Chapter 7: Moving Freight and the Economy

Freight transportation plays a critical role in the economy. As part of the supply chain, goods are moved from where they are produced to where they are consumed using the regional, national, and international transportation network. Goods movement provides for delivery, transfer, and trading of commodities and offers employment opportunities for a large sector of QC workers. The freight industry includes for-hire freight carriers, private transportation providers, freight forwarders, logistics providers, and vehicle service and maintenance. This chapter examines the Quad Cities' freight system assets and obstacles to efficient movements of goods and services.

In the *Bi-State Region Freight Plan* (2015), key themes were identified to monitor the performance of the metropolitan and regional freight transportation system:

Economy – Use the Bi-State Region freight system to support the region's economy	**Infrastructure** – Maintain and enhance highway system infrastructure	**Operations** – Promote freight rail system operational efficiencies	**Access and Modal Options** – Increase accessibility and mobility options for the region	**Resiliency** – Work toward system resiliency and reliability

In the *Bi-State Regional Freight Plan Addendum (2024),* these goals were expanded to include the following additional themes and were compared to federal goals and respective state freight plan goals for consistency:

Innovation — enhance the existing freight system's performance by nurturing the accessibility of relevant data, state-of-the-art technologies, and advanced workforce capabilities.	**Workforce Retention** — maintain the existing workforce and provide incentives for new workers	**Equity & Environmental Justice** — Provide all community members with equal transportation opportunities and minimize environmental repercussions.

Both the 2015 *Bi-State Region Freight Plan* and 2024 addendum will be referenced in this plan, but the full documents can be found on Bi-State Regional Commission's website (www.bistateonline.org). Map 7.1 shows the Freight Transportation and Intermodal Network for the Metropolitan Planning Area (MPA). The system's performance and future freight network needs will be broken down and discussed using four sections–air, rail, river, and road. Pipelines, used to transport large amounts of liquids and gases, bisect the MPA and are briefly discussed in this chapter, but are detailed more fully in the Scott and Rock Island County Hazard Mitigation Plans.

The freight plan identified the Bi-State Region as a production location, indicating that there are numerous manufacturing operations in the area. Linking local industries to various markets is imperative for the regional economy. Multimodal access expands the opportunities available for industries to ship their products to their destinations. However, industries tend to be spread out in the Bi-State Region, resulting in difficulties achieving sufficient volumes for efficient rail service and cost-efficient multi-modal industrial parks.

Air Freight

There are two airports in the Quad Cities as shown in Table 7.1. The Quad Cities International Airport in Moline, Illinois provides commercial and general aviation services. The Davenport Municipal Airport in Davenport, Iowa provides general aviation services.

Table 7.1 Airports in the Quad Cities Metropolitan Planning Area

Airport	Location	F.A.A. Category	Highway Access	Runway Lengths
Quad Cities International	Moline, IL	Certified Air Carrier	I-74, I-280 U.S. 6 U.S. 150	10,002 ft. × 150 ft. 7,301 ft. × 150 ft. 5,016 ft. × 150 ft.
Davenport Municipal	Davenport, IA	Basic Transport	U.S. 61 I-80	5,511 ft. x 100 ft. 4,001 ft. x 100 ft.

Source: Quad Cities International Airport Officials 2024 and Davenport Municipal Airport Manager 2024

Quad Cities International Airport (MLI)

The Quad Cities International Airport (MLI) in Moline, Illinois is operated by the Metropolitan Airport Authority. The airport is directly accessible from Interstates 74 and 280 and U.S. Highways 6 and 150. It is the regional commercial aviation airport, serving both passenger and freight needs. It had 276,702 enplanements in 2023, the 4th highest number of enplanements in Illinois according to the FAA's *Air Carrier Activity Information System* (ACAIS). The *2022 Illinois Public Use and Publicly Owned Airport Inventory Report* reported that MLI had 85 based aircraft and 45,816 operations in 2023. The *2019 Illinois Statewide Aviation Economic Impact Study* reported that MLI created 4,386 jobs and generated $647.3 million in total economic impact.

In 2022, MLI deplaned 307,038 tons of freight and enplaned 335,288 tons. In 2023, the amount of freight deplaned dropped to 252,832 tons. However, the freight enplaned in 2023 increased to 397,831 tons.

Runways are roughly 10,000, 7,000, and 5,000 feet in length. Improvements at the airport since 2020 include:

- Airfield electrical systems to change all fixtures to LEDs in 2020
- Drainage improvements on the east end of RWY 9/27 improving drainage in low lying areas
- Shortening of RWY 5/23 and constructing full-length parallel taxiway to RWY 9/27 in 2022
- Rehab of pavements throughout the general aviation complex
- Purchase of runway snow removal mechanical brooms in 2022
- Purchase of airport firefighting apparatus in 2021

Additional future upgrades at the airport include:

- Project GATEWAY, a terminal modernization program to enhance the passenger experience, improve energy efficiency, and replace aging infrastructure in the ticketing lobby, central commons, TSA checkpoint, and curbside entrances
- Rehabilitation of TWY Foxtrot
- General Aviation entrance road realignment improving the intersection with Indian Bluff Road.
- Construction of drainage improvements along TWY K
- Rehab airfield electrical vault
- Rehab RWY 13/31 pavements

General aviation services are provided by Elliot Aviation, a private company offering full-service Fixed-Base Operations on the south side of the airfield via three fully instrumentalized runways. International trade services within the Quad Cities MPA include an on-site U.S. Customs Port of Entry and a Foreign Trade Zone located near the Quad Cities International Airport. Other amenities include QCIA Airport Services, the Civil Air Patrol and ground transportation services including public transportation, rental car, taxi, and delivery services.

Foreign Trade Zone

Foreign and domestic merchandise may be moved into zones for operations, not otherwise prohibited by law, including storage, exhibition, assembly, manufacturing, and processing. Customs and Border Patrol duty and federal excise tax, if applicable, are paid when the merchandise is transferred from the zone for consumption. While in the zone, merchandise is not subject to U.S. duty or excise tax. Certain tangible personal property is generally exempt from state and local ad valorem taxes. Goods may be exported from the zone free of duty and excise tax.

To accommodate freight service providers, the Quad Cities International Airport has a full-service freight-aircraft parking area (ramp) and 3 freight storage/cargo buildings. All three cargo buildings have from 5,000 to 10,000 square feet of space and are located just east of the main airport terminal building. They are available for aeronautical and non-aeronautical use, such as warehousing and office suite space for air freight or express delivery companies. The area within 60 miles of the airport is

Foreign Trade Zone (FTZ) #133. Land-based development around the airport has been a focus in recent years.

According to the *Bi-State Region Freight Plan*, mode shifts away from air cargo to truck as the primary mode has occurred, as trends move toward consolidated air freight facilities. Except for highly time-sensitive goods, most air destined freight is trucked to Chicago O'Hare airport 170 miles away. Expedited carriers are the primary users of air freight. FedEx and UPS operate at MLI for some cargo, but primarily truck freight from the MPA to Chicago.

Davenport Municipal Airport (DVN)

The Davenport Municipal Airport (DVN), located in Davenport, Iowa, is operated by the City of Davenport and was built in 1948. The airport is accessible from Interstate 80 and U.S. Highway 61. It is a general aviation airport providing full service Fixed-Base Operations containing two runways with full instrument landing systems. The primary runway length is 5,511 feet in length and 100 feet in width, while the secondary runway is 4,001 feet in length and 100 feet in width. According to the DVN Master Plan, the airport features a precision landing system equipped with Glide Slope outer marker, localizer, approach lights, federally-maintained Automated Weather Observing System, and a Remote Communications Outlet. Planes using DVN facilities are able to refuel using the airport's 24-hour fuel facilities.

There are more than 100 aircraft based at the Davenport Municipal Airport recording over 28,000 take-offs/landings in 2014. The *Iowa Aviation System Plan 2010-2030* estimates 118 based aircraft and 53,100 operations in 2020, and projects that in 2030 there will be 133 based aircraft and 59,850 operations for DVN.

The airport has the capacity of 150 vehicles for public and employee parking, 120 spaces for based aircraft, and approximately 100 other based air craft. There are 78 aircraft T-hangars, 6 box-style hangars, and 2 executive box-style hangars. Four large aircraft hangars are also maintained. Other services located at the airport include the Iowa Air National Guard, Civil Air Patrol, and National Weather Service.

Rail Freight

Iowa's first railroad lines opened in November 1855 from Davenport to Muscatine. Currently, there are a total of four rail carriers operating in the Quad Cities MPA. Two of these lines, Burlington Northern Santa Fe (BNSF) and Canadian Pacific Kansas City (CPKC) are Class I railroads. The other two railroads are Iowa Interstate (IAIS) Railroad and Dakota Minnesota & Eastern (DM&E). BNSF, CPKC, and IAIS provide connections to national markets. In the five-county Bi-State Region, the approximate mileage of rail operated by each carrier is 85 miles (BNSF), 155 miles (CPKC), 100 miles (IAIS), and 3 miles (DM&E).[1] BNSF provides important gateway access to Chicago, Kansas City, and Memphis. CPKC connects to gateways in Minneapolis-St. Paul, Chicago, and Kansas City. IAIS connects to all seven Class I Railroads, connecting to Chicago and Omaha-Council Bluffs.

[1] *Source: Bi-State Regional Freight Plan Addendum, pg. 11*

Rail Traffic

There are upwards of 16 trains daily in the busiest road-rail intersections in the Quad Cities MPA. Table 7.2 shows a breakdown of the busiest public at-grade motor vehicle crossings by daily train traffic in each of the MPA's three counties. Several rail crossings are located near the Rock Island Arsenal, a major military manufacturing facility, logistics center, and employer.

Roads and railway intersections often produce bottleneck and safety issues. In Colona, a long-standing issue at IL84 and Cleveland Road is being addressed with potential track consolidation or narrowing the rails by the Illinois DOT and railroads to provide more storage space for vehicles waiting for trains. There are multiple sources of funding to aid in the development of safer railroad crossings, including through both states' Departments of Transportation and at the federal level through the Federal Railroad Administration. In the last five years, there have been multiple discussions regarding how long trains are blocking crossings, particularly in relation to access to employers. In some cases, communities have established a relationship with local railroad contacts to address complaints. Federal regulations take precedence, but there is no specific regulation governing the amount of time a standing train can block a public at-grade crossing.

With the merging of Canadian Pacific and Kansas City rail companies, there were concerns that number of trains crossing would increase. However, a comparison of data provided by the Federal Rail Administration Office of Safety Analysis indicated that the trains per day decreased in Scott and Rock Island Counties between the previous LRTP (data sourced between 2018 and 2020) and the current LRTP (data sourced between 2023 and 2024). The affected average vehicle count is up in the current LRTP, especially in Rock Island County. The increased vehicle count could indicate that the trains are longer or are blocking crossings without viable detours for a longer duration.

Rail in the Bi-State Region represents 14.3% or 5.66 million tons for inbound freight movement and 8.8% or 3.71 million tons of the share in tons for outbound freight based on 2023 *Bi-State Regional Freight Plan Addendum*. For 2055 projections, rail inbound freight is expected to drop to only 5% of region's total inbound freight movement, going from 5.66 million tons to just over 3 million tons. Outbound freight is expected to maintain around 8% of the region's total outbound freight movement in 2055, but will be moving larger amounts, up to 6.06 million tons in 2055 from 3.71 million in 2022. Trucking is typically more economically viable for transporting lower-weight and higher-value commodities.

Commodities in the *Bi-State Regional Freight Plan Addendum* are broken into 7 broad categories that include Advanced Manufacturing; Chemicals, Pharmaceuticals, and Plastics; Construction Materials; Energy; Food and Agriculture; Motorized Vehicles and Parts; and Other. These commodities are divided into counties. The category Other has the largest transported value in 2022 and largest estimated transported value in 2055 in the MPA. This category covers the largest range of products; therefore, the other categories will be considered. In Scott County, the commodity group with the largest value in 2022 is Food & Agriculture. In 2055, Chemicals, Pharmaceuticals, and Plastics is projected to gain the most value. In Rock Island County, Food and Agriculture is also the highest valued commodity in both 2022 and estimated in 2055. While the MPA includes Henry County, the Addendum does not break down commodity flows to a level that can

distinguish between non-MPA and MPA territory. As such, Henry County will not be included in these estimates.

Table 7.2 Busiest Rail Traffic at Public Crossings within the Quad Cities MPO by County

Crossing ID	Street Road	Trains Per Day	Avg Vehicle Count	Reporting Railroad	Updated	City
Scott County, IA						
603899R	W 1ST ST	11	521	DME	6/7/2024	Davenport
603900H	ROCKINGHAM ROAD	11	9,000	DME	6/7/2024	Davenport
605947K	SCHMIDT ROAD	11	760	DME	6/17/2024	Davenport
605946D	S HOWELL ST	10	500	DME	6/7/2024	Davenport
607141P	SOUTH CONCORD ST	10	1,000	DME	5/23/2024	Davenport
607145S	SOUTH STARK ST	10	2,531	DME	5/23/2024	Davenport
Rock Island County, IL						
065670X	SMITH RD	16	100	BNSF	12/13/2023	Near Barstow
065672L	BARSTOW RD	14	400	BNSF	12/13/2023	Near Barstow
065673T	193RD ST N	14	100	BNSF	12/13/2023	Near Barstow
065682S	248TH ST N	14	35	BNSF	12/13/2023	Near Barstow
605937E	7TH STREET	13	2,600	IAIS	8/2/2024	East Moline
605938L	9TH ST	13	150	IAIS	6/7/2024	East Moline
065678C	226TH ST N	12	25	BNSF	12/13/2023	Near Barstow
916106D	N 1ST AVENUE	12	175	IAIS	7/5/2023	Carbon Cliff
479075A	ARGO ST	12	225	NS	9/22/2023	Coal Valley
604314S	15TH ST	11	2,200	IAIS	1/15/2024	Moline
604314S	15TH ST	11	2,200	IAIS	1/15/2024	Moline
604316F	12TH STREET	11	2,100	IAIS	7/5/2023	Moline
604319B	6TH STREET	11	2,100	IAIS	7/5/2023	Moline
604322J	1ST ST	11	1,150	IAIS	7/5/2023	Moline
605929M	17TH STREET	11	1,300	IAIS	7/5/2023	Moline
605930G	19TH STREET	11	4,000	IAIS	7/5/2023	Moline
605931N	23RD STREET	11	2,600	IAIS	7/5/2023	Moline
605932V	34TH STREET	11	3,900	IAIS	7/5/2023	Moline
Henry County, IL						
065667P	COLONA RD	16	375	BNSF	12/13/2023	Colona
065668W	CLEVELAND RD	16	8,600	BNSF	12/13/2023	Colona
065655V	N 1900TH AVE	16	100	BNSF	12/13/2023	Near Colona

Source: Federal Railroad Administration Office of Safety Analysis, pulled 2024

Rail Facilities

There are currently no intermodal container facilities in the Quad Cities MPA. This presents a challenge in shipping products from the MPA. With the 2019 closure of the intermodal facility in Rochelle, IL, the remaining closest intermodal facilities are located around 2.5 hours away in Joliet or Northlake, Illinois. Nationally, the trend is toward regional hubs that require shipments via locally serviced rail or truck to an intermodal facility.

A public transload facility was developed in 2016 in Davenport's Eastern Iowa Industrial Center (EIIC) to accommodate truck to rail freight. Located near the Davenport Municipal Airport, this asset connects the industrial center to CPKC system via a rail spur from the riverfront north through Davenport to the industrial center. The facility underwent improvements in 2019, which added two interchange tracks and a fourth spur. There are other private transload facilities and warehouses in the metro area with rail service, including Alter Logistics, Catch-up Logistics, and Murray Warehousing.

In Muscatine, Iowa, southwest of the MPA, an intermodal facility continues to be considered where rail, truck, and barge options would be available. The feasibility of containerized shipping on the Upper Mississippi River has been examined in the region. A 2017 study outlined key steps forward for the 100-acre privately-owned site, Kent Corporation. A Port Commission was recommended for governance enabled by the City of Muscatine. This facility would provide 2,500 linear feet of access along the river with sufficient depth for barge and towboat handling. The site offers opportunities for river, rail, and highway multi-model options to move containerized freight.

Quad City Railport in Silvis, Illinois is located on 900-acres and is currently owned by Iowa Interstate Railroad. Of the total acres, 360 acres are dedicated to rail activities. Railroading Heritage of Midwest America has purchased and begun restoring the railyard so it can be operated as a multi-use facility.

Transload Facility

A facility that provides for transferring freight to and from trucks and rail cars. Intermodal facilities, cross docks, and team tracks are all examples of transload facilities. Cross docks transfer materials with little or no storage between transfers. Team tracks are tracks on which railcars are placed for the use of the public in loading or unloading freight.

Source: Iowa Department of Transportation, Iowa Rail Toolkit, 2019

Interstate Rail Travel

Interstate rail travel in the MPA is served by two existing rail crossings over the Mississippi River at the Government Bridge (Iowa Interstate Railroad) and the Crescent Bridge (BNSF). The Government Bridge is owned by the Rock Island Arsenal. Railroad lines lease the tracks. Both crossings are located between Davenport and Rock Island, either at or downstream of Lock and Dam 15. These rail bridges are in excess of 115 years of age. The upper rail deck of the Government Bridge has been retrofitted for double-stacked railroad containers. Rail access over the Government Bridge, a swing span, opens to allow river traffic to pass through Lock and Dam 15. Due to navigation regulations, river barge traffic has precedence over other modes. This can create bottlenecks for both rail and vehicular transportation.

According to the 2022 *Iowa State Rail Plan*, rail traffic at the Government Bridge is restricted to a speed of 10 mph and results in rail travel delays in addition to those related to barge movements. Both Mississippi River crossings were listed in the "Iowa Rail Network Bottlenecks Inventory" in the plan. With the age and restricted speeds, the *Bi-State Region Freight Plan* identified a need to examine the feasibility of new or improved rail crossings in the metro area.

The *Bi-State Region Freight Plan* also drew attention to rail speeds at the Mississippi River crossings. Likewise, the 2022 *Iowa State Rail Plan* indicated the Crescent Bridge was functionally obsolete, while the Government Bridge needs to be replaced to support gross weights higher than 286K. As a result of these plans, Bi-State Regional Commission sponsored a study of Mississippi River rail crossings in the Quad Cities. The *Mississippi River Rail Crossing Study* (2020) investigated rehabilitating the existing crossings at the Crescent and Government Bridges in addition to constructing a new span to carry rail traffic across the river. A series of three alternatives were recommended based on impacts to the Centennial Bridge, future passenger rail traffic, and levels of funding. The three alternatives would support 30-to-40-mph operations on the crossings, which is higher than the current 10 mph limits. Future improvements would be based on private-sector interest and initiation.

Truck Freight

Truck freight traffic in the Quad Cities is served by four interstates, five federal highways, and ten state highways. Interstate 80 connects the area nationally with the east and west coasts. The I-280 bypass along with I-80 encircles the Quad Cities, providing excellent access within and outside of the Quad Cities. Interstate 74 bisects the metro area, creating north/south movement, while I-88 provides an alternate route to Chicago. Both Illinois and Iowa participate in Unified Carrier Registration (UCR), along with 39 other states. This system allows an interstate motor carrier to register its operation with the base state where it is located at one fee for all states in which operations will be conducted.

Truck Traffic and Travel

Highways for truck freight movement are critical to every sector of the Quad Cities economy. The vast majority of freight in the Quad Cities Region, some 82.7%, moves on its roadways, as trucks represented the most used mode of freight both in terms of tonnage and value of commodities.

While all interstates have high truck average annual daily traffic (AADT) counts, I-80 is the busiest of the interstates, and in several sections sees up to 15,500 trucks per day on average. I-280 is the next busiest, and the entire stretch within the region sees truck AADTs of up to 10,000. According to the 2023 *Bi-State Region Freight Plan Addendum*, outbound truck traffic is greater than inbound traffic in both tonnage and value, a shift from the trends during the previous LRTP. The same report indicates that Food and Agriculture accounts for the greatest tonnage moved (over 40% of the total commodities moved), while Advanced Manufacturing accounts for the greatest value moved (around 34% of the total commodities moved).

Bottlenecks in the Quad Cities Region come from several main sources, including congested truck corridors, aging bridges, and blocked rail crossings.

Historically, bridges in the Quad Cities are responsible for many bottlenecks in the region. Reconstruction of the I-74 Mississippi River bridge (2020) has alleviated one of these bottlenecks, and the I-80 Mississippi River bridge is expected to be reconstructed beginning in 2028. The age and condition of the remaining bridges affect highway freight movement when there are backups due to crashes or if bridges need to be closed for repair or washing. Table 7.3 lists the sufficiency ratings for Mississippi and Rock River crossings in the Quad Cities along with the Truck AADT and the percentage of trucks that cross the river on that facility.

Table 7.3 Sufficiency Ratings on the Mississippi and Rock Rivers Bridges

Bridge	Bridge Condition (IADOT)	Sufficiency Rating (ILDOT)	Year of Rating	Avg. Truck ADT (Percentage)	AADT Year
Mississippi River					
Government Bridge	50.4	n/a	2022	n/a	n/a
US 67/Centennial Bridge	24.8	18.9	2022 IA, 2021 IL	646 (3%)	2022
I-74	87.7 (EB); 86.0 (WB)	91.7 (EB); 91.4 (WB)	2022 IA, 2021 IL	3,235 (4%)	2022
I-280	57.0	51.7	2023 IA, 2019 IL	7,416 (31%)	2022
I-80	44.0	65	2021 IA, 2012 IL	10,327	2022
SR 92, Muscatine	49.0	65.6	2021 IA, 2008 IL	525 (6%)	2022
Rock River					
US 67 (North Channel)		52.1	2016	800 (8%)	2021
US 67 (Central Channel)		74.2	2021	800 (8%)	2021
US 67 (South Channel)		50.4	2014	800 (8%)	2021
I-74		96.3 (NB); 97.3 (SB)	2013	2,200 (8%)	2021
I-80		96.5 (NB); 86.4 (SB)	2011	8,205 (35%)	2021
27th Street, Moline IL		47.2	2019	456 (4%)	2020
SR 92		87.5 (NB); 87.5 (SB)	2016	1,125 (11%)	2021
SR 92 (Henry/Rock Island County Line)		88.6	2013	170 (8%)	2021
SR 84		88.5	2017	340 (3%)	2021
Milan Beltway		82.8	2013	1,323 (7%)	2020

Source: ILDOT Structural Information Management System accessed 2024; IADOT Open Data accessed 2024.

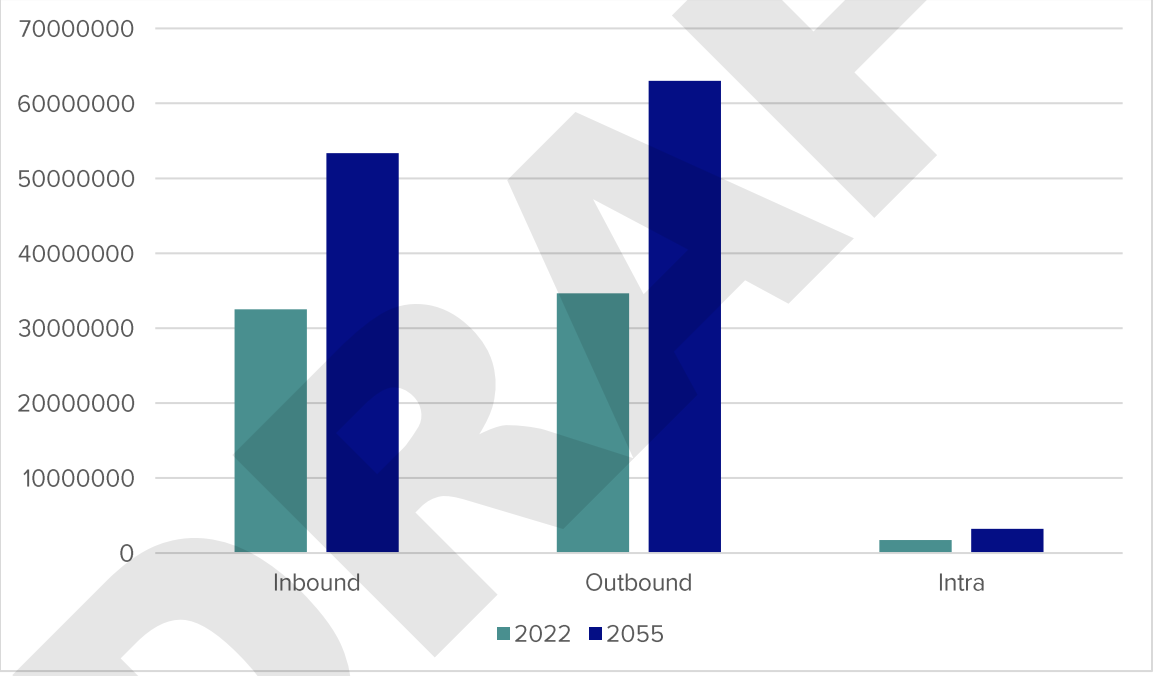
Sufficiency Ratings by County, 2023

County	Good	Fair	Poor	Totals
Rock Island, IL	125 (46.0%)	132 (49.0%)	15 (5%)	272
Henry, IL	177 (54%)	119 (36%)	32 (10%)	328
Scott, IA	100 (35%)	156 (55%)	29 (10%)	285

Source: Bridge Condition by County 2023, National Bridge Inventory.
https://www.fhwa.dot.gov/bridge/nbi/no10/county23a.cfm#il

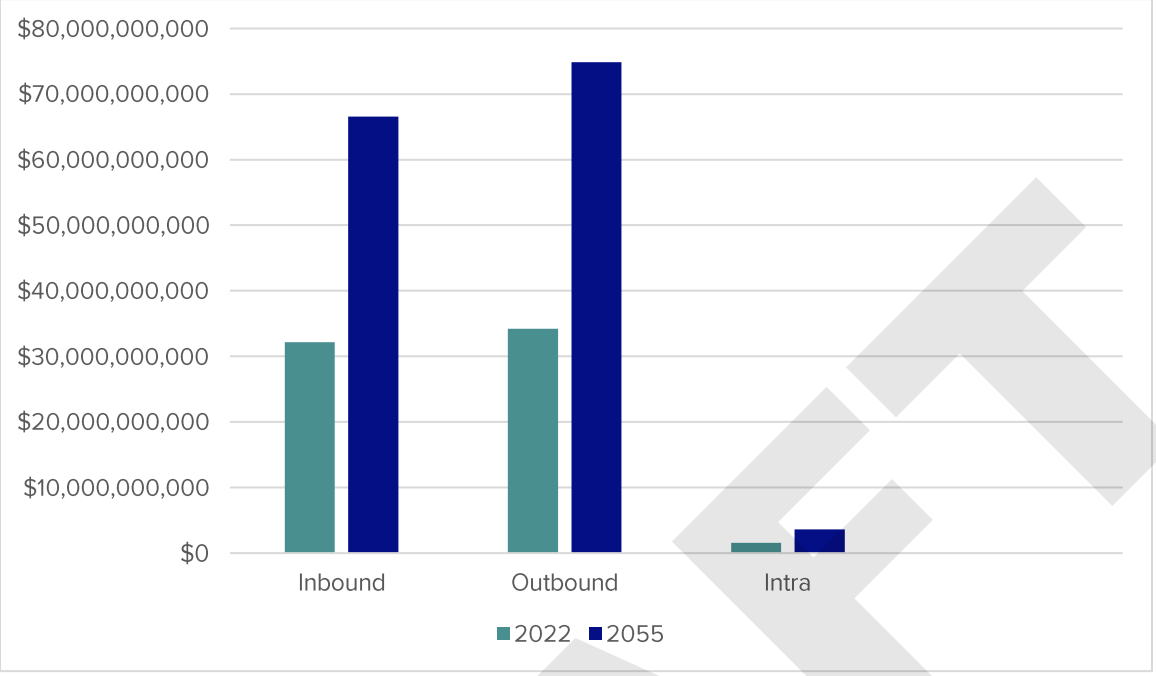
The *Bi-State Region Freight Plan* found that the highway infrastructure in the Quad Cities is generally in good condition and meets the needs of the region. However, there are growing concerns with congestion and bridge sufficiency, as inbound and outbound shipments via truck are expected to increase by tonnage and value by 2055 as shown in Figure 7.1 and Figure 7.2.

Figure 7.1Bi-State Regional Truck Modal Share by Tonnage



Source: Bi-State Regional Freight Plan Addendum (2024)

Figure 7.2 Bi-State Regional Truck Modal Share by Value



Source: Bi-State Regional Freight Plan Addendum (2024)

In addition to river crossing bottlenecks, low clearance structures pose risks for truck traffic moving through and within the Quad Cities. Refer to Chapter 4 and Map 4.4 showing annual average daily truck traffic and low clearance structures to locate these features. There are a number of low clearance structures located on I-74. With the I-74 Mississippi River Corridor Reconstruction project, a number of these problem areas will be eliminated. However, there are other corridors and spot locations on major highways where they will need to be addressed in the future, such as near downtown Davenport and Rock Island's Centennial Expressway.

Weight restrictions have a bearing on road durability and bridge capacity, as well as impacts to maintenance of roadway facilities. Both Iowa and Illinois have provisions and permit systems for oversized and overweight vehicles. In Iowa, typically vehicles exceeding 80,000 pounds, or 20,000 per axle, require oversize/overweight permits issued by the Iowa Department of Transportation. In Illinois, restrictions are similar to Iowa with a gross weight of 80,000 pounds, and based on weight per axle and axle spacing.

National Freight Network

Under MAP-21, the U.S. DOT was tasked with establishing a national freight network to assist in the strategic direction of resources for improving the mobility of freight on the highway portion of the national freight transportation system. According to FHWA, "the primary freight network will be comprised of not more than 27,000 centerline miles of existing roadways that are most critical to the movement of freight, but the 27,000-mile cap may be increased by an additional 3,000 centerline miles of existing and planned roadways that the Secretary deems critical to the future efficient movement of goods on

the primary freight network."[2] In the Quad Cities, I-80 on both sides of the Mississippi River is designated on the primary freight network. The U.S. DOT also designated an additional 14,000 miles that were above the statutory cap, but fulfilled the statutory criteria. The segment of I-280 in Iowa from I-80 to the Mississippi River has been included in this comprehensive primary freight network. Map 7.2 shows the National Highway System and Connectors, as well as the Primary Freight Network in the MPA.

Under the FAST Act, Congress authorized the establishment of a nationally-significant freight and highway projects program to provide financial assistance for projects of national or regional significance. When the FAST Act expired in 2021, it was replaced by the Infrastructure Investment and Job Act (IIJA), which largely preserves the core programs of FAST. Both FAST and IIJA establish criteria for a National Highway Freight Network that includes a 41,518-mile network identified during the designation process for the primary freight network. This network is to be reevaluated every five years. Criteria for this network includes changes in origins/destinations for freight movement, percentage of annual daily truck traffic, changes in location of key facilities, ports of entry, access to energy development/production, access to modal freight and intermodal facilities, tonnage and value of freight movement, freight bottlenecks, significance of good movement, and emerging freight/commerce corridors. In addition to upholding FAST programs, IIJA also created the Promoting Resilient Operations for Transformative Efficient Cost Savings Transportation (PROTECT) program and the Bridge Formula Program.

Water Freight

Inland waterway freight links the Quad Cities with other communities and markets along the Mississippi River, the Gulf of Mexico, and the Great Lakes, and provides connections to foreign ports. Navigation season in the Quad Cities Region runs for approximately ten months, March through December, with a minimum channel depth of nine feet. While barge transportation requires more shipping time than other forms of transport, the lower shipping rates, and energy efficiency of this mode of transportation provides a significant cost savings to bulk material shippers. According to the U.S. Army Corps of Engineers, barge transportation is 7.5 times more economical than shipping by trucks measured by weight.

A marine highway system was established in 2007 under Section 1121 of the Energy Independence and Security Act to reduce congestion on the surface highway network. The U.S. Maritime Administration has oversight for this program. Its purpose is to expand the use of America's navigable waterways. The Mississippi River north of St. Louis is designated as M-35.

In October 2020, the Upper Mississippi River Ports was designated as a port statistical area. This 221.5 river mile corridor will allow the U.S. Army Corps of Engineers to report commodity data to be consolidated for this segment of the river. The Waterborne Commerce Statistics Center is responsible for capturing information on vessels, tonnage, commodity, and origin-destination from vessel operating companies. The benefit of the designation includes recognition of the volume of freight moving on the river, assurance

[2] *US Department of Transportation, Federal Highway Administration, "Map-21 -Moving Ahead for Progress in the 21st Century" https://www.fhwa.dot.gov/map21/factsheets/freight.cfm*

of reliable access to the region's exports, and promoting environmentally sustainable water infrastructure development. Bi-State staff, in cooperation with peer Metropolitan Planning Organizations (MPOs), have published an online interactive map and dashboard showing the UMRP statistical area with cataloged terminals.

In July 2023, the City of Rock Island was legislated to become the Rock Island Regional Port District, and received a planning grant to conduct a master plan for its Sunset Business Park and regional port district in 2024. The city leases a river terminal to a private operator and hopes to expand its river freight capabilities in the coming years. In 2024, the Ports of Eastern Iowa Authority was established by resolution for six counties in eastern Iowa including Clinton, Dubuque, Jackson, Louisa, Muscatine, and Scott Counties. The designation will aid in gathering freight statistics, and convene stakeholders to bring attention to the important contribution the Mississippi River plays in maritime freight in the United States. Both of these designations will elevate river navigation in the Quad Cities MPA and the region.

Water Traffic and Travel

River Miles 469 through 503 are located in the Quad Cities MPA. There are two locks and dams on the Mississippi River located in the MPA: Lock and Dam 14, located downstream of LeClaire, and Lock and Dam 15, located between Davenport and Rock Island. Like other locks and dams built during the 9-foot Channel Navigation Project in the 1930s, their lock chambers are shorter than most contemporary commercial barges and require barges to split up and pass through the locks in multiple operations. According to the U.S. Army Corps of Engineers, "this procedure requires uncoupling barges at midpoint which triples lockage times and exposes deckhands to increased accident rates." Table 7.4 provides data on the average delay and processing time at Locks 14 and 15.

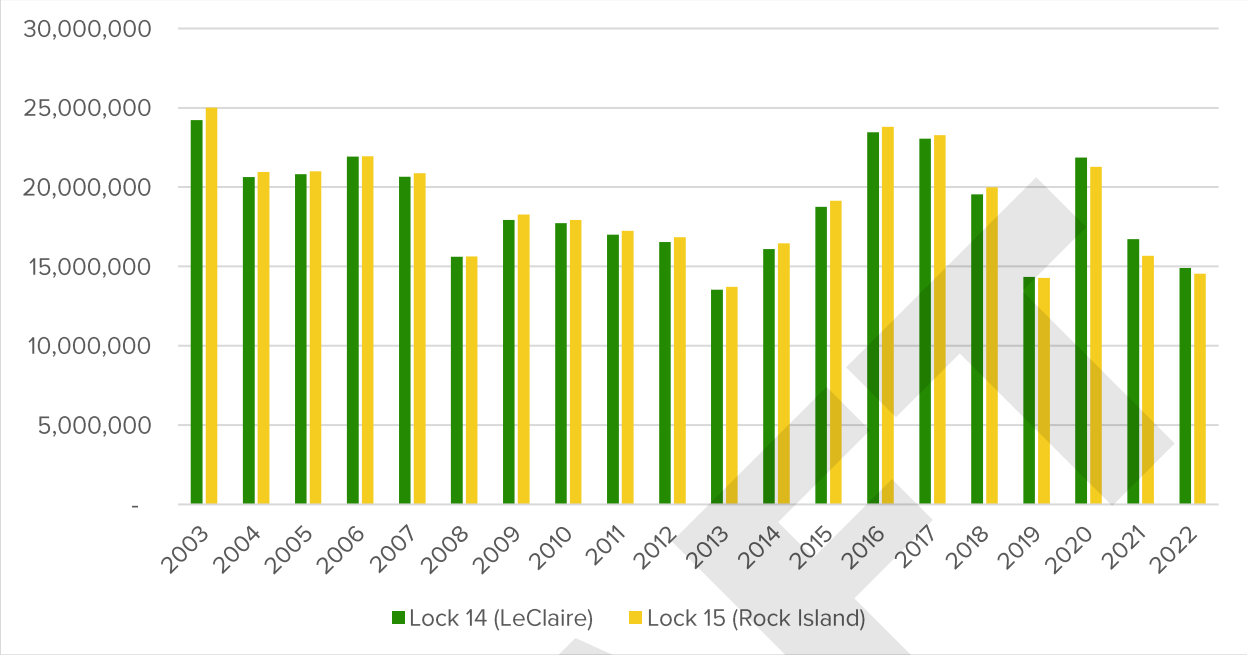
Table 7.4 Average Lock Processing & Delay time

Description	Lock and Dam 14 (LeClaire)	Lock and Dam 15 (Rock Island)
Construction (9-foot Channel)	1935-1940	1931-1934
Chamber fill time	8 minutes	7 minutes
Average Delay – Tows (hours), 2021 annual Data	2.1	1.63
Average Processing Time (minutes), 2021 Data	72	79

Source: U.S. Army Corps of Engineers, Locks and Dams 14 & 15 Fact Sheets, 2022 Vessel & Lockage Data

When compared to the 2017 data from the previous LRTP, average delays are down by about an hour at both Locks. Average processing time has increased by about 30 minutes at each Lock. Figure 7.3, shows the average tonnage that passed through Locks and Dams 14 and 15 from 2002 through 2022. Significant flooding events affected river shipping in 2008, 2013, and 2019. Tonnages in 2021 were much lower than in 2017, which could explain the reason why 2021's average delay is much lower than 2017. Due to the slow nature of river transportation, most of the commodities shipped on the river are bulk commodities (Figure 7.4) and not time-sensitive. When this type of extreme weather event occurs, shifts to alternative modes are necessary placing greater pressure on rail and highway modes.

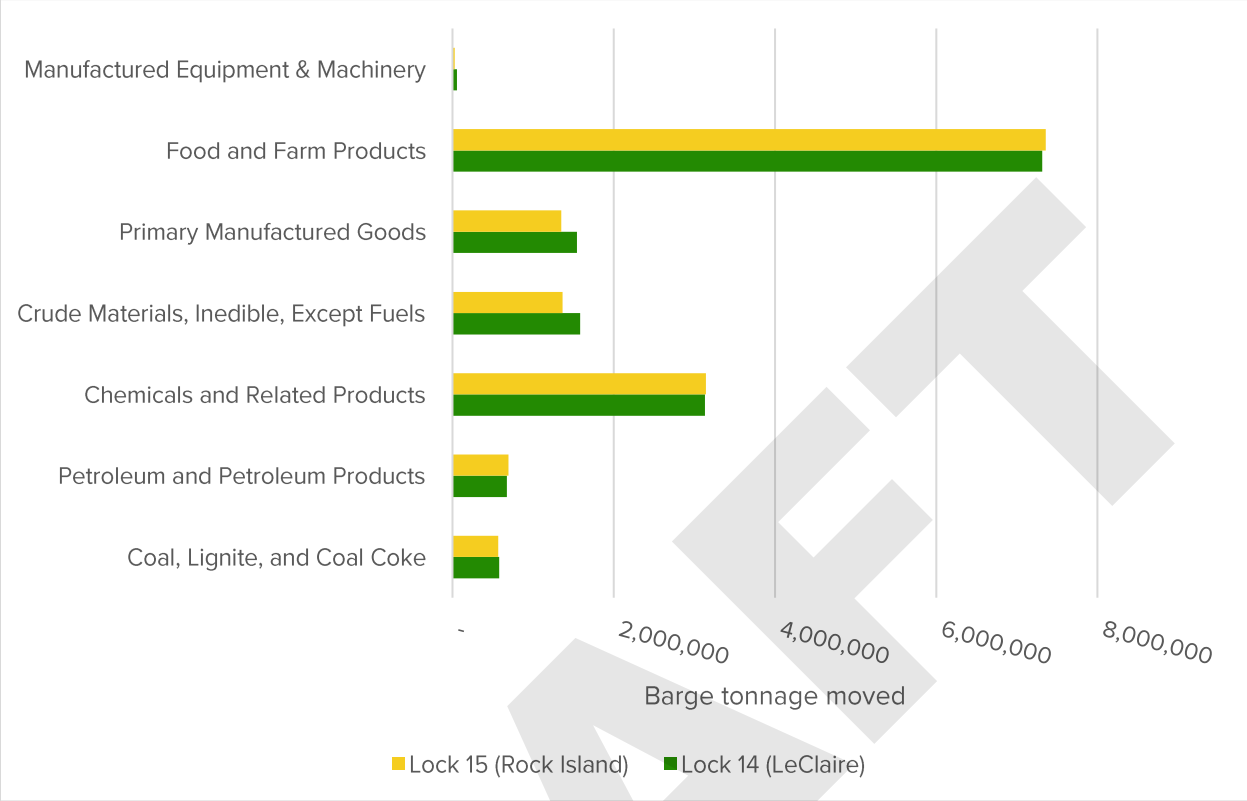
Figure 7.3 Average Annual Tonnage at Locks 14 and 15



Source: U.S. Army Corps of Engineers, Locks and Dams 14 & 15 Fact Sheets, 2022 Vessel & Lockage Data

Grain shipments travelling downstream dominate the average tonnage that gets locked through Locks 14 and 15. Coal, chemicals, manufactured goods, and crude materials constitute the majority of commodities that are shipped upstream to the Bi-State Region.

Figure 7.4 Average Tonnage by Commodity at Locks 14 and 15



Source: U.S. Army Corps of Engineers, Locks and Dams 14 & 15 Fact Sheets, 2022 Vessel & Lockage Data

Domestic and International Freight Movement

The Quad Cities Region lies at the crossroads of numerous American freight routes, representing the multimodal nature of bulk and other commodity shipments. Maritime, rail, and highway shipping operations are all represented in the logistics and freight network in the Quad Cities. Recent approval of the three U.S. Corn Belt Ports including the UMRP, signals the growing interest in promoting the region's maritime freight capabilities. Both the Illinois Marine Transportation Plan (2021) and the Iowa State Freight Plan (2022) emphasize the significance of the state's waterways as a crucial component of the state and national freight network.

Direct access to foreign markets provides regional producers additional opportunities to sell their products. However, this dependence on foreign markets can occasionally be volatile, as exemplified by the pork and soybean tariffs imposed by China in 2018. According to a report by the Bureau of Labor Statistics[3], American exports of soybeans to China fell from $12.2 billion in 2017 to $3.1 billion in 2018. The result of such a dramatic decrease impacted agricultural economies throughout the Midwest and increased the soybean inventory domestically, while affecting shipping and freight providers by largely negating a major market. The same report noted in October 2018, "the U.S. Department of Agriculture provided up to $12 billion in aid to the agricultural industry...to help farmers

[3] *Source: Hergt, B. (October 2020). The effects of tariff rates on the U.S. economy: What the Producer Price Index tells us.* Bureau of Labor Statistics - Beyond the Numbers.

ease the downside of the effects of the additional tariffs." While the aid assisted some producers, the impact of large-scale changes within high export industries, such as agriculture are felt throughout ancillary sectors, such as shipping. Regional economies can better adapt to these changes through a multimodal transportation network to provide producers efficient access to other markets. The soybean market grossed $16.4 billion in FY 2022[4], further demonstrating the volatility of the agricultural market.

Water Freight Facilities

In October 2020, the U.S. Army Corps of Engineers approved the creation of the UMRP as one of three Corn Belt Port Statistical Areas. The mapping project for the UMRP statistical area, mentioned previously, shows cataloged terminals within the statistical area. The UMRP consists of existing ports and terminals along the Mississippi River between Iowa and Illinois from river mile 361.5 in Keokuk, Iowa to river mile 580 in Dubuque, Iowa. UMRP encompasses 50 existing Iowa barge terminals and about 20 existing barge terminals in Illinois. The statistical area designation will ideally attract business, create jobs, and promote usage of the Mississippi River for shipping goods. Within the MPA, there are 28 verified terminals. These facilities require a reliable river navigation system where lock delays are reduced in order to move their products. Depending on their locations, they also need reliable access to rail and/or the highway system. Reducing bottlenecks in and around these facilities will help freight movement in the metropolitan area.

Pipelines

Certain bulk commodities, largely oil and natural gas, needing to travel long distances are shipped via pipeline from their production sites to locations where they can be refined and used. The Quad Cities MPA is served by numerous pipelines that traverse the region. Two local plans, the *Scott County Multi-Jurisdictional Hazard Mitigation Plan* (2023) and the *Rock Island County Multi-Jurisdictional Hazard Mitigation Plan* (2021), provide maps and information regarding pipelines in the region, including issues of safety and security as it relates to hazardous materials spills.

Freight Opportunities

Modal Trends and Commodity Shipments

The *Bi-State Regional Freight Plan Addendum* outlined a number of global trends affecting freight movement in the future. Industrialization of agriculture has resulted in farmers shipping more output over longer distances by truck. FHWA forecasts significant increase in truck traffic up to 74% by 2055. Class I railroads have shifted towards larger, 100-plus cars, grain shuttles, and consolidation facilities that result in longer distance travel. Current congestion on the rail network is expected to increase due to the merger of Kansas City Southern and Canadian Pacific.

Extraction of natural resources using the emerging technology to produce domestic oil and gas sources is expected to continue to have an impact on freight movement. Rail systems throughout the Midwest are seeing large increases in crude oil by rail, according

[4] *Source: Soley, Graham (January 6, 2023). Record U.S. FY 2022 Agricultural Exports to China. USDA Foreign Agricultural Service: International Agricultural Trade Report.* https://fas.usda.gov/data/record-us-fy-2022-agricultural-exports-china

to the *Bi-State Region Freight Plan*. Safety associated with these trains is a concern to the communities through which the trains run. The MPA region experienced 48 hazardous material spills on roadways and two on railways between 2018 to 2023 according to the *Bi-State Regional Freight Plan Addendum*.

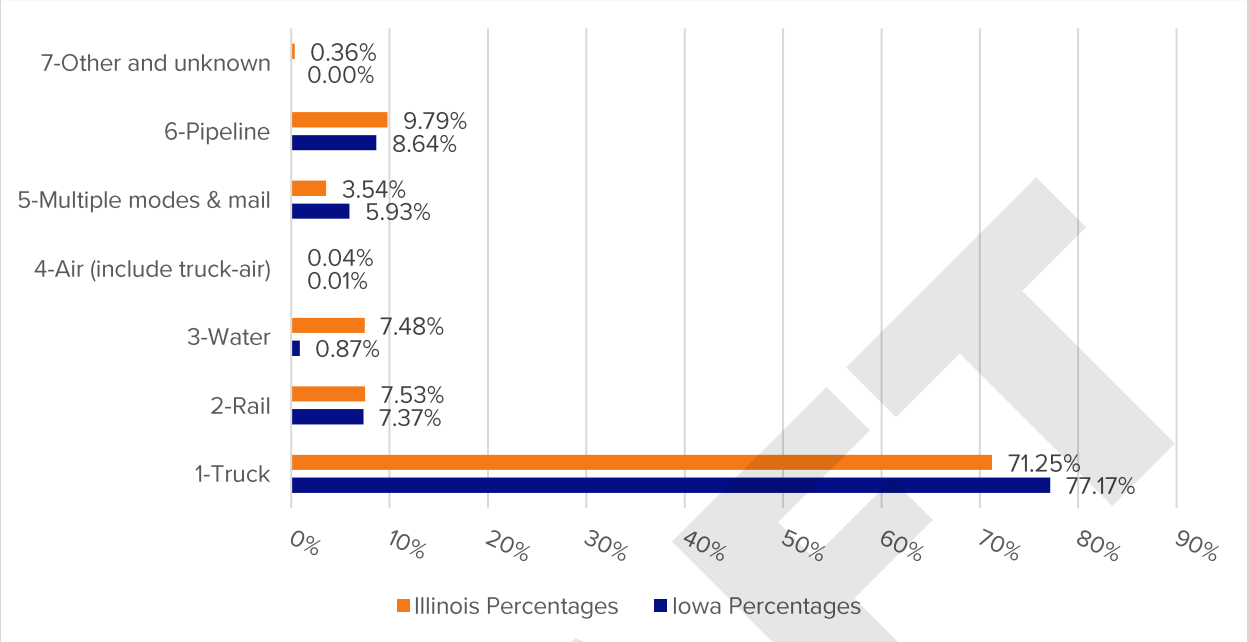
Another potential mode of moving the oil and gas extracted in those regions to refineries in the south is via pipeline. Numerous natural gas and hazardous liquid pipelines traverse the Quad Cities Region. These assets are more fully discussed in detail in the Rock Island County and Scott County hazard mitigation plans to address minimizing safety issues related to pipeline transport.

Lastly, workforce issues like driver shortages, hours of service issues, changing family-work balance interests, and safety requirements are having an impact on transportation. These global issues will have direct and indirect influence on the Quad Cities' intermodal transportation system.

Freight by Mode

The Bureau of Transportation Statistics' Freight Analysis Framework provides state summary tables by mode and commodity type for all freight products. In both Iowa and Illinois, trucking is the dominant mode and represents almost 78% and 72% of each respective state's share of outbound domestic goods by tonnage, according to the 2023 Freight Analysis Framework (FAF) data. The *Bi-State Regional Freight Plan Addendum* includes specific estimates for Scott and Rock Island Counties, which match the overall calculations for each state. In Scott County, trucking accounts for about 79% of all outbound freight tonnage, and accounts for around 77% of all freight tonnage moving through the county. In Rock Island County, trucking represents just over 84% of inbound tonnage freight and almost 87% of all freight tonnage movement in the county as of 2022. Predictions for 2055 indicate trucking will continue to dominate the mode share, although Iowa is predicted to see a slight rise in rail freight, and Illinois is predicted to see a large increase in pipeline freight. Trucking may decrease in the future if improvements can be made to other modes, or if conditions like higher fuel prices drive shipments to more fuel-efficient modes, such as rail and water transportation. Shifts to heavy-duty truck alternative fueled vehicles may lessen this decrease. Figure 7.5 breaks down the percent of outbound domestic freight by mode for each state.

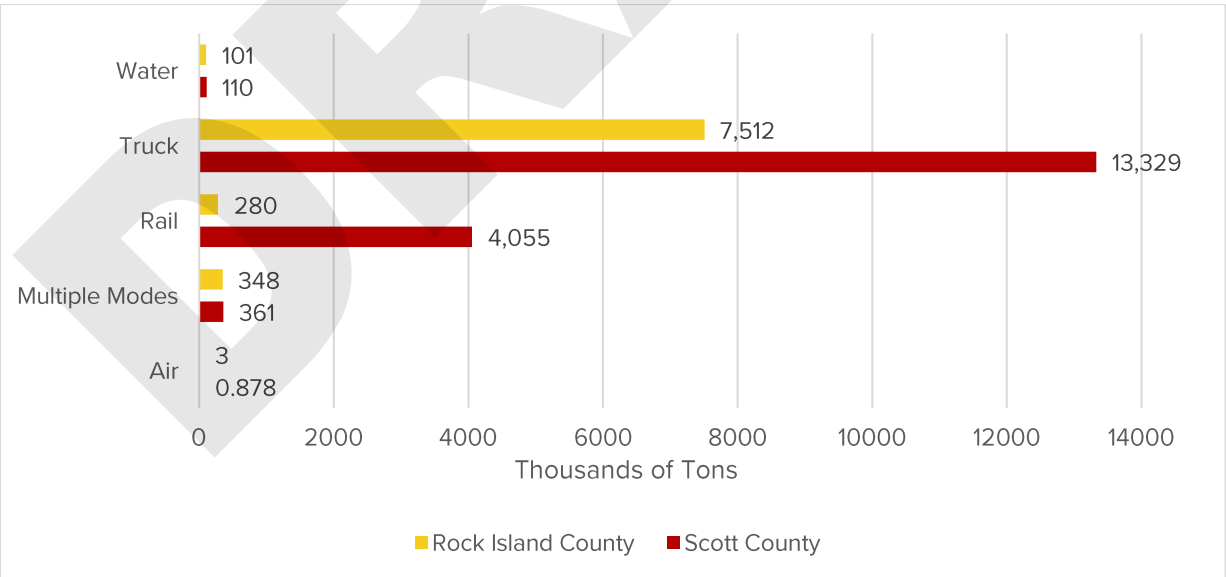
Figure 7.5 Outbound Domestic Freight by Mode



Source: Federal Highway Administration Freight Analysis Framework Version 5, 2023 data

Figure 7.6 shows the outbound freight for both Rock Island and Scott County. The unreliability of the Upper Mississippi River System may hamper efforts to shift freight to water, unless investments occur to improve the lock system to reduce river congestion, and address extreme weather resilience.

Figure 7.6 County Outbound Freight by Mode



Source: Bi-State Freight Plan Addendum 2024

Freight by Commodity

According to 2023 FAF data, Illinois' top outbound commodities by tonnage are cereal grains, gasoline, and natural gas and other fossil fuel products; and the top outbound commodities by value are pharmaceuticals, mixed freight goods, and electronics. Iowa's top outbound commodities by tonnage are cereal grains, animal feed, and gravel; and the top outbound commodities by value are mixed freight goods, live animals/fish, and meat/seafood. The Bi-State Region itself supports both food production and machinery pieces, particularly due to the agricultural machinery pieces made at Deere and Company, headquartered in Moline. Figure 7.7 and Figure 7.8 show the top ten commodities of Iowa and Illinois by total tonnage.

Figure 7.7 Iowa Top Commodities by Tonnage in 2023

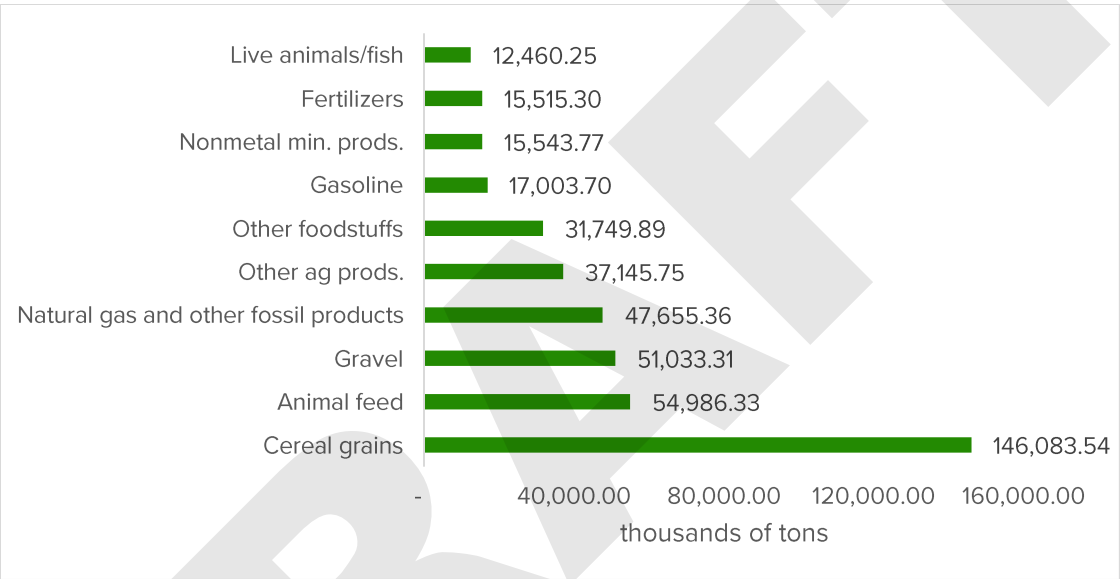
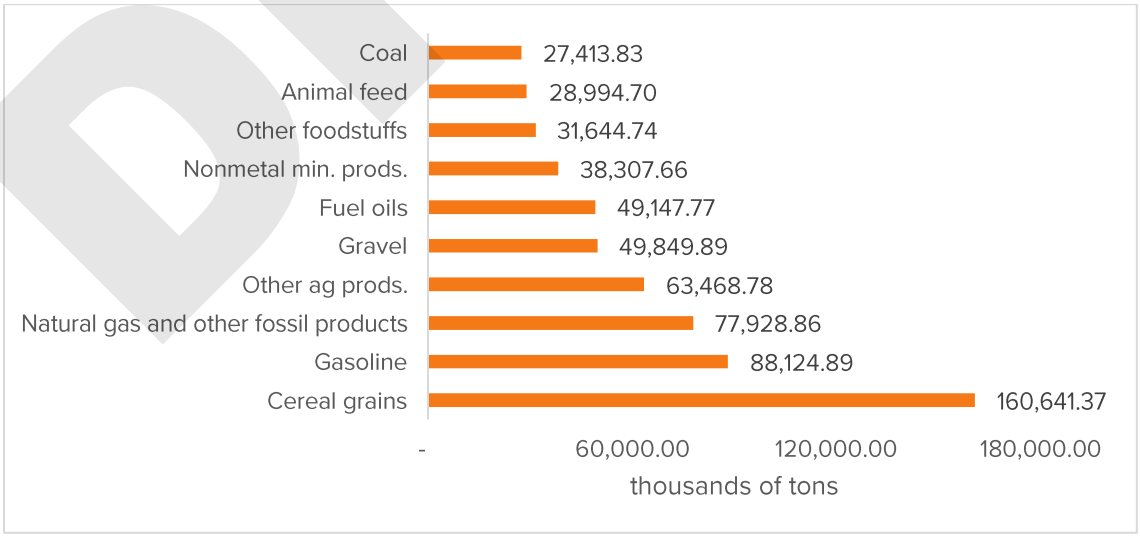


Figure 7.8 Top Tonnage Commodities Illinois in 2023



Source: Federal Highway Administration Freight Analysis Framework Version 5, 2023 data

The following figures break down the weight and value of the top ten outbound commodities for the States of Illinois and Iowa. Cereal grains are one of the top outbound commodities by tonnage for both Illinois and Iowa, representing about 19% and 30% of each respective state's total tonnage. Figure 7.9 and Figure 7.10 show major freight commodities by value for 2023.

Figure 7.9 Iowa Top Commodities by Value in 2023

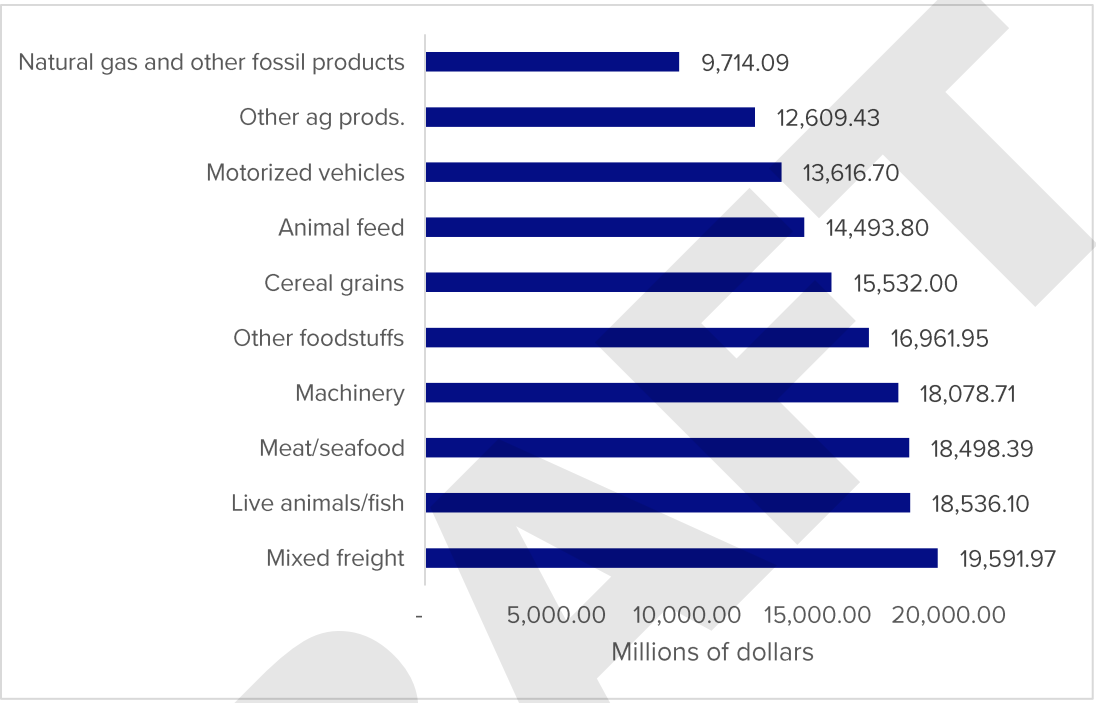
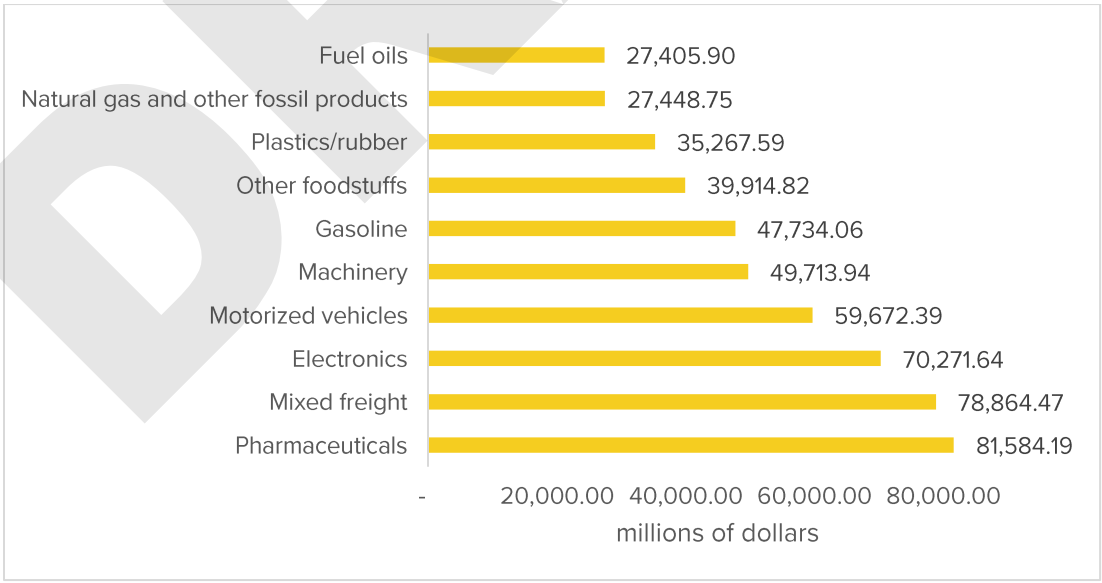


Figure 7.10 Top Value Commodities Illinois in 2023



Source: Federal Highway Administration Freight Analysis Framework Version 5, 2023 data

Freight Barriers and Obstacles

Capacity and Congestion

With the emphasis on bulk commodities of grain and gravel by tonnage and products, such as machinery and chemical products by value, the Quad Cities' multi-modal network should continue to support the efficient movement of goods. Compared to other metro areas, the Quad Cities has relatively low congestion on roads and railways. The Federal Highway Administration defines seven root causes of congestion: physical bottlenecks (a.k.a. "capacity constraints"), traffic incidents, work zones, weather, poorly timed signals, special events, and over-capacity demand (i.e. daily and seasonal peaks superimposed on a system with a fixed capacity).

Bottlenecks and Incidents

Bottlenecks and incidents are the greatest source of slowing traffic on the highway network in the Quad Cities. In Section 4 of the *Bi-State Region Freight Plan* and Chapter 4 of this plan, congested areas are identified, either based on the average daily 24-hour traffic volumes or using projected traffic volumes compared with capacity. In the *Bi-State Region Freight Plan Addendum,* the Regional Integrated Transportation Information System (RITIS) Probe Data Analytics Suite was used to identify and rank bottlenecks in the region. The 2022 data pulled from RITIS provided an interstate and non-interstate ranking, based on both all traffic and truck-specific delay.

There were 9 regionally significant interstate bottlenecks within the MPA:

1) Westbound on I-80 between 1st Avenue and the IL/IA Stateline
2) Eastbound on I-80 between I-280 and I-80
3) Eastbound on I-80 between I-74 and US-67
4) Westbound on I-80 between US-61 and Middle Road (Exit 301)
5) Westbound on I-80 between Middle Road and Exit 1
6) Southbound on I-80 between US-6 and I-88
7) Northbound on I-74 between IL/IA Stateline and Middle Road/Locust Street (Exit 3)
8) Eastbound on I-280 between the IL/IA Stateline and I-80
9) Eastbound on I-80 between Middle Road (Exit 301) and the IL/IA Stateline

There were five significant non-interstate bottlenecks in the MPA:

1) Eastbound on Cleveland Road between IL-84 and I-80
2) Westbound on IL-5 between I-74 and 7th Street
3) Eastbound on US-67 between I-74 and 26th Street
4) Southbound on US-67 between Mound Street and I-74
5) Northbound on US-67 between W. 10th Avenue and E 1st Avenue

The *Bi-State Region Freight Plan Addendum* noted locations in the region with significant mobility challenges based on truck travel times from the National Performance Management Research Data Set (NPMRDS). This analysis indicated that the least reliable roadways in the Quad Cities for freight movement were accessing the Centennial Bridge crossing at River Drive in Davenport and 1st Avenue in Rock Island. Another chokepoint was the U.S. 61/I-80 interchange.

Modal intersections, such as at rail-highway crossings or rail-river crossings, are another cause of bottlenecks. These intersections create modal conflicts that may increase shipping time, costs, or create other negative consequences. Several locations within the transportation planning area, and noted below, have high roadway traffic crossings at-grade with active rail corridors. Typically, at locations with at-grade crossings, trains have the right-of-way over motor vehicles. The *Bi-State Region Freight Plan* Section 3.2 indicated that "density of rail traffic, measured in million gross ton-miles, per mile is substantial around the Quad Cities metro area, but moderate in the towns along the Mississippi River outside of the urbanized area." This remains true in the region. In the metro area, the BNSF line averaged about 21.05 million tons per year, and the CPKC line averaged 10.46 million tons per year.

As shown earlier in this chapter, *FRA Office of Safety Analysis Web Site (Query Table 8.08)* indicated that in Davenport, the Canadian Pacific tracks have 9 trains over Ripley Street with 10,000 daily vehicles. In Moline, 19th Avenue's roadway traffic of 4,000 vehicles per day competes with Canadian Pacific rail freight traffic of 11 trains (reported 2023). On the already congested corridors, such as Kimberly Road and 53rd Street, the data indicates there is one train per day on the CP/DME. Increased traffic to the transload facility in north Davenport is expected to contribute to potential delays on this roadway.

Another identified bottleneck is at the IL-84/Colona Road/Cleveland Road intersection of the BNSF line. As IL-84 nears the BNSF rail tracks, traffic splits from IL-84 onto Cleveland Road, where a traffic count of 8,600 vehicles per day travel enroute to I-80. In Colona, the BNSF line has 16 trains that cross IL-84/Colona Road. The IL DOT plans to consolidate the tracks in the future, but these examples demonstrate areas of the Quad Cities MPO where road/rail conflicts occur and can negatively impact freight efficiencies.

Regional-National Infrastructure

As noted earlier, the *Bi-State Region Freight Plan* also drew attention to rail speeds at the Mississippi River crossings. In 2020, Bi-State Regional Commission commissioned a study to review rail crossings in the region. The study examined the existing crossings, and recommended a series of primary alternatives in the vicinity of the Crescent Bridge and near the Government Bridge. The benefits of a new bridge included a high-fixed crossing to avoid river barge delays, capacity to carry passenger rail traffic at 40-mph, and improved grade crossings. However, significant investment will be required to meet the requirements to adapt a crossing to fit within the existing urban footprint. Numerous other bridges will likely be affected due to insufficient clearances, including the Centennial Bridge and the Rock Island Viaduct.

Lastly, air freight, which is mainly trucked from the Quad Cities to Chicago, is affected by delays at the larger commercial airports. With much of the air and rail freight traveling to Chicago's O'Hare Airport, the need to support the nationally significant Chicago Regional Environmental and Transportation Efficiency (CREATE) program to reduce freight and

passenger bottlenecks in the Chicago region is important. The ongoing implementation of CREATE will have positive trickle-down effects on freight shipments to and from the Quad Cities. As of September 2024, 34 of the 70 projects had been created, with another 20 underway.

Safety and Operations

Chapter 4 (Map 4.8a) outlines a five-year history of crashes and shows higher total crashes over five years along key truck routes (Map 4.4). These locations include:

- U.S. 6/Kimberly Road (U.S. 61 to I-74), Davenport – 315 trucks per day
- I-74 (U.S. 6/Kimberly Road, Davenport to IL-5 John Deere Road, Moline) – 1,364 trucks per day
- IL-5/John Deere Road (I-74 to 41st Street), Moline – 933 trucks per day

There are planned reconstruction improvements for each of these corridors. The improvements are expected to reduce crashes and improve system reliability once complete.

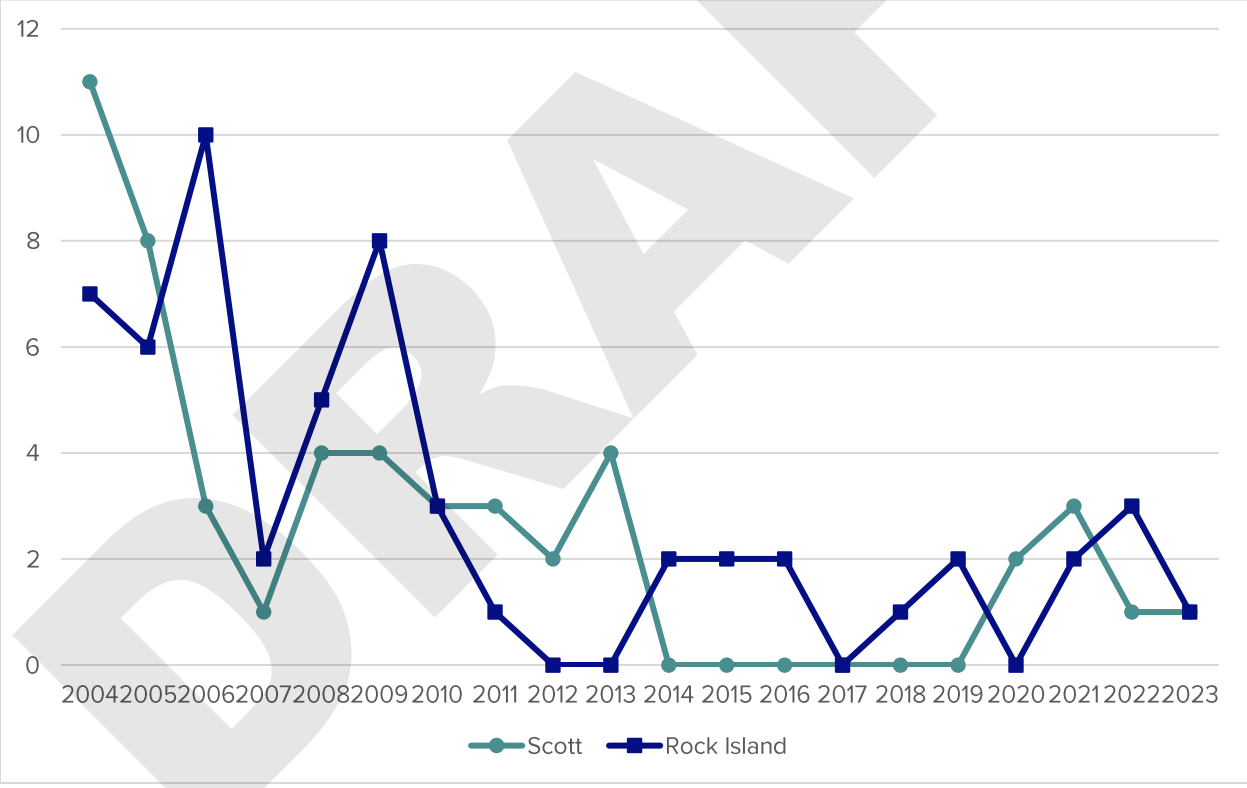
Table 7.5 Railroad Accidents, Injuries, and fatalities in Rock Island and Scott Counties

	Scott			Rock Island		
Year	Accidents	Injuries	Fatalities	Accidents	Injuries	Fatalities
2004	11	9	0	7	2	1
2005	8	15	0	6	7	1
2006	3	7	0	10	1	0
2007	1	12	1	2	4	0
2008	4	8	0	5	3	0
2009	4	6	3	8	8	1
2010	3	5	0	3	5	0
2011	3	2	1	1	5	0
2012	2	5	0	0	3	0
2013	4	6	0	0	1	0
2014	0	4	0	2	0	0
2015	0	5	0	2	1	0
2016	0	3	0	2	0	0
2017	0	6	0	0	1	0
2018	0	3	1	1	2	0
2019	0	4	0	2	1	0
2020	2	0	0	0	0	0
2021	3	0	0	2	0	0
2022	1	1	0	3	0	0
2023	1	0	0	1	0	0
Total	50	101	6	57	44	3

Source: FRA Table 3.16 Summary of Train Accidents with Reportable Damage, Casualties, & Major Causes

As shown in Table 7.5, there have been 107 total railroad accidents resulting in rail infrastructure or train car damage in Rock Island and Scott Counties between January 1, 2004 and December 31, 2023. Accidents, as defined by *FRA Railroad Safety Data Frequently Asked Questions (FAQs) Table 3.07*, are any occurrence where train cars or rail infrastructure are damaged. An accident listed need not be a collision with an automobile. Table 7.5 also identifies incidents where casualties are reported by injury or fatality on rail property by county and rail line. The FRA injury/fatality data is a query from *FRA Data Table 3.16* by state and county with subsets "All locations, All Casualties & All Job Categories" selected. Although more rail crossings are located in Rock Island County, Scott County recorded more than double the amount of injuries during the same period. Total injuries for both counties are 145 with nine fatalities, a subset of the injury category. Six occurred in Scott County and three in Rock Island County. Primary causes found in the FRA data for injuries are due to track, human, or equipment error. The number of rail/motor vehicle train accidents in Scott and Rock Island Counties has decreased substantially in the last 20 years, as depicted in Figure 7.11.

Figure 7.11 Railroad Accidents in Scott and Rock Island Counties



Source: Federal Railroad Administration Office of Safety Analysis Table 3.16 pulled 2024

Throughout the Quad Cities MPA, public access areas intersect rail infrastructure. To reduce accidents (pedestrian, motor collisions, and other rail infrastructure damage), municipalities may need to examine the space and type of interactions occurring near rail infrastructure.

Schwiebert Riverfront Park in Rock Island is an example where the rail infrastructure has the ability to be both economically viable, safe, and aesthetically pleasing. Minor adjustments, such as fencing or other pedestrian-friendly improvements, could maximize

corridor utility at the Illinois Highways 84 and 92 crossings of BNSF in East Moline, the Rockingham and Division Street crossings of the Canadian Pacific rail line, and the Canadian Pacific's route along the LeClaire Park area with its farmer's market and Modern Woodman Ballpark. Where applicable, additional safety enhancements may be considered:

- Fencing and appropriate spacing
- Advanced warning signage
- Flashing lights and railroad wigwags (pendulum crossing signals)
- Bells
- Other electronic warning systems
- Locomotive speed ordinance
- Nighttime whistle ban lift in low visibility areas
- Cross bucks with track numbers
- Road paint to maintain distance
- Traffic law enforcement

Planned Intermodal Network Improvements for Tomorrow

Maintaining Air Freight Options

According to the *Bi-State Region Freight Plan*, mode shifts away from air cargo to truck as the primary mode of transportation will continue since trends toward consolidated air freight facilities have already occurred. Except for highly time-sensitive goods, most air-destined freight is trucked to Chicago O'Hare airport 170 miles away. Expedited carriers are the primary users of air freight. FedEx and UPS operate at the Quad Cities International Airport (MLI) for some cargo, but primarily truck from the MPA to Chicago. The expectation is that this mode choice will continue. The local focus will be to maintain basic air cargo options currently available for specialized, time-sensitive goods and rent existing cargo-oriented spaces for aeronautical and non-aeronautical uses.

Future projects at MLI will consist of realigning the entrance road to the general aviation facilities, rehabilitation to sections of Runway 13/31, construction of drainage improvements, rehabilitation of the airfield's electrical vault, general aviation ramp enhancements, and conducting a commercial Spaceport planning study. The Metropolitan Airport Authority regularly reviews and updates its airport master plan to maintain services and provide for future development in and around the facility.

The Davenport Municipal Airport (DVN) serves a variety of business needs. It supports nearly 400 employment opportunities and generates $20 million annually in local spending. DVN is positioning itself to meet the future air and air cargo demand of the region with the installation of an upgraded perimeter security fence in 2029.

The City of Davenport, the Iowa Department of Transportation Aviation Bureau, and the Federal Aviation Administration work closely with each other in regularly reviewing and updating its master plan for future improvements.

Improving Rail Freight Movement

Rail network improvements are typically conducted by the private investment of railroads. In addition to maintaining the rail lines, switching yards, and signaling, there is continued interest in the Quad Cities to facilitate improved rail freight movement to serve the area's economy.

In 2019, Canadian Pacific raised the height of tracks through downtown Davenport as a result of continued, historic flooding. After flood waters receded, numerous access points between downtown Davenport and LeClaire Park remained cutoff for almost a year. Since then, a number of crossings have been mitigated to resume vehicular traffic. Davenport will be constructing a railroad overpass on South Concord Street to allow continuous vehicular access to its wastewater treatment plant.

In the *Bi-State Region Freight Plan*, a few project concepts were identified to allow the area rail system to better serve industry needs. They included addressing:

- Aging rail bridges requiring reduced speeds, weight limitations, and vertical and horizontal clearance
- Rails lines that are unable to carry the industry standard rail car size and weight
- Rail spurs and connections from the Iowa Interstate Railroad
- An intermodal, transload, and/or consolidation facility

Improving rail crossing capacity at the Mississippi River will aid the efficiency and reliability of rail freight movement in the Quad Cities. The Crescent Bridge at the Mississippi River has a limited remaining useful life due to its age and condition. On-going improvements and maintenance to the Davenport span of the Government Bridge will help to retain the viability of interstate rail service through the Quad Cities MPA. The *Mississippi River Rail Crossing Study* (2020) presented numerous alternatives to address the deficiencies of the two existing rail bridges in the Quad Cities, the Government Bridge, and the Crescent Bridge. The next step would be to further refine and determine a preferred alternative for engineering analysis to address this future infrastructure need. This is expected to be a private-sector initiated project.

In addition to crossing capacity, efficient freight access will also involve addressing capacity constraints at crossings, near industry, and near downtown and retail centers. Industrial uses are unique because many demand access to road, rail, and river freight infrastructure. Numerous clusters can be found within the Quad Cities, such as the industrial cluster of steel, metal, and plastics manufacturing in Bettendorf along the Mississippi River. Conflicts between freight and passenger modes may cause delay times in shipping, as passenger rail service is initiated in the metro area. From a local perspective, when rail-highway modes intersect, issues can arise. These crossings include IL-92 and IL-84 and the Iowa Interstate Railroad and BNSF lines at the Arsenal Bridge, where road, rail, and river modes intersect. Solutions at these locations may aid better freight movement in the metropolitan area.

With rail access at the Eastern Iowa Industrial Center, the operation of the transload facility is an important asset in the movement of freight in the metro area, and EIIC has attracted industries such as Amazon, Kraft, and Sterilite. Within the Bi-State Region, a study was completed in 2017 to investigate a 100-acre port site in Muscatine, Iowa. The port would provide a number of on-site services for consolidating and transloading freight on highway, rail, and water modes. As of 2024, the project is on hold, as the prime industry driving the initiative evaluates the potential benefit and viability.

Facilitating Truck Freight Transportation

Chapter 4 highlights improvements to the roadway system. Many of these improvements, particularly to those categorized as part of the national highway system will aid freight movement. The *Bi-State Region Freight Plan* lists more than a dozen previously unidentified, unfunded highway system project concepts. Important reconstruction recommendations that remain unfunded include:

- I-80/U.S. 61 Interchange
- U.S. 67 Centennial Bridge
- I-280/U.S. 6 Interchange

There are a number of spot locational improvements, where traffic bottlenecks or low clearance structures reduce system capacity. These locations may require either operational improvements or reconstruction to improve system efficiency. Additionally, truck traffic continues to increase along the I-80 corridor, and there is interest in improved capacity, such as expanding the interstate to six lanes from Iowa City to/through the Quad Cities. A location study and environmental assessment was conducted in 2021 for I-80 from west of I-280 to just east of the 35th Street bridge in LeClaire to evaluate capacity increases. Both the Iowa and Illinois DOTs have worked cooperatively on a pre-engineering, environmental, and land use analysis for the replacement of the I-80 bridge over the Mississippi River. The Planning and Environment linkages study was completed in late 2022. The NEPA/Phase 1 preliminary engineering & environmental studies began early in 2023. The project was wrapping up the preferred alternative selection process as of late 2024 and is on schedule to be completed in 2025.

Serving Water Freight Needs

Aging infrastructure coupled with limited federal appropriations presents a number of challenges in maintaining the Upper Mississippi River (UMR), a vital marine highway system. The UMR carries more than 175 million tons of cargo each year. Barge transportation is the most efficient option when river travel is available. A single barge can move the same amount of dry goods as 16 railcars or 70 trucks. The difference is even larger for liquid goods, where one barge is equivalent to 46 railcars or 144 trucks, according to a 2022 study done by the National Waterways Foundation. The study also found that barge traffic is most energy efficient, moving freight around 30% further than rail, and almost four times further than truck. Barge traffic also has the smallest carbon footprint, with rail emitting almost 40% more, and trucking entering over 300% more.[5]

[5] *Source: Kruse, C. James. January 2022. "A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001 – 2019."* National Waterways Foundation.

However, barge traffic is dependent on the river remaining in working order, requiring both sufficient water flow and working locks in order to sustain freight movement. Dredging operations and lock maintenance represent significant investments.

U.S. Inland Waterway Trust Fund supports a portion of the system. In 2014, the navigation fuel tax was raised from $0.20 to $0.29 per gallon, where it remains in 2024. The previous increase was in 1984. There are three main programs to fund projects by the U.S. Army Corps of Engineers: operation and maintenance, major rehabilitation, and future improvements. Only operations and maintenance have been funded in recent years, albeit not to its fullest extent.

Since 2015, work at Lock and Dam 15 has included replacement of all eight miter gates, repair and painting of the dam's service bridge, repair of the upper guide wall's bullnose, and repairs to the lower guide wall. Work at Lock and Dam 14 includes repairs to the upper guide wall. In addition, the lock was dewatered in winter 2021 to perform inspections and make $3.5 million worth of repairs. These repairs included replacement of the bubbler system, installation of new miter gate anchorages, and construction of a new lower sill beam. The U.S. Army Corps of Engineers' Mississippi River Project's service base is co-located with Lock and Dam 14. In the forebay, the Corps has completed a dock wall rehabilitation project and the construction of a new storage building. Significant repairs are also underway on the lower guide wall's public walkway. In addition, mooring cells have been added in Pools 14 and 15 to reduce shoreline erosion and facilitate improved barge tow efficiencies waiting for locking through the system.

The result of delayed maintenance and new project implementation affects system reliability and contributes to congestion within the river navigation system. The Water Resources Reform and Development Act of 2014 made provisions to allow public-private partnerships (P3) that may encourage more innovative partnerships and solutions to the nation's navigation system. This act was last updated in 2020.

On the metropolitan level, the presence of facilities to handle and consolidate goods for transport on the waterway system is an attractive asset for the Bi-State Region. As noted previously, there are port potentials in Rock Island, Illinois and in Muscatine, Iowa downstream from the Quad Cities. Both will require additional planning to identify facility needs and costs.

Supporting Strategies

The *Bi-State Region Freight Plan Addendum* identified Performance Measures that could be used to assess the health of the MPA's freight system. These are broken into 5 sections, which include Economic, Safety, Mobility, Sustainability and Resiliency, and System Preservation. While all of these goals are important to the overall health of the freight system, the Safety, Mobility, Sustainability and Resiliency, and System Preservation measures are most relevant to the LRTP, as they demonstrate how the freight system interacts with the transportation system in the region.

The Safety and Sustainability and Resiliency measures focus on identifying and tracking freight variables, such as truck-related accidents, hazardous material spills, and unscheduled closures at locks. Mobility measures focus on tracking daily variables in the freight network, such as regional bottlenecks, delays at locks and Truck Travel Time

Reliability (TTTRI). Finally, the System Preservation measure focuses on the physical infrastructure of the network, including the pavement and bridge conditions. These performance measures will not be referenced in detail here, but can be found in the *Bi-State Region Freight Plan Addendum*.