods.	5,807,432	2,585,672	1,704,463
Meat/seafood	4,313,173	3,048,350	2,297,943

	Share of Tons
Cereal grains	12.16%
Gravel	12.07%
Gasoline	7.36%
Other foodstuffs	6.31%
Nonmetal min. prods.	5.09%
Base metals	5.07%
Other ag. prods.	4.13%
Fuel oils	4.07%
Waste/scrap	4.01%
Unknown	3.70%
Chemical prods.	2.91%
Natural sands	2.82%
Coal-n.e.c.	2.78%
Fertilizers	2.76%
Basic chemicals	2.07%
Wood prods.	2.04%
Plastics/rubber	1.93%
Animal feed	1.69%
Milled grain prods.	1.52%
Meat/seafood	1.45%

Figure 1-23: Origination and Termination of Rail Intermodal Tons, 2014

Originating	
Orig County	Tons 2014
Cook	42,601,857
Macon	127,601
Madison	317,490
Ogle	608,026
St. Clair	1,370,608
Will	11,328,407

Terminating	
Dest County	Tons 2014
Cook	38,939,559
Macon	109,200
Madison	201,209
Ogle	281,555
St. Clair	1,193,293
Will	8,160,269

Figure 1-24: Commodities Moving by Rail Intermodal, 2014

	Type of Flow IL (Tons 2014)		
	Inbound	Outbound	Within
Mixed freight	33,215,320	34,481,000	3,600
Motorized vehicles	4,076,051	2,491,622	105,800
Cereal grains	129,528	4,137,986	
Other foodstuffs	1,226,515	1,810,205	7,511
Chemical prods.	972,499	1,722,557	571
Paper articles	842,486	1,141,739	
Machinery	902,401	923,019	
Milled grain prods.	617,184	1,136,965	8,151
Plastics/rubber	850,965	887,482	
Other ag. prods.	838,298	820,388	
Textiles/leather	658,273	721,358	
Basic chemicals	372,766	715,333	295
Animal feed	415,972	634,289	2,860
Furniture	542,338	464,495	
Articles-base metal	326,839	674,535	
Alcoholic beverages	354,918	363,205	
Misc. mfg. prods.	329,466	342,044	
Base metals	273,190	388,366	
Waste/scrap	152,853	481,316	13,600
Electronics	267,626	360,308	

	Share of Tons
Mixed freight	64.40%
Motorized vehicles	6.35%
Cereal grains	4.06%
Other foodstuffs	2.90%
Chemical prods.	2.56%
Paper articles	1.89%
Machinery	1.74%
Milled grain prods.	1.68%
Plastics/rubber	1.65%
Other ag. prods.	1.58%
Textiles/leather	1.31%
Basic chemicals	1.04%
Animal feed	1.00%
Furniture	0.96%
Articles-base metal	0.95%
Alcoholic beverages	0.68%
Misc. mfg. prods.	0.64%
Base metals	0.63%
Waste/scrap	0.62%
Electronics	0.60%

Figure 1-25: Origination and Termination of Rail Carload Tons, 2014

Originating	
Orig County	Tons 2014
Adams	451,393
Alexander	238,486
Boone	579,993
Bureau	4,000
Carroll	61,536
Cass	42,200
Champaign	2,339,453
Christian	343,170
Clark	573,642
Coles	596,812
Cook	61,023,261
Crawford	1,214,679
Cumberland	157,522
De Witt	63,736
Douglas	702,581
DuPage	171,659
Edgar	399,022
Edwards	244,675
Effingham	553,195
Fayette	607,212
Ford	1,261,229
Franklin	6,089,906
Grundy	1,061,297
Hamilton	2,945,123
Henry	273,678
Iroquois	1,109,620
Jackson	60,864
Jasper	204,341
Jefferson	273,306
Jo Daviess	744,900
Kane	64,508
Kankakee	2,764,287
Knox	40,420
Lake	50,351
La Salle	10,504,393
Livingston	508,100
Logan	195,604
McDonough	74,214
McHenry	193,621
McLean	1,089,625
Macon	6,127,432
Macoupin	1,427,901
Madison	2,843,143
Marion	1,768,413
Marshall	34,080
Mason	45,667
Menard	4,596
Montgomery	4,712,154
Morgan	1,818,853
Moultrie	399,132
Ogle	1,254,729
Peoria	1,039,181
Perry	16,568
Piatt	309,307
Pike	310,453
Pulaski	18,108

Putnam	4,276
Randolph	2,919,028
Richland	354,128
Rock Island	844,657
St. Clair	14,636,216
Saline	6,490,245
Sangamon	464,063
Scott	498,708
Shelby	12,760
Stephenson	33,795
Tazewell	206,383
Vermilion	809,228
Wabash	817,721
Wayne	21,710
White	1,693,352
Whiteside	745,056
Will	810,336
Williamson	51,383
Winnebago	186,362
Woodford	120,042

Terminating	
Dest County	Tons 2014
Adams	241,382
Alexander	270,532
Bond	11,211
Boone	95,918
Bureau	11,240
Carroll	3,840
Champaign	754,301
Christian	4,178,317
Clark	99,596
Clay	8,080
Coles	176,440
Cook	83,020,254
Crawford	200,109
DeKalb	34,652
De Witt	113,386
Douglas	58,588
DuPage	3,731,651
Edgar	42,348
Edwards	28,044
Effingham	538,472
Ford	3,884
Fulton	1,161,170
Greene	15,640
Grundy	840,870
Hamilton	122,044
Henderson	36,136
Henry	1,236
Iroquois	225,124
Jackson	4,057,574
Jasper	3,968,869
Jefferson	2,743,060
Jo Daviess	1,083,947
Kane	424,860
Kankakee	3,084,127
Kendall	112,040

Knox	40,687
Lake	3,130,594
La Salle	1,340,609
Livingston	35,400
Logan	59,112
McHenry	174,105
McLean	83,459
Macon	7,132,753
Macoupin	15,117
Madison	6,937,098
Marion	10,237,243
Marshall	93,868
Mason	2,444,500
Massac	16,928,296
Montgomery	3,306,110
Morgan	211,708
Moultrie	18,680
Ogle	476,231
Peoria	7,128,276
Perry	17,413
Pulaski	932,478
Randolph	7,526,517
Rock Island	587,186
St. Clair	17,600,333
Saline	11,928
Sangamon	125,592
Shelby	143,120
Stephenson	3,077
Tazewell	11,445,238
Vermilion	392,218
Whiteside	80,816
Will	9,085,343
Williamson	33,575
Winnebago	175,646

Figure 1-26: Commodities Moving by Rail Carload, 2014

	Type of Flow IL (2014 Tons)		
	Inbound	**Outbound**	**Within**
Coal	98,521,116	29,289,249	12,795,584
Basic chemicals	16,362,066	14,363,905	782,151
Cereal grains	8,493,048	16,836,888	3,761,081
Chemical prods.	8,105,986	8,394,943	478,992
Motorized vehicles	7,591,897	7,494,734	484,365
Plastics/rubber	7,173,908	4,343,995	572,905
Other foodstuffs	5,556,577	4,717,981	470,115
Animal feed	4,676,145	4,549,795	676,410
Milled grain prods.	4,351,377	4,947,511	519,157
Gravel	1,004,321	6,519,257	1,216,087
Other ag. prods.	2,705,215	2,761,784	790,653
Fertilizers	3,661,407	2,410,047	159,031
Wood prods.	3,774,961	1,990,373	106,148
Natural sands	219,711	4,133,123	117,212
Crude petroleum	2,569,646	1,893,556	3,840
Coal-n.e.c.	1,626,357	2,219,679	440,092
Base metals	1,690,700	1,789,589	33,445
Nonmetallic minerals	1,614,256	1,516,961	175,259
Metallic ores	3,162,347	18,240	440
Waste/scrap	1,360,291	1,695,219	124,126

	Share of Tons
Coal	40.29%
Basic chemicals	9.03%
Cereal grains	8.34%
Chemical prods.	4.87%
Motorized vehicles	4.46%
Plastics/rubber	3.46%
Other foodstuffs	3.08%
Animal feed	2.84%
Milled grain prods.	2.81%
Gravel	2.50%
Other ag. prods.	1.79%
Fertilizers	1.79%
Wood prods.	1.68%
Natural sands	1.28%
Crude petroleum	1.28%
Coal-n.e.c.	1.23%
Base metals	1.01%
Nonmetallic minerals	0.95%
Metallic ores	0.91%
Waste/scrap	0.91%

Figure 1-28: Commodities Moving by Water, 2014

	Type of Flow IL (2014 Tons)		
	Inbound	**Outbound**	**Within**
Coal	1,627,335	30,196,038	1,205,841
Cereal grains	71,245	16,438,636	16,233
Other ag. prods.	189,020	8,305,854	27,993
Coal-n.e.c.	1,208,326	3,929,699	753,865
Fertilizers	4,473,207	381,126	91,112
Crude petroleum	4,586	4,905,783	17,833
Nonmetal min. prods.	2,221,259	2,024,916	15,610
Gravel	1,378,228	930,835	1,828,357
Gasoline	857,213	2,178,403	737,119
Basic chemicals	1,247,554	1,772,396	149,920
Nonmetallic minerals	2,764,768	79,385	56,320
Animal feed	115,083	2,724,448	585
Base metals	1,662,532	375,572	30,849
Chemical prods.	681,422	1,046,790	98,702
Natural sands	151,638	566,310	1,069,900
Fuel oils	378,224	961,164	325,235
Wood prods.	109,751	876,264	126,144
Articles-base metal	813,478	176,871	3,273
Other foodstuffs	250,658	601,176	1,640
Waste/scrap	131,267	519,046	11,859

	Share of Tons
Coal	31.3%
Cereal grains	15.6%
Other ag. prods.	8.1%
Coal-n.e.c.	5.6%
Fertilizers	4.7%
Crude petroleum	4.7%
Nonmetal min. prods.	4.0%
Gravel	3.9%
Gasoline	3.6%
Basic chemicals	3.0%
Nonmetallic minerals	2.7%
Animal feed	2.7%
Base metals	2.0%
Chemical prods.	1.7%
Natural sands	1.7%
Fuel oils	1.6%
Wood prods.	1.1%
Articles-base metal	0.9%
Other foodstuffs	0.6%
Waste/scrap	0.6%

Figure 1-29: Estimated Illinois Waterway Freight Tons by County of Origin, 2014

County	2014 Tons
Adams	2,784,625
Alexander	343,140
Brown	156,602
Bureau	774,425
Calhoun	829,399
Carroll	138,704
Cass	767,695
Cook	9,994,849
DuPage	2,133,026
Fulton	300,044
Gallatin	20,866
Greene	727,369
Grundy	399,796
Hancock	466,227
Hardin	1,093,619
Henderson	250,685
Jackson	163,665

Jersey	1,065,942
Jo Daviess	882,086
Lake	780,437
La Salle	1,283,681
Madison	6,912,911
Marshall	535,679
Mason	844,502
Massac	19,695,049
Mercer	66,585
Monroe	1,216,157
Morgan	754,451
Peoria	1,662,597
Pike	835,109
Pope	14,154
Pulaski	560,648
Putnam	154,808
Randolph	167,436
Rock Island	696,139

St. Clair	20,853,557
Schuyler	181,689
Scott	655,866
Tazewell	2,343,912
Union	585,975
Whiteside	310,539
Will	1,427,213
Woodford	778,513

Figure 1-30: Estimated Illinois Waterway Freight Tons by Destination County, 2014

County	2014 Tons
Adams	262,415
Alexander	119,127
Brown	68,496
Bureau	57,359
Calhoun	85,938
Carroll	103,412
Cass	90,054
Cook	10,183,759
DuPage	3,446,625
Fulton	93,740
Gallatin	17,531
Greene	65,305
Grundy	144,482
Hancock	46,318
Hardin	398,160
Henderson	19,000
Jackson	97,698

Jersey	159,549
Jo Daviess	203,663
Lake	2,096,661
La Salle	348,588
Madison	1,928,136
Marshall	88,828
Mason	63,892
Massac	566,769
Mercer	22,378
Monroe	215,515
Morgan	92,775
Peoria	691,777
Pike	89,807
Pope	9,566
Pulaski	115,321
Putnam	13,730
Randolph	134,927
Rock Island	231,991

St. Clair	2,895,117
Schuyler	64,809
Scott	53,430
Tazewell	659,424
Union	140,726
Whiteside	87,739
Will	1,368,599
Woodford	159,120

Figure 1-35: Top 15 Commodities by Tonnage Shipped by Air, 2014

	Inbound	Outbound	Within	Total
Electronic Equipment	50.1	253.6		303.7
Machinery	71.9	83.8		155.7
Vehicles and Parts	27	65.4		92.4
Plastics and Rubber	40.7	20.3		61
Textiles and Leather	15.3	41.1		56.4
Precision Instruments	35	20.7		55.7
Articles of Base Metal	24.5	24.8		49.3
Pharmaceutical Products	15.5	26.8		42.3
Other Chemical Products	23.1	13.6		36.7
Base Metals and Shapes	15.8	17.9		33.7
Miscellaneous Manufactured Products	8.7	22		30.7
Non-Metallic Mineral Products	12	7.2		19.2
Basic Chemicals	10.5	7.3		17.8
Printed Products	6.7	10.4		17.1
Other Prepared Foodstuffs	10.9	5		15.9

Figure 1-36: Top 15 Commodities by Value Shipped by Air, 2014

	Inbound	Outbound	Within	Total
Electronic Equipment	6,681	37,836		44,517
Pharmaceutical Products	7,543	12,521		20,064
Machinery	8,033	3,962		11,995
Precision Instruments	6,810	2,702		9,512
Other Transportation Equipment	1,403	1,086		2,489
Vehicles and Parts	575	1,901		2,476
Miscellaneous Manufactured Products	1,053	1,084		2,137
Basic Chemicals	785	927		1,712
Other Chemical Products	901	635		1,536
Articles of Base Metal	764	765		1,529
Textiles and Leather	577	930		1,507
Plastics and Rubber	882	382		1,264
Non-Metallic Mineral Products	541	125		666
Base Metals and Shapes	224	293		517
Printed Products	164	237		401

Figure 1-47: Freight Flow Growth by Mode, 2014 to 2045 (average yearly growth rates labeled)

	Growth Rate of Tons 2014 to 2045 Final	Incremental Tons 2014 to 2045
Truck - FAF Dis	1.4%	343,344,977
Rail Intermodal - STB	0.8%	29,452,931
Rail Carload - STB	0.8%	91,776,846
Water - TS	0.8%	28,350,925

	Growth Rate of Value 2014 to 2045 Final	Incremental Value 2014 to 2045
Truck - FAF Dis	1.8%	792,137,001,727
Rail Intermodal - STB	0.6%	269,409,121,268
Rail Carload - STB	2.6%	452,570,757,884
Water - TS	2.4%	34,171,440,010

Figure 1-48: Freight Flow Growth by Type, 2014 to 2045 (average yearly growth rates labeled)

	Growth Rate of Tons 2014 to 2045 Final	Incremental Tons 2014 to 2045
Inbound	1.2%	172,745,505
Outbound	1.1%	164,204,653
Within	1.0%	155,975,520

	Growth Rate of Value 2014 to 2045 Final	Incremental Value 2014 to 2045
Inbound	1.4%	638,556,914,921
Outbound	1.4%	698,308,603,067
Within	1.4%	211,422,802,900

Figure 1-49: Freight Flow Growth by Type by Mode, 2014 to 2045 (average yearly growth rates labeled)

	Growth Rate of Tons 2014 to 2045	Incremental Tons 2014 to 2045
Truck - FAF Dis	1.80%	93,909,150
Rail Intermodal - STB	0.90%	15,336,600
Rail Carload - STB	0.60%	43,028,531
Water - TS	2.20%	20,471,225
Truck - FAF Dis	1.70%	91,972,482
Rail Intermodal - STB	0.70%	14,106,410
Rail Carload - STB	1.10%	51,106,392
Water - TS	0.30%	7,019,369
Truck - FAF Dis	1.10%	157,463,345
Rail Intermodal - STB	0.20%	9,921
Rail Carload - STB	-0.30%	-2,358,077
Water - TS	0.40%	860,331

		Growth Rate of Value 2014 to 2045 Final	Incremental Value 2014 to 2045
Inbound	Truck - FAF Dis	2.10%	273,761,208,964
Inbound	Rail Intermodal - STB	0.70%	147,026,774,073
Inbound	Rail Carload - STB	2.20%	192,387,442,935
Inbound	Water - TS	4.00%	25,381,488,949
Outbound	Truck - FAF Dis	1.80%	316,879,433,925
Outbound	Rail Intermodal - STB	0.50%	121,977,205,526
Outbound	Rail Carload - STB	3.10%	251,484,722,054
Outbound	Water - TS	1.10%	7,967,241,562
Within	Truck - FAF Dis	1.40%	201,496,358,838
Within	Rail Intermodal - STB	0.30%	405,141,670
Within	Rail Carload - STB	1.90%	8,698,592,894
Within	Water - TS	1.70%	822,709,499

Figure 1-50: Freight Flow Tonnage Growth by Commodity, 2014 to 2045 (average yearly growth rates labeled)

	Growth Rate of Value 2014 to 2045 Final	Incremental Tons 2014 to 2045
Cereal grains	1.50%	82,745,017
Chemical prods.	2.70%	47,753,199
Gravel	2.60%	43,578,667
Other foodstuffs	1.90%	43,353,525
Nonmetal min. prods.	2.30%	34,695,972
Basic chemicals	2.10%	33,036,394
Waste/scrap	2.20%	29,157,731
Plastics/rubber	2.10%	26,346,179
Other ag. prods.	1.50%	26,293,796
Base metals	1.50%	24,980,950
Coal-n.e.c.	1.80%	17,743,543
Fertilizers	1.60%	16,967,410
Alcoholic beverages	2.60%	16,420,032
Machinery	2.50%	16,179,260
Animal feed	1.50%	15,195,489
Furniture	3.10%	13,699,622
Milled grain prods.	1.60%	13,402,509
Motorized vehicles	1.00%	13,243,131
Articles-base metal	2.20%	13,209,892
Wood prods.	1.40%	12,982,366
Crude petroleum	-0.80%	-1,910,585
Fuel oils	-0.40%	-4,311,015
Gasoline	-0.30%	-4,835,799
Coal	-2.60%	-106,790,643

Figure 1-51: Freight Flow Value Growth by Commodity, 2014 to 2045 (average yearly growth rates labeled)

	Growth Rate of Value 2014 to 2045 Final	Incremental Value 2014 to 2045
Transport equip.	7.10%	175,750,898,581
Electronics	2.70%	173,201,678,404
Machinery	2.50%	166,050,232,399
Chemical prods.	2.70%	141,191,130,053
Motorized vehicles	1.00%	132,900,167,146
Pharmaceuticals	3.30%	93,744,071,244
Plastics/rubber	2.10%	72,138,835,225
Furniture	3.10%	61,433,108,778
Other foodstuffs	1.90%	55,111,930,365
Misc. mfg. prods.	2.00%	49,130,032,452
Articles-base metal	2.20%	48,599,486,017
Basic chemicals	2.10%	44,481,142,659
Precision instruments	3.00%	43,113,724,049
Unknown	1.10%	41,716,439,473
Base metals	1.50%	38,808,337,171
Coal-n.e.c.	1.80%	35,225,908,168
Meat/seafood	1.60%	27,518,083,324
Textiles/leather	1.00%	25,396,991,208
Alcoholic beverages	2.60%	18,806,190,722
Cereal grains	1.50%	17,228,394,549
Crude petroleum	-0.80%	-1,017,787,030
Tobacco prods.	-7.20%	-3,108,028,906
Fuel oils	-0.40%	-3,199,573,893
Gasoline	-0.30%	-4,160,766,143
Coal	-2.60%	-6,000,583,921

Figure 1-52: Rail Pass-through Forecasts

		Growth Rate of Tons 2014 to 2045 Final	Incremental Tons 2014 to 2045
Pass-through	Rail Intermodal - STB	1.80%	9,674,183
Pass-through	Rail Carload - STB	1.70%	128,150,403

		Growth Rate of Value 2014 to 2045 Final	Incremental Value 2014 to 2045
Pass-through	Rail Intermodal - STB	1.90%	129,960,156,963
Pass-through	Rail Carload - STB	1.90%	100,772,116,472

Figure 1-53: Incremental Billions of Dollars 2014 to 2045

	Inbound	Outbound	Within
Air -BTS T-100	344.7300991	288.8072311	2.544394851

Figure 1-54: Incremental Millions of Tons 2014 to 2045 by County

Dest County	Dest COUNTY FIPS	Incremental Tons 2014 to 2045
Adams	17001	3,030,581
Alexander	17003	325,967
Bond	17005	325,577
Boone	17007	2,042,376
Brown	17009	1,030,764
Bureau	17011	559,193
Calhoun	17013	168,896
Carroll	17015	959,203
Cass	17017	1,465,755
Champaign	17019	5,528,181
Christian	17021	-568,319
Clark	17023	844,900
Clay	17025	643,670
Clinton	17027	1,397,503
Coles	17029	1,533,012
Cook	17031	133,729,879
Crawford	17033	1,490,646
Cumberland	17035	202,935

De Witt	17039	1,211,025
DeKalb	17037	883,431
Douglas	17041	1,450,110
DuPage	17043	23,996,907
Edgar	17045	858,220
Edwards	17047	726,904
Effingham	17049	2,004,153
Fayette	17051	1,059,570
Ford	17053	1,241,269
Franklin	17055	526,386
Fulton	17057	55,843
Gallatin	17059	533,642
Greene	17061	794,039
Grundy	17063	1,934,131
Hamilton	17065	182,363
Hancock	17067	1,104,223
Hardin	17069	402,911
Henderson	17071	639,318
Henry	17073	3,836,500
Iroquois	17075	2,030,532

Jackson	17077	-1,542,556
Jasper	17079	-2,202,061
Jefferson	17081	-454,414
Jersey	17083	383,479
Jo Daviess	17085	821,106
Johnson	17087	589,447
Kane	17089	7,468,960
Kankakee	17091	1,463,887
Kendall	17093	1,263,776
Knox	17095	1,024,546
La Salle	17099	4,206,222
Lake	17097	10,001,449
Lawrence	17101	413,178
Lee	17103	1,643,728
Livingston	17105	2,622,597
Logan	17107	1,311,960
Macon	17115	8,479,272
Macoupin	17117	3,181,084
Madison	17119	10,047,809
Marion	17121	698,613

Marshall	17123	891,961
Mason	17125	-527,890
Massac	17127	-9,824,570
McDonough	17109	832,131
McHenry	17111	3,611,959
McLean	17113	3,840,145
Menard	17129	282,092
Mercer	17131	351,888
Monroe	17133	738,620
Montgomery	17135	-998,391
Morgan	17137	1,295,733
Moultrie	17139	743,002
Ogle	17141	3,622,971
Peoria	17143	5,251,858
Perry	17145	266,980
Piatt	17147	793,689
Pike	17149	508,173
Pope	17151	36,599
Pulaski	17153	1,325,306
Putnam	17155	127,211

Randolph	17157	-2,928,139
Richland	17159	376,774
Rock Island	17161	4,823,592
Saline	17165	413,023
Sangamon	17167	4,917,070
Schuyler	17169	291,708
Scott	17171	617,938
Shelby	17173	1,055,870
St. Clair	17163	21,487,908
Stark	17175	586,276
Stephenson	17177	1,864,335
Tazewell	17179	558,310
Union	17181	731,577
Vermilion	17183	2,648,814
Wabash	17185	127,949
Warren	17187	2,025,202
Washington	17189	1,004,921
Wayne	17191	658,503
White	17193	219,294
Whiteside	17195	1,794,071

Will	17197	11,077,129
Williamson	17199	766,123
Winnebago	17201	7,420,375
Woodford	17203	1,408,912

Orig County	Orig County FIPS	Incremental Tons 2014 to 2045
Adams	17001	6,216,670
Alexander	17003	626,978
Bond	17005	320,375
Boone	17007	1,416,054
Brown	17009	910,943
Bureau	17011	1,392,688
Calhoun	17013	191,265
Carroll	17015	1,090,928
Cass	17017	1,904,565
Champaign	17019	4,736,329
Christian	17021	1,674,360
Clark	17023	1,198,635
Clay	17025	580,619
Clinton	17027	1,040,767

Coles	17029	1,677,043
Cook	17031	112,322,903
Crawford	17033	-353,593
Cumberland	17035	313,787
De Witt	17039	799,434
DeKalb	17037	1,253,056
Douglas	17041	1,742,108
DuPage	17043	23,003,071
Edgar	17045	866,035
Edwards	17047	923,312
Effingham	17049	1,977,038
Fayette	17051	1,250,644
Ford	17053	1,655,029
Franklin	17055	-1,496,850
Fulton	17057	590,576
Gallatin	17059	-329,245
Greene	17061	1,451,943
Grundy	17063	2,111,948
Hamilton	17065	-413,068
Hancock	17067	1,756,244

Hardin	17069	1,515,452
Henderson	17071	949,310
Henry	17073	2,703,705
Iroquois	17075	2,601,737
Jackson	17077	415,214
Jasper	17079	840,443
Jefferson	17081	1,371,668
Jersey	17083	678,106
Jo Daviess	17085	1,587,536
Johnson	17087	1,004,087
Kane	17089	8,295,874
Kankakee	17091	3,748,667
Kendall	17093	1,498,524
Knox	17095	917,373
La Salle	17099	14,391,845
Lake	17097	13,246,788
Lawrence	17101	218,314
Lee	17103	936,987
Livingston	17105	2,894,119
Logan	17107	1,507,653

Macon	17115	5,598,593
Macoupin	17117	791,609
Madison	17119	7,068,636
Marion	17121	2,447,722
Marshall	17123	1,225,233
Mason	17125	1,777,574
Massac	17127	-15,718,263
McDonough	17109	735,116
McHenry	17111	4,075,491
McLean	17113	3,333,110
Menard	17129	351,199
Mercer	17131	246,236
Monroe	17133	483,389
Montgomery	17135	-1,711,682
Morgan	17137	2,579,389
Moultrie	17139	860,050
Ogle	17141	4,069,382
Peoria	17143	5,016,942
Perry	17145	-157,669
Piatt	17147	984,248

Pike	17149	1,663,050
Pope	17151	25,259
Pulaski	17153	1,063,416
Putnam	17155	999,215
Randolph	17157	-650,060
Richland	17159	467,562
Rock Island	17161	3,869,577
Saline	17165	-4,505,058
Sangamon	17167	2,577,681
Schuyler	17169	357,781
Scott	17171	1,568,293
Shelby	17173	1,139,263
St. Clair	17163	11,179,834
Stark	17175	858,303
Stephenson	17177	1,241,000
Tazewell	17179	5,086,169
Union	17181	1,169,806
Vermilion	17183	3,550,866
Wabash	17185	-468,388
Warren	17187	1,748,236

Washington	17189	953,146
Wayne	17191	506,120
White	17193	-912,360
Whiteside	17195	2,588,611
Will	17197	16,461,520
Williamson	17199	848,752
Winnebago	17201	4,603,526
Woodford	17203	2,406,570

Figure 1-55: Incremental Billions of Dollars 2014 to 2045 by County

Dest County	Dest County FIPS	Incremental Value 2014 to 2045
Adams	17001	4,659,031,017
Alexander	17003	182,843,231
Bond	17005	540,655,417
Boone	17007	2,981,797,957
Brown	17009	1,422,232,377
Bureau	17011	990,298,511
Calhoun	17013	92,369,326
Carroll	17015	866,157,292
Cass	17017	1,208,641,106
Champaign	17019	5,704,476,706
Christian	17021	1,503,726,201
Clark	17023	716,752,067
Clay	17025	1,421,150,274
Clinton	17027	1,896,009,147
Coles	17029	2,019,393,985
Cook	17031	408,099,536,748
Crawford	17033	1,131,087,901

Cumberland	17035	180,002,351
De Witt	17039	944,490,654
DeKalb	17037	1,746,985,736
Douglas	17041	1,404,864,609
DuPage	17043	79,889,311,911
Edgar	17045	617,562,149
Edwards	17047	989,698,761
Effingham	17049	2,203,383,147
Fayette	17051	1,001,068,318
Ford	17053	968,342,989
Franklin	17055	956,438,153
Fulton	17057	828,485,551
Gallatin	17059	160,452,528
Greene	17061	542,039,964
Grundy	17063	2,274,389,900
Hamilton	17065	261,209,183
Hancock	17067	662,669,729
Hardin	17069	143,844,089
Henderson	17071	316,681,163
Henry	17073	2,473,226,936

Iroquois	17075	1,330,507,882
Jackson	17077	791,286,533
Jasper	17079	308,850,588
Jefferson	17081	2,351,162,173
Jersey	17083	559,425,453
Jo Daviess	17085	1,340,061,821
Johnson	17087	243,716,915
Kane	17089	17,914,319,593
Kankakee	17091	4,948,357,538
Kendall	17093	2,313,642,271
Knox	17095	1,399,193,134
La Salle	17099	5,639,154,830
Lake	17097	30,924,532,670
Lawrence	17101	509,546,501
Lee	17103	2,369,616,294
Livingston	17105	1,606,224,244
Logan	17107	988,494,492
Macon	17115	7,992,697,177
Macoupin	17117	4,160,862,368
Madison	17119	17,275,738,993

Marion	17121	13,722,140,034
Marshall	17123	872,611,552
Mason	17125	748,648,928
Massac	17127	304,073,980
McDonough	17109	679,479,495
McHenry	17111	8,416,616,600
McLean	17113	5,487,876,132
Menard	17129	261,538,492
Mercer	17131	276,008,580
Monroe	17133	950,602,472
Montgomery	17135	808,899,321
Morgan	17137	1,547,709,044
Moultrie	17139	431,034,226
Ogle	17141	2,346,232,942
Peoria	17143	11,268,968,670
Perry	17145	281,583,042
Piatt	17147	472,072,561
Pike	17149	536,846,262
Pope	17151	26,594,034
Pulaski	17153	903,162,708

Putnam	17155	137,905,709
Randolph	17157	1,703,922,589
Richland	17159	438,462,837
Rock Island	17161	8,181,825,912
Saline	17165	416,198,483
Sangamon	17167	6,273,620,210
Schuyler	17169	232,728,341
Scott	17171	328,537,084
Shelby	17173	595,244,457
St. Clair	17163	53,489,719,957
Stark	17175	255,665,695
Stephenson	17177	1,588,092,839
Tazewell	17179	7,869,680,934
Union	17181	391,764,865
Vermilion	17183	3,689,505,872
Wabash	17185	255,099,349
Warren	17187	1,330,931,840
Washington	17189	981,959,317
Wayne	17191	658,778,921
White	17193	365,419,595

Whiteside	17195	2,748,115,502
Will	17197	52,501,609,827
Williamson	17199	1,754,172,574
Winnebago	17201	11,733,887,846
Woodford	17203	2,745,931,850

Orig County	Orig County FIPS	Incremental Value 2014 to 2045
Adams	17001	5,103,417,273
Alexander	17003	348,964,791
Bond	17005	2,478,389,285
Boone	17007	3,787,048,342
Brown	17009	1,209,432,946
Bureau	17011	1,831,015,630
Calhoun	17013	118,265,803
Carroll	17015	1,125,241,787
Cass	17017	1,213,684,396
Champaign	17019	5,050,551,759
Christian	17021	1,191,698,406
Clark	17023	812,771,204

Clay	17025	1,137,930,981
Clinton	17027	1,525,111,247
Coles	17029	1,717,835,867
Cook	17031	430,013,760,802
Crawford	17033	-439,115,051
Cumberland	17035	302,046,193
De Witt	17039	640,887,290
DeKalb	17037	2,431,513,001
Douglas	17041	1,337,144,140
DuPage	17043	72,327,574,216
Edgar	17045	752,054,125
Edwards	17047	943,642,215
Effingham	17049	4,782,479,281
Fayette	17051	908,636,909
Ford	17053	1,677,078,335
Franklin	17055	627,611,043
Fulton	17057	615,769,816
Gallatin	17059	21,996,615
Greene	17061	671,261,617
Grundy	17063	3,638,021,084

Hamilton	17065	255,361,398
Hancock	17067	687,223,197
Hardin	17069	119,551,372
Henderson	17071	318,179,403
Henry	17073	2,493,585,829
Iroquois	17075	1,570,735,630
Jackson	17077	654,888,140
Jasper	17079	456,023,704
Jefferson	17081	2,514,358,173
Jersey	17083	374,318,676
Jo Daviess	17085	10,589,551,147
Johnson	17087	259,094,597
Kane	17089	18,582,207,352
Kankakee	17091	7,225,797,930
Kendall	17093	2,056,752,917
Knox	17095	1,628,597,683
La Salle	17099	6,294,670,404
Lake	17097	63,101,239,415
Lawrence	17101	393,900,354
Lee	17103	1,671,727,053

Livingston	17105	2,072,958,227
Logan	17107	928,460,355
Macon	17115	9,083,679,083
Macoupin	17117	1,346,931,406
Madison	17119	21,939,153,627
Marion	17121	10,677,375,611
Marshall	17123	844,853,508
Mason	17125	978,349,674
Massac	17127	-1,777,752,377
McDonough	17109	600,972,321
McHenry	17111	9,179,401,228
McLean	17113	5,106,477,522
Menard	17129	1,179,763,863
Mercer	17131	212,520,680
Monroe	17133	493,050,472
Montgomery	17135	687,348,843
Morgan	17137	1,877,351,516
Moultrie	17139	870,438,855
Ogle	17141	2,458,929,165
Peoria	17143	13,121,069,126

Perry	17145	208,258,698
Piatt	17147	661,206,899
Pike	17149	606,083,200
Pope	17151	19,552,349
Pulaski	17153	288,539,374
Putnam	17155	578,854,552
Randolph	17157	2,792,627,488
Richland	17159	456,596,053
Rock Island	17161	6,451,797,567
Saline	17165	110,692,002
Sangamon	17167	6,205,869,668
Schuyler	17169	162,592,713
Scott	17171	614,560,620
Shelby	17173	615,838,287
St. Clair	17163	63,761,614,579
Stark	17175	405,625,670
Stephenson	17177	1,545,106,102
Tazewell	17179	6,843,725,705
Union	17181	435,912,722
Vermilion	17183	8,212,429,156

Wabash	17185	145,106,087
Warren	17187	1,234,614,107
Washington	17189	1,288,234,511
Wayne	17191	554,855,059
White	17193	292,461,369
Whiteside	17195	4,272,779,596
Will	17197	32,748,757,144
Williamson	17199	2,354,879,569
Winnebago	17201	10,197,444,768
Woodford	17203	2,631,989,406

Illinois State Freight Plan

Appendix B:

Illinois Truck Bottlenecks

Illinois Department of Transportation (IDOT)

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
Adams County								
20323312	119P11789	Other Highways	BROADWAY ST	IL-104	1.00126	Westbound	Adams	Low
Champaign County								
92529442	107N50010	Other	N MATTIS AVE	0	1.22654	Southbound	Champaign	Medium
92529684	107N50033	Other	N NEIL ST	0	0.24786	Southbound	Champaign	Low
20078396	107N50036	Other	N NEIL ST	0	0.19205	Southbound	Champaign	Low
Cook County								
19822254	107N50384	Other	ARCHER AVE	0	0.39845	Westbound	Cook	Low
19822248	107P50385	Other	ARCHER AVE	0	0.41184	Eastbound	Cook	Low
16880810	107N04374	Interstates	BISHOP FORD FWY	I-94	0.42241	Eastbound	Cook	Low
16897185	107N04471	Other Highways	BISHOP FORD FWY	IL-394	0.80146	Southbound	Cook	Low
756025182	107N12292	Other Highways	BISHOP FORD FWY	IL-394	1.13048	Southbound	Cook	Low
16880806	107P04375	Interstates	BISHOP FORD FWY	I-94	0.66656	Westbound	Cook	Low
16880800	107P04376	Interstates	BISHOP FORD FWY	I-94	0.67929	Westbound	Cook	Low
130106958	107P04377	Interstates	BISHOP FORD FWY	I-94	0.89538	Westbound	Cook	Low
16880788	107P04378	Interstates	BISHOP FORD FWY	I-94	1.49506	Westbound	Cook	Low
19885635	107P12292	Other Highways	BISHOP FORD FWY	IL-394	1.17742	Northbound	Cook	Low
810746274	107P19933	Interstates	BISHOP FORD FWY	I-94	0.28844	Westbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
130136225	107N17498	Other	DAN RYAN EXPRESS LANE	0	0.58581	Eastbound	Cook	Low
711399144	107P04509	Other	DAN RYAN EXPRESS LANE	0	0.61312	Westbound	Cook	Low
16883135	107P04511	Other	DAN RYAN EXPRESS LANE	0	0.42929	Westbound	Cook	Low
711442330	107P04512	Other	DAN RYAN EXPRESS LANE	0	0.65440	Westbound	Cook	Low
16882009	107P04513	Other	DAN RYAN EXPRESS LANE	0	0.35922	Westbound	Cook	High
16886902	107P04514	Other	DAN RYAN EXPRESS LANE	0	0.83201	Westbound	Cook	High
125112419	107P04515	Other	DAN RYAN EXPRESS LANE	0	0.26784	Westbound	Cook	Medium
810828345	107P04516	Other	DAN RYAN EXPRESS LANE	0	0.57223	Westbound	Cook	High
16883083	107P04517	Other	DAN RYAN EXPRESS LANE	0	0.43280	Westbound	Cook	High
111806238	107P04518	Other	DAN RYAN EXPRESS LANE	0	0.32790	Westbound	Cook	High
16882013	107P04519	Other	DAN RYAN EXPRESS LANE	0	0.54111	Westbound	Cook	Medium
16881787	107N04240	Interstates	DAN RYAN EXPY E	I-90/I-94	0.27826	Eastbound	Cook	Low
27701639	107N04241	Interstates	DAN RYAN EXPY E	I-90/I-94	0.13809	Eastbound	Cook	Low
116069559	107N04242	Interstates	DAN RYAN EXPY E	I-90/I-94	0.22834	Eastbound	Cook	Low
16881781	107N04243	Interstates	DAN RYAN EXPY E	I-90/I-94	0.36637	Eastbound	Cook	Low
16886897	107P04232	Interstates	DAN RYAN EXPY W	I-90/I-94	0.34523	Westbound	Cook	Low
709740974	107P04234	Interstates	DAN RYAN EXPY W	I-90/I-94	0.48459	Westbound	Cook	Low
19839646	107P04235	Interstates	DAN RYAN EXPY W	I-90/I-94	0.49493	Westbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16886945	107P04236	Interstates	DAN RYAN EXPY W	I-90/I-94	0.24781	Westbound	Cook	Medium
16886946	107P04237	Interstates	DAN RYAN EXPY W	I-90/I-94	0.65010	Westbound	Cook	Low
125112692	107P04238	Interstates	DAN RYAN EXPY W	I-90/I-94	0.62657	Westbound	Cook	Medium
16882015	107P04239	Interstates	DAN RYAN EXPY W	I-90/I-94	0.46198	Westbound	Cook	High
16881790	107P04240	Interstates	DAN RYAN EXPY W	I-90/I-94	0.44255	Westbound	Cook	High
111814176	107P04241	Interstates	DAN RYAN EXPY W	I-90/I-94	0.16016	Westbound	Cook	High
125112582	107P04242	Interstates	DAN RYAN EXPY W	I-90/I-94	0.23209	Westbound	Cook	High
116069557	107P04243	Interstates	DAN RYAN EXPY W	I-90/I-94	0.34554	Westbound	Cook	High
16881780	107P04244	Interstates	DAN RYAN EXPY W	I-90/I-94	0.25560	Westbound	Cook	High
734821171	107P04386	Interstates	DAN RYAN EXPY W	I-94	0.23403	Westbound	Cook	Low
735218199	107P04387	Interstates	DAN RYAN EXPY W	I-94	0.26230	Westbound	Cook	Low
16881457	107P04403	Interstates	DAN RYAN EXPY W	I-57	0.35374	Northbound	Cook	Low
125120777	107N05028	Other Highways	DEMPSTER ST	IL-58	0.18419	Westbound	Cook	Low
755288207	107N19020	Other	DES PLAINES AVE	0	0.75156	Southbound	Cook	Medium
1034847843	107N19426	Other	DIXIE HWY	0	0.60317	Southbound	Cook	High
19880324	107P18365	Other	DIXIE HWY	0	0.60317	Northbound	Cook	High
125158552	107P18367	Other	DIXIE HWY	0	0.38641	Northbound	Cook	Medium
125160812	107N18237	Other	E 103RD ST	0	0.87479	Westbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19857342	107N13440	Other	E 63RD ST	0	0.16846	Westbound	Cook	Medium
19858677	107N13470	Other	E 87TH ST	0	0.56630	Westbound	Cook	Medium
19757597	107P17837	Other	E ADAMS ST	0	0.16974	Westbound	Cook	Low
19809475	107N17681	Other	E CHICAGO AVE	0	0.20527	Westbound	Cook	Medium
721083489	107P17682	Other	E CHICAGO AVE	0	0.20527	Eastbound	Cook	Medium
19751496	107N05198	Other	E CONGRESS PKWY	0	0.16923	Westbound	Cook	High
125160636	107P04954	Other	E CONGRESS PKWY	0	0.13775	Eastbound	Cook	Medium
19810723	107P17697	Other	E GRAND AVE	0	0.28479	Eastbound	Cook	Medium
19810750	107P17698	Other	E GRAND AVE	0	0.20168	Eastbound	Cook	Low
19810768	107P17699	Other	E GRAND AVE	0	0.20226	Eastbound	Cook	Medium
719750684	107N11373	Other Highways	E HIGGINS RD	IL-72	0.26186	Eastbound	Cook	Low
19736563	107P06947	Other Highways	E HIGGINS RD	IL-72	1.17605	Westbound	Cook	Low
716766015	107P06948	Other Highways	E HIGGINS RD	IL-72	0.26186	Westbound	Cook	Low
719745669	107P13041	Other	E HIGGINS RD	0	0.15700	Eastbound	Cook	Low
828662501	107P17733	Other	E ILLINOIS ST	0	0.20169	Eastbound	Cook	Low
720477459	107P17734	Other	E ILLINOIS ST	0	0.20073	Eastbound	Cook	Medium
19810911	107P17735	Other	E ILLINOIS ST	0	0.31060	Eastbound	Cook	Low
19757633	107P17861	Other	E JACKSON BLVD	0	0.18058	Eastbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19874614	107N13560	Other	E LAKE ST	0	1.62482	Eastbound	Cook	Low
16882860	107N05091	Other Highways	E NORTH AVE	IL-64	0.20214	Eastbound	Cook	Low
19820478	107N07178	Other Highways	E OGDEN AVE	US-34	0.21154	Westbound	Cook	Low
19810541	107P17695	Other	E OHIO ST	0	0.20219	Eastbound	Cook	High
19810330	107P17686	Other	E ONTARIO ST	0	0.20273	Westbound	Cook	Medium
1078368254	107N13369	Other	E ROOSEVELT RD	0	0.19251	Westbound	Cook	Low
721077495	107P13369	Other	E ROOSEVELT RD	0	0.16665	Eastbound	Cook	Medium
19950652	107N04473	Interstates	EDENS EXPY E	I-94	0.78824	Eastbound	Cook	High
820680957	107N04474	Interstates	EDENS EXPY E	I-94	0.30519	Eastbound	Cook	High
16891165	107N04475	Interstates	EDENS EXPY E	I-94	0.49635	Eastbound	Cook	High
16891171	107N04476	Interstates	EDENS EXPY E	I-94	0.40586	Eastbound	Cook	High
16880331	107N04477	Interstates	EDENS EXPY E	I-94	1.54366	Eastbound	Cook	Medium
16880325	107N04478	Interstates	EDENS EXPY E	I-94	2.45035	Eastbound	Cook	Medium
16880315	107N04479	Interstates	EDENS EXPY E	I-94	1.68724	Eastbound	Cook	Low
19772347	107N04480	Interstates	EDENS EXPY E	I-94	1.24787	Eastbound	Cook	Low
820681812	107N04481	Interstates	EDENS EXPY E	I-94	0.43628	Eastbound	Cook	Low
16880296	107N04482	Interstates	EDENS EXPY E	I-94	1.18084	Eastbound	Cook	Low
820681887	107N04483	Interstates	EDENS EXPY E	I-94	1.19650	Eastbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16880487	107N04484	Interstates	EDENS EXPY E	I-94	1.55616	Eastbound	Cook	Low
810465241	107N04485	Interstates	EDENS EXPY E	I-94	0.27562	Eastbound	Cook	Low
16896258	107N04486	Interstates	EDENS EXPY E	I-94	2.18710	Eastbound	Cook	Low
125166999	107P04473	Interstates	EDENS EXPY W	I-94	0.46187	Westbound	Cook	High
16891224	107P04474	Interstates	EDENS EXPY W	I-94	0.39119	Westbound	Cook	Medium
820681363	107P04475	Interstates	EDENS EXPY W	I-94	0.35720	Westbound	Cook	Medium
16891173	107P04476	Interstates	EDENS EXPY W	I-94	0.45002	Westbound	Cook	Medium
16891214	107P04477	Interstates	EDENS EXPY W	I-94	0.68494	Westbound	Cook	Low
16880323	107P04478	Interstates	EDENS EXPY W	I-94	1.46196	Westbound	Cook	Low
16880319	107P04479	Interstates	EDENS EXPY W	I-94	2.50851	Westbound	Cook	Low
16880313	107P04480	Interstates	EDENS EXPY W	I-94	1.59055	Westbound	Cook	Low
16891282	107N04184	Interstates	EISENHOWER EXPY	I-290	0.36084	Eastbound	Cook	Low
19835651	107N04192	Interstates	EISENHOWER EXPY	I-290	0.50000	Eastbound	Cook	Low
16881754	107N04193	Interstates	EISENHOWER EXPY	I-290	0.79604	Eastbound	Cook	Low
27701350	107N04194	Interstates	EISENHOWER EXPY	I-290	0.71619	Eastbound	Cook	Low
16882213	107N04195	Interstates	EISENHOWER EXPY	I-290	0.29409	Eastbound	Cook	Low
27701354	107N04196	Interstates	EISENHOWER EXPY	I-290	0.44782	Eastbound	Cook	Low
16882040	107N04197	Interstates	EISENHOWER EXPY	I-290	0.51001	Eastbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16883444	107N04198	Interstates	EISENHOWER EXPY	I-290	1.57949	Eastbound	Cook	Low
19815104	107N04199	Interstates	EISENHOWER EXPY	I-290	0.82833	Eastbound	Cook	Medium
16882034	107N04200	Interstates	EISENHOWER EXPY	I-290	0.78356	Eastbound	Cook	Medium
19815394	107N04201	Interstates	EISENHOWER EXPY	I-290	0.49928	Eastbound	Cook	High
19815506	107N04202	Interstates	EISENHOWER EXPY	I-290	0.47483	Eastbound	Cook	High
16882022	107N04203	Interstates	EISENHOWER EXPY	I-290	0.56656	Eastbound	Cook	High
19815487	107N04204	Interstates	EISENHOWER EXPY	I-290	0.62466	Eastbound	Cook	High
19887597	107N04205	Interstates	EISENHOWER EXPY	I-290	1.00326	Eastbound	Cook	High
16897649	107N04206	Interstates	EISENHOWER EXPY	I-290	0.64498	Eastbound	Cook	High
124645025	107N04208	Interstates	EISENHOWER EXPY	I-290	0.63248	Eastbound	Cook	High
16882956	107N04209	Interstates	EISENHOWER EXPY	I-290	1.09253	Eastbound	Cook	High
124637745	107P04184	Interstates	EISENHOWER EXPY	I-290	0.38117	Westbound	Cook	Low
16891252	107P04188	Interstates	EISENHOWER EXPY	I-290	0.39470	Westbound	Cook	Low
19814423	107P04189	Interstates	EISENHOWER EXPY	I-290	0.33789	Westbound	Cook	Medium
27701333	107P04190	Interstates	EISENHOWER EXPY	I-290	0.39669	Westbound	Cook	Medium
125124967	107P04191	Interstates	EISENHOWER EXPY	I-290	0.51761	Westbound	Cook	Medium
16881755	107P04192	Interstates	EISENHOWER EXPY	I-290	0.35559	Westbound	Cook	High
125114614	107P04193	Interstates	EISENHOWER EXPY	I-290	0.67222	Westbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16881752	107P04194	Interstates	EISENHOWER EXPY	I-290	0.59412	Westbound	Cook	Medium
27701347	107P04195	Interstates	EISENHOWER EXPY	I-290	0.74185	Westbound	Cook	High
16882216	107P04196	Interstates	EISENHOWER EXPY	I-290	0.29043	Westbound	Cook	High
27701352	107P04197	Interstates	EISENHOWER EXPY	I-290	0.69926	Westbound	Cook	High
16883448	107P04198	Interstates	EISENHOWER EXPY	I-290	0.52158	Westbound	Cook	Medium
16882042	107P04199	Interstates	EISENHOWER EXPY	I-290	1.55272	Westbound	Cook	Medium
27701355	107P04200	Interstates	EISENHOWER EXPY	I-290	0.54843	Westbound	Cook	Medium
16882032	107P04201	Interstates	EISENHOWER EXPY	I-290	0.99228	Westbound	Cook	Low
792424245	107P04202	Interstates	EISENHOWER EXPY	I-290	0.30443	Westbound	Cook	Low
16882026	107P04203	Interstates	EISENHOWER EXPY	I-290	0.76397	Westbound	Cook	Low
16882021	107P04204	Interstates	EISENHOWER EXPY	I-290	0.26801	Westbound	Cook	Low
125128145	107P04206	Interstates	EISENHOWER EXPY	I-290	0.17828	Westbound	Cook	Low
16882962	107P04208	Interstates	EISENHOWER EXPY	I-290	0.71361	Westbound	Cook	Low
19874188	107P04210	Interstates	EISENHOWER EXPY W	I-290	1.42221	Westbound	Cook	Low
721609944	107N05155	Other Highways	HARLEM AVE	IL-43	0.17541	Southbound	Cook	Low
19815091	107N05160	Other Highways	HARLEM AVE	IL-43	0.53641	Southbound	Cook	Low
995732514	107N05161	Other Highways	HARLEM AVE	IL-43	0.12842	Southbound	Cook	Medium
19812231	107N05162	Other Highways	HARLEM AVE	IL-43	0.36730	Southbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
27700091	107P05153	Other Highways	HARLEM AVE	IL-43	0.57723	Northbound	Cook	Low
19820457	107P05155	Other Highways	HARLEM AVE	IL-43	0.23001	Northbound	Cook	Low
917233127	107P05156	Other Highways	HARLEM AVE	IL-43	0.17541	Northbound	Cook	Low
19814021	107P05161	Other Highways	HARLEM AVE	IL-43	0.53158	Northbound	Cook	Low
755951058	107P05162	Other Highways	HARLEM AVE	IL-43	0.12842	Northbound	Cook	Medium
16891629	107N04221	Interstates	I-190	I-190	0.51777	Westbound	Cook	Low
125159686	107P04219	Interstates	I-190	I-190	0.59218	Eastbound	Cook	Low
19739270	107P04223	Interstates	I-190	I-190	0.56652	Eastbound	Cook	Low
130103901	107N04215	Interstates	I-290	I-290	2.25793	Eastbound	Cook	Low
717519099	107P19878	Other	I-290	0	0.19388	Eastbound	Cook	Medium
111815454	107P19880	Other	I-290	0	0.30859	Eastbound	Cook	Low
1147461389	107P19882	Other	I-290	0	0.23353	Westbound	Cook	Medium
130100740	107P19884	Other	I-290	0	0.11816	Westbound	Cook	Medium
16897666	107N04148	Interstates	I-294	I-294	2.46140	Southbound	Cook	Low
19890434	107N04149	Interstates	I-294	I-294	1.74700	Southbound	Cook	Medium
735462396	107N04151	Interstates	I-294	I-294	0.11047	Southbound	Cook	High
750166547	107N04152	Interstates	I-294	I-294	0.69076	Southbound	Cook	High
125159681	107N04153	Interstates	I-294	I-294	0.39715	Southbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16883074	107N04154	Interstates	I-294	I-294	0.82080	Southbound	Cook	Medium
16882968	107N04155	Interstates	I-294	I-294	1.97245	Southbound	Cook	Low
16882847	107N04156	Interstates	I-294	I-294	4.15560	Southbound	Cook	Low
811204002	107N04157	Interstates	I-294	I-294	0.65315	Southbound	Cook	Medium
16882843	107N04158	Interstates	I-294	I-294	0.47899	Southbound	Cook	Medium
19950251	107N04159	Interstates	I-294	I-294	0.79699	Southbound	Cook	Low
16882838	107N04160	Interstates	I-294	I-294	0.41235	Southbound	Cook	Medium
16891643	107N04161	Interstates	I-294	I-294	0.52796	Southbound	Cook	Medium
16891652	107N04162	Interstates	I-294	I-294	1.05658	Southbound	Cook	Medium
16880417	107N04164	Interstates	I-294	I-294	1.82320	Southbound	Cook	Medium
16880384	107N04165	Interstates	I-294	I-294	1.65253	Southbound	Cook	Medium
16898009	107N04435	Interstates	I-294	I-80/I-294	0.40369	Eastbound	Cook	Medium
16897167	107N04436	Interstates	I-294	I-80/I-294	1.01868	Eastbound	Cook	Low
16897158	107N04437	Interstates	I-294	I-80/I-294	1.64643	Eastbound	Cook	Medium
19880552	107N04438	Interstates	I-294	I-80/I-294	1.98697	Eastbound	Cook	Medium
16898011	107N04441	Interstates	I-294	I-80/I-94	0.46068	Westbound	Cook	Low
709595736	107N04442	Interstates	I-294	I-80/I-94	2.48073	Westbound	Cook	Low
19848288	107P04143	Interstates	I-294	I-294	1.67701	Northbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16882827	107P04144	Interstates	I-294	I-294	1.00738	Northbound	Cook	Low
16882124	107P04145	Interstates	I-294	I-294	1.62929	Northbound	Cook	Low
19894207	107P04147	Interstates	I-294	I-294	0.99128	Northbound	Cook	Low
16897710	107P04148	Interstates	I-294	I-294	1.11447	Northbound	Cook	Low
19890821	107P04149	Interstates	I-294	I-294	2.53971	Northbound	Cook	Low
16897657	107P04150	Interstates	I-294	I-294	1.42766	Northbound	Cook	Low
130120629	107P04151	Interstates	I-294	I-294	0.30317	Northbound	Cook	Low
740458630	107P04152	Interstates	I-294	I-294	0.66542	Northbound	Cook	Low
16897556	107P04153	Interstates	I-294	I-294	0.35483	Northbound	Cook	Low
16883073	107P04154	Interstates	I-294	I-294	0.76428	Northbound	Cook	Medium
19887314	107P04155	Interstates	I-294	I-294	0.63715	Northbound	Cook	High
782789258	107P04156	Interstates	I-294	I-294	1.53042	Northbound	Cook	Medium
16882845	107P04157	Interstates	I-294	I-294	4.57858	Northbound	Cook	Low
16882842	107P04158	Interstates	I-294	I-294	0.44284	Northbound	Cook	Low
27701168	107P04159	Interstates	I-294	I-294	0.31242	Northbound	Cook	Low
19780807	107P04160	Interstates	I-294	I-294	0.99898	Northbound	Cook	Low
16882835	107P04161	Interstates	I-294	I-294	0.43614	Northbound	Cook	Low
125121071	107P04162	Interstates	I-294	I-294	0.68324	Northbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
125121042	107P04163	Interstates	I-294	I-294	0.43489	Northbound	Cook	Low
711505994	107P04435	Interstates	I-294	I-80/I-294	0.25029	Westbound	Cook	Low
16897169	107P04436	Interstates	I-294	I-80/I-294	0.54725	Westbound	Cook	Low
16897163	107P04437	Interstates	I-294	I-80/I-294	0.86929	Westbound	Cook	Low
16898803	107P04438	Interstates	I-294	I-80/I-294	2.16422	Westbound	Cook	Low
27702668	107P04439	Interstates	I-294	I-80/I-294	1.06596	Westbound	Cook	Low
27702670	107P04441	Interstates	I-294	I-80/I-94	0.06115	Eastbound	Cook	High
749320569	107P53115	Other	I-294	0	0.48317	Northbound	Cook	High
16897772	107N04332	Interstates	I-55	I-55	0.58128	Southbound	Cook	Low
16897775	107N04334	Interstates	I-55	I-55	0.70279	Southbound	Cook	Low
19894686	107N04335	Interstates	I-55	I-55	0.89246	Southbound	Cook	Low
19822713	107N04336	Interstates	I-55	I-55	3.35969	Southbound	Cook	Low
16882104	107N04337	Interstates	I-55	I-55	1.39330	Southbound	Cook	Low
19821795	107N04338	Interstates	I-55	I-55	1.92882	Southbound	Cook	Low
16882170	107N04339	Interstates	I-55	I-55	1.21167	Southbound	Cook	Low
19840633	107N04340	Interstates	I-55	I-55	1.11406	Southbound	Cook	Low
16882088	107N04341	Interstates	I-55	I-55	1.29068	Southbound	Cook	Medium
16886771	107N04342	Interstates	I-55	I-55	0.34285	Southbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19839609	107N04343	Interstates	I-55	I-55	0.87802	Southbound	Cook	Medium
125113114	107N04344	Interstates	I-55	I-55	1.96851	Southbound	Cook	Medium
19838300	107N04345	Interstates	I-55	I-55	0.94390	Southbound	Cook	High
125110562	107N04347	Interstates	I-55	I-55	0.22087	Southbound	Cook	Low
125110369	107N04348	Interstates	I-55	I-55	0.33859	Southbound	Cook	High
16896994	107N04349	Interstates	I-55	I-55	0.07980	Southbound	Cook	High
16898483	107P04334	Interstates	I-55	I-55	0.22643	Northbound	Cook	Low
16882107	107P04337	Interstates	I-55	I-55	3.59782	Northbound	Cook	Low
16882102	107P04338	Interstates	I-55	I-55	1.06013	Northbound	Cook	Medium
16882168	107P04339	Interstates	I-55	I-55	2.16168	Northbound	Cook	Medium
16882208	107P04340	Interstates	I-55	I-55	1.08748	Northbound	Cook	Medium
125114150	107P04341	Interstates	I-55	I-55	1.00079	Northbound	Cook	Low
125113111	107P04345	Interstates	I-55	I-55	1.52888	Northbound	Cook	Low
19838311	107P04346	Interstates	I-55	I-55	0.52315	Northbound	Cook	High
16882046	107P04347	Interstates	I-55	I-55	0.28310	Northbound	Cook	High
16896991	107P04348	Interstates	I-55	I-55	0.27561	Northbound	Cook	Medium
721450348	107P04349	Interstates	I-55	I-55	0.07643	Northbound	Cook	High
16881452	107N04403	Interstates	I-57	I-57	0.10563	Southbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
810583414	107N04439	Interstates	I-80	I-80/I-294	0.26272	Eastbound	Cook	Medium
19947679	107N04440	Interstates	I-80	I-80/I-294	0.32791	Eastbound	Cook	Medium
19880329	107P04434	Interstates	I-80	I-80	0.98186	Eastbound	Cook	Low
709595734	107P04442	Interstates	I-80	I-80/I-94	0.96027	Eastbound	Cook	Medium
810864535	107P04443	Interstates	I-80	I-80/I-94	2.24693	Eastbound	Cook	Medium
16891255	107N04098	Interstates	I-90	I-90	0.68043	Eastbound	Cook	Low
125120002	107N04099	Interstates	I-90	I-90	0.90862	Eastbound	Cook	Low
16891484	107N04100	Interstates	I-90	I-90	0.12054	Eastbound	Cook	Medium
735373207	107N04101	Interstates	I-90	I-90	0.58985	Eastbound	Cook	Low
19794016	107N04102	Interstates	I-90	I-90	0.27162	Eastbound	Cook	Medium
16891492	107N04103	Interstates	I-90	I-90	0.71342	Eastbound	Cook	Low
16891552	107N04104	Interstates	I-90	I-90	0.25801	Eastbound	Cook	Low
16891558	107N04105	Interstates	I-90	I-90	0.83447	Eastbound	Cook	Low
943531444	107N04106	Interstates	I-90	I-90	0.66757	Eastbound	Cook	Low
16891591	107N04107	Interstates	I-90	I-90	0.74241	Eastbound	Cook	Medium
16891612	107N04108	Interstates	I-90	I-90	0.58379	Eastbound	Cook	Medium
19739210	107N04109	Interstates	I-90	I-90	0.26506	Eastbound	Cook	High
16896608	107N04113	Interstates	I-90	I-90	1.85472	Eastbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16896614	107N04114	Interstates	I-90	I-90	0.73626	Eastbound	Cook	Low
16880582	107N04117	Interstates	I-90	I-90	2.91612	Eastbound	Cook	Low
19751476	107N04244	Interstates	I-90	I-90/I-94	0.37414	Eastbound	Cook	Low
19810066	107N04249	Interstates	I-90	I-90/I-94	0.38608	Eastbound	Cook	High
16900587	107N04251	Interstates	I-90	I-90/I-94	0.21533	Eastbound	Cook	High
16900581	107N04252	Interstates	I-90	I-90/I-94	0.56376	Eastbound	Cook	High
732181387	107N04253	Interstates	I-90	I-90/I-94	0.53870	Eastbound	Cook	Medium
19805006	107N04254	Interstates	I-90	I-90/I-94	0.42676	Eastbound	Cook	High
16900547	107N04255	Interstates	I-90	I-90/I-94	0.39731	Eastbound	Cook	Medium
16900556	107N04256	Interstates	I-90	I-90/I-94	0.77586	Eastbound	Cook	Medium
125119862	107N04260	Interstates	I-90	I-90/I-94	0.45194	Eastbound	Cook	High
16900594	107N04521	Other	I-90	0	0.25680	Eastbound	Cook	High
810569539	107N04522	Other	I-90	0	0.20809	Eastbound	Cook	High
943304747	107N04523	Other	I-90	0	0.56800	Eastbound	Cook	High
124637381	107N04524	Other	I-90	0	0.55931	Eastbound	Cook	High
16900573	107N04525	Other	I-90	0	0.46369	Eastbound	Cook	High
16900546	107N04526	Other	I-90	0	0.27053	Eastbound	Cook	High
124647355	107N04527	Other	I-90	0	1.03679	Eastbound	Cook	High

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16900512	107N04530	Other	I-90	0	0.24075	Eastbound	Cook	High
125119779	107N04531	Other	I-90	0	0.52739	Eastbound	Cook	High
124648568	107N04532	Other	I-90	0	0.67793	Eastbound	Cook	High
125119770	107N04533	Other	I-90	0	0.21593	Eastbound	Cook	High
16900478	107N04534	Other	I-90	0	0.52847	Eastbound	Cook	High
27704781	107N04535	Other	I-90	0	0.25143	Eastbound	Cook	High
16900470	107N04536	Other	I-90	0	0.17869	Eastbound	Cook	High
116069574	107N05323	Interstates	I-90	I-90/I-94	0.05422	Eastbound	Cook	High
19812259	107N05324	Interstates	I-90	I-90/I-94	0.03383	Eastbound	Cook	High
124641221	107N05325	Interstates	I-90	I-90/I-94	0.44520	Eastbound	Cook	High
733431642	107P04098	Interstates	I-90	I-90	0.19520	Westbound	Cook	High
16891467	107P04099	Interstates	I-90	I-90	0.75345	Westbound	Cook	Low
130105919	107P04100	Interstates	I-90	I-90	0.64630	Westbound	Cook	Low
16891481	107P04101	Interstates	I-90	I-90	0.34426	Westbound	Cook	Low
744252734	107P04111	Interstates	I-90	I-90	0.32033	Westbound	Cook	Low
19739197	107P04112	Interstates	I-90	I-90	0.12466	Westbound	Cook	Medium
19950076	107P04113	Interstates	I-90	I-90	0.96034	Westbound	Cook	Low
124641243	107P04246	Interstates	I-90	I-90/I-94	0.08216	Westbound	Cook	High

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
124641224	107P04249	Interstates	I-90	I-90/I-94	0.96078	Westbound	Cook	Medium
27701647	107P04250	Interstates	I-90	I-90/I-94	0.14470	Westbound	Cook	High
125125501	107P04251	Interstates	I-90	I-90/I-94	0.28629	Westbound	Cook	High
111806202	107P04252	Interstates	I-90	I-90/I-94	0.36771	Westbound	Cook	Medium
19807595	107P04253	Interstates	I-90	I-90/I-94	0.58471	Westbound	Cook	Medium
16900584	107P04254	Interstates	I-90	I-90/I-94	0.59144	Westbound	Cook	Medium
16900567	107P04255	Interstates	I-90	I-90/I-94	0.33494	Westbound	Cook	Medium
16900554	107P04256	Interstates	I-90	I-90/I-94	0.60256	Westbound	Cook	Medium
19802767	107P04257	Interstates	I-90	I-90/I-94	0.64019	Westbound	Cook	Medium
810614644	107P04258	Interstates	I-90	I-90/I-94	0.28375	Westbound	Cook	High
16900518	107P04259	Interstates	I-90	I-90/I-94	0.31719	Westbound	Cook	High
844974002	107P04260	Interstates	I-90	I-90/I-94	0.42287	Westbound	Cook	Medium
19800145	107P04261	Interstates	I-90	I-90/I-94	0.47288	Westbound	Cook	High
16900505	107P04262	Interstates	I-90	I-90/I-94	0.52222	Westbound	Cook	High
16900490	107P04263	Interstates	I-90	I-90/I-94	0.58421	Westbound	Cook	High
19797570	107P04264	Interstates	I-90	I-90/I-94	0.09662	Westbound	Cook	High
781546419	107P04265	Interstates	I-90	I-90/I-94	0.27170	Westbound	Cook	High
16900467	107P04266	Interstates	I-90	I-90/I-94	0.04056	Westbound	Cook	High

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
124637425	107P04521	Other	I-90	0	0.27605	Westbound	Cook	High
124637416	107P04522	Other	I-90	0	0.16591	Westbound	Cook	High
124637409	107P04523	Other	I-90	0	0.38189	Westbound	Cook	High
124637385	107P04524	Other	I-90	0	0.60370	Westbound	Cook	Medium
124637379	107P04525	Other	I-90	0	0.60204	Westbound	Cook	High
16900558	107P04527	Other	I-90	0	0.66121	Westbound	Cook	High
19802314	107P04528	Other	I-90	0	0.61390	Westbound	Cook	High
16900514	107P04530	Other	I-90	0	0.32002	Westbound	Cook	High
125119780	107P04531	Other	I-90	0	0.46082	Westbound	Cook	High
16900485	107P04534	Other	I-90	0	0.46323	Westbound	Cook	High
116069878	107P05323	Interstates	I-90	I-90/I-94	0.08628	Westbound	Cook	High
130120657	107P05324	Interstates	I-90	I-90/I-94	0.11666	Westbound	Cook	High
130106433	107P05325	Interstates	I-90	I-90/I-94	0.05732	Westbound	Cook	High
16900520	107P14424	Interstates	I-90	I-90/I-94	0.09043	Westbound	Cook	High
783079715	107N19933	Interstates	I-94	I-94	0.51137	Eastbound	Cook	Medium
716813428	107N09865	Other Highways	IL-171	IL-171	0.41393	Southbound	Cook	Low
125156750	107N05132	Other Highways	IL-50	IL-50	0.26587	Southbound	Cook	Low
736277704	107P19890	Other	IL-53	0	0.21346	Northbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
719976996	107P11706	Other Highways	IL-59	IL-59	0.27769	Northbound	Cook	Low
719980923	107N05068	Other Highways	IL-64	IL-64	0.11809	Eastbound	Cook	Low
19790709	107N08097	Other Highways	IRVING PARK RD	IL-19	3.34677	Westbound	Cook	Low
16882688	107N08871	Other Highways	IRVING PARK RD	IL-19	0.12069	Westbound	Cook	Medium
125163440	107P18321	Other Highways	IRVING PARK RD	IL-19	0.35685	Eastbound	Cook	Low
19945196	107N04998	Other	LAKE COOK RD	0	0.19585	Eastbound	Cook	Low
716765025	107P04999	Other	LAKE COOK RD	0	0.11933	Westbound	Cook	Low
841638564	107N05291	Other Highways	LAKE ST	US-20	0.08788	Eastbound	Cook	Medium
19790182	107N18566	Other	LAWRENCE AVE	0	0.17110	Westbound	Cook	Medium
720243353	107P18304	Other Highways	LEE ST	US-45	0.59563	Northbound	Cook	Low
19735804	107N08127	Other Highways	MANNHEIM RD	US-45	1.05922	Southbound	Cook	Medium
720278164	107P16704	Other	N ASHLAND AVE	0	0.50622	Northbound	Cook	High
19796581	107N50883	Other	N BROADWAY ST	0	0.27585	Southbound	Cook	Medium
717070032	107P50884	Other	N BROADWAY ST	0	0.27585	Northbound	Cook	Low
19807917	107N08044	Other Highways	N CICERO AVE	IL-50	1.00987	Southbound	Cook	Low
19804470	107N08046	Other Highways	N CICERO AVE	IL-50	1.01136	Southbound	Cook	Low
757139323	107N08051	Other Highways	N CICERO AVE	IL-50	0.26843	Southbound	Cook	Low
757139320	107P04939	Other Highways	N CICERO AVE	IL-50	0.25264	Northbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19795288	107P04940	Other Highways	N CICERO AVE	IL-50	0.33639	Northbound	Cook	Low
19810785	107P08044	Other Highways	N CICERO AVE	IL-50	0.90867	Northbound	Cook	Low
19807776	107P08046	Other Highways	N CICERO AVE	IL-50	1.00987	Northbound	Cook	Low
19804881	107P08047	Other Highways	N CICERO AVE	IL-50	1.01136	Northbound	Cook	Low
125155428	107P14426	Other Highways	N CICERO AVE	IL-50	0.26843	Northbound	Cook	Low
130105089	107N04961	Other	N COLUMBUS DR	0	0.42290	Southbound	Cook	Low
721464530	107N17894	Other	N COLUMBUS DR	0	0.21118	Southbound	Cook	Medium
125172659	107P17893	Other	N COLUMBUS DR	0	0.42242	Northbound	Cook	Medium
721212263	107P17895	Other	N COLUMBUS DR	0	0.21051	Northbound	Cook	Medium
19789355	107N09890	Other Highways	N CUMBERLAND AVE	IL-171	0.51494	Southbound	Cook	Low
719869726	107N09891	Other Highways	N CUMBERLAND AVE	IL-171	0.34722	Southbound	Cook	Low
19790352	107P09889	Other Highways	N CUMBERLAND AVE	IL-171	0.50179	Northbound	Cook	Low
19812166	107N17780	Other	N HALSTED ST	0	0.38109	Southbound	Cook	High
19809909	107N17781	Other	N HALSTED ST	0	0.36040	Southbound	Cook	Medium
19812003	107P17781	Other	N HALSTED ST	0	0.38109	Northbound	Cook	High
776341443	107P17782	Other	N HALSTED ST	0	0.36040	Northbound	Cook	Low
19810994	107N05163	Other Highways	N HARLEM AVE	IL-43	0.39093	Southbound	Cook	Low
125161735	107N11511	Other Highways	N HARLEM AVE	IL-43	0.51784	Southbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
125168457	107N11512	Other Highways	N HARLEM AVE	IL-43	0.49990	Southbound	Cook	Low
19811939	107P05163	Other Highways	N HARLEM AVE	IL-43	0.36730	Northbound	Cook	Medium
19810856	107P05164	Other Highways	N HARLEM AVE	IL-43	0.39093	Northbound	Cook	Low
19807798	107P05166	Other Highways	N HARLEM AVE	IL-43	0.50264	Northbound	Cook	Low
19799346	107P11510	Other Highways	N HARLEM AVE	IL-43	0.51784	Northbound	Cook	Medium
722743064	107P11511	Other Highways	N HARLEM AVE	IL-43	0.49990	Northbound	Cook	Low
755726559	107P09063	Other Highways	N LA GRANGE RD	US-45	0.13402	Northbound	Cook	Medium
722467789	107N05205	Other	N LASALLE BLVD	0	0.45633	Southbound	Cook	Medium
721214724	107N05199	Other	N LASALLE DR	0	0.26511	Southbound	Cook	Medium
721214722	107P05204	Other	N LASALLE DR	0	0.23611	Northbound	Cook	High
721082315	107N05203	Other	N LASALLE ST	0	0.23611	Southbound	Cook	Low
732979782	107P05200	Other	N LASALLE ST	0	0.26511	Northbound	Cook	High
719862608	107P05206	Other	N LASALLE ST	0	0.50464	Northbound	Cook	Medium
926534433	107P17835	Other	N LASALLE ST	0	0.34934	Northbound	Cook	Medium
721179581	107N17893	Other	N LOWER COLUMBUS DR	0	0.23608	Southbound	Cook	Medium
27671042	107P17894	Other	N LOWER COLUMBUS DR	0	0.24505	Northbound	Cook	Medium
16878993	107N11672	Other	N MICHIGAN AVE	0	0.18998	Southbound	Cook	Medium
19809218	107N11674	Other	N MICHIGAN AVE	0	0.46101	Southbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19809927	107P11673	Other	N MICHIGAN AVE	0	0.90610	Northbound	Cook	Medium
717370092	107N11530	Other	N MILWAUKEE AVE	0	0.60758	Southbound	Cook	Low
19796061	107N11542	Other	N MILWAUKEE AVE	0	0.64771	Southbound	Cook	Low
19794579	107N11543	Other	N MILWAUKEE AVE	0	0.60377	Southbound	Cook	Low
717370091	107P11531	Other	N MILWAUKEE AVE	0	0.76455	Northbound	Cook	High
806702013	107N12649	Other	N OGDEN AVE	0	0.23597	Westbound	Cook	High
19810029	107P17744	Other	N ORLEANS ST	0	0.23542	Northbound	Cook	Low
716675447	107P51096	Other	N QUENTIN RD	0	0.34856	Northbound	Cook	Low
778034287	107N13031	Other	N SHERIDAN RD	0	0.44816	Northbound	Cook	Low
19757445	107N13831	Other	N STATE ST	0	0.50407	Southbound	Cook	High
19810774	107N13834	Other	N STATE ST	0	0.16776	Southbound	Cook	Low
19757540	107P13832	Other	N STATE ST	0	0.51649	Northbound	Cook	Medium
721176848	107P13835	Other	N STATE ST	0	0.16776	Northbound	Cook	Low
16879528	107N05297	Other	N UPPER MICHIGAN AVE	0	0.86683	Southbound	Cook	High
16879117	107P11672	Other	N UPPER MICHIGAN AVE	0	0.86661	Northbound	Cook	High
16879001	107P17736	Other	N UPPER MICHIGAN AVE	0	0.18232	Northbound	Cook	High
19810289	107N13386	Other	N WESTERN AVE	0	0.37765	Southbound	Cook	Low
19803537	107P13393	Other	N WESTERN AVE	0	0.25758	Northbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19848201	107P18157	Other	RIDGELAND AVE	0	0.99051	Northbound	Cook	Low
19816131	107N13350	Other	ROOSEVELT RD	0	0.50318	Westbound	Cook	Low
19838550	107N04976	Other	S ARCHER AVE	0	1.01629	Southbound	Cook	High
721450378	107N04977	Other	S ARCHER AVE	0	0.49716	Southbound	Cook	Medium
858112177	107N04978	Other	S ARCHER AVE	0	0.44825	Southbound	Cook	Low
19838586	107P04977	Other	S ARCHER AVE	0	1.01629	Northbound	Cook	High
721450379	107P14427	Other	S ARCHER AVE	0	0.49716	Northbound	Cook	Medium
858112178	107P18753	Other	S ARCHER AVE	0	0.46979	Northbound	Cook	Low
19836132	107N16696	Other	S ASHLAND AVE	0	0.58153	Southbound	Cook	Low
776372762	107N16697	Other	S ASHLAND AVE	0	0.39074	Southbound	Cook	Low
721137510	107P16695	Other	S ASHLAND AVE	0	0.92703	Northbound	Cook	Low
19837427	107P18726	Other	S ASHLAND AVE	0	0.37898	Northbound	Cook	High
19836890	107N18017	Other	S CALIFORNIA AVE	0	0.65106	Southbound	Cook	Low
19837278	107P18018	Other	S CALIFORNIA AVE	0	0.65106	Northbound	Cook	Low
721135226	107P17864	Other	S CANAL ST	0	0.33653	Northbound	Cook	Low
19837297	107N18717	Other	S CANALPORT AVE	0	0.27727	Southbound	Cook	High
722891755	107N05137	Other Highways	S CICERO AVE	IL-50	0.25403	Southbound	Cook	Low
754481847	107N05138	Other Highways	S CICERO AVE	IL-50	0.74373	Southbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19846149	107N05140	Other Highways	S CICERO AVE	IL-50	0.71869	Southbound	Cook	Medium
19845989	107N05141	Other Highways	S CICERO AVE	IL-50	0.78472	Southbound	Cook	High
19844567	107N05142	Other Highways	S CICERO AVE	IL-50	0.51960	Southbound	Cook	High
27706894	107N05143	Other Highways	S CICERO AVE	IL-50	1.02473	Southbound	Cook	Low
19842153	107N05144	Other Highways	S CICERO AVE	IL-50	0.39399	Southbound	Cook	Medium
19841578	107N05145	Other Highways	S CICERO AVE	IL-50	0.61781	Southbound	Cook	Low
721170043	107N08031	Other Highways	S CICERO AVE	IL-50	0.36251	Southbound	Cook	Low
19839338	107N08032	Other Highways	S CICERO AVE	IL-50	1.01325	Southbound	Cook	Low
19839146	107N08033	Other Highways	S CICERO AVE	IL-50	0.41582	Southbound	Cook	Low
19836650	107N08037	Other Highways	S CICERO AVE	IL-50	1.01286	Southbound	Cook	Low
19836178	107N08038	Other Highways	S CICERO AVE	IL-50	0.36669	Southbound	Cook	Low
19835754	107N08040	Other Highways	S CICERO AVE	IL-50	0.19885	Southbound	Cook	Medium
19813756	107N08833	Other Highways	S CICERO AVE	IL-50	0.53511	Southbound	Cook	Low
19827068	107P05138	Other Highways	S CICERO AVE	IL-50	0.25403	Northbound	Cook	Low
706461925	107P05141	Other Highways	S CICERO AVE	IL-50	0.71869	Northbound	Cook	Medium
125156691	107P05142	Other Highways	S CICERO AVE	IL-50	0.79917	Northbound	Cook	High
19844762	107P05143	Other Highways	S CICERO AVE	IL-50	0.50533	Northbound	Cook	High
721177259	107P05145	Other Highways	S CICERO AVE	IL-50	0.39643	Northbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
125156624	107P08030	Other Highways	S CICERO AVE	IL-50	0.61851	Northbound	Cook	Medium
125156634	107P08031	Other Highways	S CICERO AVE	IL-50	0.70445	Northbound	Cook	Low
125114714	107P08033	Other Highways	S CICERO AVE	IL-50	1.01325	Northbound	Cook	Medium
19839261	107P08034	Other Highways	S CICERO AVE	IL-50	0.62986	Northbound	Cook	Medium
19838178	107P08037	Other Highways	S CICERO AVE	IL-50	0.38183	Northbound	Cook	Low
19836053	107P08040	Other Highways	S CICERO AVE	IL-50	0.42608	Northbound	Cook	Medium
19814254	107P08043	Other Highways	S CICERO AVE	IL-50	0.53511	Northbound	Cook	Low
19859641	107P19270	Other	S COLFAX AVE	0	0.22344	Northbound	Cook	Low
116128244	107P04959	Other	S COLUMBUS DR	0	0.39021	Northbound	Cook	High
19834494	107P18129	Other	S CRAWFORD AVE	0	0.59312	Northbound	Cook	Low
19826502	107P18961	Other	S CRAWFORD AVE	0	1.04742	Northbound	Cook	Low
125167196	107P18011	Other	S DAMEN AVE	0	0.40940	Northbound	Cook	Medium
19877591	107N50262	Other	S DOTY AVE	0	2.14592	Southbound	Cook	High
19877442	107P50263	Other	S DOTY AVE	0	2.11902	Northbound	Cook	Low
19877439	107P50265	Other	S DOTY AVE	0	1.36397	Northbound	Cook	Medium
125118167	107N05152	Other Highways	S HARLEM AVE	IL-43	0.70657	Southbound	Cook	Low
19757591	107P50516	Other	S JEFFERSON ST	0	0.26649	Northbound	Cook	Low
943695174	107N17967	Other	S KEDZIE AVE	0	0.41288	Southbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
721216901	107N18637	Other	S KEDZIE AVE	0	0.50323	Southbound	Cook	Low
19840749	107P17968	Other	S KEDZIE AVE	0	0.41288	Northbound	Cook	Low
19820607	107N09499	Other Highways	S LA GRANGE RD	US-45	0.13402	Southbound	Cook	Medium
754673930	107N19154	Other Highways	S LA GRANGE RD	US-45	0.18023	Southbound	Cook	Low
19821197	107N19353	Other Highways	S LA GRANGE RD	US-45	0.75254	Southbound	Cook	Medium
19821338	107P09499	Other Highways	S LA GRANGE RD	US-45	0.75254	Northbound	Cook	High
792528589	107N17834	Other	S LASALLE ST	0	0.34934	Southbound	Cook	Medium
125145410	107N05294	Other	S MICHIGAN AVE	0	0.39760	Southbound	Cook	High
19843646	107N13213	Other	S PULASKI RD	0	1.00435	Southbound	Cook	High
947131458	107N13214	Other	S PULASKI RD	0	0.63095	Southbound	Cook	Low
19841538	107N13215	Other	S PULASKI RD	0	0.38244	Southbound	Cook	Low
19845389	107P13212	Other	S PULASKI RD	0	0.50123	Northbound	Cook	Low
19842800	107P13214	Other	S PULASKI RD	0	1.00435	Northbound	Cook	High
19842218	107P13215	Other	S PULASKI RD	0	0.63095	Northbound	Cook	Low
721217479	107P13216	Other	S PULASKI RD	0	0.38244	Northbound	Cook	Low
19857538	107P05264	Other	S STONY ISLAND AVE	0	0.16203	Northbound	Cook	Low
19856802	107P05266	Other	S STONY ISLAND AVE	0	0.18912	Northbound	Cook	Low
125161088	107P05259	Other	S STONY ISLAND EXT	0	0.25961	Northbound	Cook	High

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
756772203	107N19266	Other	S TORRENCE AVE	0	0.37477	Southbound	Cook	Low
756768167	107P19267	Other	S TORRENCE AVE	0	0.37477	Northbound	Cook	Low
16902987	107N05298	Other	S WACKER DR	0	0.34807	Southbound	Cook	Medium
16907462	107P05299	Other	S WACKER DR	0	0.41354	Northbound	Cook	Medium
735209397	107P50336	Other	S WENTWORTH AVE	0	0.23470	Northbound	Cook	Low
810487249	107P50341	Other	S WENTWORTH AVE	0	0.25331	Northbound	Cook	Medium
19842427	107P50342	Other	S WENTWORTH AVE	0	0.25199	Northbound	Cook	High
19834812	107N12441	Other	S WESTERN AVE	0	1.28168	Southbound	Cook	Low
16907484	107P19379	Other	S WESTERN AVE	0	1.23789	Northbound	Cook	Low
19842132	107N05246	Other	S WESTERN BLVD	0	0.53951	Southbound	Cook	Low
125164793	107N19672	Other	SKOKIE BLVD	0	1.13611	Southbound	Cook	High
718159242	107P19673	Other	SKOKIE BLVD	0	1.13611	Northbound	Cook	High
755288027	107P18456	Other Highways	SKOKIE RD	US-41	0.26006	Northbound	Cook	Low
19875389	107P13573	Other	ST CHARLES RD	0	1.06568	Westbound	Cook	Medium
753927232	107N18538	Other	TOUHY AVE	0	0.38604	Westbound	Cook	Low
719752300	107P07186	Other	TOUHY AVE	0	0.05561	Eastbound	Cook	Low
19771566	107P07187	Other	TOUHY AVE	0	0.43070	Eastbound	Cook	Low
19771105	107P19570	Other	VILLA ST	0	1.54685	Eastbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
915788753	107N18723	Other	W 18TH ST	0	0.25031	Westbound	Cook	Low
828291383	107N13412	Other	W 47TH ST	0	0.50625	Westbound	Cook	Low
19842631	107N05230	Other	W 55TH ST	0	0.97850	Westbound	Cook	Low
19842586	107N05232	Other	W 55TH ST	0	0.98280	Westbound	Cook	Low
19842627	107P05231	Other	W 55TH ST	0	0.96714	Eastbound	Cook	Low
778009208	107N13439	Other	W 63RD ST	0	0.33484	Westbound	Cook	Low
19843912	107P13439	Other	W 63RD ST	0	0.64289	Eastbound	Cook	Low
19823599	107P50367	Other	W 73RD ST	0	0.99802	Eastbound	Cook	Low
125118986	107P13471	Other	W 87TH ST	0	0.56630	Eastbound	Cook	Low
19757601	107P17838	Other	W ADAMS ST	0	0.23941	Westbound	Cook	Medium
19757606	107P17839	Other	W ADAMS ST	0	0.14856	Westbound	Cook	Medium
19757611	107P17843	Other	W ADAMS ST	0	0.27243	Westbound	Cook	Low
19800846	107N17609	Other	W BELMONT AVE	0	1.01487	Westbound	Cook	Low
716674053	107N17618	Other	W BELMONT AVE	0	0.50198	Westbound	Cook	Low
756520195	107N17619	Other	W BELMONT AVE	0	0.42834	Westbound	Cook	Medium
19800842	107P17610	Other	W BELMONT AVE	0	1.01487	Eastbound	Cook	Low
756520193	107P17620	Other	W BELMONT AVE	0	0.42834	Eastbound	Cook	Low
19809614	107N17676	Other	W CHICAGO AVE	0	0.39459	Westbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19809589	107N17677	Other	W CHICAGO AVE	0	0.36223	Westbound	Cook	Low
19809561	107N17678	Other	W CHICAGO AVE	0	0.54419	Westbound	Cook	Low
720287911	107N17679	Other	W CHICAGO AVE	0	0.23008	Westbound	Cook	Low
721083485	107N17680	Other	W CHICAGO AVE	0	0.23311	Westbound	Cook	Medium
19809616	107P17677	Other	W CHICAGO AVE	0	0.40490	Eastbound	Cook	Medium
19809582	107P17678	Other	W CHICAGO AVE	0	0.35192	Eastbound	Cook	Low
125158383	107P17679	Other	W CHICAGO AVE	0	0.54419	Eastbound	Cook	Low
779316028	107P17680	Other	W CHICAGO AVE	0	0.23008	Eastbound	Cook	High
721082320	107P17681	Other	W CHICAGO AVE	0	0.23311	Eastbound	Cook	High
19739235	107N04952	Other	W CONGRESS PKWY	0	0.44105	Westbound	Cook	Medium
19739236	107P04953	Other	W CONGRESS PKWY	0	0.36433	Eastbound	Cook	High
19791697	107N13112	Other	W DEVON AVE	0	0.32040	Westbound	Cook	Low
722465548	107N13293	Other	W DIVISION ST	0	0.21719	Westbound	Cook	Low
19807869	107P13294	Other	W DIVISION ST	0	0.21719	Eastbound	Cook	Low
755957066	107N17653	Other	W FULLERTON AVE	0	0.17167	Westbound	Cook	Medium
19803825	107N17654	Other	W FULLERTON AVE	0	0.33228	Westbound	Cook	Medium
19803810	107N17655	Other	W FULLERTON AVE	0	0.44040	Westbound	Cook	Medium
19803747	107N17656	Other	W FULLERTON AVE	0	0.56091	Westbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19803703	107N17657	Other	W FULLERTON AVE	0	0.49967	Westbound	Cook	Low
19803829	107P17654	Other	W FULLERTON AVE	0	0.31471	Eastbound	Cook	Medium
756634844	107P17655	Other	W FULLERTON AVE	0	0.21089	Eastbound	Cook	Medium
756632454	107P17656	Other	W FULLERTON AVE	0	0.48112	Eastbound	Cook	Medium
19803739	107P17657	Other	W FULLERTON AVE	0	0.49854	Eastbound	Cook	High
757125360	107P17658	Other	W FULLERTON AVE	0	0.49967	Eastbound	Cook	Medium
16882629	107N05186	Other	W GARFIELD BLVD	0	0.50417	Westbound	Cook	Low
19842447	107P05191	Other	W GARFIELD BLVD	0	0.75791	Eastbound	Cook	Low
19842420	107P05192	Other	W GARFIELD BLVD	0	0.24780	Eastbound	Cook	Low
719977505	107P05012	Other Highways	W GOLF RD	IL-58	0.11266	Eastbound	Cook	Low
19810946	107N17702	Other	W GRAND AVE	0	0.50396	Westbound	Cook	High
19810807	107P17701	Other	W GRAND AVE	0	0.15425	Eastbound	Cook	Low
19810949	107P17703	Other	W GRAND AVE	0	0.50396	Eastbound	Cook	High
125167739	107P17885	Other	W HARRISON ST	0	0.22960	Eastbound	Cook	Low
917058791	107P06951	Other Highways	W HIGGINS RD	IL-72	0.53780	Westbound	Cook	Medium
943490152	107P06952	Other Highways	W HIGGINS RD	IL-72	0.82937	Westbound	Cook	High
19798128	107N08104	Other Highways	W IRVING PARK RD	IL-19	0.50705	Westbound	Cook	Low
19798013	107N08107	Other Highways	W IRVING PARK RD	IL-19	0.68037	Westbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19797989	107N08108	Other Highways	W IRVING PARK RD	IL-19	0.57822	Westbound	Cook	Low
19797970	107N08109	Other Highways	W IRVING PARK RD	IL-19	0.50182	Westbound	Cook	Low
19797944	107N08110	Other Highways	W IRVING PARK RD	IL-19	0.50035	Westbound	Cook	Low
19797908	107N08111	Other Highways	W IRVING PARK RD	IL-19	0.49996	Westbound	Cook	Low
130089120	107N17949	Other Highways	W IRVING PARK RD	IL-19	0.50706	Westbound	Cook	Low
19790932	107P08100	Other Highways	W IRVING PARK RD	IL-19	1.03947	Eastbound	Cook	Low
19798200	107P08103	Other Highways	W IRVING PARK RD	IL-19	0.50095	Eastbound	Cook	Low
19798090	107P08106	Other Highways	W IRVING PARK RD	IL-19	1.01198	Eastbound	Cook	Low
19798014	107P08108	Other Highways	W IRVING PARK RD	IL-19	0.51484	Eastbound	Cook	Low
19797994	107P08109	Other Highways	W IRVING PARK RD	IL-19	0.57822	Eastbound	Cook	Low
19797961	107P08110	Other Highways	W IRVING PARK RD	IL-19	0.50706	Eastbound	Cook	Low
19797903	107P08112	Other Highways	W IRVING PARK RD	IL-19	0.49996	Eastbound	Cook	Low
19797967	107P17949	Other Highways	W IRVING PARK RD	IL-19	0.50182	Eastbound	Cook	Medium
19757647	107P17855	Other	W JACKSON BLVD	0	0.23839	Eastbound	Cook	High
124639268	107P17857	Other	W JACKSON BLVD	0	0.14961	Eastbound	Cook	Low
19757644	107P17859	Other	W JACKSON BLVD	0	0.14856	Eastbound	Cook	Low
19757636	107P17860	Other	W JACKSON BLVD	0	0.23889	Eastbound	Cook	Low
932818839	107N05288	Other Highways	W LAKE ST	US-20	0.17922	Eastbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
932820592	107P05289	Other Highways	W LAKE ST	US-20	0.17922	Westbound	Cook	Low
788058900	107P14013	Other	W LAKE ST	0	0.26819	Westbound	Cook	Low
20068627	107P50571	Other	W MADISON ST	0	0.12330	Westbound	Cook	High
19796820	107N13143	Other	W MONTROSE AVE	0	0.74830	Westbound	Cook	Low
19818295	107N12640	Other	W OGDEN AVE	0	0.56028	Westbound	Cook	Medium
19810620	107P17692	Other	W OHIO ST	0	0.23106	Eastbound	Cook	Low
19810567	107P17693	Other	W OHIO ST	0	0.23262	Eastbound	Cook	Medium
19810376	107P17688	Other	W ONTARIO ST	0	0.23264	Westbound	Cook	Low
943400693	107N11451	Other	W PALATINE RD	0	0.22818	Westbound	Cook	Medium
19738387	107P11452	Other	W PALATINE RD	0	0.21842	Eastbound	Cook	Low
19840159	107N18678	Other	W PERSHING RD	0	1.01419	Westbound	Cook	Low
19840125	107N18679	Other	W PERSHING RD	0	0.75286	Westbound	Cook	Low
721286763	107N18680	Other	W PERSHING RD	0	0.25406	Westbound	Cook	Medium
19840127	107P18680	Other	W PERSHING RD	0	0.84062	Eastbound	Cook	Low
19792658	107N05051	Other Highways	W PETERSON AVE	US-14	0.74120	Eastbound	Cook	Medium
19792698	107N05052	Other Highways	W PETERSON AVE	US-14	0.50062	Eastbound	Cook	Low
19792672	107P05052	Other Highways	W PETERSON AVE	US-14	0.74120	Westbound	Cook	High
810612600	107N13365	Other	W ROOSEVELT RD	0	0.08927	Westbound	Cook	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19836289	107N13366	Other	W ROOSEVELT RD	0	0.30546	Westbound	Cook	Medium
721076964	107N13367	Other	W ROOSEVELT RD	0	0.21449	Westbound	Cook	Low
125165341	107N13368	Other	W ROOSEVELT RD	0	0.17444	Westbound	Cook	Medium
719551201	107P13366	Other	W ROOSEVELT RD	0	0.14448	Eastbound	Cook	Low
721076960	107P13367	Other	W ROOSEVELT RD	0	0.25025	Eastbound	Cook	Low
19791666	107P13032	Other	W SHERIDAN RD	0	0.55395	Southbound	Cook	Low
753811132	107N07193	Other	W TOUHY AVE	0	0.60435	Westbound	Cook	Low
19779566	107N11446	Other	W TOUHY AVE	0	0.24926	Westbound	Cook	Low
19814218	107P50583	Other	W VAN BUREN ST	0	0.49647	Westbound	Cook	High
19814267	107P50584	Other	W VAN BUREN ST	0	0.50768	Westbound	Cook	High
19814313	107P50585	Other	W VAN BUREN ST	0	0.25278	Westbound	Cook	High
19814347	107P50586	Other	W VAN BUREN ST	0	0.25330	Westbound	Cook	High
19814360	107P50587	Other	W VAN BUREN ST	0	0.46488	Westbound	Cook	Medium
19814396	107P50588	Other	W VAN BUREN ST	0	0.29870	Westbound	Cook	High
19757747	107N05305	Other	W WACKER DR	0	0.15009	Westbound	Cook	High
19757752	107P05306	Other	W WACKER DR	0	0.14957	Eastbound	Cook	Medium
19757856	107P13330	Other	W WASHINGTON BLVD	0	0.20685	Eastbound	Cook	Low
776398116	107P13331	Other	W WASHINGTON BLVD	0	0.07438	Eastbound	Cook	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
108775414	107P13332	Other	W WASHINGTON ST	0	0.15372	Eastbound	Cook	Medium
926534435	107P50561	Other	W WASHINGTON ST	0	0.22284	Eastbound	Cook	Medium
19833169	107N12442	Other	WESTERN AVE	0	0.62409	Southbound	Cook	Low
19832056	107N12443	Other	WESTERN AVE	0	1.00428	Southbound	Cook	Medium
841402826	107N19379	Other	WESTERN AVE	0	0.66855	Southbound	Cook	Low
125166119	107N19399	Other	WESTERN AVE	0	0.22200	Southbound	Cook	Medium
19831975	107P12681	Other	WESTERN AVE	0	1.00428	Northbound	Cook	Low
19833957	107P19399	Other	WESTERN AVE	0	0.66855	Northbound	Cook	Low
19738386	107N07295	Other	WILLOW RD	0	0.39983	Eastbound	Cook	Low
19975756	107N07296	Other	WILLOW RD	0	0.56186	Eastbound	Cook	Low
16906195	107P07296	Other	WILLOW RD	0	0.57415	Westbound	Cook	Low
19740426	107P11457	Other	WILLOW RD	0	0.08282	Westbound	Cook	Low
125165340	107P13368	Other		0	0.36227	Eastbound	Cook	Low
711522500	107P17046	Other		0	0.24102	Eastbound	Cook	Low
711615239	107P17048	Other		0	0.56415	Eastbound	Cook	High
711616170	107P17050	Other		0	0.21006	Eastbound	Cook	High

DuPage County

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
762005348	107P06821	Other Highways	BUTTERFIELD RD	IL-56	0.07293	Eastbound	DuPage	Low
19874277	107P05096	Other Highways	E NORTH AVE	IL-64	0.19092	Westbound	DuPage	Low
125164697	107N04210	Interstates	EISENHOWER EXPY E	I-290	1.23313	Eastbound	DuPage	High
16882872	107N04211	Interstates	EISENHOWER EXPY E	I-290	1.60477	Eastbound	DuPage	Low
16882868	107P04211	Interstates	EISENHOWER EXPY W	I-290	1.03783	Westbound	DuPage	Low
16883150	107P04212	Interstates	EISENHOWER EXPY W	I-290	1.61257	Westbound	DuPage	Low
925590986	107N50422	Other	FINLEY RD	0	2.08775	Southbound	DuPage	High
777803601	107P50423	Other	FINLEY RD	0	2.08502	Northbound	DuPage	Medium
936662505	107N12581	Other	HIGHLAND AVE	0	0.17687	Southbound	DuPage	Medium
762007587	107P12581	Other	HIGHLAND AVE	0	1.24545	Northbound	DuPage	Medium
16892086	107N04214	Interstates	I-290	I-290	1.17608	Eastbound	DuPage	Low
735462395	107N04150	Interstates	I-294	I-294	0.47334	Southbound	DuPage	High
16894124	107N04273	Interstates	I-355	I-355	0.19128	Southbound	DuPage	Low
16894100	107N04275	Interstates	I-355	I-355	0.68753	Southbound	DuPage	Medium
19906578	107N04278	Interstates	I-355	I-355	1.42544	Southbound	DuPage	Low
744598804	107N04279	Interstates	I-355	I-355	0.58410	Southbound	DuPage	Low
16892214	107P04280	Interstates	I-355	I-355	0.93412	Northbound	DuPage	Low
16897469	107N04329	Interstates	I-55	I-55	2.04586	Southbound	DuPage	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16900015	107N04330	Interstates	I-55	I-55	1.60388	Southbound	DuPage	Low
16897791	107N04331	Interstates	I-55	I-55	1.85852	Southbound	DuPage	Low
16897442	107P04329	Interstates	I-55	I-55	1.11861	Northbound	DuPage	Low
16900018	107P04330	Interstates	I-55	I-55	2.00328	Northbound	DuPage	Low
16899984	107P04331	Interstates	I-55	I-55	1.68585	Northbound	DuPage	Low
16897781	107P04332	Interstates	I-55	I-55	1.76514	Northbound	DuPage	Low
16897564	107N04284	Interstates	I-88	I-88	1.15656	Eastbound	DuPage	Low
27701661	107N04285	Interstates	I-88	I-88	0.41191	Eastbound	DuPage	Low
111809618	107N04288	Interstates	I-88	I-88	0.31812	Eastbound	DuPage	Low
772088989	107P11651	Other Highways	IL-53	IL-53	0.56606	Northbound	DuPage	Low
761920804	107N05122	Other Highways	IL-59	IL-59	0.31805	Southbound	DuPage	Low
16897850	107N04984	Other Highways	IL-83	IL-83	0.56266	Southbound	DuPage	Medium
16897856	107N04985	Other Highways	IL-83	IL-83	0.94403	Southbound	DuPage	Medium
125154927	107N04986	Other Highways	IL-83	IL-83	0.74147	Southbound	DuPage	Low
19896702	107N05280	Other Highways	IL-83	IL-83	1.86332	Southbound	DuPage	Low
19896389	107N05281	Other Highways	IL-83	IL-83	0.99079	Southbound	DuPage	Medium
16897852	107P04985	Other Highways	IL-83	IL-83	0.56951	Northbound	DuPage	Medium
19894073	107P04986	Other Highways	IL-83	IL-83	0.93720	Northbound	DuPage	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19889348	107P04991	Other Highways	IL-83	IL-83	0.21121	Northbound	DuPage	Low
716675639	107P04984	Other Highways	KINGERY HWY	IL-83	0.47217	Northbound	DuPage	Medium
754319254	107N05284	Other Highways	LAKE ST	US-20	0.29965	Eastbound	DuPage	Low
19904687	107N13555	Other Highways	LAKE ST	US-20	0.09352	Eastbound	DuPage	Low
759680488	107P05284	Other Highways	LAKE ST	US-20	0.25195	Westbound	DuPage	Low
19915715	107N12577	Other	MAIN ST	0	1.47426	Southbound	DuPage	Low
19874711	107P16761	Other	N YORK ST	0	0.44600	Northbound	DuPage	Low
19916955	107N16742	Other	NAPER BLVD	0	1.84776	Southbound	DuPage	Medium
125157777	107P16742	Other	NAPER BLVD	0	0.32559	Northbound	DuPage	Low
19906800	107P05102	Other Highways	NORTH AVE	IL-64	0.17343	Westbound	DuPage	Low
111827586	107P05107	Other Highways	NORTH AVE	IL-64	1.56255	Westbound	DuPage	High
762154368	107N13583	Other	S CASS AVE	CR-15	1.68188	Southbound	DuPage	Medium
19907937	107N50929	Other	S MAIN ST	0	0.86797	Southbound	DuPage	Low
19788828	107N12499	Other	THORNDALE AVE	CR-26	1.08094	Eastbound	DuPage	Low
1027247631	107N12501	Other	THORNDALE AVE	CR-26	0.28899	Eastbound	DuPage	Medium
16892073	107N12502	Other	THORNDALE AVE	CR-26	0.84675	Eastbound	DuPage	Low
19788815	107P12502	Other	THORNDALE AVE	CR-26	0.28899	Westbound	DuPage	Low
777803783	107N19199	Other	W DIEHL RD	0	1.28152	Westbound	DuPage	Medium

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
777803780	107P19200	Other	W DIEHL RD	0	1.29352	Eastbound	DuPage	Medium
716653423	107P05285	Other Highways	W LAKE ST	US-20	0.33327	Westbound	DuPage	Medium
19876955	107N05095	Other Highways	W NORTH AVE	IL-64	0.20536	Eastbound	DuPage	Low
716560985	107N05100	Other Highways	W NORTH AVE	IL-64	0.20437	Eastbound	DuPage	Low
1022917814	107N19221	Other	WARRENVILLE RD	CR-3	0.80283	Westbound	DuPage	Medium
1022917813	107P19222	Other	WARRENVILLE RD	CR-3	0.80283	Eastbound	DuPage	High
Kane County								
947258301	107P13971	Other	BIG TIMBER RD	CR-21	2.63277	Northbound	Kane	Low
16850999	107N18391	Other Highways	DUNDEE AVE	IL-25	0.56849	Southbound	Kane	Low
16851059	107P18392	Other Highways	DUNDEE AVE	IL-25	0.57651	Northbound	Kane	Low
797976658	107P19510	Other	E GALENA BLVD	0	0.11752	Eastbound	Kane	Medium
792745183	107P18387	Other Highways	IL-25	IL-25	0.18641	Northbound	Kane	Low
1063298427	107N12527	Other	RANDALL RD	0	0.12432	Southbound	Kane	Medium
1063298421	107P19607	Other	RANDALL RD	0	0.13047	Northbound	Kane	Medium
792745181	107N18386	Other Highways	S LIBERTY ST	IL-25	0.18641	Southbound	Kane	Low
714262437	107P18389	Other Highways	S LIBERTY ST	IL-25	0.46086	Northbound	Kane	Low

Lake County

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
19762572	107N12979	Other	DEERFIELD RD	0	1.13035	Westbound	Lake	Low
719146561	107N05321	Other	E LAKE COOK RD	0	0.09611	Eastbound	Lake	Low
16896166	107P04490	Interstates	EDENS EXPY SPUR W	I-94	0.17764	Westbound	Lake	Low
130112372	107P53119	Other	I-294	0	0.08975	Westbound	Lake	Medium
125153065	107N04503	Interstates	I-41	I-94	0.56526	Eastbound	Lake	Low
27700905	107P04504	Interstates	I-41	I-94	0.24361	Westbound	Lake	Low
19745661	107N04496	Interstates	I-94	I-94	2.61154	Eastbound	Lake	Low
16887208	107N04497	Interstates	I-94	I-94	1.28010	Eastbound	Lake	Low
16886673	107N04498	Interstates	I-94	I-94	1.32145	Eastbound	Lake	Low
16886663	107N04499	Interstates	I-94	I-94	3.70202	Eastbound	Lake	Low
19753851	107N04500	Interstates	I-94	I-94	2.29064	Eastbound	Lake	Low
19752639	107N04501	Interstates	I-94	I-94	1.37236	Eastbound	Lake	Low
16886594	107N04502	Interstates	I-94	I-94	0.91962	Eastbound	Lake	Low
16887206	107P04497	Interstates	I-94	I-94	2.23353	Westbound	Lake	Low
16887216	107P04498	Interstates	I-94	I-94	1.37098	Westbound	Lake	Low
16886665	107P04499	Interstates	I-94	I-94	1.93862	Westbound	Lake	Low
19754755	107P04500	Interstates	I-94	I-94	3.35731	Westbound	Lake	Low
108788875	107P04501	Interstates	I-94	I-94	2.10144	Westbound	Lake	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
16886596	107P04502	Interstates	I-94	I-94	1.54750	Westbound	Lake	Low
19751939	107P04503	Interstates	I-94	I-94	0.68402	Westbound	Lake	Low
19767212	107N12732	Other Highways	IL-83	IL-83	0.38719	Southbound	Lake	Low
1140949013	107P17899	Other	LAKE COOK RD	0	0.23440	Westbound	Lake	Medium
16896771	107N05245	Other Highways	SKOKIE VALLEY RD	US-41	1.42717	Southbound	Lake	Low
16896770	107P09359	Other Highways	SKOKIE VALLEY RD	US-41	1.42548	Northbound	Lake	Low
Madison County								
815473082	119N13209	Other	BELT LINE RD	0	1.48491	Westbound	Madison	Low
815473081	119P13210	Other	BELT LINE RD	0	1.42705	Eastbound	Madison	High
20567833	119N04949	Other Highways	GODFREY RD	IL-111	0.61733	Southbound	Madison	Low
25155447	119P15619	Other	I-70	0	0.28419	Eastbound	Madison	Low
938115247	119P15621	Other	I-70	0	0.16750	Southbound	Madison	Medium
135073886	119N12729	Other Highways	IL-143	IL-143	0.11599	Westbound	Madison	Low
124961144	119P12729	Other Highways	LANDMARKS BLVD	IL-143	0.05939	Eastbound	Madison	Low
20628277	119N13122	Other Highways	NAMEOKI RD	IL-203	0.18530	Southbound	Madison	Low
McHenry County								
20150756	107N11178	Other Highways	W ELM ST	IL-120	0.32604	Westbound	McHenry	Low
McLean County								

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
108739910	107P11562	Other Highways	CHESTER ST	IL-251	2.33869	Northbound	McLean	Low
20008635	107P05356	Interstates	I-39	I-39	0.06141	Northbound	McLean	Medium
108739824	107N06182	Other	US-51-BR	0	0.17213	Southbound	McLean	Medium
Rock Island County								
20669075	118P05616	Interstates	I-74	I-74	1.01726	Northbound	Rock Island	Low
St. Clair County								
20560340	119P18405	Other	DR MARTIN LUTHER KING JR	0	0.40132	Northbound	St Clair	Low
20664246	119N04245	Interstates	I-55	I-55/I-70	0.66416	Westbound	St Clair	Low
20692434	119N04615	Interstates	I-55	I-55/I-64	0.54321	Westbound	St Clair	Low
20559946	119N04616	Interstates	I-55	I-55/I-64	0.64196	Westbound	St Clair	Low
20560584	119N13160	Other	ST CLAIR AVE	0	0.87671	Southbound	St Clair	Medium
20560666	119P13161	Other	ST CLAIR AVE	0	0.87191	Northbound	St Clair	Medium
124966597	119N13219	Other	STOLLE RD	0	1.87965	Westbound	St Clair	Medium
124966598	119P13220	Other	STOLLE RD	0	2.00493	Eastbound	St Clair	Medium
Tazewell County								
815545211	107N05663	Interstates	I-155	I-155	0.06565	Southbound	Tazewell	Low
92679657	107N11033	Other Highways	IL-116	IL-29	1.27776	Southbound	Tazewell	Low
125173652	107N11124	Other Highways	IL-116	IL-116	0.83127	Westbound	Tazewell	Low

LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
125173657	107P11034	Other Highways	IL-116	IL-29	0.83127	Northbound	Tazewell	Low
103470431	107P11171	Other Highways	IL-116	IL-116	1.27776	Eastbound	Tazewell	Low
Whiteside County								
92526885	107N10795	Other Highways	LOCUST ST	IL-40	0.82988	Southbound	Whiteside	Low
Will County								
16897439	107N04327	Interstates	I-55	I-55	1.54239	Southbound	Will	Medium
125121749	107P04326	Interstates	I-55	I-55	3.45824	Northbound	Will	Low
709219450	107P04327	Interstates	I-55	I-55	1.22161	Northbound	Will	Low
16897437	107P04328	Interstates	I-55	I-55	1.54991	Northbound	Will	Low
16891531	107N04426	Interstates	I-80	I-80	0.55450	Westbound	Will	Low
20081460	107N04427	Interstates	I-80	I-80	1.50383	Westbound	Will	Low
19935008	107N04428	Interstates	I-80	I-80	2.70763	Westbound	Will	Low
16891533	107P04426	Interstates	I-80	I-80	0.74381	Eastbound	Will	Low
130090982	107P04427	Interstates	I-80	I-80	0.60910	Eastbound	Will	Low
20081457	107P04428	Interstates	I-80	I-80	1.63324	Eastbound	Will	Low
19931723	107N07855	Other Highways	N BROADWAY ST	IL-53	0.57141	Southbound	Will	Medium
908136972	107P12822	Other Highways	S ROUTE 59	IL-59	0.20362	Northbound	Will	Low
16891315	107P09308	Other Highways	US-30	US-30	0.29761	Eastbound	Will	Medium

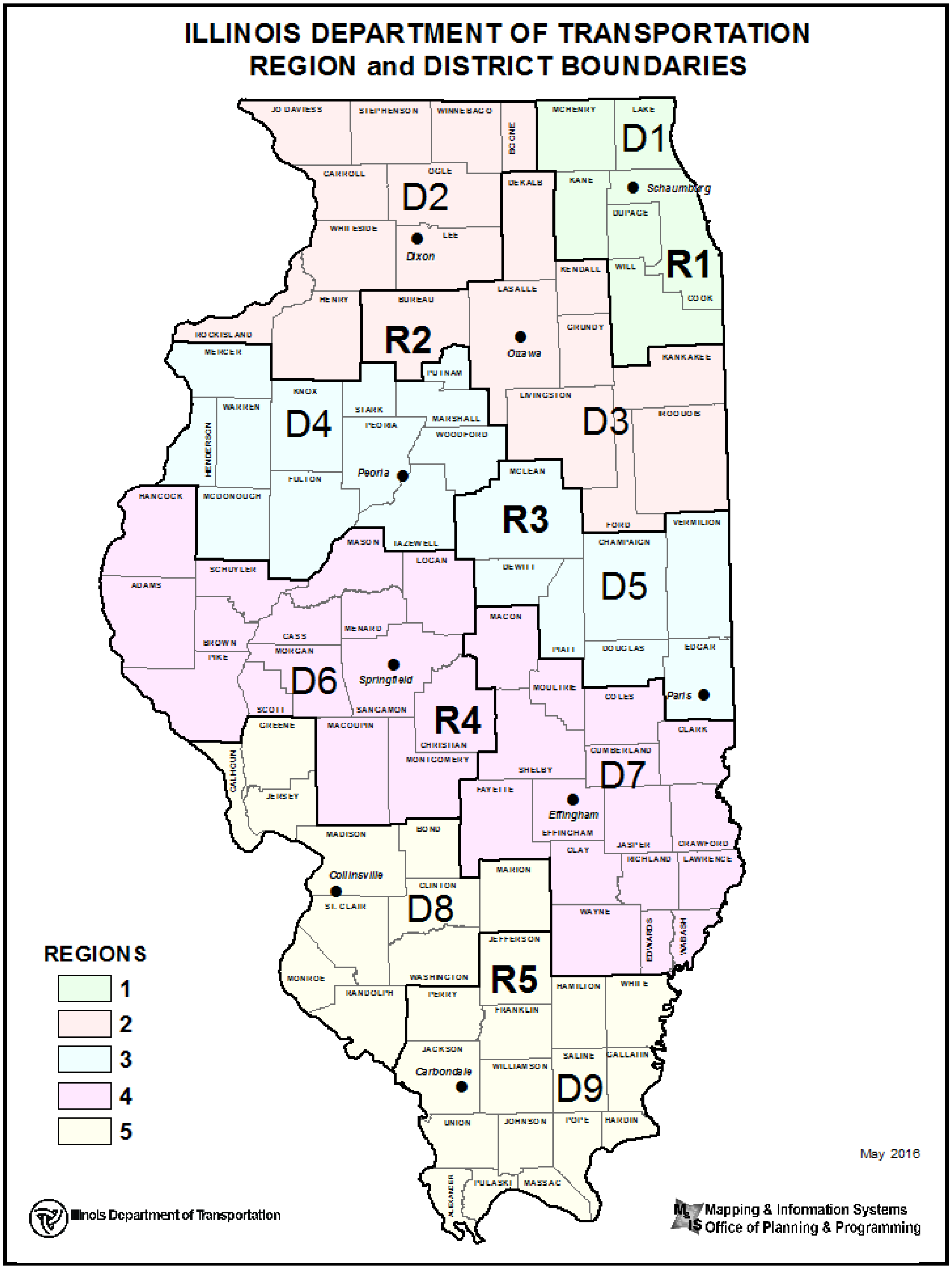
LINK_ID	TMC	Type of Road	Road Name 1	Road Name 2	Road Distance	Road Direction	County	Bottleneck Tiering
Williamson County								
20315337	119N05504	Interstates	I-57	I-57	0.36227	Southbound	Williamson	Low
Winnebago County								
1130740267	107P04931	Interstates	I-39	I-39	0.03866	Northbound	Winnebago	Low

Illinois State Freight Plan

Appendix C:

Illinois Department of Transportation Region and District Boundaries

Illinois Department of Transportation (IDOT)



ILLINOIS DEPARTMENT OF TRANSPORTATION
REGION and DISTRICT BOUNDARIES
D1
R1
Schaumburg
D2
R2
Dixon
Ottawa
D3
D4
Peoria
R3
D5
Paris
D6
Springfield
R4
D7
Effingham
D8
Collinsville
R5
D9
Carbondale
REGIONS
1
2
3
4
5
May 2016
Illinois Department of Transportation
Mapping & Information Systems
Office of Planning & Programming