

# REIMAGINED MOVE 2040

## Regional Freight Plan



August 2020



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### FREIGHT ADVISORY COMMITTEE

Karyn Page, Kansas World Trade, Chairperson

Heather Alexander, Spirit Aerosystems

Casey Harbour, WATCO Companies

Craig Bay, Kyodo Yushi Manufacturing Americas

Les Mangus, City of Andover

Ronald L. Colbert Sr., City of Valley Center

James Wagner, City of Wichita

Adrienne Korson, Greater Wichita Partnership

Andrew Nave, Greater Wichita Partnership

Javier Ahumada, Federal Highway Administration

John Maddox, Kansas Department of Transportation

Mike Moriarty, Kansas Department of Transportation

John Oswald, Wichita Airport Authority

Valerie Wise, Wichita Airport Authority

Kurt Yowell, MKEC Engineering Inc.

Brad Shores, JEO Consulting

### WAMPO STAFF

Chad Parasa, Director

Chris Upchurch, Principal Planner

Kristen Zimmerman, Senior Planner

Michelle Styles, Administrative Assistant

### CONSTULTANT TEAM

Sara Clark, TranSystems

Slade Engstrom, TranSystems

Brett Letkowski, TranSystems

Deanne Winkelmann, TranSystems

Elaine McKenzie, Cambridge Systematics

Lizzie Welch, Cambridge Systematics

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## Introduction

The Wichita Area Metropolitan Planning Organization (WAMPO) Regional Freight Plan represents an opportunity to address freight needs in a comprehensive manner and integrate freight planning into the ongoing multimodal transportation planning process.

The Regional Freight Plan supports the vision of the WAMPO long-range Metropolitan Transportation Plan (MTP), also known as the REIMAGINED MOVE 2040 plan, and the plan focus areas, most specifically mobility and economy. The plan includes a review of the region's economy and existing freight network. Trends are reviewed alongside a needs analysis to formulate forward-facing recommendations. Manageable actions are outlined to continuously bring freight issues to the forefront of transportation decision making.

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### MOBILITY & ECONOMY

*An efficient, reliable system to transport workers, move goods, visitors, and residents is essential to grow the economy regionally and globally. When woven together, elements of mobility and the economy are powerful mechanisms for a region to achieve broader community goals.*

REIMAGINED MOVE 2040

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While not required by the Fixing America's Surface Transportation (FAST) Act, the WAMPO Regional Freight Plan aligns with the Kansas Statewide Freight Plan (2017) and national freight goals. Adopting a regional freight plan positions the region with manageable actions to move through the transportation decision-making process to implement forward-facing freight and freight-benefitting projects.

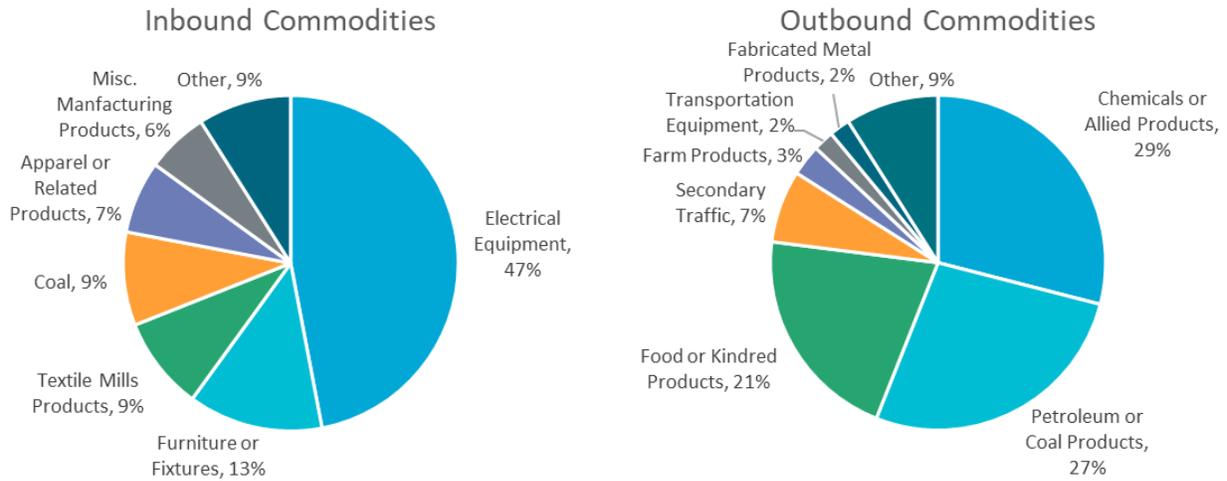
## Role of Freight in Region's Economy

In general, the Kansas economy relies more on goods-dependent industries than the overall United States. Goods-dependent industries, which rely on transportation to receive raw supplies and manufacturing goods and to send their refined/finished products to market, represent about 42 percent of gross domestic product by industry in Kansas, compared to 36 percent nationwide. Figure 1 shows the top inbound and outbound commodities in the WAMPO region.

The WAMPO region contains several industries that rely on the movement of commercial goods to, from, and through the region using a combination of truck, rail, air, and pipeline. Goods-dependent industries in the region have historically been a major source of employment, but these local industries have declined, leading to slower gross domestic product growth relative to the United States, compounded by slow population growth and an aging population in the region.

Eight industry sectors were identified as important freight-related sectors in the WAMPO region: advanced manufacturing, advanced materials, aerospace, agriculture, data services and information technology, healthcare, oil and gas, and transportation and logistics. Of these sectors, two were identified as being particularly critical to the region: aerospace and agriculture.

**Figure 1. Top Inbound and Outbound Commodities in WAMPO Region**



Source: 2006 TRANSEARCH Insight, Cambridge Systematics Inc., WAMPO Freight Plan, 2010.

## Aerospace Sector

Kansas-based aviation firms deliver 39 percent of all general aviation aircraft in the United States and approximately 53 percent of Wichita’s manufacturing employment relates to the aviation/aerospace industry. Currently, the WAMPO region is the largest aviation manufacturing metropolitan region in the United States. Spirit AeroSystems, which builds approximately 70 percent of all Boeing 737 aircraft, is the largest employer in the region with 11,500 employees. Spirit AeroSystems has signed a pledge to maintain operations in Wichita for the next twenty years or pay a \$10 million fine. Other key aerospace companies include Bombardier Learjet and Textron Aviation (Cessna Aircraft Company and Beechcraft Corporation). These companies support a network of 300 suppliers within the region and many more shipping products from other facilities. Freight movements on I-35 and the major Class I railroads support the aerospace sector.

## Agriculture Sector

The WAMPO region is a critical hub for agricultural shipments from western Kansas to national and global markets. In the agriculture sector, two of the largest privately held companies in the United States, Koch Industries and Cargill, have headquarters facilities in Wichita. These two employers account for over 4,000 local employees. Other key agriculture companies include AGCO Corporation, Farmland Foods, Dold Foods, ICM, Hiland Dairy Foods, Grain Crat, POET Ethanol Products, Abengoa Bioenergy, MKC, Fairbank Equipment, Walton’s, and United Bio Energy. Agriculture-related facilities depend on rail and highway access in the region for feedstock, product distribution, and competitively priced utilities.

## Considerations of COVID-19

The WAMPO Regional Freight Plan is a long-term planning document and vision that intends to guide freight transportation investment decision-making over a 20-year time horizon. The effects of the global COVID-19 pandemic will have lasting impacts to the economy and transportation. Transportation has seen great change during this dynamic situation from transportation restrictions due to the stay-at-home orders to shifts from regular shopping trips to home delivery.

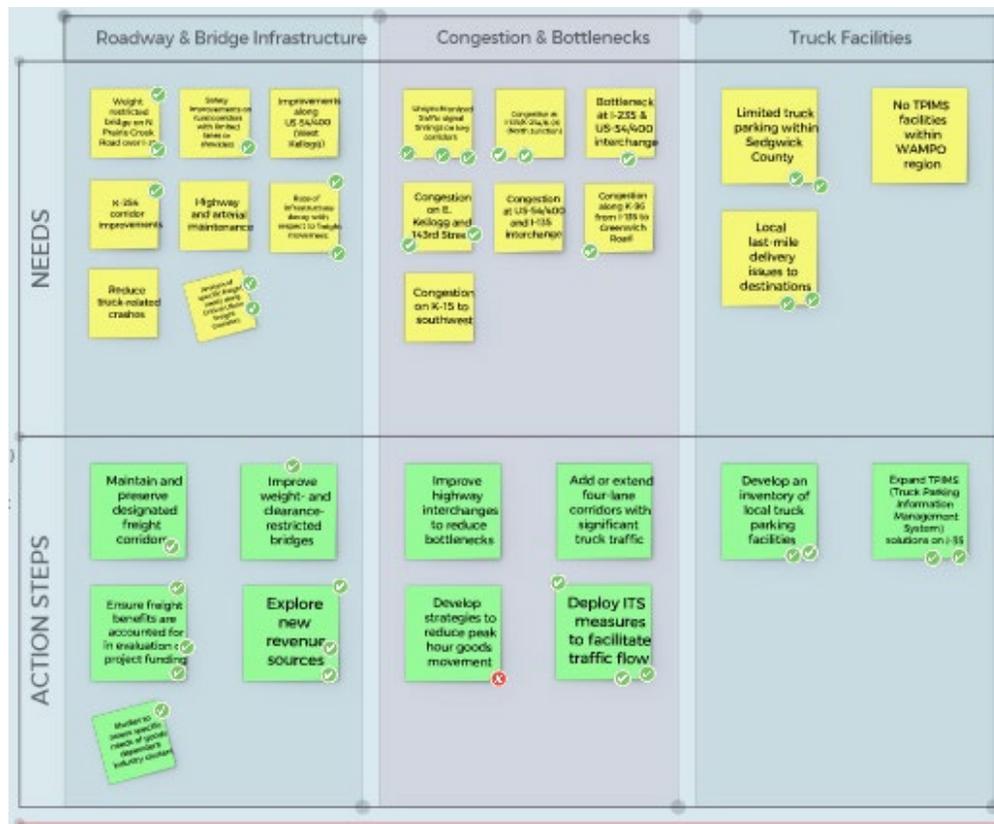
The plan acknowledges that there will likely be lasting impacts due to this new reality—even if it is difficult to forecast the effects of this unprecedented situation at this moment. The plan will address potential COVID-19 impacts while keeping the overall focus on long-term multimodal transportation planning.

## Stakeholder Engagement

WAMPO engaged the Freight Committee during the development of the Regional Freight Plan to open a dialogue with key stakeholders on various components of the plan development. The Freight Committee included representatives of local, county, and State governments, international trade organizations, and business leaders and carriers.

Through a series of online meetings held to maintain interaction during the period of social distancing, the stakeholders actively engaged in conversations to provide their input. Using the IdeaFlip interactive tool, the plan team encouraged stakeholders to provide input on eight priority areas: roadway and bridge infrastructure, congestion and bottlenecks, truck facilities, rail infrastructure, air infrastructure, land use, partnerships, and technology. Figure 2 illustrates input provided on three of the eight priority areas.

**Figure 2. IdeaFlip Priority Area Input**



Source: Stakeholder Meeting #1 Summary.

Based on a summary of stakeholder input, the plan team held further discussion on five key topics including truck parking, transload facilities, e-commerce, revenue and funding, and public/private coordination. The team used this input to develop recommendations and further input on the recommendations allowed for adjustments on implementation priorities.

## Existing Conditions

### Commodity Flows

To examine the demand to, from, and within the WAMPO region, the plan team analyzed the commodities, or goods, moving on the system both today and in the future. The commodity flow analysis examines freight modes, commodities, and trade flows and connections to trading partners both within and outside the State.

#### Top Commodities

The WAMPO region is a critical hub for agricultural shipments moving from western Kansas to national and international markets. In 2017, the top commodity moved to, from, and within the region by weight was cereal grains (22 percent). The other top five commodities by weight were non-metallic mineral products, crude petroleum, mixed freight, and coal not elsewhere classified. The top five commodities accounted for 57 percent of the total weight of goods. By value, the top commodity moved was mixed transportation equipment, followed by mixed freight, machinery, motorized vehicles, and electronics. These five commodity types accounted for \$30 billion, or 57 percent of the total value of good moved.

By 2040, the top commodities moved by weight are projected to be the same as 2017 top commodities, but crude petroleum and mixed freight will switch positions, likely due to the growth in e-commerce. The top five commodities by weight are projected to account for 53 percent of all goods by weight in 2040, down four percentage points from 2017. The forecast projects top commodities by value to remain relatively static through 2040 and the top five products combined will account for 62 percent, or \$51 billion, of the total value of all goods.

Top commodities by weight and value in 2017 and 2040 are shown in Figure 3 and Figure 4, respectively.

#### Modal Split

In 2017, 34 million tons of freight valued at \$52 billion moved through the WAMPO region. Truck is the dominant mode of freight movement, carrying 78 percent of the total weight of goods. Pipeline accounted for the second-highest modal share by weight at 14 percent. Rail had the third-highest modal share by weight at 6 percent. When measuring by value, truck accounted for the transportation of \$33 billion in goods (65 percent), the most of any mode. About \$12 billion in goods (22 percent) were transported by multiple modes and mail, which includes package delivery services as the U.S. Postal Service and FedEx, the second-highest mode share. Air had the third-highest modal share by value, accounting for \$3 billion (6 percent) of the total value of freight.

By 2040, freight will increase by over 10 percent in volume to 43 million tons, valued at \$82 billion. Agricultural, mineral, and food products are estimated to grow substantially by 2040, contributing to the significant increase in volumes. Truck will remain the dominant mode, continuing to account for 78 percent of freight movement by weight and 60 percent by value. The share of freight moved by air and multiple modes and mail will increase, which reflects the projected continued growth in e-commerce.

The modal splits by weight and value in 2017 and 2040 are shown in Figure 5 and Figure 6, respectively. Figure 7 shows percent change by mode.

#### Directional Split

In 2017, inbound shipments accounted for 60 percent of the 34 million tons moved by weight, the largest percent of any direction. Outbound shipments accounted for the next highest direction at 31 percent and internal

movement of goods accounted for 10 percent of the total volume of goods movement. The imbalance between inbound and outbound goods can be explained by the presence of aircraft manufacturers in the region, which account for the delivery of 30 percent of all general aviation aircraft built in the United States. These manufacturers require multiple parts and materials to construct the aircraft, but the final product is then flown out on its own power. When measured in volume, the inbound movement of goods accounted for the highest share at 53 percent. Due in part to the high value of the finished aviation products, the outbound share of freight movement by value was 41 percent compared to the 31 percent share for outbound goods by weight. Internal goods movement accounted for six percent of the total value of goods moved.

By 2040, projected freight movements remain largely consistent with current trends. Outbound goods are projected to grow the fastest, increasing by 33 percent in terms of volume and 73 percent in terms of value. The volume of goods moving inbound and internally are both projected to increase by 27 percent. In terms of value, inbound goods are projected to increase by 50 percent and internal goods by 33 percent. This indicates that the WAMPO region will increase exports faster than imports, with significant growth in high value exports.

The directional splits by weight and value in 2017 and 2040 are shown in Figure 8 and Figure 9, respectively. Figure 10 shows percent change by direction.

## Origin/Destination

### *Outbound Domestic Trading Partners*

Goods shipped from the WAMPO region travel to a wide variety of U.S. destinations. By weight in 2017, over 10 million tons of goods were shipped to destinations in the United States beyond the WAMPO region. The top domestic destination by weight were other counties in Kansas (58 percent), followed by Texas (10 percent), Oklahoma (6 percent), Alabama (3 percent), and Arkansas (2 percent). The forecast projects no change in the top five destinations by weight in 2040.

By value, the top destinations in 2017 were dispersed across the country, indicating that high value goods reach farther markets than high weight goods. The top five destinations by value accounted for \$14 billion (66 percent) or the total outbound value of goods in 2017. The top domestic destinations by value were Washington (28 percent), other counties in Kansas (23 percent), Texas (7 percent), Missouri (4 percent), and Oklahoma (4 percent). Washington is the top destination for goods by value because Spirit AeroSystems ships aircraft components to Boeing's final assembly facility in Renton, Washington by truck and rail. By 2040, Washington is expected to remain the top domestic destination by value with an increase in its share from 28 percent to 36 percent. Florida is expected to replace Oklahoma as the fifth-highest destination by value. The top five destinations are projected to receive approximately \$25 billion of goods in 2040.

### *Inbound Domestic Trading Partners*

The WAMPO region receives goods from trading partners across the country. By weight in 2017, over 20 million tons of goods were shipped to the WAMPO region. The top domestic origins by weight were other counties in Kansas, Oklahoma, Texas, Illinois, and Nebraska. The forecast projects no change in the top five origins by weight by 2040.

By value, the top five destinations accounted for \$18 billion (64 percent) of the total value of goods shipped to the WAMPO region. The top domestic origins were other counties in Kansas, Texas, Oklahoma, California, and Missouri. These five origins accounted for \$18 billion (64 percent) of the total value of goods shipped to the WAMPO region.

### *International Trading Partners*

In 2017, international trade accounted for just over one million tons of goods shipped to and from the WAMPO region, with a total value of nearly \$3 billion. Seventy percent of foreign shipments by weight were imports with the remaining 30 percent as exports. By 2040, total foreign shipments in the WAMPO region are projected to rise to two million tons of goods worth more than \$9 billion.

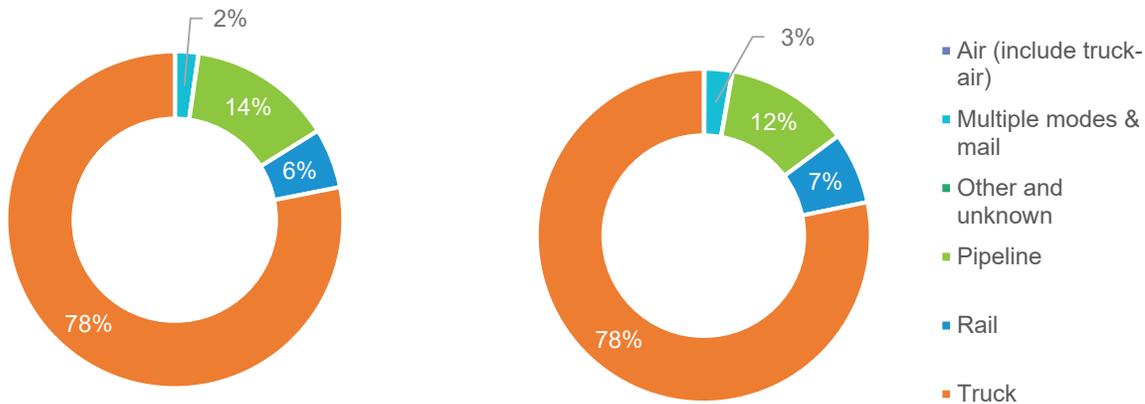
For exports, the top three destinations in 2017 by weight were Canada, Mexico, and Africa. The top export to Canada was crude petroleum while the top export to Mexico and Africa was cereal grains. These three destinations accounted for 91 percent of the 300,000 tons of exported goods by weight. By value, Canada is the top international export destination followed by Mexico and Europe. The top export by value to all three destinations was transportation equipment, highlighting the international importance of the aviation industry to the region. These three destinations accounted for 67 percent of the \$1 billion in goods exported. By 2040, Mexico is projected to become the top export destination by weight followed by Canada and Rest of Americas. In terms of value, Canada is projected to remain the top export destination followed by Europe and Rest of Americas (defined as Central and South America).

For imports, the top three origins in 2017 by weight were Canada, Rest of Americas, and Eastern Asian. The top import from Canada was crude petroleum and fertilizers from Rest of Americas. These three origins accounted for 670,000 tons (93 percent) of imports by weight. By value, imports totaled just under \$2 billion in 2017. The top three import origins by value were Canada, Eastern Asian, and Europe, accounting for over \$1 billion (75 percent) of imported goods. The top import by value from Canada was crude petroleum, while the top imports from Eastern Asian and Europe were electronics and machinery, respectively. By 2040, the top origins by weight are projected to remain the same. However, the total value of imports is projected to more than triple to over \$5 billion. While the top importers by value are projected to remain the same, transportation equipment is expected to be the top import by value from all three areas.

**Figure 3. Freight Weight by Mode**

2017 Total Tons: 34 Million

2040 Total Tons: 43 Million

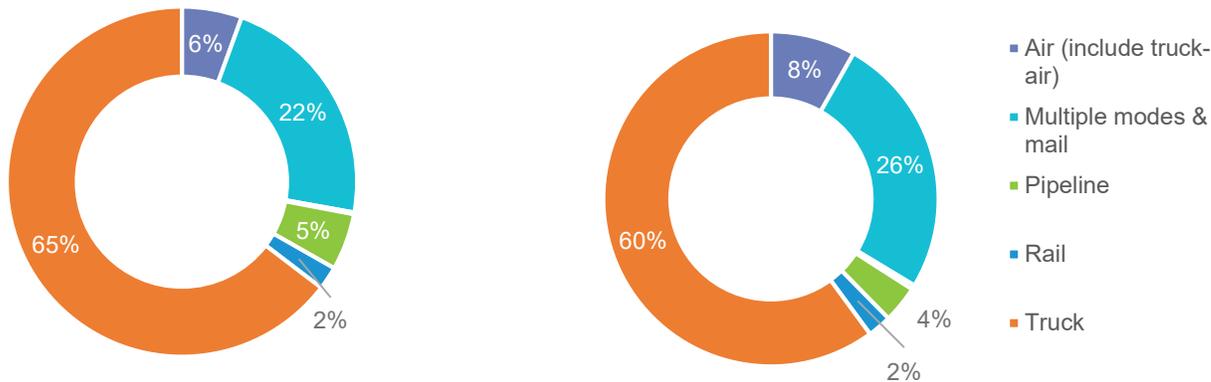


Source: Federal Highway Administration, Freight Analysis Framework 4.4, 2019.

**Figure 4. Freight Value by Mode**

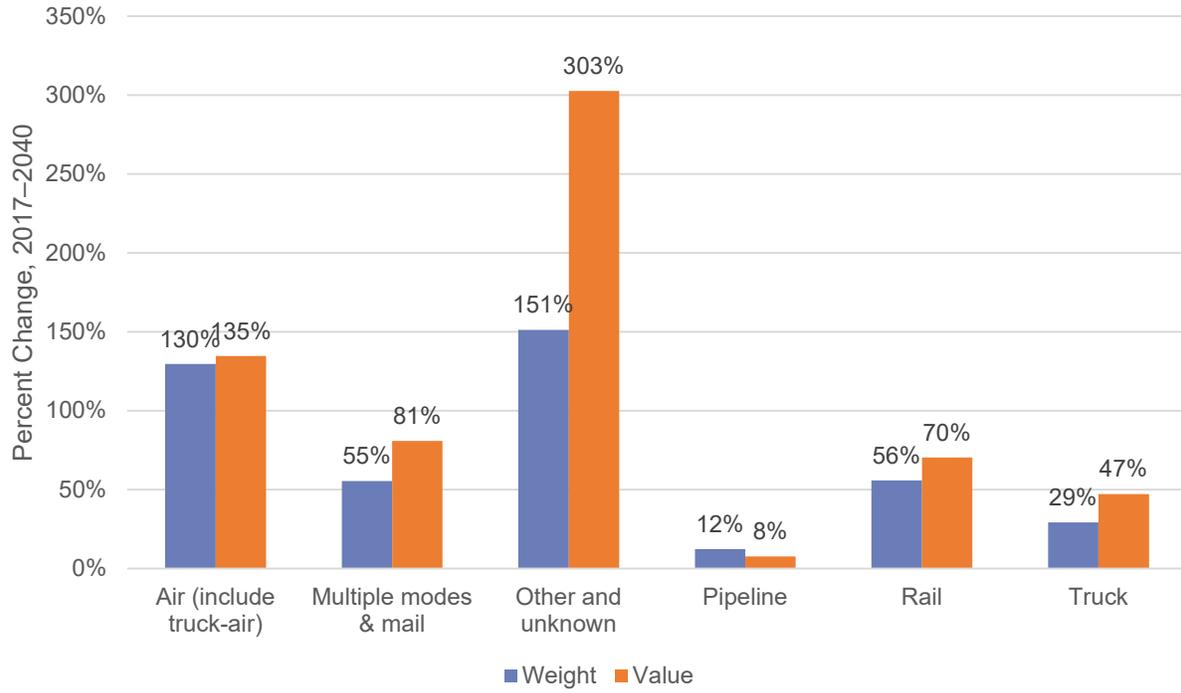
2017 Total Value: \$52 Billion

2040 Total Value: \$82 Billion



Source: Federal Highway Administration, Freight Analysis Framework 4.4, 2019.

**Figure 5. Percent Change in Freight Tons and Value by Mode**

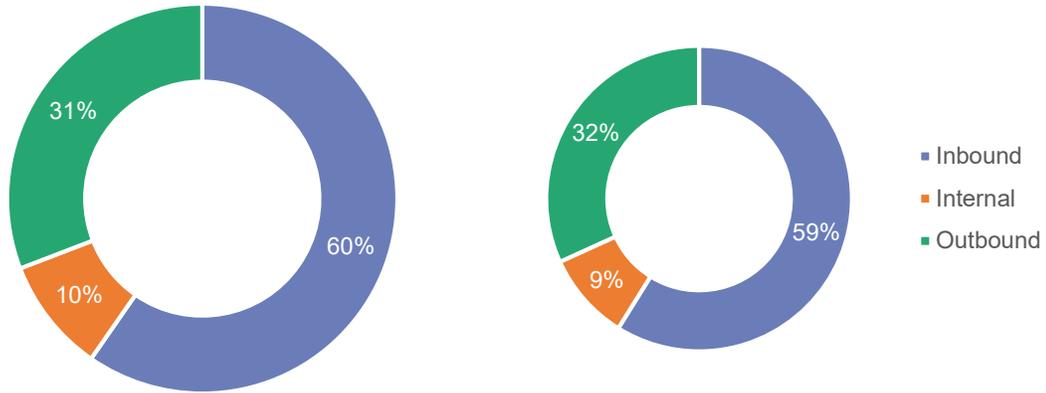


Source: Federal Highway Administration, Freight Analysis Framework 4.4, 2019.

**Figure 6. Direction of Goods Movement by Weight**

2017 Total Tons: 34 Million

2040 Total Tons: 43 Million

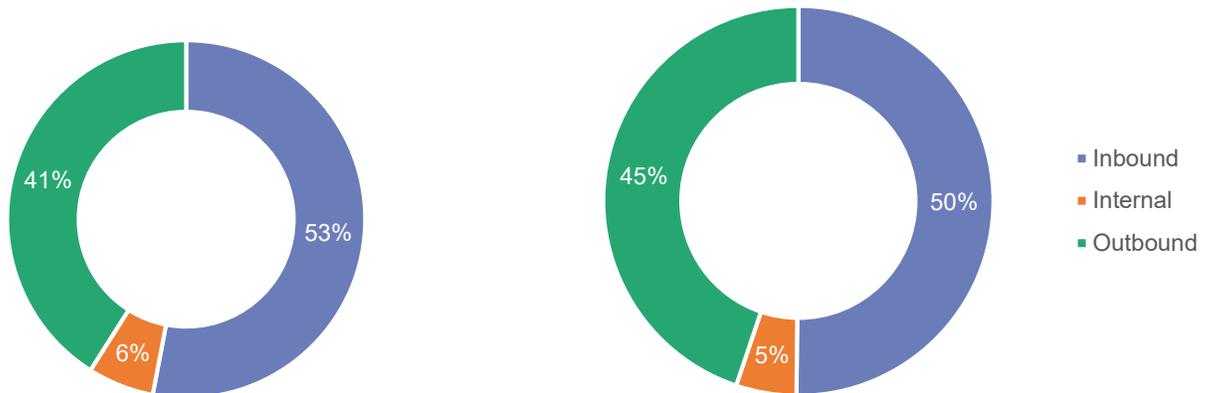


Source: Federal Highway Administration, Freight Analysis Framework 4.4, 2019.

**Figure 7. Direction of Goods Movement by Value**

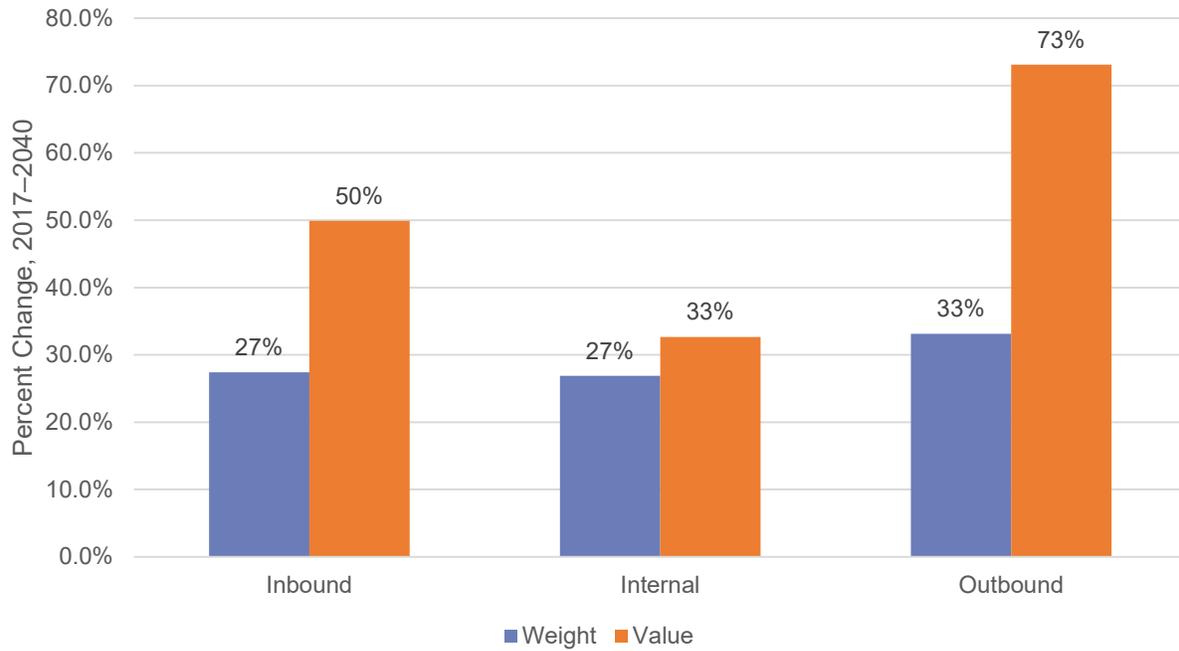
2017 Total Value: \$52 Billion

2040 Total Values: \$82 Billion



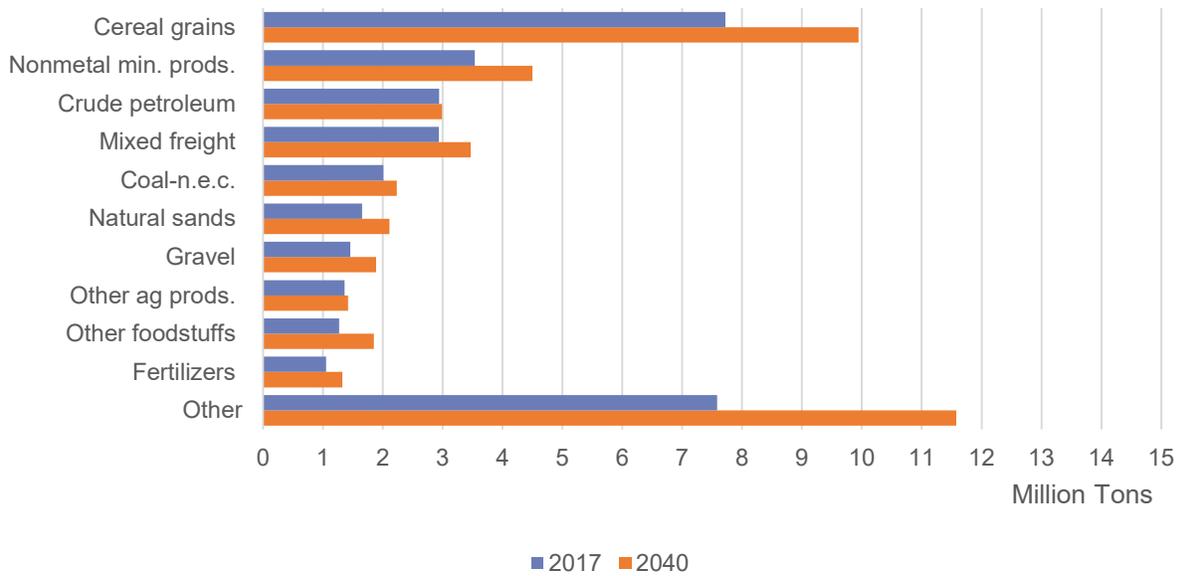
Source: Federal Highway Administration, Freight Analysis Framework 4.4, 2019.

**Figure 8. Percent Change in Direction of Goods Movement by Weight and Value**



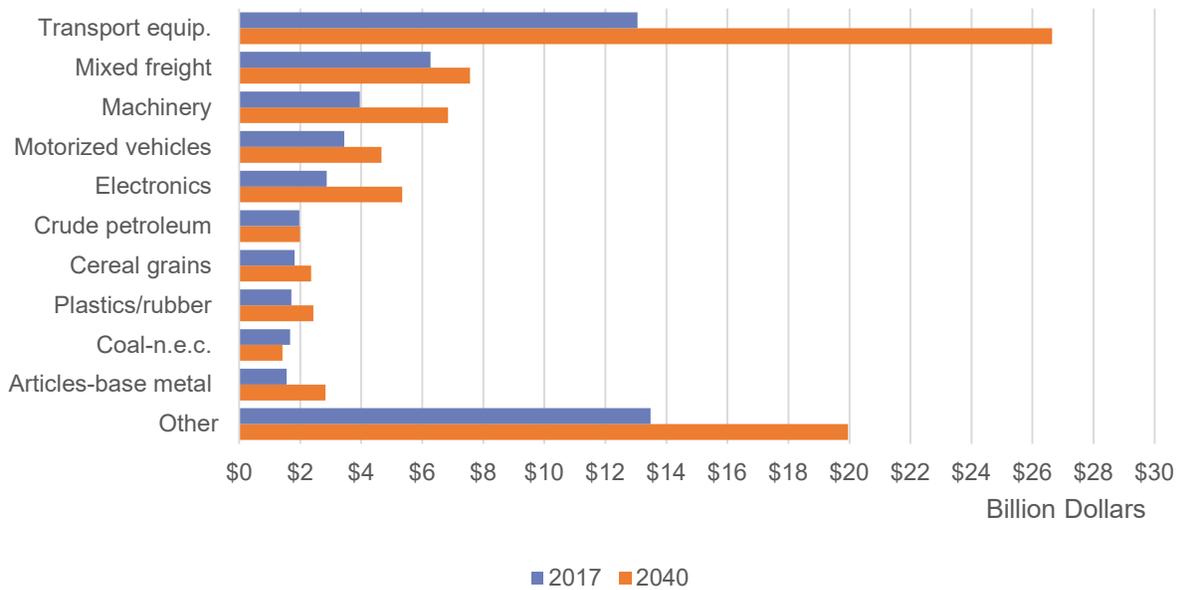
Source: Federal Highway Administration, Freight Analysis Framework 4.4, 2019.

**Figure 9. Top Commodities by Weight**



Source: FHWA, Freight Analysis Framework 4.4, 2019.

**Figure 10. Top Commodities by Value**



Source: FHWA, Freight Analysis Framework 4.4, 2019.

## Freight Network

The freight transportation infrastructure in the WAMPO region includes highways, railroads, airports, pipelines, and broadband. There are no navigable freight waterways in the region.

### Highway

Of the nearly 4,900 miles of roadway in the WAMPO region, approximately 440 miles are located on the WAMPO Multimodal Freight Network. Interstates (I-35, I-135, and I-235) provide north-south access and a partial beltway around the City of Wichita. Other key Federal or State highway routes (US-54/400, K-96, K-254, K-42, K-15, and K-53) provide connections with other urban centers and States outside of the WAMPO region. An estimated 90 percent of freight movement in, out, and through the region are via truck on highways and other roadways.

The WAMPO region has high truck traffic volumes, particularly on the I-35 corridor, with average annual daily truck traffic (AADTT) greater than 3,000 trucks. The I-35 corridor also carries more over-size/over-weight loads than any other corridor. Rural regions and major highways have the highest percentage of trucks, while increased passenger traffic in cities results in a lower truck percentage in urbanized areas. Figure 11 shows average annual daily truck traffic volume on highways, while Figure 12 shows average annual daily truck traffic percent on highways.

In general, the WAMPO region does not suffer from congestion or delay with an average system delay of less than one minute and the highway system provides reliable truck travel times. The average travel time index for each road category was lower than the target travel time index, indicating there is not an unacceptable level of congestion in the region, even in areas likely identified as bottlenecks. Maximum truck travel time reliability on highways is shown in Figure 13.

### National Designated Freight Corridors

The National Highway Freight Network includes the following system of roadways: Primary Highway Freight System, Critical Urban Freight Corridors, and Critical Rural Freight Corridors.

The Primary Highway Freight System (PHFS) includes highways identified as the most critical highway portions of the U.S. freight transportation system. In the WAMPO region, the PHFS includes:

- I-35/Kansas Turnpike
- I-135

Critical Urban Freight Corridors (CUFC) are public roads in urbanized areas providing access to the primary system and interstates with connections to other important ports, public transportation facilities, or other intermodal facilities. Approximately half of the CUFC in Kansas are located in the WAMPO region, highlighting the importance of the roadway network to the movement of freight. In the WAMPO region, CUFC include:

- US-54/400, Kansas Turnpike to 135th Street West (17.5 miles)
- K-15, I-135 to 71st Street South (5.6 miles)
- Broadway Street, I-235 to 13th Street (3.5 miles)
- West Street, K-42 to US-54/400 (1.5 miles)
- Wichita Dwight D. Eisenhower National Airport Connector, US-54/400 to Airport (1.5 miles)
- 61st Street North, I-135 to Floodway Bridge (1.0 miles)

- Hydraulic Street, I-135 to 37th Street North (1.0 miles)
- 21st Street, I-135 to Broadway Street North (1.0 miles)
- 29th Street, I-135 to Broadway Street North (1.0 miles)

Critical Rural Freight Corridors (CRFC) are public roads that are not in an urbanized area providing access to the primary system and interstates with connections to other important ports, public transportation facilities, or other intermodal freight facilities. There are no CRFC in the WAMPO region. The CUFCs and CRFCs are eligible for FAST ACT formula freight funding.

## Rail

Four railroads operate on approximately 175 miles of track in the WAMPO region. Within the region, Union Pacific Railroad and BNSF Railway operate as Class I railroads while the Kansas & Oklahoma Railroad and Wichita Terminal Association operate as Class III/shortline railroads. Figure 14 shows the rail network.

Union Pacific operates around five trains per day in the region and its main commodities are automotive, grain, and merchandise. BNSF operates over 30 trains per day in the region and its main commodities are coal, grain, intermodal, and merchandise. Both Class I railroads are capable of maximum loaded car weights of 286,000 pounds or more with no clearance restrictions.

The Kansas & Oklahoma Railroad has trackage radiating north, west, and southwest from its headquarters in Wichita and its main commodities are agricultural and industrial products such as corn, wheat, fertilizers, lumber, cement, sand, and rock. The Wichita Terminal Association is a switching and terminal railroad owned by a partnership between Union Pacific and BNSF. It operates nine miles of track where it primarily moves grain, grain-related products, and scrap steel.

In the WAMPO region, BNSF operates two transload facilities, United Warehouse Company and Garvey Public Warehouse to move freight from one mode of transportation to another. There are also five major freight railyards and grain elevators in the region. The two freight railyards, Union Pacific United Warehouse Terminal and BNSF Terminal, are manifest facilities that handle mixed trains with a variety of rail car types and products. Three shuttle grain elevators, the highest capacity grain elevators, also serve as the most common truck-rail transfer facilities, given the importance of grain production to the State's economy. The grain elevators include Bartlett Grain Shuttle Elevator (UP, BNSF, and WTA), Gavilon Grain LLC Shuttle Grain Elevator (UP, BNSF, and K&O), and Right Coop Shuttle Grain Elevator (BNSF).

## Air

There are 33 airports in the WAMPO region offering commercial passenger service, freight service, military service, and/or general aviation service: 24 private general aviation facilities, eight public civilian airfields, and one military airfield. The airport locations are shown in Figure 15.

Of the airports in the WAMPO region, only Wichita Dwight D. Eisenhower National Airport (ICT) is equipped to handle substantial freight operations on three runways (6300 feet, 7300 feet, and 10300 feet). As one of only two airports in Kansas that supports scheduled air cargo service, it accounts for the majority of air cargo tonnage shipped into and out of Kansas (80 percent of all air freight and mail in Kansas during a twelve-month period). Eisenhower Airport is not only the air freight hub of Kansas, but it is also the gateway for planes and aerospace products manufactured in the region to depart under their own power. The airport has air cargo facilities to accommodate cargo from both integrated express carriers and cargo carried by passenger airlines. There are

four integrated express carriers operating at the airport: DHL, Federal Express, United Parcel Service (UPS), and UPS Supply Chain Solutions.

McConnell Air Force Base, the military airfield, primarily conducts (in air) refueling and airlift operations. The airfield receives approximately 1.6 million gallons of fuel per month via pipeline to complete these activities. McConnell Air Force Base accommodates a workforce of more than 6,500 employees, approximately 3,000 family members, and 9,000 retirees.

## Pipeline

Overall, pipelines in the WAMPO region offer limited commodity movement. The primary pipeline provides fuel to McConnell Air Force Base to serve refueling operations. In 2017, a pipeline disruption caused a temporary shift to trucking. During this outage, 123 trucks were needed weekly to supply the base with the quantity of fuel normally transported by pipeline daily.

## Broadband

Broadband access is an important factor in modern business, enabling transmission of information and access to world markets. This is especially important in the WAMPO region as advanced manufacturing relies on global supply chains and communication. Overall, the WAMPO region has wide broadband coverage with average downstream speed in most areas of at least 20 megabits per second. Figure 16 shows broadband coverage by census tract.

## Freight Facilities

Freight movement is most concentrated around facilities that require input or output of goods to market. These freight facilities include distribution centers, bonded warehouses, grain elevators, and more. Figure 17 shows freight facilities and their location relative to the freight transportation network.

## Existing Documents and Plans

The planning team reviewed existing freight-related plans and documents to highlight key findings and recommendations. In addition to a summary of the documents, the team identified outstanding actions.

### WAMPO Freight Plan

*WAMPO Freight Plan* (WAMPO, 2010) sought to identify the transportation systems that exist in the WAMPO region used to move freight into, out of, and within the region. This plan includes a review of factors and trends that dictate, affect, and influence the multiple modes of traffic and the flow of freight. The plan also discussed procedures for planning and programming freight-related projects through the WAMPO transportation planning process. The plan focused on transportation system maintenance, supporting intermodal movements, minimizing conflicts between freight and non-freight land use and modes, safety, and compatibility with State and Federal planning efforts.

### Kansas Statewide Freight Plan

The *Kansas Statewide Freight Plan* (Kansas Department of Transportation, 2017) provides a 20-year planning horizon for freight shipping trends and prioritizes freight projects to be completed over the next five years. Freight needs and recommendations identified in the plan include:

- Low Overpass Clearances: Continue increasing clearance of low clearance bridges.
- Congestion and Bottlenecks: Develop strategies to reduce peak-hour goods movement, deploy ITS measures to facilitate traffic flow, implement open-road tolling to increase the speed of goods movement, improve rural freight movement through bypasses, add or extend four-lane corridors, and install passing lanes.
- Crashes: Reduce conflicts at rail-highway crossings.
- Truck Parking: Continue to develop ITS solutions to truck parking; improve parking geometrics
- Rail Crossings: Improve at-grade crossings with negative incident trends.
- Rail Location: Relocate train operations to alternative rail corridors outside the urban region.
- Track Weight: Improve shortline railroad tracks to 268,000-pound weight capacity.
- Transload Facilities: Add transload facilities to accommodate transfers between truck and rail.
- Air Cargo Facilities: Maintain air cargo facilities at ICT and expand as needed.

### Kansas Statewide Freight Network Truck Parking Plan

The *Kansas Statewide Freight Network Truck Parking Plan* (Kansas Department of Transportation and Kansas Turnpike Authority, 2016) identified current and future freight truck parking needs to position Kansas to take action and adopt policies that create a safer driving environment, better use of parking assets, and increase the economic impact of trucks in Kansas. The plan included four primary recommendations:

- Improve parking information and sharing
- Add or improve parking assets
- Explore creating parking improvement partnerships
- Examine pro-parking policies for freight trucks

The plan acknowledges that Wichita is one of the State's top freight generators and suggests working with the Department of Wildlife and Parks to incorporate truck parking areas in existing tourist information sites where appropriate, such as the location along I-35 Turnpike 10 miles south of Wichita in Belle Plaine. The plan also recommends static sign placement with distance to truck parking outside major metropolitan areas such as Wichita.

### Wichita Railroad Master Plan

The *Wichita Railroad Master Plan* (City of Wichita, 2013) is a coordinated, comprehensive plan to outline long-term projects to improve transportation mobility in Wichita for highway users and railroads. The plan reviewed improvement options for four areas of the city that include several railroad corridors such as the BNSF Railway, Union Pacific Railroad, Kansas & Oklahoma Railroad, Wichita Terminal Authority, and Wichita Union Terminal. In addition to small-scale improvements, the plan recommends advancing improvements in two areas of the city:

- Area 1: Grade separation of BNSF corridor north of Lincoln Street to south of Pawnee Street
- Area 2: Elevate 21st Street and 29th Street and relocate BNSF railyard

### WAMPO Railroad Crossing Plan

The *WAMPO Railroad Crossing Plan* (WAMPO, 2007) assessed safety and congestion at the region's highway-railroad grade crossing to benefit the traveling public and private industries that are vital to the area's economic success. The plan included an extensive system inventory that WAMPO used to identify needs and deficiencies.

Focus areas generally included the Top 50 Hazard Index crossings and locations identified through stakeholder and public engagement.

## Regional Growth Plan

The *Regional Growth Plan* (Greater Wichita Partnership, 2018) helps regional partners achieve heightened economic growth and prosperity through increasingly refined and targeted economic development activities in the ten-county greater Wichita region. The plan includes the top ten key initiatives:

- Identify and attract top talent for the greater Wichita region's priority employment sectors
- Develop a robust, coordinated, and results-driven business retention and expansion program
- Purposefully establish a regional ecosystem for innovation, intellectual property creation, commercialization and product development
- Invest in a high-capacity, nationally-focused earned media program
- Effectively engage site consultants and industry influencers
- Develop a reskilling initiative transitioning underemployment talent for careers in targeted industries
- Leverage the region's information and communications technology council to guide and inform the sector's strategic growth
- Leverage public-private partnerships to develop a Cybersecurity Center of Excellence and advanced cyber-range in the greater Wichita region
- Elevate the urgency to develop high-capacity broadband in the greater Wichita region
- Launch a regional talent development cooperative

## Wichita-South Central Kansas Regional Export Plan

The *Regional Export Plan* (Global Cities Initiative, 2017) conducted an economic and export performance analysis for the ten-county greater Wichita region. Key finding from the market assessment include:

- Wichita-South Central Kansas is export dependent, but not highly globally oriented.
- The regional economic is vulnerable to the volatility of aviation exports.
- Ninety percent (90 percent) of exports in the region are goods, and aviation is dominant.
- Many current exporting companies are passive in their decision to export and their selection of export markets.
- Most exporting companies do not use export assistance because they are not aware it is available.

To address these needs, the plan identifies four core strategies:

- Build a thriving export assistance program.
- Integrate support for global opportunities into the larger economic development system.
- Catalyze export growth for companies in the aviation supply chain.
- Target under exporting companies in key regional industry clusters (non-aerospace).

## Summary of Major Outstanding Items

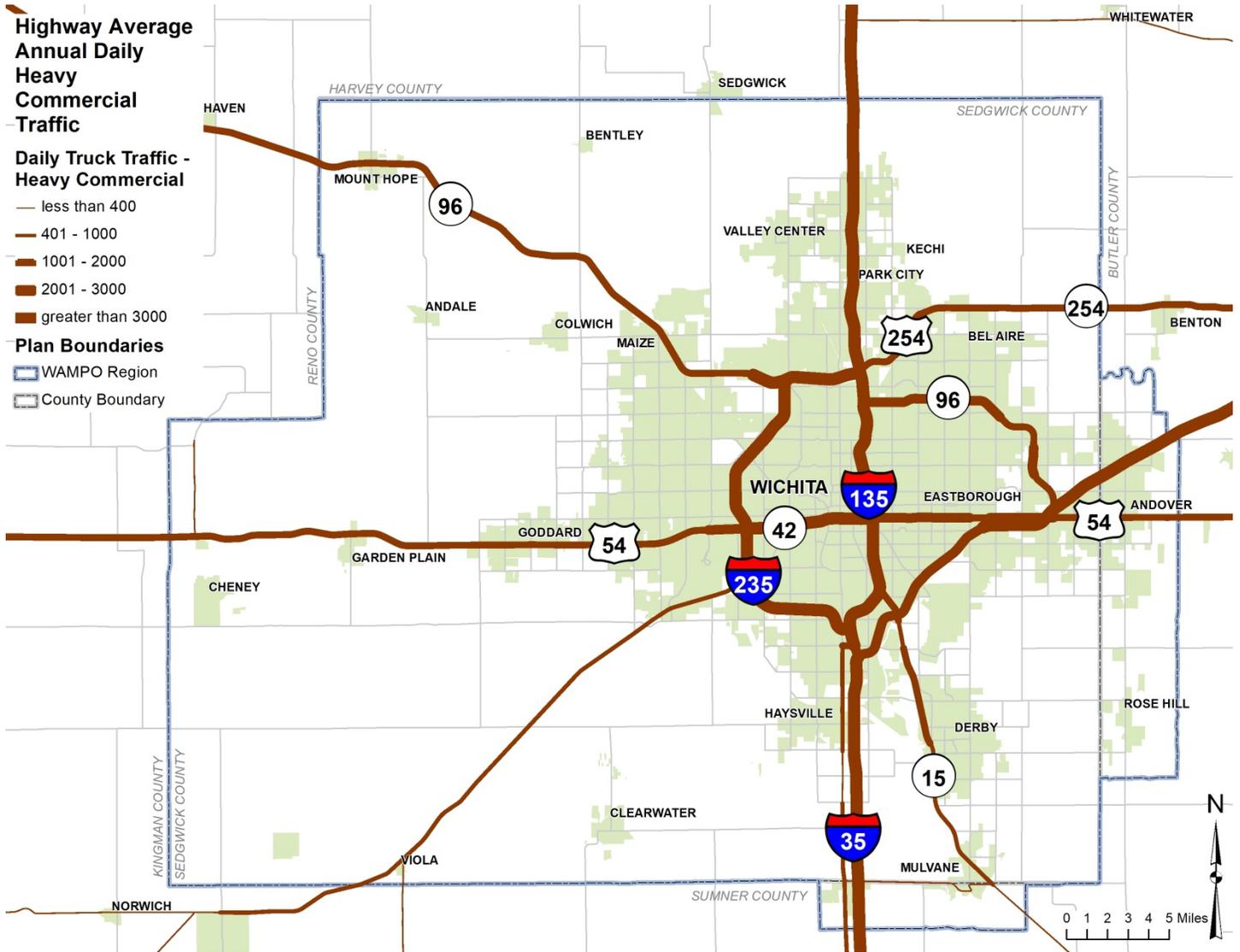
Table 1 includes projects identified in the existing documents and plans that have yet to be completed:

**Table 1. Summary of Major Outstanding Freight Projects**

Route	Location	Improvement	Action
I-235	Bridge #079 and Bridge #080	Bridge replacement on I-235 in Sedgwick County	Letting anticipated in 2020
I-235	I-235 & Kellogg Interchange	Interchange improvements in Sedgwick County	No funding identified
US-54/400	119th Street to 135th Street	Widen roadway	Construction start date to be determined
US-54/400	151st Street to 167th Street	Widen roadway	Construction start date to be determined
Meridian Avenue	77th Street North to 69th Street North	Reconstruct and pave Meridian Avenue with new 10-foot path and storm sewer improvements	Design contract anticipated in 2020
61st Street North	Broadway to Wichita-Valley Center Floodway	Construct an urban three-lane roadway and intersection improvements to Broadway and 61st Street with bicycle and pedestrian pathways	Design initiated with construction start date to be determined
159th Street	Bridge on 159th Street East over Kansas Turnpike	Reconstruct bridge and approaches to four-lane width with new 10-foot path to meet current functional and structural requirements	Under construction with completion anticipated in 2020
17th Street	I-135 to Broadway	Reconstruct existing two-lane roadway to three-lane section with curb and gutter, drainage improvements, and bicycle and sidewalk facilities	Design complete with anticipated letting in 2020

Source: Kansas Department of Transportation *Kansas Statewide Freight Plan, 2017*; Wichita Area Metropolitan Planning Organization *MOVE 2040, 2015*.

Figure 11. Highway Average Annual Daily Heavy Commercial Traffic



Source: Kansas Department of Transportation, 2019.

Figure 12. Highway Average Annual Daily Heavy Commercial Traffic Percent

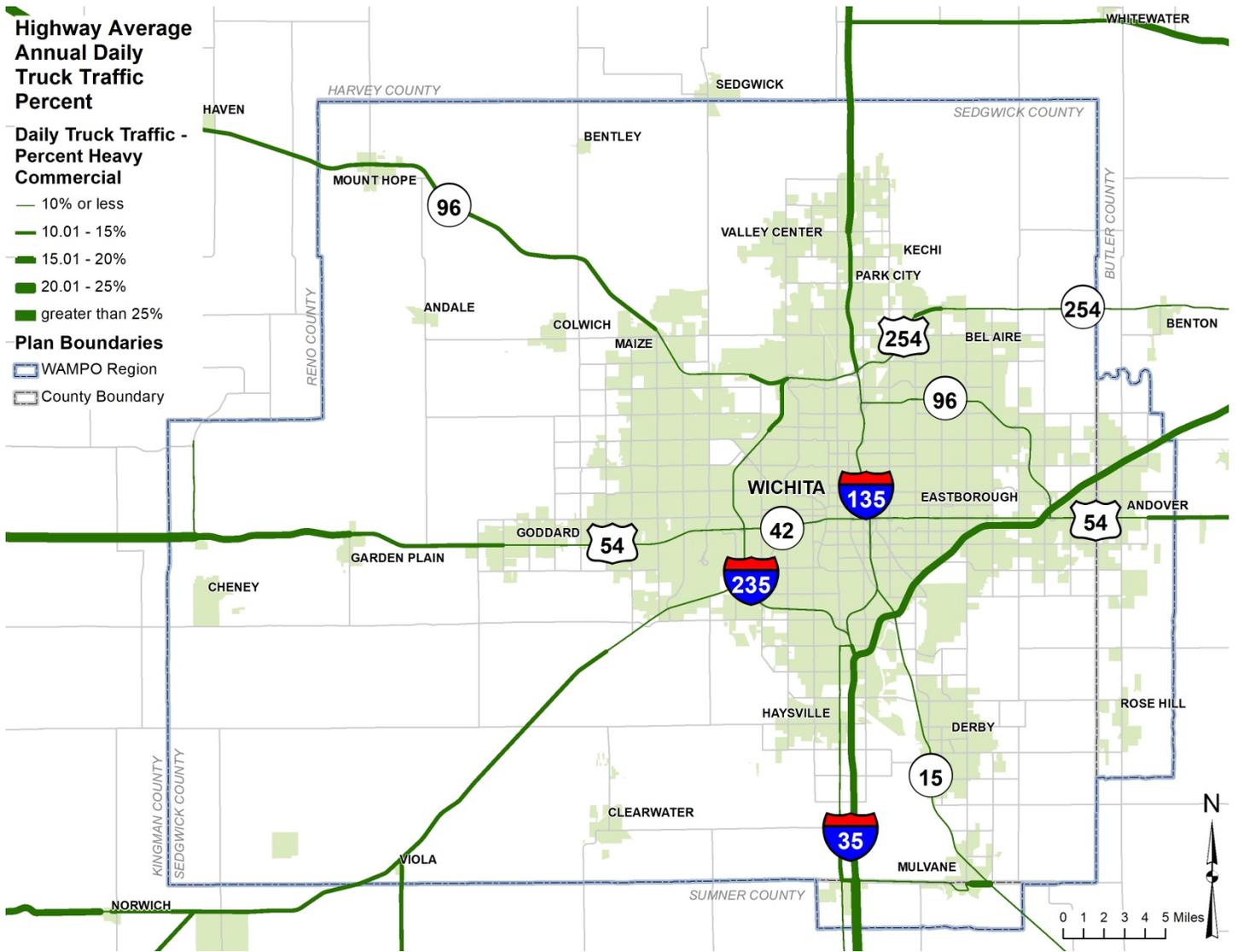
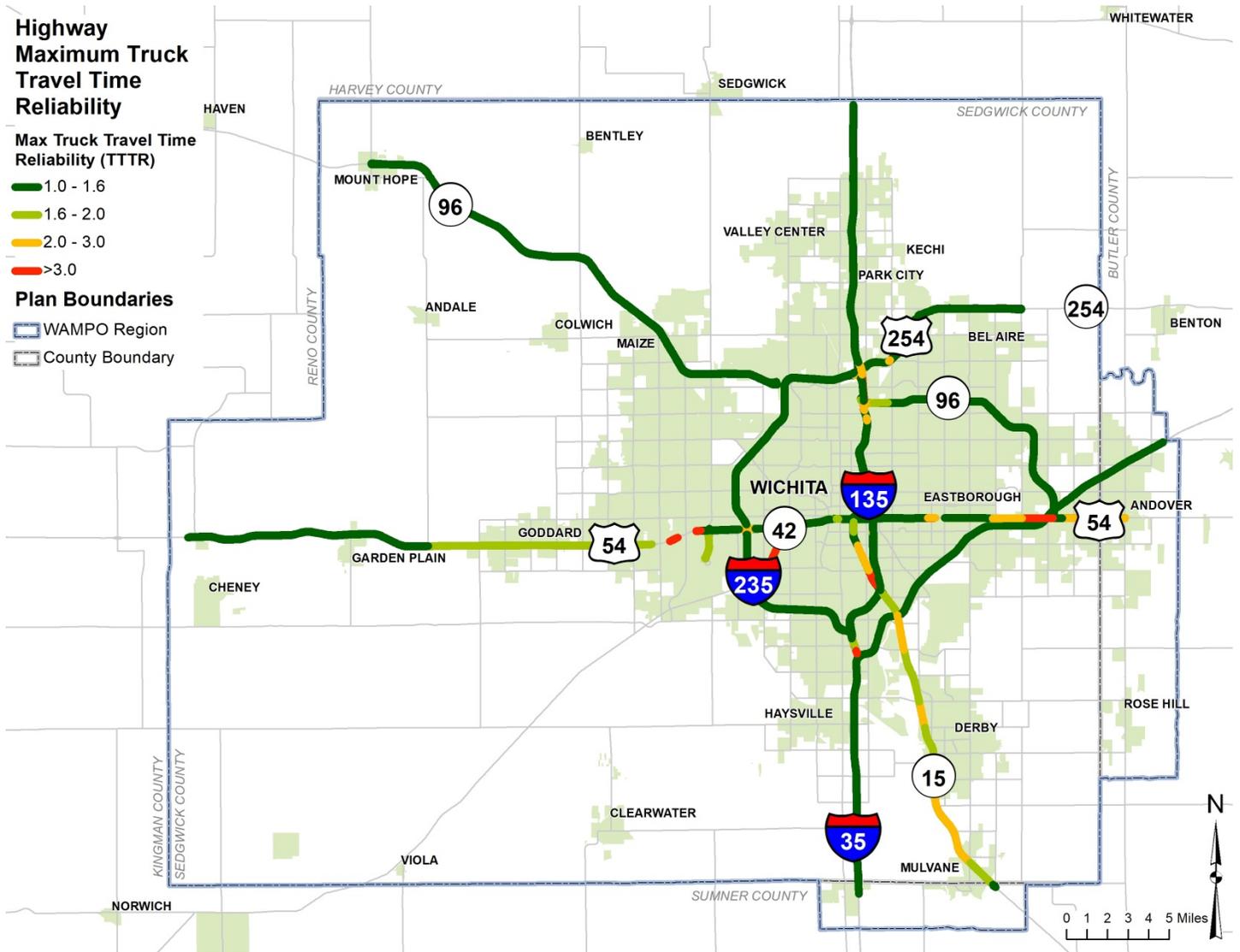
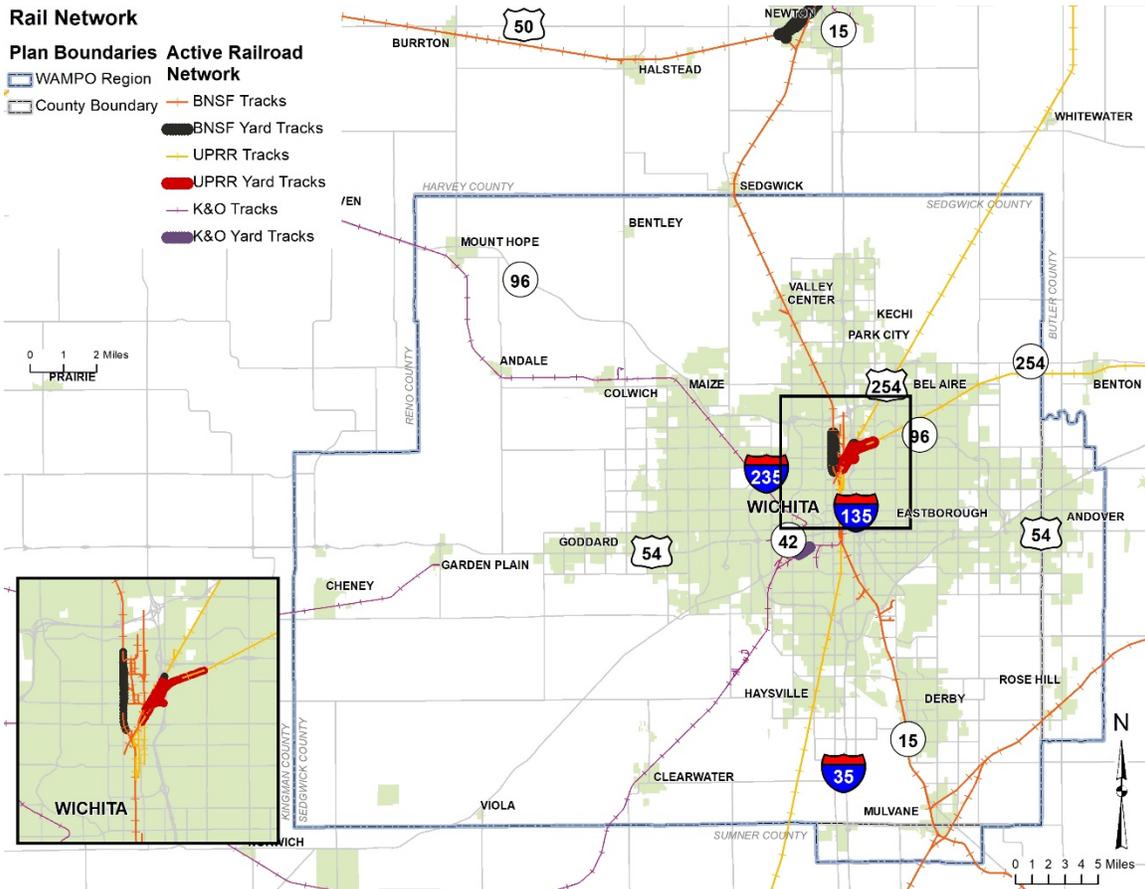


Figure 13. Highway Maximum Truck Travel Time Reliability



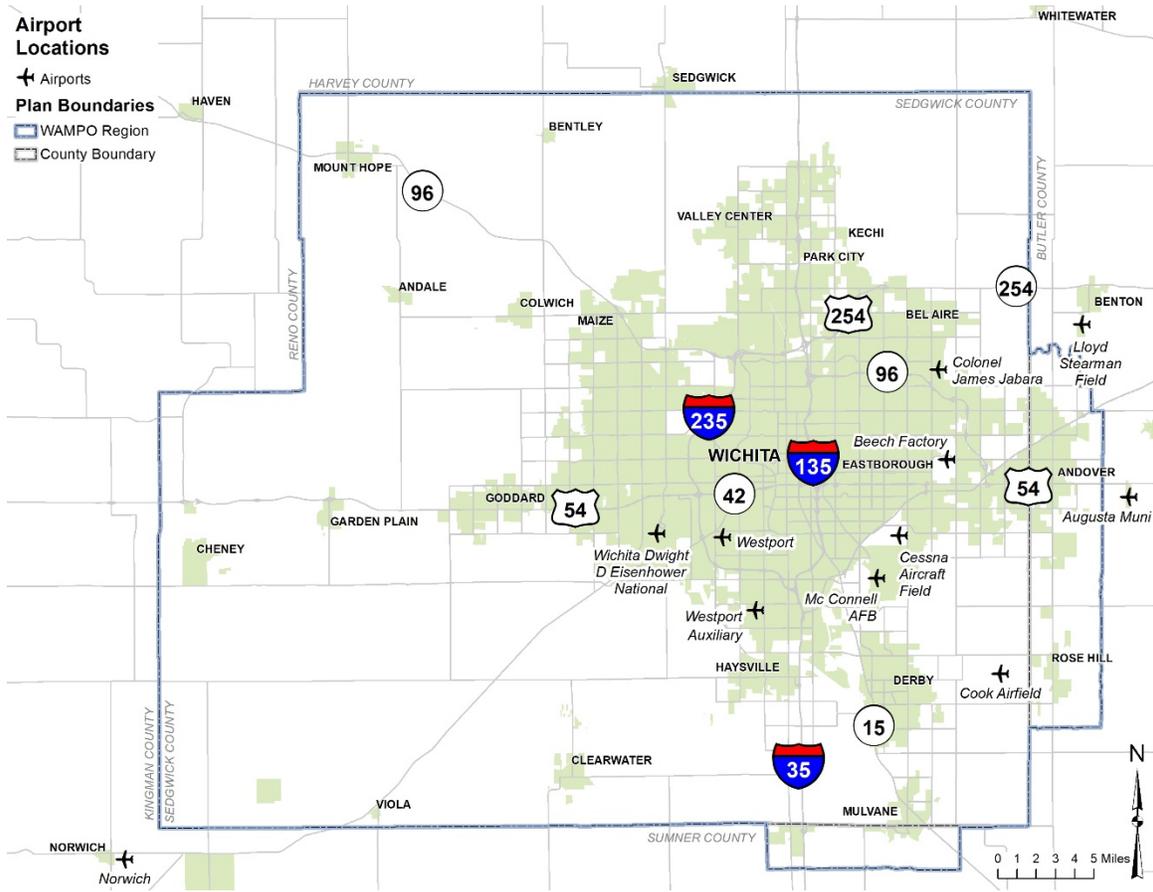
Source: National Performance Management Research Data Set, 2017-2019.

Figure 14. Rail Network



Source: Kansas Department of Transportation, 2019.

Figure 15. Airport Locations



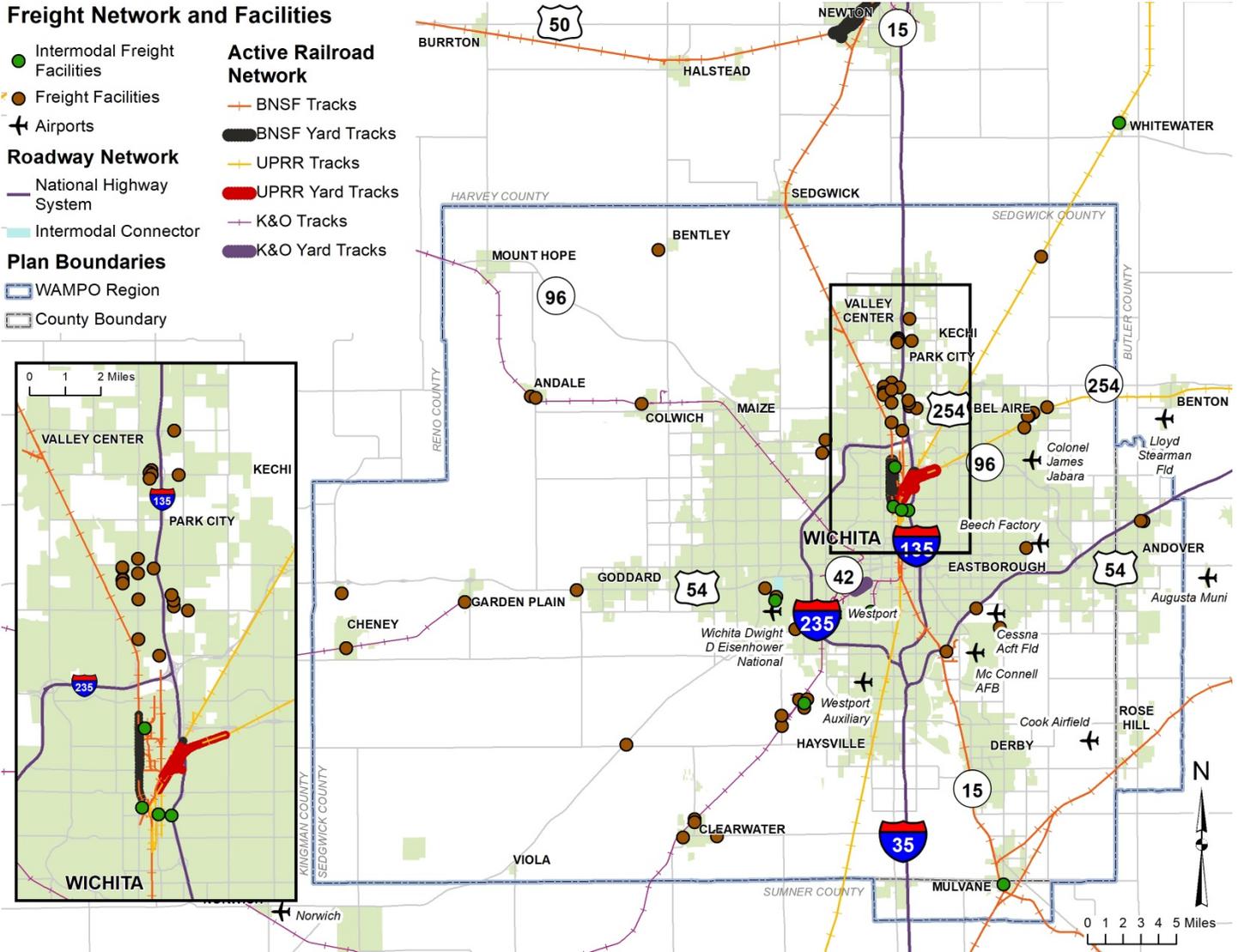
Source: Federal Aviation Administration, 2019.



Figure 17. Freight Facilities

**Freight Network and Facilities**

- Intermodal Freight Facilities
- Freight Facilities
- ✈ Airports
- Roadway Network**
  - National Highway System
  - Intermodal Connector
- Plan Boundaries**
  - WAMPO Region
  - County Boundary
- Active Railroad Network**
  - BNSF Tracks
  - BNSF Yard Tracks
  - UPRR Tracks
  - UPRR Yard Tracks
  - K&O Tracks
  - K&O Yard Tracks



Source: Wichita Area Metropolitan Planning Organization, 2019.

## Freight Trends

Understanding broad freight trends is important to the planning process, as it supports the WAMPO Regional Freight Plan in being forward-facing. These trends, described below, influence investments and other decisions made in the region.

### E-Commerce

E-commerce, or electronic commerce, is the buying and selling of goods or services via the internet. This includes mobile shopping, online orders, online payment with encryption—each encompassing a wide variety of data, systems, and backend tools. There are several models for E-commerce, ranging from consumer-to-consumer (C2C) to business-to-business (B2B) and they vary in their impact to the freight transportation system. Customer experience drives the need for delivery speed and certainty, which creates a need for changes to how traditional freight delivery systems operate.

**Modes:** Shippers can no longer rely on a single mode of transportation. E-commerce order fulfillment is more inconsistent than those for more traditional bulk shipments. Shippers now must select the mode that best accommodates each shipment’s weight, dimensions, distance to destination, delivery requirements, special handling needs, and other direct-to-customer variables. Unique to online services and express delivery is the use of personal vehicles. Personal vehicle use in express delivery will affect traffic patterns including the potential of an increase of non-peak-period trips into residential areas.

**First and Last Mile:** Shippers capable of executing first-mile and last-mile transportation are better positioned to control costs, ensure delivery speed and accuracy, and enrich the customer service experience. Home delivery growth is the most noticeable impact of E-commerce as consumers switch to online purchases especially for discretionary goods. Transportation systems are seeing a reduction in consumer travel to stores and an increase in delivery by parcel services. This demand on last-mile logistics from growing parcel deliveries is causing changes to roadway system use and needs.

**Land Use:** E-commerce has reduced the demand for standard retail activities, which has implications on the reduction in need for conventional retail space. However, home deliveries are distribution-based activities that increase warehouse and distribution footprints. Trends in conversion of retail spaces as showrooms, pick up locations, or return depositories are helping to maintain their relevancy. Distribution facilities focus on automation and random storage strategies to match the large variety of goods in demand at any time. Land use demands will continue to evolve as E-commerce grows.

COVID-19 has seen a major shift to E-commerce due to stay-at-home orders and social distancing recommendations. Many experts believe that this shift will remain after the pandemic, accelerating adoption of E-commerce at a higher rate than predicted pre-COVID.

E-commerce and its associated mode, delivery, and land use demands will likely continue to disrupt traditional transportation planning practices. An effort to closely monitor E-commerce developments will enhance effective planning and operations of the transportation system. Considerations should be made to more accurately capture travel changes due to E-commerce in the regional travel demand model to help forecast system needs.

### Resilience

Resilience is “ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions” (FHWA Order 552). A functioning economy needs the support of a resilient

transportation system in the event of either man-made or natural events that cause disruptions. Public planning for resilience can help to improve transportation infrastructure durability to withstand extreme weather events or man-made events. Doing so will reduce future maintenance costs over the full life cycle of transportation assets.

The FHWA has many tools available to assist with risk and vulnerability assessment so that adaptations can be identified that will allow more comprehensive project evaluations to avoid making investments in vulnerable areas. Incorporating private sector business continuity plans will aid in a more robust evaluation of impacts to the supply chain when investing in public infrastructure.

Operations during COVID-19 have relied on knowledge gained from past disruptions, but this event is unique; it occurred on a global scale, impacting supply chain routes, production capacity, public health, and revenues. This event has reinforced that transportation system resilience should look at risks and vulnerabilities comprehensively to ensure that transportation investment can respond appropriately to any type of disruption.

## Transload Facilities

Transload facilities are multimodal sites where products move from one mode of transportation to another. For instance, a product may be transferred from a truck into a rail car. It is important to note that the product is unloaded from one mode and loaded onto the other versus an intermodal facility where the product remains in the same container for the entire trip. Transload facilities are important in markets with bulk shipments, warehouse product, or dimensional products (e.g., steel beams, wind power components, pipe). A truck-rail transload facility may be as basic as an unpaved storage area adjacent to a set-out or siding track but can be built with permanent storage facilities or in proximity to other rail yard operations. Equipment used to transfer loads range from forklifts to specialized cranes.

In 2015, KDOT prepared a Transload Facility Site Analysis to identify statewide facility needs. Through this analysis, KDOT reviewed 111 sites around the State and selected sites in Great Bend and Garden City for funding. The number of sites that were evaluated illustrates that transportation options in Kansas are important to shippers and economic development agencies. KDOT continues to support investment in rail infrastructure through the State Rail Service Improvement Fund.

Transload services offer companies long-haul economies of rail shipment with direct service by truck. This is beneficial when the production or consumption point is not near a railroad or if shipment variability does not make investment in a dedicated facility make sense.

To determine whether or where additional transload facilities are appropriate within the WAMPO region, WAMPO and its partners—Class I railroads, shortline railroads, economic development agencies, shippers, and KDOT—should review current facilities to find if they have capacity and facilities to serve existing and potential customers. Additional awareness of existing transload options may meet the needs of the region. If the inventory determines any needs, a targeted market study, evaluation of additional sites, further marketing of existing sites, or other solutions could be advanced.

## Smart and Dedicated Infrastructure

Smart and dedicated infrastructure includes technological or policy tools that can be used by the public sector to improve the transportation network. Smart infrastructure is typically defined by integration of technology to improve infrastructure performance or enhance information about its performance, leading to better decision making. Dedicated infrastructure refers to limited infrastructure that serves a specific purpose (e.g., truck-only lanes, bus-only lanes, protected bike lanes). Dedicated infrastructure may or may not also include technology

components. These strategies may be implemented in coordination with the private sector or according to established industry standards.

Dedicated Truck Lanes (DTLs) separate commercial vehicles from passenger vehicles or mixed traffic flows to improve truck mobility and reduce potential conflict points. DTLs can be used to connect major freight generators (such as intermodal facilities) to the highway network or to provide a lane for through traffic on a congested highway.

Smart infrastructure is a broad term encompassing infrastructure that incorporates technology to improve performance of or information about the transportation system. Communication can take place vehicle-to-vehicle (V2V), vehicle-to-infrastructure or infrastructure-to-vehicle (V2I or I2V), or infrastructure-to-infrastructure (I2I). Freight Signal Priority (FSP) is one of the technology strategies to improve operational efficiency with decreased hours of delay and enhanced safety benefits of freight service, without major capital investment on major freight corridors. Safety benefits arise from the ability to hold green or yellow lights or extend all-red signal phases to ensure vehicles clear the intersection without collision. Mobility benefits are realized when signals detect a freight vehicle via loop detectors or on-board devices and prioritize that travel direction. Local agencies have also deployed similar technology to prioritize transit vehicles (transit signal priority, or TSP).

Real-time information systems can improve the performance of existing infrastructure by broadly distributing information to drivers about traffic or weather conditions, alternate routes, or other location-specific information, allowing them to make more informed decisions. Information can be distributed through dynamic message signs, mobile applications, or on-board devices. Dynamic message signs and on-board device integration are particularly important for freight roadway users, as truck drivers are typically prohibited from using mobile devices in the vehicle.

In order to determine whether or where smart and dedicated infrastructure is appropriate within the WAMPO region, WAMPO and its partners (including KDOT) should identify candidate corridors with sufficient truck traffic to utilize the infrastructure while paying close attention to the origins and destinations of trucks on the corridor.

## Private Sector Vehicle Technology

Vehicle technologies typically improve safety or reduce transportation costs. These advancements are typically led by private-sector original equipment manufacturers (OEMs).

Autonomous vehicle (AV) and connected vehicle (CV) technology are often grouped together as Connected/Autonomous Vehicles (CAV). However, there are important distinctions between the two applications. A CV has an onboard transceiver that can broadcast and receive information from other connected vehicles or from connected infrastructure itself. An AV has advanced computerized systems to handle some or all driving requirements. Increased automation is expected to reduce crashes by reducing human error (e.g., eliminating driver reaction time to avoid a collision, speed control, or lane drift correction). This technology could have economic benefits for private companies if the technology can address the truck driver shortage facing the U.S. freight industry, removing one limitation on the amount of freight that can be trucked at any time. KDOT announced their Kansas Statewide Connected and Autonomous Vehicle Vision Plan to direct the agency in January 2020 outlining roles and actions for State agencies.

Truck platooning is one application of truck automation, which allows two or more trucks to travel together in convoy, using connectivity technology and automated driving support systems. Public benefits to platooning include lower fuel consumption and improved air quality: trucks operating 50 to 75 feet apart can reduce fuel

use five to 10 percent. Platooning may also impact safety and congestion by reducing the physical footprint required to move two or more trailers. KDOT has instituted an internal Truck Platooning Committee with representation from a variety of bureaus and units within the agency and the Kansas Highway Patrol. The goals of the committee are to better understand truck platooning, identify potential test/demonstration corridors, identify potential statutory modifications that may need to be addressed, and provide educational efforts for State legislators and the traveling public.

Unmanned Aerial Systems (UAS, or commonly known as drones) are aircraft without a human pilot onboard. UAS are emerging as a strategy to optimize freight efficiency. To operate drones as a commercial pilot in the United States, the requirements of the FAA's Part 107 Small UAS Rule (Part 107) need to be followed, which includes passing the FAA's Aeronautical Knowledge Test to obtain a Remote Pilot Certificate. Kansas is the only State allowed to operate without line-of-sight restrictions, presenting an opportunity for testing and innovation in the WAMPO region and complementing its existing strengths in aerospace manufacturing.

WAMPO should be aware of emerging vehicle technologies to understand how roadway use patterns may change, to advocate for policies that increase safety and mobility, and to position themselves for partnerships. An additional public-sector role for advancing CAV technology include basic roadway maintenance. Cameras and detection systems will rely on well-maintained, clearly marked highways and new technological components such as transmitters. The role of rest areas and truck parking will also require reevaluation, and truck parking outside of urbanized areas may be well-suited to become transition areas where loads can change between autonomous and driver-operated vehicles before entering a complex urban environment.

## Delivery and Distribution Advances

Delivery and distribution technologies are not directly related to transportation of freight but will impact shipping patterns.

Route and fleet optimization are used by carriers to improve the efficiency of equipment and labor, increasing on-time delivery, and reducing transportation costs. In addition to optimizing deliveries and labor utilization, specialized routing systems are needed for freight due to the size and weight of the vehicles.

Public-sector agencies should be aware that commercial vehicles may perceive routes and connectivity differently than the traveling public. Outreach to major carriers may be necessary to understand the constraints faced by the freight community when optimizing routes.

Changes in manufacturing practices can influence the pattern of freight movement in a region and change commonly used metrics for freight production. Increased automation of facilities reduces waste and the type or number of employees per unit output. WAMPO and its partners may not experience a dramatic change in freight traffic on its roadways due to automation practices. However, automation can reduce the effectiveness of using employment data in manufacturing as a proxy for freight activity. Additionally, workforce preparedness concerns in the community will likely change as new skills are required in automated environments.

## Freight Technology and Data

Data sharing between the public and private sectors is a recent opportunity due to evolving technology that provides benefits to both the public and private sector. For example, technology can be used to inform both transportation agencies and individual truck drivers about roadway conditions and truck parking availability in real time. Potential integration points include the electronic logging devices used by drivers to record hours-of-service (e.g., Omnitracs devices) or software typically used for inspection pre-clearance programs (PrePass or

Drivewyze are both used in Kansas). In June 2020, Drivewyze announced a partnership with INRIX to provide drivers with real-time information about dangerous slowdowns, queues, and road closures.

A wealth of new data sources also exists to provide information on truck origins, destinations, parking locations, routing, both in aggregate and real time, which can help transportation agencies better plan and manager their resources. Better data about carrier operations can also facilitate enforcement and inspections by providing information about the vehicle, speed, and drive time. To realize full benefits of data sharing, as well as other technology strategies, enhanced institutional capacity (training and technology investments) at transportation agencies is often required.

WAMPO is currently a partner on the Heartland Freight Technology Plan that will prioritize new technologies for the four-state Heartland region, set strategies for harmonization regulation, recommendations for data management and sharing while setting a blueprint for action. Partnerships like these will allow WAMPO to remain at the forefront of new technologies and data while gaining efficiencies through collaboration.

## Needs Analysis

### Highway Infrastructure Analysis

#### Congestion

Roadways in the WAMPO region are generally not congested with more than 85 percent of roadways in the region currently operating at uncongested levels during peak teams. Nearly all roadways operated uncongested during a typical 24-hour period.

Any delays in the WAMPO region are often caused by bottlenecks, which are narrow or obstructed sections of a highway that lead to an area of traffic congestion. Ten bottlenecks were identified through analysis of NPRMDS data or previous studies. In general, these bottlenecks occur at interchanges between major roadways in the WAMPO region and are shown in Figure 18:

- I-235/US-54
- I-235/K-42
- US-54 near Eisenhower Airport
- I-35/I-135/I-235
- I-135/US-54
- I-35/US-54
- I-135/K-254
- US-54 between I-235 and I-35
- Portions of K-15 south of Wichita
- I-135 from I-35 to I-235

#### Crash Analysis

According to KDOT crash statistics, heavy/large trucks were involved in 5 percent of all crashes and 18 percent of all fatal crashes in 2017. From 2006 to 2017, Sedgwick County commercial vehicles accounted for an average of 17 percent of all vehicle crashes and 12 percent of all fatal crashes. However, both total crashes and fatal crashes involving commercial vehicles have been trending down.

#### Bridge Restrictions

Truck traffic in the region can be impeded by barriers such as low overpass clearances and weight restrictions on bridges. The I-35 corridor also handles more over-size/over-weight traffic than any other corridor in Kansas. According to the *Kansas Statewide Freight Plan*, there are 75 bridges with a vertical clearance of under 16 feet in Kansas, though there are not currently any in the WAMPO region. There are also 15 weight posted bridges and 63 restricted bridge structures in Kansas. There is currently one weight restricted bridge in the WAMPO region located on the freight network on I-35 about two miles northeast of the Sedgwick county line at N Prairie Creek Road.

#### Truck Parking

Truck parking can be an issue with increased truck traffic and the new electronic logging device rule leading to increased accountability in following hours of service rules. These requirements can lead to truck drivers using parking lots, side roads, shoulders, or ramps for parking to stay within the requirements. In 2019, Kansas was

one of eight Midwest States to participate in the implementation of the Traffic Parking Information and Management Systems (TPIMS), which collects and shares truck parking availability information at nearly 130 select lot locations along major freight corridors. The closest TPIMS parking lot to the WAMPO region is located on I-135 at the Harvey County Rest Area (MM 23). There are currently no TPIMS locations on I-35 in Kansas.

## Multimodal Infrastructure Analysis

### Rail

Issues related to the movement of rail include track weight, railroad crossings, rail location, and hazard index. In the WAMPO region, one section on the Kansas & Oklahoma Railroad in the southwest portion of the region has been identified as a track segment that should be upgraded to 268,000-pound weight capacity in order to accommodate heavier traffic. The WAMPO *Freight Plan* (2010) also identified three locations for possible upgrades to crossing condition, seven locations warranting upgraded warning devices, six candidate locations for crossing consolidation, and eight candidates for grade separation. Of the seven locations identified as warranting upgrade crossing warning devices, four have been addressed. The locations are shown in Figure 19.

The locations of rail facilities often contribute to issues at rail crossings. Many facilities are located in urbanized areas in the region. Rail movement can be slowed by the requirement to slow trains in the urban areas and roadway traffic movements and efficiency can be affected. One way to address these conflicts is through relocating train operations to alternative rail corridors outside the urban area. Another potential solution is to consolidate rail operations from several urban routes in a single corridor that is grade separated or has other features to improve mobility and safety, like Wichita's Central Corridor. This already implemented strategy improved the overall efficiency of the regional freight system and provided the opportunity to add truck-to-rail modal diversion, aiding the realization of environmental goals.

Transload facilities are multimodal sites where products are moved from one mode of transportation to another. Transload facilities are important in markets with bulk shipments, warehouse product, or dimensional products (e.g., steel beams, wind power components, and pipe); all which are present in the Wichita market. The need for expanded or new transload facilities has been expressed in local dialogue surrounding economic development and business recruitment.

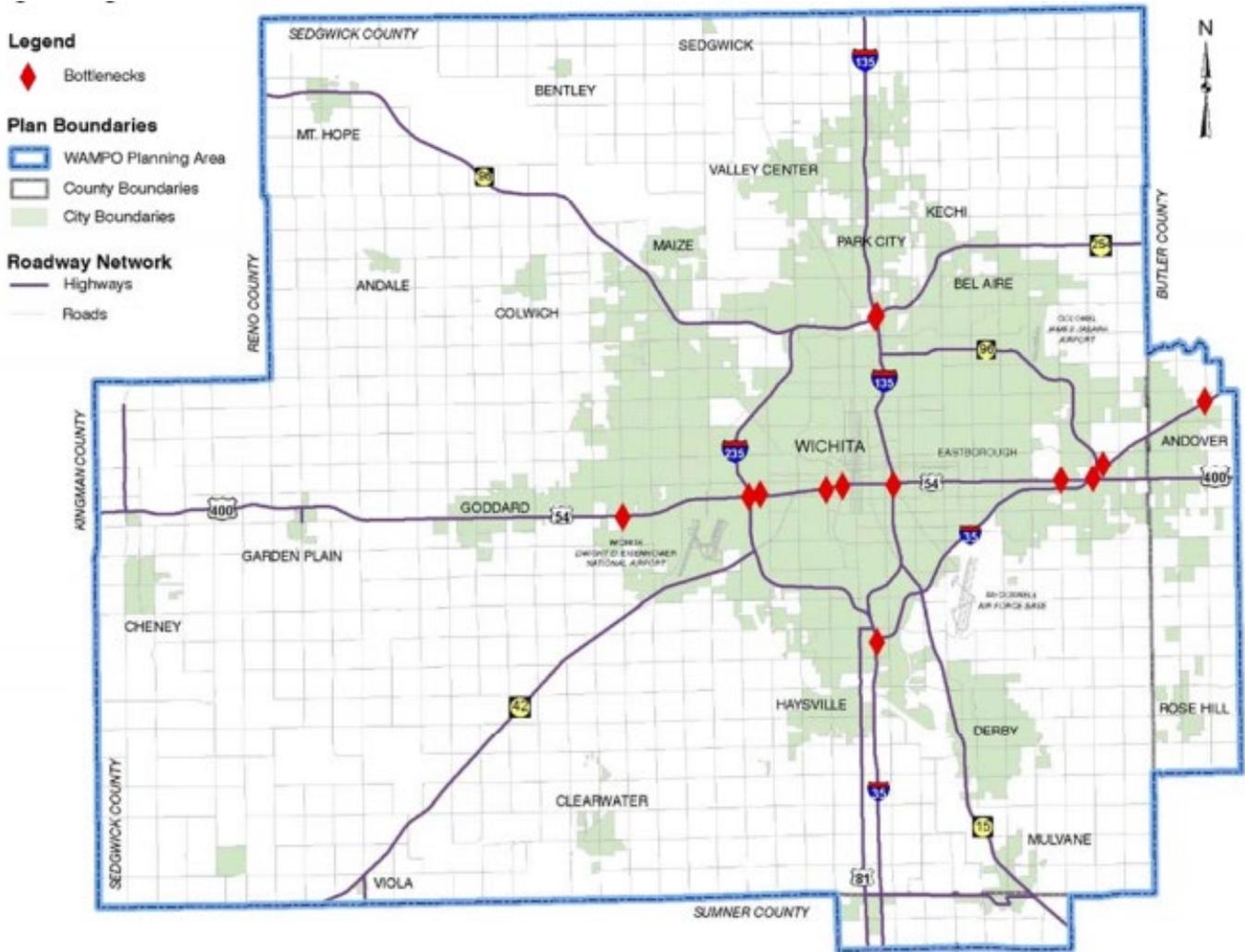
### Air

There are currently no congestion issues at Wichita Dwight D. Eisenhower National Airport (ICT) that would substantially delay the shipment or delivery of freight in the region. The 2016 *Aviation System Plan* did not identify any airport access issues at the airport, and the goal should be to maintain cargo facilities to continue to be able to support large freight aircraft operations. However, the 2003 *Airport Master Plan* recommended an expansion of air cargo facilities and the air cargo apron and the extension of Runway 01R-19L from 7,300 feet to 8,700 feet, which could facilitate larger aircraft. The WAMPO MTP identified that a new customs facility is needed to accommodate more international air travel in and out of the region.

### Pipeline

While pipelines exist in the WAMPO region, very limited commodities are moved by pipeline. Various commodities, predominately petrochemical and petroleum products, flow from a source to a destination, often a modal transfer point, where it transferred to another freight mode for delivery or transfer to another modal transfer point before reaching its final destination. There were no issues related to the movement of commodities by pipeline identified.

Figure 18. Roadway Bottleneck Locations



Source: WAMPO.



## Recommendations

Based on the analysis, Table 2 identifies focus areas and needs to advance freight-related strategies and improvements in the Wichita region.

**Table 2. Matrix of Identified Needs**

Focus Area	Identified Needs
Roadway and Bridge Infrastructure	<ul style="list-style-type: none"> <li>• Maintain and preserve nationally and locally designated freight corridors</li> <li>• Improve weight-restricted bridges</li> <li>• Ensure freight benefits are accounted for evaluation of projects in the Long-Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), and other planning and funding documents</li> </ul>
Congestion and Bottlenecks	<ul style="list-style-type: none"> <li>• Improve highway interchanges to reduce bottlenecks</li> <li>• Add or extend four-lane corridors with significant truck traffic</li> <li>• Develop strategies to reduce peak-hour goods movement</li> <li>• Deploy ITS measures to facilitate traffic flow</li> </ul>
Truck Facilities	<ul style="list-style-type: none"> <li>• Develop ITS solutions to truck parking</li> <li>• Expand TPIMS solutions on I-35</li> </ul>
Rail Infrastructure	<ul style="list-style-type: none"> <li>• Reduce conflicts at priority highway-rail crossings</li> <li>• Consider rail relocation strategies outside the urban area or in designated rail corridors with grade separations to improve safety</li> <li>• Improve shortline railroad tracks to 268,000-pound weight capacity</li> <li>• Add transload facilities to accommodate transfers between truck and rail</li> </ul>
Air Infrastructure	<ul style="list-style-type: none"> <li>• Maintain and expand air cargo facilities</li> <li>• Consider a new customs facility for more international air shipments in and out of the region</li> </ul>
Land Use	<ul style="list-style-type: none"> <li>• Identify non-highway corridors near freight generators for last-mile geometric and safety improvements to facilitate truck traffic</li> <li>• Continue to grow established industries while leveraging new opportunities</li> </ul>
Partnerships	<ul style="list-style-type: none"> <li>• Foster public-private partnerships between the freight transportation industry and governmental entities to address institutional and infrastructure issues</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Engage with State on Connected and Autonomous Vehicle (CAV) policy</li> <li>• Respond to changes in industrial automation</li> </ul>

## Implementation

Implementing the priority actions will require continued collaboration between the goods movement industry, Kansas Department of Transportation (KDOT), Kansas Turnpike Authority (KTA), local governments, Wichita Airport Authority, freight support organizations, WAMPO, and private industries. Identifying the policy- and planning-related actions is a good first step. Below are the policy and planning related implementation items.

## Policy and Planning

**Local Assistance Project:** Turning the goals of REIMAGINED MOVE 2040 into reality will require more than just building discrete transportation projects. It will require new approaches to transportation, land use, and economic development in the WAMPO region. This project will involve recruiting consultant services to research and provide WAMPO members with best practices and recommended approaches to help achieve the long-range plan vision.

**Collaboration & Training:** WAMPO is committed to exploring and making available collaborator training and education opportunities with entities like the Local Technical Assistance Program (LTAP). These efforts will support efforts to take a “deeper dive” into the most pressing and relevant transportation issues and solutions.

**Regional Committee Work:** WAMPO is supportive of facilitating regional discussions among designated and ad-hoc committees that are focused on implementing the goals, strategies, and vision of the REIMAGINED MOVE 2040 plan.

Specific planning and policy related priority actions include:

- Ensure freight benefits are accounted for in evaluation of projects in the Metropolitan Transportation Plan (MTP), Transportation Improvement Program (TIP), and other planning and funding documents
- Develop strategies to reduce peak-hour goods movement
- Develop inventory of local truck parking facilities
- Identify non-highway corridors near freight generators for last-mile geometric and safety improvements to facilitate truck traffic
- Foster public-private partnerships between the freight transportation industry and governmental entities to address institutional and infrastructure issues
- Engage with State on Connected and Autonomous Vehicle (CAV) policy

## Priority Actions

Continuing efforts to implement these recommendations should be a focus over the planning horizon to achieve the WAMPO’s freight-planning goals. In support of implementation, the following tables outline manageable actions that WAMPO and its standing freight committee can take to continuously bring freight issues to the forefront of transportation decision making.

**Table 3. Matrix of Priority Actions**

<b>MPO Requirements</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Ensure freight benefits are accounted for in evaluation of projects in the long-range planning, Transportation Improvement Program (TIP), and other planning and funding documents	Lead project evaluation and planning	Annual	Freight and freight-benefitting projects selected
Maintain current freight data to inform decision-making	Lead data collection and management	On-going	Data storage solutions in place
<b>Roadway and Bridge Infrastructure</b>			
<b>Action</b>	<b>Action</b>	<b>Action</b>	<b>Action</b>
Improve weight-restricted bridges	Support State and local agencies in continuous inventory updates and investment priorities	On-going	Maintain or increase investment level in freight infrastructure, Continuous improvement in bridge ratings
Maintain and preserve nationally and locally designated freight corridors	Lead long-range planning and project selection for funding	On-going	Maintain or increase investment level in freight infrastructure, Continuous improvement in maintenance ratings
<b>Congestion and Bottlenecks</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Improve highway interchanges to reduce bottlenecks	Support State and local agencies by serving as stakeholders on project studies to advocate for freight	On-going	Maintain or increase investment level in freight infrastructure, particularly highway interchanges
Add or extend four-lane corridors with significant truck traffic	Support State and local agencies by serving as stakeholders on project studies to advocate for freight	On-going	Maintain or increase investment level in freight infrastructure, particularly four-lane corridors

Develop strategies to reduce peak-hour goods movement	Lead studies or investigations	Mid-term	Investigation completed Strategies in action
Deploy ITS measures to facilitate traffic flow	Support State and local agencies by serving as stakeholders on project studies to advocate for freight	On-going	Projects deployed
<b>Truck Facilities</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Develop solutions to truck parking	Lead studies, investigations, or awareness campaigns	Mid-term	Inventory completed, Solutions in place
Expand TPIMS solutions	Support State by serving as stakeholders on project studies to advocate for freight	Mid-term	Projects deployed
<b>Rail Infrastructure</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Reduce conflicts at priority highway-rail crossings	Lead studies or investigations	Mid-term	Continuous decline in conflicts
Consider highway-rail grade separations to improve safety	Lead studies or investigations	Mid-term	Solutions in place
Improve shortline railroad tracks to 268,000-pound weight capacity	Support State and private carriers by serving as an advocate for freight	On-going	Continuous increase in miles of 286,000-pound track
Evaluate need for transload facilities to accommodate transfers between truck and rail	Lead studies, investigations, or awareness campaigns in partnership with State, industry, and private carriers	On-going	Evaluation complete
<b>Air Infrastructure</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Maintain and expand air cargo facilities	Support Airport Authority and private carriers by serving as an advocate for air freight	On-going	Maintain or grow market share  Maintain or grow air cargo volumes

Consider a new customs facility for more international air shipments in and out of the region	Support Airport Authority and private carriers by serving as an advocate for air freight	On-going	Facility in place
<b>Land Use</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Identify non-highway corridors near freight generators for last-mile geometric and safety improvements to facilitate truck traffic	Support State and local agencies by serving as stakeholders on project studies to advocate for freight	On-going	Corridor identification complete Projects complete
Continue to grow established industries while leveraging new opportunities	Support State and local agencies by serving as stakeholders on project studies to advocate for freight	On-going	Growth in number of industrial employees in region
<b>Partnerships</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Engage with the Heartland Freight Technology Plan	Staff participate as partner/sponsor	Project duration (Fall 2020)	Plan adoption and implementation of recommendations
Foster public-private partnerships between the freight transportation industry and governmental entities to address institutional and infrastructure issues	Lead freight committee and other ad hoc means for collaboration	On-going	Continuous improvement in bridge ratings
<b>Technology</b>			
<b>Action</b>	<b>WAMPO Role</b>	<b>Time Period</b>	<b>Success Indicators</b>
Engage with State on Connected and Autonomous Vehicle (CAV) policy	Support State and local agencies by serving on committees or project studies to advocate for freight	On-going	Continuous review of policy to ensure technology is integrated
Support establishment of a MPO technology working group	Advocate for freight	On-going	Working group established Provision of a forum for idea sharing, policy review
Respond to changes in industrial automation	Support research and private sector deployment	On-going	Successful deployment or pilot testing in the region