



MISSOURI State Freight & Rail Plan

RAIL PLAN REPORT



Prologue

The *Missouri State Freight and Rail Plan* presents the statutory elements of a State Rail Plan (Table P-1). Presented herein are proposed infrastructure and service improvements to Missouri's statewide rail network in accordance with the requirements of the Federal Railroad Administration's (FRA) State Rail Plan Guidance issued on September 17, 2013. The FRA is the Federal agency with oversight responsibilities for the nation's rail systems. The table below details how those FRA requirements are met within the Missouri Rail Plan. FRA understands that private railroads are under no obligation to provide information on their capital improvement plans, thus the information available while proposing improvements and investments may be incomplete.

TABLE P-1. FRA STATE RAIL PLAN REQUIREMENTS

FRA State Rail Plan Requirements	Missouri Statewide Freight and Rail Plan Location
1. Role of Rail in Statewide Transportation	Missouri Freight & Rail Profile Volume 2: 2.1 Role of Rail in Statewide Transportation
2. State's Existing Rail System	
2.1 Description and Inventory	Missouri Freight & Rail Profile Volume 2: 2.2 Infrastructure and Existing Rail System
2.2 Trends and Forecasts	Missouri Freight & Rail Profile Volume 2: 2.3 Demographic and Economic Growth Factors, 2.4 Freight Demand, 3.0 Air Freight Modal Profile; Freight Profile Volume 1: Highway; Commodity Flow Profile Technical Memorandum; Economic Impacts of Passenger Rail Report
2.3 Rail Service Needs and Opportunities	Missouri Freight & Rail Profile Volume 2: 2.5 Performance, 2.6 Key Performance Trends
3. Proposed Passenger Rail Improvements	- Economic Futures & Needs Assessment Report - Rail Plan Report: 3.0 Proposed Passenger Rail Improvements and Investments
4. Proposed Freight Rail Improvements	- Economic Futures & Needs Assessment Report - Rail Plan Report: 1.2 Proposed Freight Rail Improvements and Investments
5. The State's Rail Service and Investment Program	Rail Plan Report: 5.0 Missouri Rail Service and Investment Program
5.1 Vision	Rail Plan Report: 5.1 Vision, Goals and Objectives
5.2 Program Coordination	Rail Plan Report: 5.2 Program Coordination
5.3 Rail Agencies	Rail Plan Report: 5.3 Rail Agencies
5.4 Program Effects	Rail Plan Report: 5.4 Program Effects
5.5 Passenger Element	Rail Plan Report: 5.5 Passenger Element
5.6 Freight Element	Rail Plan Report: 5.6 Freight Element
5.7 Rail Studies and Reports	Rail Plan Report: 5.7 Rail Studies and Reports
5.8 Passenger/Freight Capital Program	Rail Plan Report: 5.8 Passenger and Freight Rail Capital Program
6. Coordination and Review	Rail Plan Report: 6.0 Coordination and Review

Source: FRA State Rail Plan Guidance. September 2013.

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Executive Summary

Role of Rail in Statewide Transportation

Missouri's passenger rail network is a critical component of Amtrak's Midwest¹ operations, and by extension, the nation's passenger rail system. Amtrak, formally the National Railroad Passenger Corporation, provides intercity passenger rail service across the United States and into Canada. In Missouri, Amtrak operates via two long-distance routes (*Southwest Chief* and *Texas Eagle*) and the State-supported *Missouri River Runner*, connecting large urban centers to outlying suburbs and smaller communities in the interior of the State. Additionally, the *Lincoln Service*, a State-supported route funded by Illinois, connects Chicago with St. Louis, the only Missouri stop. The Missouri passenger rail network provides a wide network of coverage, with 66 percent of Missourians living within 30 miles of an Amtrak station and 82 percent living within 60 miles.²

The value of freight rail-transported goods traveling in Missouri totaled approximately \$552.3 billion in 2018, or 52 percent of the value of all freight transported to, from or through the State.³ This amounted to more than 414 million tons of freight. More than 349 million (84 percent) of those tons were classified as carload shipments. The remainder of rail-transported freight is categorized as intermodal.

The Association of American Railroads releases rankings of States based on key railroad metrics. In 2019, Missouri ranked fifth nationally in freight rail employment and twelfth in terminated rail tons and terminated rail carloads. These rankings highlight the critical role of rail in Missouri's transportation system. The important role rail plays in the statewide transportation system is further explored in Section 1.0.

Missouri's Existing Rail System

Missouri's existing rail system provides an overview and inventory of the State's existing rail system as a baseline for planning and decision-making, describes the trends that will impact the need for rail in the State, and identifies the needs and opportunities for passenger and freight rail service in the State.

Inventory

Missouri's rail network is owned and maintained by 22 rail carriers operating 5,300 miles of rail network within the State. These rail carriers range from large Class I railroads, which operate extensive national and international rail systems, to small switching and terminal railroads, which provide vital rail support functions. Six of the seven

¹ The National Railroad Passenger Corporation, doing business as Amtrak, operates nine regional rails services within Illinois, Michigan, Missouri, and Wisconsin as Amtrak Midwest. Amtrak provides rail service to 46 States and 3 Canadian provinces over 21,400 miles of track.

² U.S. Census Bureau, American Community Survey 2018 5-Year Estimates.

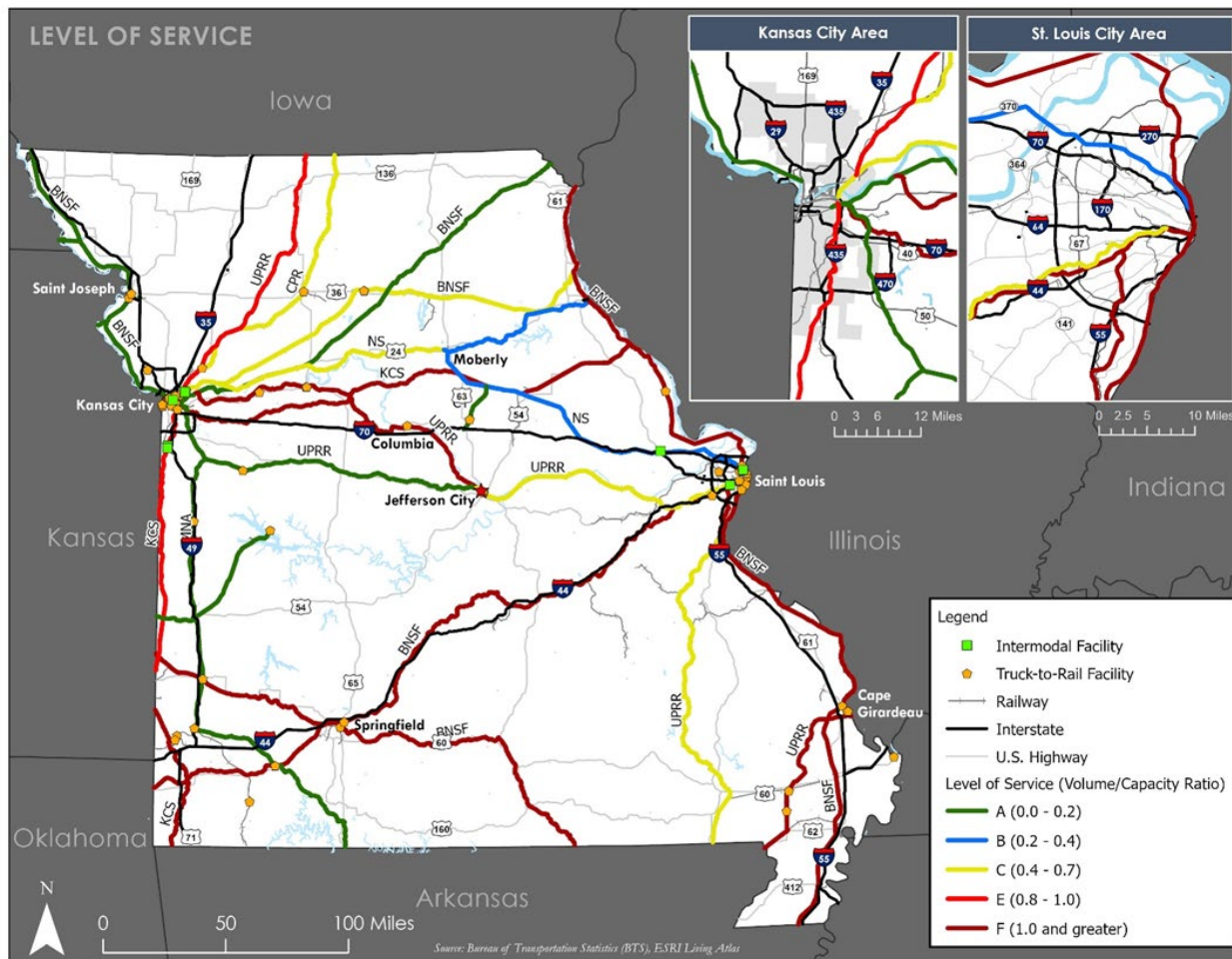
³ STB Carload Waybill Data, 2012 – 2018.

Class I railroads in the U.S. operate in Missouri. This extensive rail network facilitates freight shipments and hosts four intercity passenger rail services administered by Amtrak.

Freight Rail Performance

The *National Rail Freight Infrastructure Capacity and Investment Study*,⁴ prepared by the AAR, establishes a methodology for determining the level of service for specific freight rail corridors. The level of service for Missouri's freight rail corridors are shown below in Figure 1.

FIGURE 1. RAILROAD EXISTING LEVEL OF SERVICE (CORRIDOR VOLUME TO CAPACITY)



Source: Carload Waybill Data, 2012 – 2018, AAR.

As shown in Figure 1, numerous rail miles across the State have 'E' and 'F' LOS ratings. This is observed at major interchange points (Springfield, St. Louis) and where railroad connects centers of economic activity (Kansas City to Joplin, St. Louis to Cape Girardeau, etc.).

⁴ Cambridge Systematics, prepared for AAR *National Rail Freight Infrastructure Capacity and Investment Study*, 2007.

Passenger Rail Performance

On-time performance is a key performance metric for evaluating the operations of a passenger rail service in Missouri. OTP represents the percentage of trains to arrive at a route's terminus within 15 minutes of the scheduled arrival time. Fiscal Year 2019 OTP for the three Amtrak services⁵ in Missouri are shown in Table 1. Amtrak OTP targets are 80 percent for State-supported (*Missouri River Runner*) and on long-distance (*Southwest Chief* and *Texas Eagle*) routes. Over recent years, the *Missouri River Runner* data shows ridership levels have risen and fallen mostly in correlation with on-time performance. The largest factors, however, determining ridership are demand for the service and fare prices.

TABLE 1. ON-TIME PERFORMANCE

Service	FY 2019 OTP	Service Type	Amtrak Target	Target Performance
<i>Missouri River Runner</i>	63%	State-supported	80%	Not achieved
<i>Southwest Chief</i>	33%	Long-distance	80%	Not achieved
<i>Texas Eagle</i>	27%	Long-distance	80%	Not achieved

Source: Amtrak State Fact Sheets: Missouri, 2019.

Note: FY 2019 was the most recent year for reliable OTP data. In FY 2020, Amtrak experienced an unprecedented decline in ridership caused by the COVID-19 pandemic. OTP for FY 2020: 74%, *Missouri River Runner*; 64% *Southwest Chief*; 48% *Texas Eagle*.

Rail Service Needs and Opportunities

The state has a significant economic stake in the preservation and maintenance of the rail network and services. Keeping rail infrastructure in a state of good repair is important to meeting current and future goods movement demand. Doing so requires monitoring existing conditions, analyzing forecasts and talking with rail carriers and other stakeholders to identify deficiencies or issues on the horizon. These deficient areas are the basis for the needs of Missouri's freight and passenger rail assets.

Freight rail system needs and opportunities are born out of the supply chain and goods movement within the State based on the commodity flow and level of service analyses undertaken for this plan and from the insights shared by stakeholders and the public. Freight rail needs and opportunities created for this report, and defined further in Section 2.3, are:

- Track capacity.
- Safety and crossings.
- Funding for spurs servicing local businesses.

⁵ Not including the Illinois state-supported *Lincoln Service* which operates almost entirely in Illinois.

- Intermodal network; facilities and connectivity.
- Bottlenecks and constraints.
- Maintaining and expanding short line and local railroads.
- Aging structures and clearance.

Passenger rail needs are based on the existing conditions assessment, ridership demand and community and stakeholder input. The needs and opportunities identified for the intercity passenger rail network are:

- Funding shortfall for the *Missouri River Runner*.
- Unserved and underserved communities.
- Infrastructure.
- Stations.
- Service, operations, and coordination.

Further discussion of freight and passenger rail needs and opportunities is provided in Section 2.3.

Proposed Rail Improvements

Freight and passenger rail improvements directly address the specific needs (Section 2.3) identified through the technical analyses undertaken for this plan. Proposed passenger rail improvements can be separated into three categories based on the desired outcome. The categories of passenger rail projects, provided in Section 3.0, are enhanced capacity, new or improved services, and station improvements. Freight rail projects detailed in this plan either enhance capacity or improve intermodal infrastructure. Freight rail improvements are provided in Section 4.0.

Missouri Rail Service and Investment Program

The Missouri Rail Service and Investment Program describes the State's long-term vision for rail service and the role of rail in the statewide multimodal transportation system. The RSIP, available as Section 5.0 of this report, prioritizes the specific projects, programs, policies, laws, and funding necessary to achieve that vision and describes the financial and physical impacts.

The RSIP is the project-focused “action plan” component of the State rail plan. It lays out the State’s long-range vision for the passenger and freight rail system in a coordinated and integrated way. In summary, the Missouri RSIP:

- Provides Missouri’s vision for passenger and freight rail over the next 20 years.
- Describes how Missouri’s long-term vision integrates with other transportation planning efforts.
- Describes any planned Missouri rail agency organizational changes and proposed policy or legislative changes and new programs within the 4- and 20-year time horizons.
- Describes the program effects of freight and passenger rail effects on the Missouri transportation system.
- Describes existing and needed Missouri planning studies.
- Lists all Missouri selected freight and passenger and rail projects.

Coordination and Review

MoDOT recognizes the importance of support from railroads, shippers and rail travelers alike for the success of the Missouri State Freight and Rail Plan. Opportunities for stakeholder and public engagement were offered to provide a space for public input while attempting to garner support for the plan’s rail vision. In the development of this plan, MoDOT sought to increase understanding of rail transportation in the State while strengthening partnerships with public and private stakeholders.

A variety of opportunities were offered to the public and agencies to engage in the creation of the Statewide Freight and Rail Plan. The MoDOT project team created an approach that included four industry forums, four regional stakeholder meetings, one open house, two steering committee meetings, a public survey, stakeholder interviews, social media releases, a project website, and direct contact with partner agencies. This approach is further discussed in Section 6.0.

1.0 Role of Rail in Statewide Transportation

Missouri's railroads play a critical role in the transportation of goods and people within the State, throughout the country and across North America. A substantial portion of the freight moving into, out of and through Missouri is carried on trains. In 2018 the value of rail-transported goods traveling over track in Missouri totaled approximately \$552.3 billion, or 52 percent of the value of all freight transported to, from, or through the State. Amtrak operates passenger rail service in Missouri, connecting large urban centers to outlying suburbs and smaller communities in the interior of the State. The State-supported *Missouri River Runner* (St. Louis to Kansas City via Jefferson City) is made possible by financial support subject to annual operating agreements and legislative appropriations. There are two long-distance routes operated by Amtrak that pass through the State. These services, further discussed in Section 2.0, originate in Chicago, each with urban and rural stops in Missouri. The passenger rail system provides wide coverage, with 82 percent of Missourians living within 60 miles of an Amtrak station.⁶

The following sections summarize some of the FRA required elements for the Role of Rail in Statewide Transportation. All the elements required by FRA guidance can be found in the **Missouri Freight & Rail Profile—Volume 2**.

1.1 Governance Structure

MoDOT is responsible for administering and implementing transportation projects and programs at the State level, including for rail transportation. The department operates under a decentralized organization with its principal office in Jefferson City. This central office provides staff assistance and functional control for the various departmental tasks in seven geographical districts. MoDOT is governed by the Missouri Highways and Transportation Commission, which is a six-member, bi-partisan board appointed by the governor and confirmed by the Missouri Senate. MoDOT's Director and Commission Secretary are appointed by the commission. The Director is responsible for all other employee appointments and hiring. MoDOT is responsible for maintaining Missouri's highway system and bridges, as well as improving waterways, transit, aviation, railroads, freight development, and bicycle and pedestrian travel. The various non-highway modes are established as sections within the Central Office and report to the Multimodal Operations Director, who reports to the Deputy Chief Engineer. These sections carry out the statewide planning for these modes; there are no counterparts in the districts.

1.2 State Funding Authority

Although MoDOT maintains and improves existing passenger rail service, there are no dedicated State funds and limited Federal funds available for passenger rail operations and infrastructure improvements. Rather, funding is subject to legislative general revenue appropriation and gubernatorial approval each year. The financial support Missouri has provided for the *Missouri River Runner* since 1980 allows this transportation option to exist. This is in line with similar State-supported Amtrak services across the country. Some States have dedicated revenue sources used to fund intercity passenger rail including fuel taxes, transportation trust funds and license plate fees. In Missouri, fuel taxes are constitutionally protected and must be used for maintenance and investment in State-

⁶ U.S. Census Bureau, American Community Survey 2018 5-Year Estimates.

owned roadways. This challenging funding environment complicates MoDOT's efforts to continue supporting the *Missouri River Runner*.

Missouri Funding Programs

Missouri administers four rail-specific funding programs:⁷

- **State-Supported passenger rail service:** Funding support for the Amtrak *Missouri River Runner* service between St. Louis and Kansas City. Non-dedicated funding appropriated annually from the General Revenue Fund.
 - » \$9.1 M in support of the *Missouri River Runner* in FY 2019.
- **Highway-Rail Crossing Safety Program:** The program is funded from State motor vehicle licensing fees. Under the provisions of Section 389.612 of the Missouri Revised Statutes, each motor vehicle registration or renewal is assessed 25 cents for this purpose.
 - » \$3.0 M appropriated by the State legislature for this program in FY 2019.⁸
 - » \$1.8 M from the Highway-Rail Crossing Safety account was used in 2019 to leverage a Federal CRISI grant (see Sections 5.5 and 5.6 for more details on this program).
- **Station Improvements Program:** This funding is appropriated under Article IV, Section 30(c), of the Missouri Constitution and Section 226.225 of the Missouri Revised Statutes.
 - » \$25,000 for improvements to Missouri passenger rail stations in FY 2019.
- **Railroad regulatory activities:** MoDOT's Railroad Section conducts railroad safety inspections and other related regulatory activities.
 - » Funded in part by annual assessments of railroad companies operating in Missouri based on their gross intrastate operating revenues (Section 622.300 of the Missouri Revised Statutes).

Other funding sources are available in Missouri for certain rail projects across the State, these include:

- **State Transportation Assistance Revolving Fund:** Provides loans to local entities for non-highway projects, such as rail, waterway, and air travel infrastructure.
- **Missouri Transportation Finance Corporation:** A State infrastructure bank with the ability to make loans and provide other forms of credit assistance to public and private entities to carry out transportation projects. Eligible railroad projects include right-of-way acquisition, development or establishment of new intermodal or railroad facilities, improvement or rehabilitation of intermodal or rail equipment or facilities, and refinancing outstanding debt incurred for these purposes.

⁷ Source: General Assembly of the State of Missouri, House Bill No. 4 (2015, 2017, 2019) House Bill No. 2004 (2016, 2018).

⁸ Actual revenue collected from the 25-cent assessment in FY 2019 totaled approximately \$1.5 M.

- **Missouri Port Capital Improvement Program:** Capital improvement matching grants (20 to 80 percent) awarded for specific undertakings of port development, such as land acquisitions, construction, terminal facility development, port improvement projects, and other related port facilities. This program requires an annual budget appropriation from the general assembly and signature by the governor. CIP funds come from general revenue.
 - » \$1.8 M in CIP funding went to rail related port projects in FY 2019 at the SEMO Port.
- **Freight Enhancement Program:** Funding for transportation purposes other than highways which requires a 20-percent local match. Only capital costs are eligible and must satisfy at least one of MoDOT's Five Goals; Safety, Connectivity and Mobility, Economic Development, Major Maintenance and Reliability. Program requires an annual budget appropriation from the general assembly and signature by the governor, funds come from the State Transportation Fund.
 - » \$0.46 M from the FRE went toward a rail spur in FY 2019 in Laddonia.

Rail Initiatives

Missouri's latest initiatives and plans for passenger and freight rail infrastructure are documented in the recently updated MoDOT *2018 Long Range Transportation Plan*. By 2014, Missouri had received approximately \$50 million in FRA funding to improve passenger rail services in the State.⁹ This funding leveraged nearly \$20 million in private investment. The goal of the funding was to improve OTP and travel time. These projects are all located along the State-supported *Missouri River Runner* corridor. The Federal funding required a State commitment to continue operation of the *Missouri River Runner* passenger rail service for a minimum of 20 years.¹⁰ Five additional improvement projects in the corridor have completed NEPA documentation and preliminary engineering. These projects, listed below, await additional capital funding to be implemented.

- Second mainline track, Lee Summit to Strasburg.
- Passing siding, Knob Noster.
- Passing siding, Holden.
- Universal crossover Bonnots Mill.
- Universal crossover, Hermann.

Other Missouri rail projects and initiatives awarded Federal funding in recent years include:

- **New locomotives on the *Missouri River Runner*:** New equipment is being deployed on various Amtrak Midwest routes as part of the larger effort to improve service through a cooperative agreement between Amtrak

⁹ Funding provided through the American Recovery and Reinvestment Act (ARRA) and High-Speed Intercity Passenger Rail Program (HSIPR).

¹⁰ MoDOT. *Statewide Transportation Improvement Program – Section 7 Multimodal*.

Midwest and the States of Illinois, Michigan, Wisconsin, and Missouri. New, more reliable locomotives are Tier IV compliant and reduce emissions by 90 percent over the previous equipment. The new locomotives and cars are in service on various Midwest routes with exact usage determined by Amtrak and State DOTs.

- **Positive Train Control:** A \$12.02 million USDOT grant intended to help implement PTC in Missouri was awarded in 2017. The \$197 million national program was designed to assist States in deploying PTC technology in advance of a December 31, 2018¹¹ deadline for implementation on rail corridors utilized by passenger services. The grant award was to design, install, and test a fully integrated PTC system over 8.5 miles of Kansas City Terminal Railway right-of-way, which carries approximately 552,000 riders per year. Implementation of KCT's PTC system was certified by FRA in December 2020.
- **Consolidated Rail Infrastructure and Safety Improvements program:** MoDOT was awarded Federal funding in 2019 and 2020 under this program intended to improve the safety, efficiency, and reliability of intercity passenger and freight rail systems. Combined grant funding for the two projects discussed below will cover up to \$12,942,319. At the time of writing these projects were still in the preconstruction phase.
 - » MoDOT Rail Corridor Consolidation and At-Grade Crossing Safety Improvement Project: Approved in February 2019 by the USDOT, the project proposes to close four crossings and enhance safety measures at 11 crossings along a 19-mile BNSF rail segment between Aurora and Republic.
 - » Thayer-North Rail Corridor At-Grade Consolidation and Safety Improvement Project: Will close eight at-grade crossings between Fordland and Diggins and create a grade-separated crossing of U.S. Highway 60 over the rail corridor.

The role of rail in Missouri is discussed in greater detail in the **Freight & Rail Profile—Volume 2**, which includes additional discussion of governance structure, State funding authority, and rail initiatives and plans.

¹¹ Congress later extended the deadline for full implementation to December 31, 2020.

2.0 Missouri's Existing Rail System

Railroad corridors serve areas across Missouri, with Kansas City and St. Louis historically serving as major points for the interchange of rail traffic moving between the eastern and western U.S. This infrastructure is largely owned by Missouri's 22 private railroads belonging to the following classes:

- **Class I:** U.S. Class I Railroads are large line haul freight railroads with a total 2018 operating revenue of \$490 million or more. There are seven Class I Railroads in the United States; five of which own tracks in Missouri with one additional Class I railroad, CSX, maintaining operating rights to roughly a mile of track within the State.
- **Local:** Missouri is home to six local railroads that provide line-haul service separate from Class I Railroads. Combined, these local railroads operate roughly 590 miles of rail throughout the State. All local railroads in Missouri are classified by the STB as Class III. There are no Class II railroads in the State.
- **Switching Terminal:** These small Class III railroads primarily perform local switching and terminal services for larger railroads. Switching and terminal railroads typically do not move freight between two geographic locations. Such movements are referred to as "line haul" moves. Rather than providing line haul service, these railroads perform support functions, including combining rail cars to form a consist,¹² breaking down train consists and storing rail cars. A major function of switching and terminal railroads is the pickup from and/or delivery to industry not located on Class I railroads. This vital connection provides connectivity between industry and the national rail network.

The 5,300 miles of track in Missouri vary in its ability to meet modern demand. Corridors range from barely traveled to above capacity. This produces a need for targeted rail investments, particularly those which improve the safety of the network.

Missouri's passenger rail network is a critical component of Amtrak's Midwest operations, and by extension, the nation's passenger rail system. Amtrak passenger rail service in Missouri, via two long-distance routes (*Southwest Chief* and *Texas Eagle*) and the State-supported *Missouri River Runner*, connect large urban centers to outlying suburbs and smaller communities in the interior of the State. Additionally, the *Lincoln Service*, a State-supported route funded by Illinois, connects Chicago with St. Louis—the only Missouri stop. The Missouri passenger rail network provides a wide network of coverage with 66 percent of Missourians within 30 miles of an Amtrak station and 82 percent living within 60 miles.¹³

¹² A consist is a grouping of cars and locomotives which form a train.

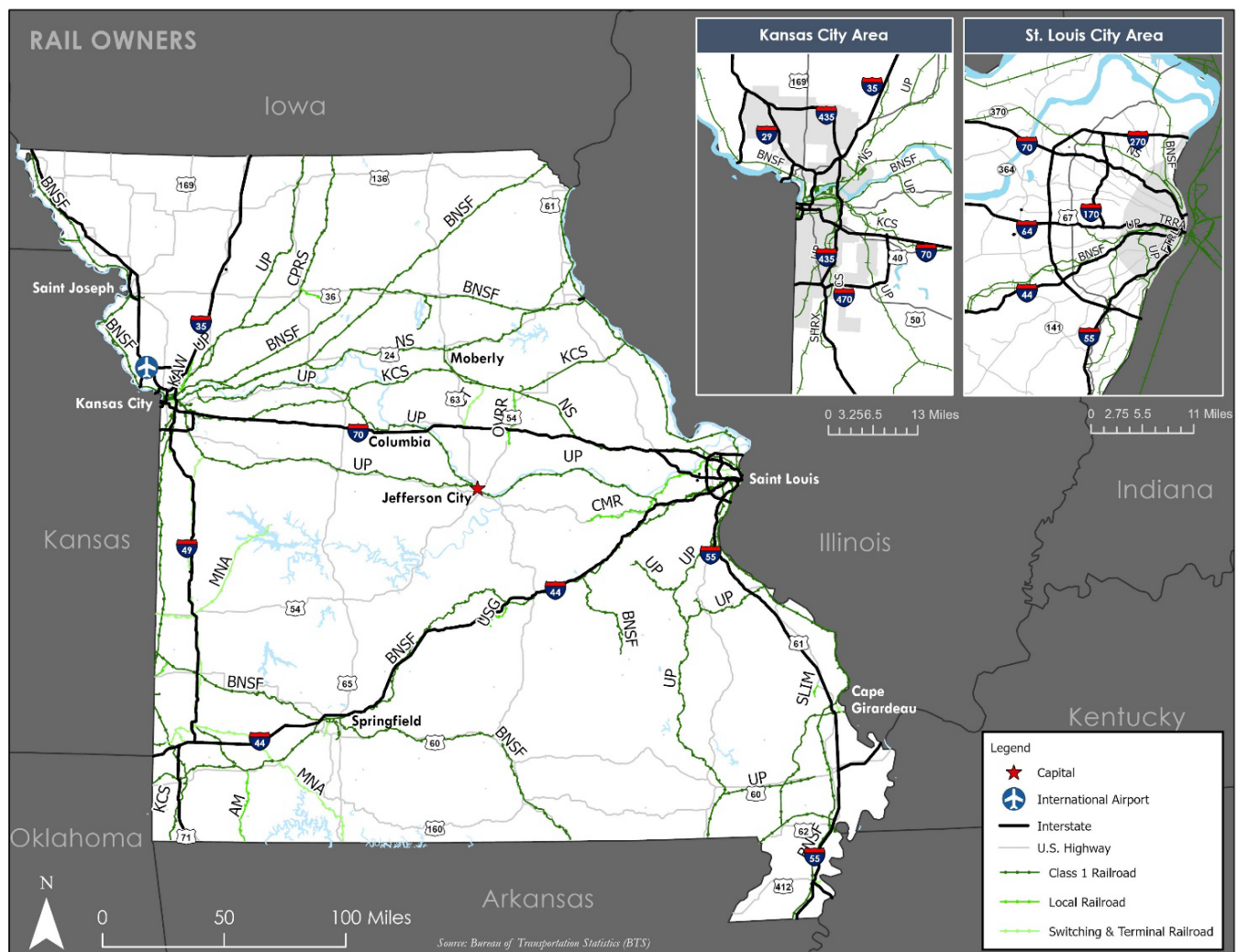
¹³ U.S. Census Bureau, American Community Survey 2018 5-Year Estimates.

2.1 Missouri Rail System Inventory

Existing Freight Rail Network

This section summarizes the statewide freight rail network and intermodal facilities. In Missouri, railroad companies typically are described in three general categories (described above) based on their size and type of operations: 1) Class I Railroads, 2) Local Railroads, and 3) Switching and Terminal Railroads. Missouri's rail infrastructure also includes spurs owned and operated by individual businesses used to connect industries to the larger rail network. Active railroads in Missouri are depicted in Figure 2.

FIGURE 2. STATEWIDE RAILROAD OWNERS



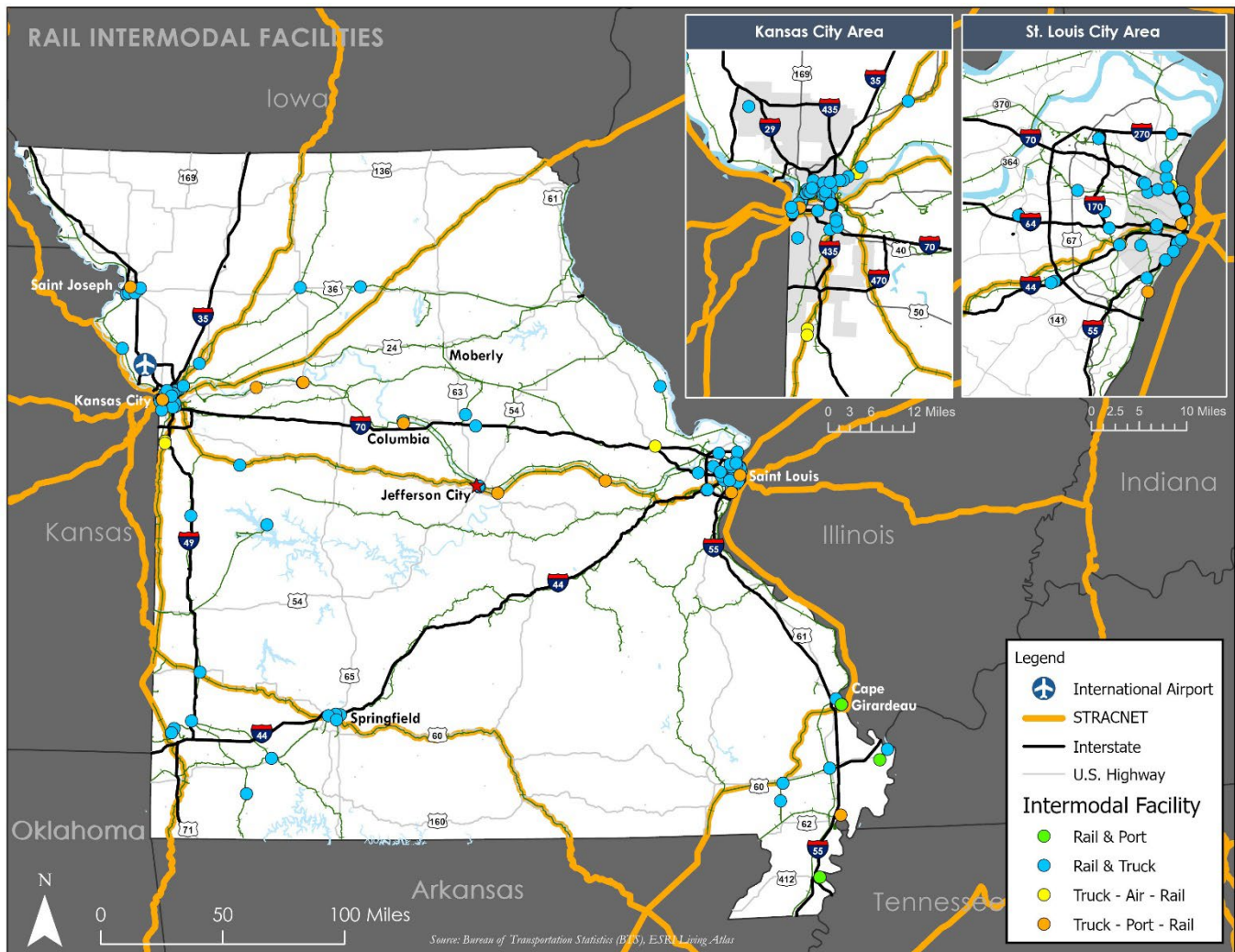
Source: Bureau of Transportation Statistics (BTS), ESRI Living Atlas.

Note: Definition of railroad reporting marks available in the Missouri Freight & Rail Profile—Volume 2.

Intermodal Facilities

Intermodal facilities are where freight is moved between multiple modes of transportation (rail, ship/barge, truck, and air) in containers or vehicles. These facilities reduce cargo-handling time, thereby, increasing efficiency in transporting goods. Missouri has 141 intermodal facilities integrating rail with other modes. A high concentration of these facilities is located in the St. Louis and Kansas City regions. Additional intermodal facilities are spread throughout the State to facilitate intermodal shipments. The location of intermodal facilities across the State, which feature rail and their primary modes of transportation, are presented and Figure 3 below.

FIGURE 3. MISSOURI RAIL INTERMODAL FACILITIES



Source: Bureau of Transportation Statistics (BTS), ESRI Living Atlas.

Environmental Impact

In 2017, America's railroads moved one ton of freight an average of 479 miles on a single gallon of fuel, which is equivalent to traveling between St. Louis and Birmingham, Alabama. On average, railroads are four times more fuel efficient than trucks, and one train can carry as much as several hundred trucks. The AAR estimates that it would

have taken nearly 23 million additional trucks to transport the millions of tons of freight that originated in, terminated in, or moved through Missouri by rail in 2017.¹⁴

Existing Passenger Rail Network

Amtrak operates intercity passenger rail service within Missouri (see Figure 4). The *Southwest Chief* connects Chicago to Los Angeles with stops in Kansas City and La Plata. Each of these services provides one daily round trip. The *Texas Eagle* connects Chicago to San Antonio with service to three Missouri cities: St. Louis, Arcadia, and Poplar Bluff. In addition to the long-distance routes Missouri boasts a shorter, more reliable State-supported Amtrak service called the *Missouri River Runner*. This cross-state service connects St. Louis and Kansas City with service to eight intermediate station cities along the way. The *Missouri River Runner* has the best on-time performance, representing the percentage of trains to arrive at a route's terminus within 15 minutes of the scheduled arrival time, with 63 percent of trains operating "on-time" per this definition in fiscal year 2019. The State's long-distance routes had OTP values of 33 percent (*Southwest Chief*) and 27 percent (*Texas Eagle*) over the same period in 2019.

The *Missouri River Runner* route operates two round trips daily across 283 miles of track between the Gateway Transportation Center in St. Louis and Union Station in Kansas City. The *Missouri River Runner* provides a connection to the *Southwest Chief* service in Kansas City and to the *Texas Eagle* and *Lincoln Service* routes in St. Louis. The Illinois-funded *Lincoln Service*, which travels almost entirely within Illinois, provides service between Chicago and St. Louis—its only Missouri stop. The *Lincoln Service* is a State-supported, Amtrak-operated route.

¹⁴ Association of American Railroads. *Freight Railroads in Missouri: Rail Fast Facts for 2017*. 2019.

FIGURE 4. EXISTING MISSOURI PASSENGER RAIL NETWORK



Source: Bureau of Transportation Statistics (BTS), ESRI Living Atlas.

2.2 Trends and Forecasts

MoDOT keeps a close eye on demographic and industry trends to ensure transportation policy and investments are in line with future needs. From its current population of 6.1 million, Missouri's population is expected to grow to approximately 6.4 million by the year 2040.¹⁵ Rural areas are expected to drop in population as people continue the trend of moving to urbanized areas and natural population increase (births minus deaths) declines. The strongest

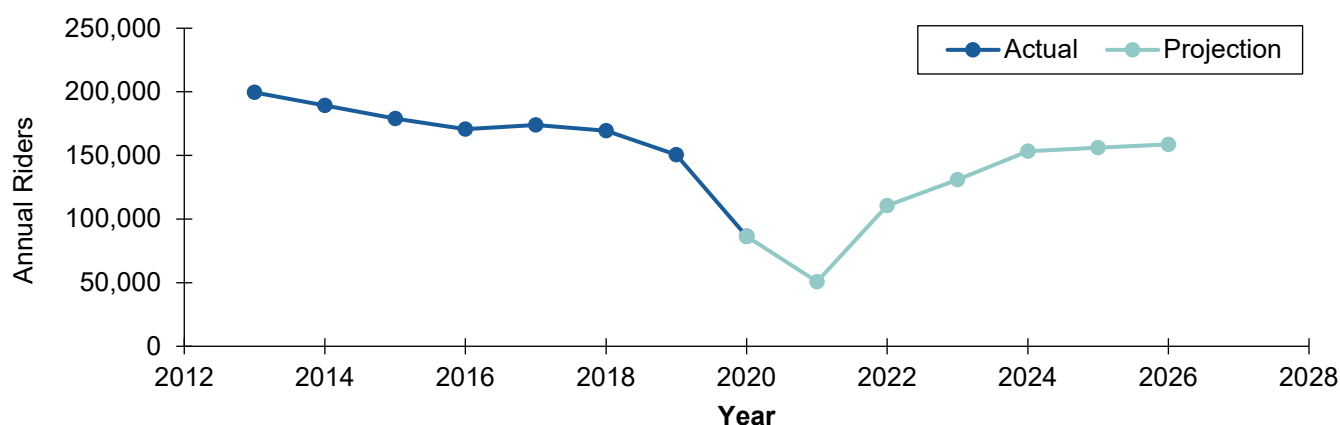
¹⁵ University of Virginia Demographics Research Group, May 2016.

growth is expected to occur in urbanized areas, particularly in the suburban communities of the St. Louis, Kansas City, and Springfield regions.¹⁶ Southwest Missouri is forecast to experience the strongest population growth by 2030 compared to other regions of the State. This is of particular importance to the State's passenger rail network as southwestern communities, such as Springfield and Branson, are without any such service.

Passenger Rail Demand

Amtrak projections for the *Missouri River Runner* anticipate 158,700 riders by 2026. As shown in Figure 5, ridership steadily trended downward from 2013 to 2019. Ridership then sharply declined because of the COVID-19 pandemic. Amtrak projections for 2021 to 2026 predict further loss in ridership in 2021 before rebounding with 158,700 riders by 2026, within 20 percent of the 13-year high set in 2013.

FIGURE 5. MISSOURI RIVER RUNNER RIDERSHIP AND RIDERSHIP PROJECTIONS, 2013 TO 2026



Source: Amtrak Ridership and Revenue Reports (2013 to 2019); Amtrak, *Five-Year Plans: Service and Asset Line Plans, 2021* (2021 to 2026)

Future passenger rail ridership in Missouri will be heavily influenced by demographic, economic, and operational changes. One major demographic change is Missouri's increasing rate of elderly residents, projected to grow from 15 percent of the population in 2014 to 21 percent in 2030.¹⁷ The number of Missourians over 80 is expected to make up 6.8 percent of the statewide population by 2040. An aging population is less likely to drive and is more reliant on other modes of travel.

Passenger rail service could alleviate congestion on Missouri highways as vehicle miles traveled (VMT) is expected to trend upward through 2040. Improved mode choice will be increasingly more important as revenue from the State's per-gallon fuel tax, the largest revenue source in Missouri, is expected to decrease over time as vehicles become more fuel efficient. Reduced revenue from the fuel tax and increased VMT would mean higher wear and tear sustained by roadways and fewer dollars available for routine maintenance.

¹⁶ MoDOT 2018 Long Range Transportation Plan Update: Technical Memorandums, Section 4: Transportation Trends, 2018.

¹⁷ MoDOT, 2018 Long Range Transportation Plan Update: Technical Memorandums, Section 4: Transportation Trends, 2018.

Freight Rail Demand

It is critical to understand what future freight demand might look like in Missouri to determine the future needs of the freight rail system. A commodity flow analysis was undertaken to understand the existing and potential future demand for freight in the year 2045 across all modes. The analysis provides insight into modal dependence, route choice, and equipment and service needs of Missouri businesses. Rail freight tonnage is expected to slightly increase between 2018 and 2045. This means that existing capacity constraints and bottlenecks on the freight rail network could continue or worsen over the next 20+ years.

Coal has been the State's number one rail commodity by weight year after year. Nearly 47 million tons of coal were imported in 2018 alone. Accounting for 78.6 percent of rail freight in 2012 by weight, coal dropped to 67.8 percent in 2018. Coal is expected to make up a smaller share of freight rail tonnage in coming years, projected to fall by 72 percent between 2018 levels and 2045. Overall, freight tonnage has dropped similarly with coal. This sharp reduction did not correlate with a similarly drastic economic impact as coal accounted for less than 1 percent of the value of all freight moved in 2018.

More information on trends and forecasts impacting the rail system can be found in the [Missouri Freight & Rail Profile—Volume 2](#).

2.3 Rail Service Needs and Opportunities

Missouri has a significant economic stake in preserving and maintaining its rail network and services. Keeping rail infrastructure in a state of good repair is important to meeting current and future goods movement demand. Doing so requires monitoring existing conditions, analyzing forecasts, and talking with rail carriers and other stakeholders to identify deficiencies or issues on the horizon. These deficient areas are the basis for the needs of Missouri's freight and passenger rail assets.

Freight Rail Needs

Freight rail system needs and opportunities are born out of the supply chain and goods movement within the State. The following needs and opportunities for the freight rail network in Missouri were developed based on the commodity flow and level of service analyses undertaken for this plan (see the [Commodity Flow Profile](#)) and from the insights shared by stakeholders and the public:

- **Track Capacity:** Several of Missouri's railroad corridors are close to or exceeding existing capacity. Specific corridors may see increased volumes above the capacity they can handle. This could result in inefficiencies and mode shift away from rail as freight volumes increase.
- **Safety and Crossings:** The forecasted increases in roadway and rail traffic will continue to lead to increased interactions at rail-highway crossings. Pedestrian trespassing also is a key concern as people create a significant safety risk by crossing into private railroad right-of-way.
- **Funding for Spurs Servicing Local Businesses:** Local spurs represent a major funding gap for most States, Missouri included, due to a lack of dedicated funding mechanisms. While industrial rail spurs are eligible for

funding from the MoDOT's Freight Enhancement Program, the program is not able to cover a significant amount of costs.

- **Intermodal Network, Facilities, and Connectivity:** Missouri's intermodal freight network and facilities are key to the State's economy as they efficiently deliver products and goods to industries and consumers. Areas of need identified by stakeholders include port improvements, more/improved transload facilities, and targeted investments for rail infrastructure serving major hubs.
- **Bottlenecks and Constraints:** Bottlenecks and constraints limit the efficiency of the railroad network at specific locations. This includes needs such as addressing congestion in St. Louis and Kansas City, creating or lengthening siding tracks to accommodate longer trains, blocked highway crossings or examining existing subdivisions that create inefficiencies for carriers.
- **Maintaining and Expanding Short Line and Local Railroads:** Additional coordination is needed between local economic development agencies and short line railroads to craft solutions to avoid the removal or reduced operations of short lines in the State.
- **Aging Structures and Clearance:** Load restrictions, safety concerns, or low clearances can severely limit the efficiency of freight movement as trains need to reduce speed, find alternative routes, or change load weights.

Passenger Rail Needs

Based on the existing conditions assessment, ridership demand, and outreach activities, the following needs and opportunities were identified for the intercity passenger rail network:

- **Funding Shortfall for *Missouri River Runner*:** A recent concern has been funding for the *Missouri River Runner* service. Over the last decade, contributions to Amtrak from Missouri for the service have fallen short of the actual expenses. This shortfall has resulted in increased debt and limited ability for service enhancement.
- **Unserved and Underserved Communities:** While Missouri's passenger rail system provides a broad network for travelers to access, a variety of communities is either not served or have limited service. Many population centers in the State lack passenger rail service or are a considerable distance from a nearby station.
- **Infrastructure:** Amtrak primarily operates over privately owned railroads, meaning the infrastructure is the responsibility of the freight rail owners. The capacity of Missouri rail infrastructure is stressed as modern freight trains grow in length and number. This trend impacts existing passenger rail routes and operations in Missouri.
- **Stations:** A number of locally owned passenger rail stations has deferred maintenance, lack basic enhancements like paved parking, or have no station building at all. Improving or developing train stations will improve the passenger rail system by providing quality stations to meet 21st century travel demands.
- **Service, Operations, and Coordination:** On-time performance remains a key indicator as it is often correlated with higher ridership. Along with that, during outreach for the plan, the schedule and frequency and intermodal connections of the existing routes were identified as barriers to choosing passenger rail service.
- **Modal Connectivity:** Like freight, people traveling by rail need other modes to complete their trips. This includes bus/shuttle service, rideshare, taxis, and proper pedestrian infrastructure such as sidewalks.

3.0 Proposed Passenger Rail Improvements and Investments

Improvements to physical rail infrastructure designed to benefit Missourians and visitors traveling the State's rail network every year produce distinct benefits for freight traffic, as well as passenger rail. This often comes in the form of reduced delays experienced when freight and passenger trains operate near one another. This section describes all passenger rail proposals under consideration.

3.1 Passenger Rail Improvement Categories

Some proposed passenger rail improvements would alleviate conflicts between passenger and freight trains. Other passenger rail improvements focus on more targeted needs, such as expanding passenger rail service and improving rail stations. This plan's proposed passenger rail improvements can be separated into categories of enhanced capacity, new or improved services, and station improvements.

Enhancing Capacity

Discrete improvements to Missouri's physical rail infrastructure have been identified for their ability to improve track capacity within the system. Proposed improvements presented in this plan include the creation of crossovers, siding tracks and additional main lines to complement existing infrastructure to improve the network's resiliency and efficiency. Proposed improvements to enhance rail capacity would improve the on-time performance of passenger rail service. These projects also would allow for added frequencies of existing services and help facilitate new services in the future. Crossovers, sidings, and additional main lines have the added benefit of providing flexibility in the operation of freight trains within active passenger rail corridors, meaning reduced delays and improved efficiency for freight shipments.

New or Improved Services

Public feedback, past and present State rail planning efforts, and the insights of the 2012 Missouri State Rail Plan were used to identify corridors, which may be suitable for intercity passenger rail service. Further study is necessary to determine the routes for such services. Depending on routing, these may come in the form of completely new services, extensions to existing ones or increased frequencies. For example, future analysis may support extension of the Missouri River Runner service beyond its terminus cities of St. Louis and Kansas City. Data also could suggest the need for a new service separate of those already in operation. Creating or extending service would expand the reach of passenger rail in Missouri, providing access to urban population centers and to smaller cities and towns. Service to new cities would create access to the national intercity rail network for Missouri communities, providing residents improved transportation choice, thus, spurring tourism.

Station Improvements

Station upgrades are proposed for the historic station facilities at Kirkwood, Independence, and Poplar Bluff. Kirkwood's train station was built in 1893 and placed on the National Register of Historic Places (NRHP) in 1985. Similarly, the Independence station was built in 1913 and listed on the NRHP in 1979. Both stations require maintenance and modernization to remain structurally sound and adapt to modern passenger rail needs. Poplar Bluff's station, constructed in 1910 and receiving a NRHP designation in 1994, also is in need of modernization and accessibility improvements.

Jefferson City on the other hand is completely without a station building. Travelers board and alight in Jefferson City using temporary outdoor facilities. The station building, constructed in 1855, served as the rail station for the State's capitol from 1984 until it was closed in 2019 due to structural concerns. Prior to use as a rail station, the historic structure was home to the Union Hotel, a part of the Jefferson Landing Historic Site. As a result of its closure, there are no on-site ticketing services. Improving passenger rail stations would ensure continued passenger rail service and guarantee the safety and functionality for years to come.

3.2 Proposed Passenger Rail Improvements

All improvements provided in Table 2 are for the benefit of intercity passenger rail service. No improvements were identified specifically for commuter rail. Despite no discrete capital projects, MoDOT will continue to support local efforts to create or expand regional commuter rail systems.

TABLE 2. PROPOSED PASSENGER RAIL IMPROVEMENTS, BY CORRIDOR

Proposed Program		Description	Need Addressed ¹
St. Louis—Jefferson City—Kansas City (<i>Missouri River Runner Corridor</i>)			
Hermann Universal Crossover	Installation of a universal crossover to improve passenger and freight rail capacity	Infrastructure	
Bonnots Mill Universal Crossover	Installation of a universal crossover to improve passenger and freight rail capacity		
Holden Siding	New siding track to improve passenger and freight rail capacity		
Knob Noster Siding	New siding track to improve passenger and freight rail capacity		
Second Main Line—Lee's Summit to Strasburg	Double track from Lee's Summit to Strasburg to improve capacity for both passenger and freight rail traffic		
Jefferson City Third Main Line Track Construction	Addition of a third main line track to increase fluidity through Jefferson City yard		
Independence Street Bridge (Kansas City) Improvements	Improve KCTR overpass on Independence Avenue to enhance freight and passenger rail service		
Pleasant Hill to Jefferson City Double Track	Addition of a second track to enhance capacity		
Kirkwood Station Upgrades	Updates to the station building and amenities to modernize and improve structural longevity	Stations	
Independence Station Upgrades	Updates to the station building and amenities to modernize and improve structural longevity		
Jefferson City—New Station	Development of a new Jefferson City station necessary due to structural issues at the current station		

St. Louis—Jefferson City— Kansas City Corridor Enhancement Study	Study examining capacity, bottlenecks and constraints to determine future plans for the corridor related to speed and frequency	Unserved and Underserved Communities
Sedalia Station Bicycle/ Pedestrian Improvements	Addition of bicycle and pedestrian facilities connecting Sedalia’s Amtrak station with the historic Katy Depot	Modal Connectivity
Warrensburg Station Bicycle/ Pedestrian Improvements	Addition of a sidewalk and ADA-compliant facilities at Warrensburg’s Amtrak station	
St. Louis—Poplar Bluff (<i>Texas Eagle</i> Corridor)		
Poplar Bluff Station Upgrades	Updates to the station building and amenities to modernize and improve structural longevity	Stations
St. Louis—Southwest Missouri		
Updated Branson— Springfield—Joplin—St. Louis Service Study	Conducting an update to the <i>Report on Proposed Operation of Passenger Train Service Between St. Louis and Southwest Missouri</i> (2007)	Unserved and Underserved Communities
Kansas City—St. Joseph		
Kansas City—St. Joseph Service Study	Feasibility study examining the extension of passenger service north from Kansas City to St. Joseph	Unserved and Underserved Communities
Kansas City—Chicago (<i>Southwest Chief</i> Corridor)		
Carrollton Amtrak Station	Creation of a new Amtrak station between Kansas City and La Plata to be served by the <i>Southwest Chief</i>	Unserved and Underserved Communities
Kansas City—Southwest Missouri		
Branson—Springfield—Joplin— Kansas City Service Study	Feasibility study examining a new service connecting Kansas City to Springfield and other communities in southwestern Missouri	Unserved and Underserved Communities
Hannibal—Quincy, Ill.		
<i>Carl Sandberg</i> and <i>Illinois Zephyr</i> Service Extension to Hannibal Study	Feasibility study examining extension of <i>Carl Sandberg</i> and/or <i>Illinois Zephyr</i> service south from Quincy to Hannibal	Unserved and Underserved Communities
St. Louis Region		
Track Reconstruction— St. Louis	Construction of new track from N Market St to Biddle St to better accommodate <i>Texas Eagle</i> service	Infrastructure
Statewide		
Intercity Connection Service Feasibility Study	Study the feasibility of connecting service between station cities and non-served population centers	Unserved and Underserved Communities

¹ Passenger rail system needs are defined in Section 2.0.

Note: Passenger rail improvements included in this list could also enhance freight rail operations.

4.0 Proposed Freight Rail Improvements and Investments

This section describes all freight rail improvement and investment proposals under consideration, including improvements to intermodal facilities and enhancements to rail capacity.

Freight rail is largely owned, operated, and maintained by private rail carriers, which receive public funding assistance only when directed toward projects with a clear public benefit. Improvements to Missouri's privately owned rail infrastructure are market-driven and the responsibility of private railroads. MoDOT's role in advancing the State's mostly private rail network includes comprehensive planning efforts, pursuing Federal project funding, and collaborating with rail carriers and other stakeholders. Projects included here are not a full accounting of improvements to be made over the next 20 years as private railroads are under no obligation to provide information on their capital investment plans.

This section presents the discrete projects deemed critical to address the freight rail needs and opportunities laid out in the **Economic Futures and Needs Assessment Report**. The needs of the freight rail network were informed in part by the commodity flow analysis undertaken for this plan (see **Commodity Flow Profile**). This analysis helped MoDOT understand potential changes to freight rail shipments with insights into current and projected freight rail characteristics, such as shipment values and weights. Other system needs were identified through conversation with rail carriers (see **Freight Profile Volume 2: Section 2.5**).

4.1 Freight Rail Improvement Categories

There are two general outcomes of the freight rail projects recommended by this plan: 1) create or improve multimodal infrastructure, or 2) enhance rail system capacity. Many of this plan's improvements target port-rail facilities to improve the overall efficiency of Missouri's transportation system. Other projects are targeted investments to inadequate infrastructure. These freight rail improvement categories are explored further below.

Multimodal Facilities Improvements

Missouri benefits greatly from a robust, centrally located rail network and access to the Missouri and Mississippi Rivers, which are USDOT-designated marine highways. As transportation methods change overtime, it is important that adequate facilities are in place to efficiently exchange freight moving between modes. Intermodal and multimodal facilities help ensure cost-effective freight movement, while providing jobs and other economic benefits to local economies. Improvements within this category include adding or upgrading rail at port facilities and improving rail access to industrial parks to connect businesses with the State's multimodal supply chain.

Enhancing Capacity

Improvements intended to enhance freight rail capacity are proposed in the short and long term to meet current needs and prepare Missouri's rail network for projected future freight volumes. Investments are especially needed

where aged rail infrastructure create bottlenecks in service as train lengths, weights, and heights evolve over time. These improvements also would benefit passenger rail service by increasing overall system efficiency where intercity services operate today and in the future.

4.2 Proposed Freight Rail Improvements

Projects included below have been selected for their ability to improve the efficiency, intermodal and safety of freight shipments in Missouri while addressing the specific needs identified through the commodity flow and other analyses. Table 3 shows projects proposed for the short- and long-term, including those which may already be underway.

TABLE 3. PROPOSED FREIGHT RAIL IMPROVEMENTS, BY RAIL CARRIER

Proposed Program	Description	Corridor/ Location	Need Addressed ¹
BNSF Railway			
St. Louis City Municipal River Terminal Rail Upgrades	Rail upgrades at the St. Louis City Municipal River Terminal to increase the efficiency of intermodal operations	Hannibal— St. Louis— Lilbourn	Intermodal Network, Facilities and Connectivity
Lilbourn Industrial Park Rail Improvements	Construction of a new rail spur to serve the industrial park		
Pike/Lincoln Port Rail Improvements	Engineering/dock and rail improvements		
New Bourbon Port Rail Improvements	Construct New Bourbon Port connection from the port to I-55 and a rail connection to St. Francois County		
West Plains—Railroad Overpass	Construction of a railroad overpass on Howell Avenue	West Plains	
West Meadows Yard—Track Realignment	Realignment of track in the West Meadows Yard	Springfield	Track Capacity
Grade Separation	Railroad-highway grade separation at Chapel Drive	Monett	Safety and Crossings
Cherokee Rail Corridor Safety Project	Closure of 5 crossings and corridor wide upgrades and site improvements	Springfield— Aurora	
Thayer North Rail Corridor Safety Project	Creation of a grade-separated crossing, associated road realignments on U.S. 60 and the closure of 8 at-grade crossings	Springfield— Thayer	
Crossing Safety Improvements, National/Division	Installation of new lights, cantilevers and intersection improvements at public crossing 664172S	Springfield	
Crossing Safety Improvements, Hisinger Lake Road	Installation of lights and gates at public crossing 005326H	Hardin	
Crossing Safety Improvements, County Road 134	Roadway safety improvements at public crossing 005019J	Medill	
Crossing Safety Improvements, County Road 113/Porche Prairie Road	Installation of lights and gates and roadway improvements at public crossing 005284Y	Mendon	

Proposed Program	Description	Corridor/ Location	Need Addressed ¹
Crossing Safety Improvements, Atchison Avenue (St. Joseph)	Installation of gates and new circuitry at public crossing 856472M	St. Joseph	
Crossing Safety Improvements, Atchison Avenue (Triplett)	Installation of lights, gates and a new crossing surface at public crossing 005286M	Triplett	
Crossing Safety Improvements, Snyder Road	Installation of lights, gates and a new crossing surface at public crossing 005287U		
Chariton County—Roadway Approach Improvements	Improvements to the roadway approaches at 3 public crossings: Atchison Avenue, Snyder Avenue, and Porche Prairie Avenue		
Crossing Safety Improvements, Gettings Lane	Installation of lights and gates at public crossing 665539N	Hayti	
Crossing Safety Improvements, Rte. YY	Installation of lights and gates at public crossing 665561B	Portageville	
Crossing Safety Improvements, County Road 121	Installation of lights and gates at public crossing 005324U	Norborne	
Crossing Safety Improvements, Meadow Road	Installation of lights and gates at public crossing 005133J	Bucklin	
Crossing Safety Improvements, Farm Road 245	Installation of lights and gates at public crossing 673253R	Stafford	
Crossing Safety Improvements, East Dade 162	Installation of lights and gates at public crossing 669780D	Everton	
Crossing Safety Improvements, County Road 140	Installation of gates at public crossing 673269M	Springfield	
Crossing Safety Improvements, Rte. UU	Installation of gates at public crossing 669811A	Bois D’Arc	
Crossing Safety Improvements, County Road 5500	Installation of lights and gates at public crossing 667851R	Willow Springs	
Crossing Safety Improvements, Big Bend Boulevard	Installation of cantilevers at public crossing 664297S	Webster Groves	
Crossing Safety Improvements, Marble Springs Road	Installation of lights and gates at public crossing 663871N	Barnhart	
Crossing Safety Improvements, Scott Road	Installation of lights and gates at public crossing 664560R	Cuba	
Crossing Safety Improvements, County Road 1130	Installation of lights and gates at public crossing 673320H	Verona	
Crossing Safety Improvements, County Road 1140	Installation of lights and gates at public crossing 673319N		
Union Pacific Railroad (UP)			
Crossing Safety Improvements, Industrial Drive	Installation of lights and gates at public crossing 442661N	Jefferson City	Safety and Crossings
Crossing Safety Improvements, Brentwood Boulevard	Installation of lights and gates at public crossing 425018L	Brentwood	
Crossing Safety Improvements, Rte. A	Installation of lights and gates at public crossing 605670R	Trenton	
Crossing Safety Improvements, Ferguson Spur Road	Installation of lights and gates at public crossing 442272H	Independence	

Proposed Program	Description	Corridor/ Location	Need Addressed ¹
Crossing Safety Improvements, Rte. P	Installation of gates and a new crossing surface at public crossing 445855E	Hillsboro	Funding for Spurs Serving Local Businesses
Crossing Safety Improvements, Watermill Road	Installation of lights and gates at public crossing 442421G	Marshall	
Crossing Safety Improvements, County Road 214	Installation of lights and gates at public crossing 787967X	Campbell	
Crossing Safety Improvements, County Road 691	Installation of lights and gates at public crossing 446324L	Fisk	
Crossing Safety Improvements, Ray Street	Installation of lights and gates at public crossing 789115B	Dexter	
Crossing Safety Improvements, County Road 603	Installation of gates at public crossing 446276Y	Poplar Bluff	
UP Crossing Lighting Improvements	Industrial lead LED upgrades at various public crossings	Statewide	
Stoddard County Industrial Park Rail Improvements	Construction of a new rail spur to serve the industrial park	Scott City (Cape Girardeau)— Dexter	Funding for Spurs Serving Local Businesses
SEMO Port Railroad (SE)			
SEMO Port – Loop Track Terminal	Construction of a new rail-barge terminal and loop track and a rail-to-barge conveyor	Scott City – Cape Girardeau	Intermodal Network, Facilities and Connectivity
Columbia Terminal Railroad (COLT)			
COLT Railroad—Transload Facility Improvements	Expansion of the transload facility to accommodate increased capacity	Columbia	Intermodal Network, Facilities and Connectivity
COLT Railroad—Capacity Improvements	Improve operations by installing ties and ballast, and by increasing rail gauge to allow for heavier loads		
COLT Railroad—I-70 Bridge Repair	Repair of the COLT bridge over I-70		Safety and Crossings
New Crossing Surface, Rte. B	Installation of new crossing surface at public crossing 480778Y		
Aurora Organic Dairy—Rail Spur	Creation of a rail spur to access Aurora Organic Dairy		Funding for Spurs Serving Local Businesses
Kansas City Terminal Railway Company (KCT)			
KCT North-South Corridor Improvements	Realignment and raising of existing track and the addition of a third track	Kansas City	Track Capacity
Kansas City Southern (KCS)			
Crossing Safety Improvements, Front Street (329718F)	Installation of lights, gates, cantilevers and a new surface at public crossing 329718F	Kansas City	Safety and Crossings
Crossing Safety Improvements, Front Street (328709G)	Installation of lights, gates and cantilevers at public crossing 328709G		

Proposed Program	Description	Corridor/ Location	Need Addressed¹
Crossing Safety Improvements, 8 th Street	Installation of lights and gates at public crossing 293421U	Glasgow	
Crossing Safety Improvements, MO 20	Installation of cantilevers, lights and gates at public crossing 293500F	Blackburn	
Crossing Safety Improvements, Rte. W	Installation of lights and gates at public crossing 293502U	Alma	
Crossing Safety Improvements, Blue Book Road	Installation of lights and gates at public crossing 293544F	Odessa	
Crossing Safety Improvements, County Road 300 and Nutmeg Road	Installation of lights and gates at 1 public crossing and closure of 1 public crossing (330015A, 330016G)	Asbury	
Marshall—Corridor Crossing Consolidation Project	Consolidation of 7 public crossings	Marshall	
Terminal Railroad Association of St. Louis (TRRA)			
Tunnel Arch Riverfront Dewatering	This project would address service constraints caused by the flooding of the tunnel through the use of wells to pump flood water out of the structure	St. Louis	Bottlenecks and Constraints
St. Louis City Port Improvements	Upgrade of the rail infrastructure at the Port’s north rail yard	St. Louis	Intermodal Network, Facilities and Connectivity
Missouri and Northern Arkansas Railroad (MNA)			
Switch Replacement Program	Replacement of MNA switches	Jasper County	Aging Structures and Clearance
Clinton—Rail Expansion	Expansion of rail to new industrial site at Rte. 52 and Vansant Road	Clinton	Funding for Spurs Serving Local Businesses Safety and Crossings
Montrose—Rail Expansion	Expansion of rail infrastructure	Montrose	
Crossing Safety Improvements, Main Street	Installation of new cantilevers and lights at public crossing	Joplin	
Crossing Safety Improvements, Pennsylvania Avenue	Installation of new gate mechanisms and circuitry at public crossing 669436C	Jasper	
Crossing Closure, 5 th Street	Permanent closure of public crossing 669556T		
Joplin—New Crossing Surfaces	Installation of new crossing surfaces at 6 public crossings		
Crossing Safety Improvements, Rte. M	Installation of gates at public crossing 443252A		
Crossing Safety Improvements, MO 126	Installation of gates and cantilevers at public crossing 443233V	Clinton	
Clinton—New Crossing Surfaces	Installation of new crossing surfaces at 9 public crossings		
Crossing Safety Improvements, Railey Creek Road	Installation of lights and gates at public crossing 435055R	Galena	
Crossing Safety Improvements, County Road 263	Installation of gates at public crossing 443014G	Harrisonville	

Proposed Program		Description	Corridor/ Location	Need Addressed ¹
Crossing Safety Improvements, Rte. P	Installation of gates and cantilevers at public crossing 442998S	Pleasant Hill		
Butler—Corridor Safety Improvements	Installation of lights and gates at 3 public crossings and the permanent closure of 2 public crossings	Butler		
Arkansas and Missouri Railroad (AM)				
Seligman—Crossing Upgrades and Closures	Upgrade of 3 public crossings and permanently closing 2 public crossings	Seligman	Safety and Crossings	
Crossing Safety Improvements, MO 90	Installation of lights, gates and new surface at public crossing 667062C	Washburn		
Norfolk Southern (NS)				
Crossing Safety Improvements, Hisinger Lake Road (483824H)	Installation of lights and gates at public crossing 483824H	Hardin	Safety and Crossings	
Crossing Safety Improvements, Main Street	Installation of lights and gates at public railroad crossing 483840S	Henrietta		
Crossing Safety Improvements, Buckeye Road	Installation of lights and gates at public crossing 480653Y	Monroe City		
Crossing Safety Improvements, County Road 217	Installation of lights and gates at public crossing 480700E	Holliday		
Crossing Safety Improvements, County Road 2795	Installation of lights and gates at public crossing 483677X	Clark		
Crossing Safety Improvements, Cal Hubbard Avenue	Installation of lights and gates at public crossing 483753N	Keytesville		
Crossing Safety Improvements, County Road 403/Bourqmont	Installation of lights and gates at public crossing 483767W	Brunswick		
Crossing Safety Improvements, County Road 121 (483823B)	Installation of lights and gates at public crossing 483823B	Norborne		
Crossing Safety Improvements, Coates Street	Installation of lights and gates at public crossing 483697J	Moberly		
Crossing Safety Improvements, Ely Road	Installation of lights and gates at public crossing 480611M	Hannibal		
Kaw River Railroad (KAW)				
Kansas City—Crossing Lighting and Safety Improvements	Installation of LED streetlights and Crossbuck Stop Yield assemblies at public crossings	Kansas City	Safety and Crossings	
Central Midland Railway (CMR)				
Crossing Safety Improvements, E. Villa Ridge Road	Improvements to the roadway approaches at public crossing 596283W	Villa Ridge	Safety and Crossings	
Crossing Safety Improvements, Dorsett Road	Installation of new gate mechanisms and gate masts at public crossing 596328B	Maryland Heights		
Crossing Safety Improvements, Warson Road	Installation of gates at public crossing 596323S			
Crossing Safety Improvements, Prichard Farm Road	Installation of lights, gates, a new crossing surface and roadway improvements at public crossing 596336T			

Proposed Program	Description	Corridor/ Location	Need Addressed ¹
Belton, Grandview and Kansas City Railroad (SHRX)			
Crossing Safety Improvements, Rte. Y	Installation of new circuitry public railroad crossing 672195U	Belton	Safety and Crossings
Other			
Jefferson County Port Development	Land acquisition, engineering and construction of a public freight harbor that would integrate barge, rail, and truck shipping via a new multimodal facility	Jefferson County	Intermodal Network, Facilities and Connectivity
InBev/Prairie Rail—Crossing Improvements, Broadway	Installation of new circuitry and crossing surface at a public crossing	St. Louis	Safety and Crossings
Crossing Surface Upgrades PE	Preliminary engineering for crossing improvements throughout the State	Statewide	
Lighting Upgrades PE	Preliminary engineering for LED upgrades throughout the State		

Source: MoDOT.

¹ Freight rail system needs are defined in Section 2.0.

Many of the improvements provided above are located at intermodal port facilities. Missouri port authorities are political subdivisions of the State enabled by Chapter 68 of the Missouri Revised Statutes (enacted in 1974). Rail improvements at Missouri's port facilities would improve system intermodal and multimodal connections and reduce departing over-the-road freight shipments. The Jefferson County and St. Louis City multimodal improvements are part of a larger effort to enhance the multimodal facilities on the Mississippi River within the St. Louis region.

Other improvements have been identified for their ability to address deterioration of existing facilities. This includes the Tunnel Arch Riverfront Dewatering Project. The concept of this project is to allow the tunnel to remain in operation during high-water events by abating Mississippi River flood waters. Improving the resiliency of the St. Louis Arch Tunnel also would be a major benefit for passenger rail service as the tunnel hosts up to 10 scheduled Amtrak frequencies each day.

5.0 Missouri Rail Service and Investment Program

This section achieves the requirements for a statewide Rail Service and Investment Program in accordance with FRA State Rail Plan guidance and complies with the Passenger Rail Investment and Improvement Act of 2008. The purpose of this section is to describe the State's long-term vision for rail service and the role rail plays in Missouri's larger multimodal transportation network.

5.1 Vision, Goals, and Objectives

This RSIP presents the investments necessary to achieving the State's passenger and freight rail vision. This section will discuss how the rail vision below integrates with goals and objectives for the rail system, existing plans, and ongoing efforts.

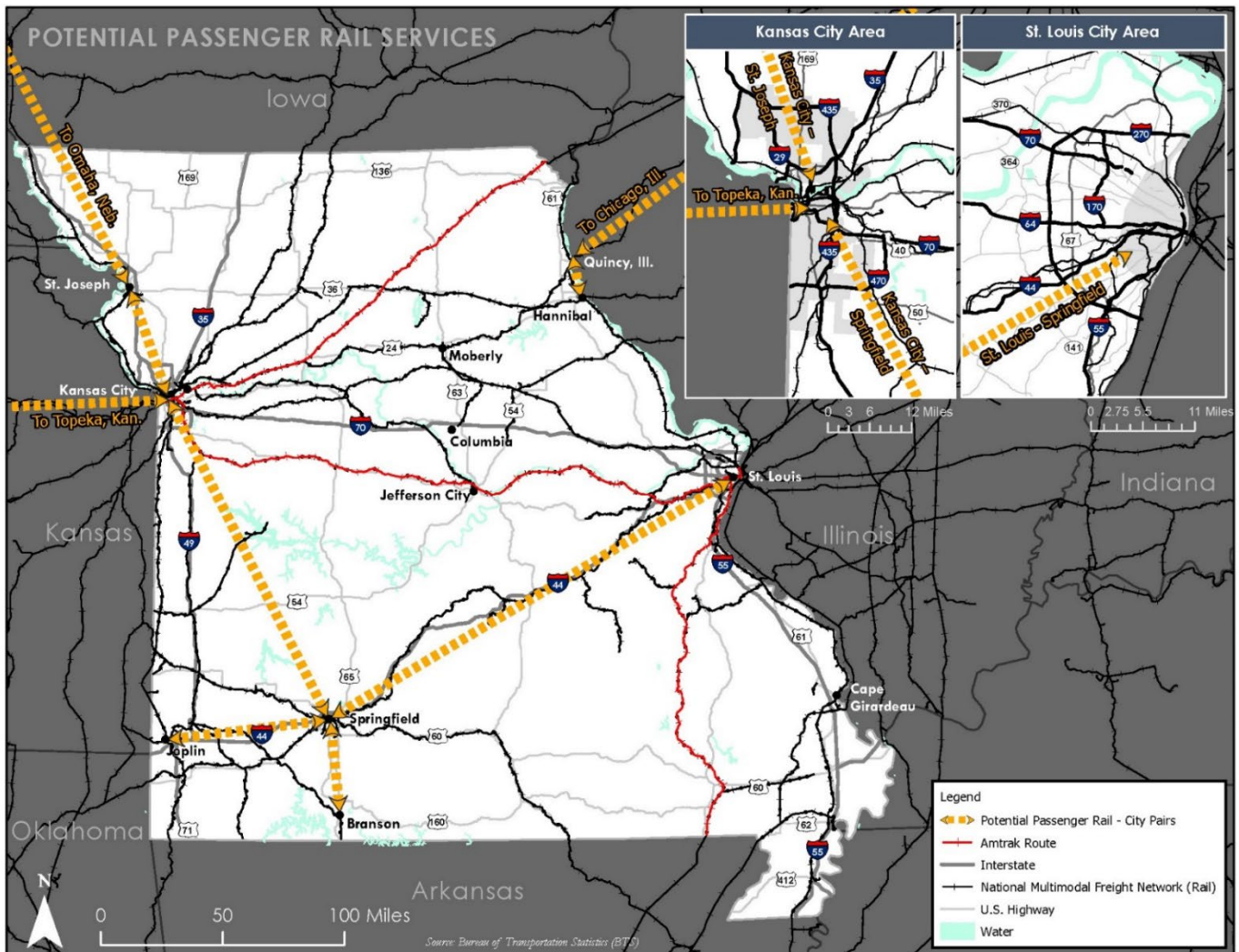
Vision

MoDOT updated the 2012 State Rail Plan transportation vision based on comments obtained through a series of outreach efforts with rail stakeholders. For more on the outreach efforts that helped inform this plan's vision, goals, objectives and investment, see **Freight Profile Volume 2: Section 2.5**. Plan goals and objectives have been created to address the following vision statement:

"Missouri's rail vision is to provide safe, environmentally-friendly transportation options supporting efficient movement of freight and passengers, while strengthening communities and advancing global competitiveness through intermodal connectivity."

The long-term vision for passenger rail in Missouri is a network of interconnected services, expanded beyond the services of today, connecting major population centers, destinations, and small communities alike. Recommended future services discussed by this plan, based on public and stakeholder feedback and prior planning efforts, are visualized in Figure 6. A series of short- and long-term improvements has been compiled to accommodate the proposed passenger rail network depicted below and ensure safe and efficient freight movement to meet future needs. These proposed rail investments are shown in Figure 7. Proposed crossing safety improvements with capital costs under \$2M are not depicted in Figure 7. Further details on programmed crossing projects can be found in Appendix A.

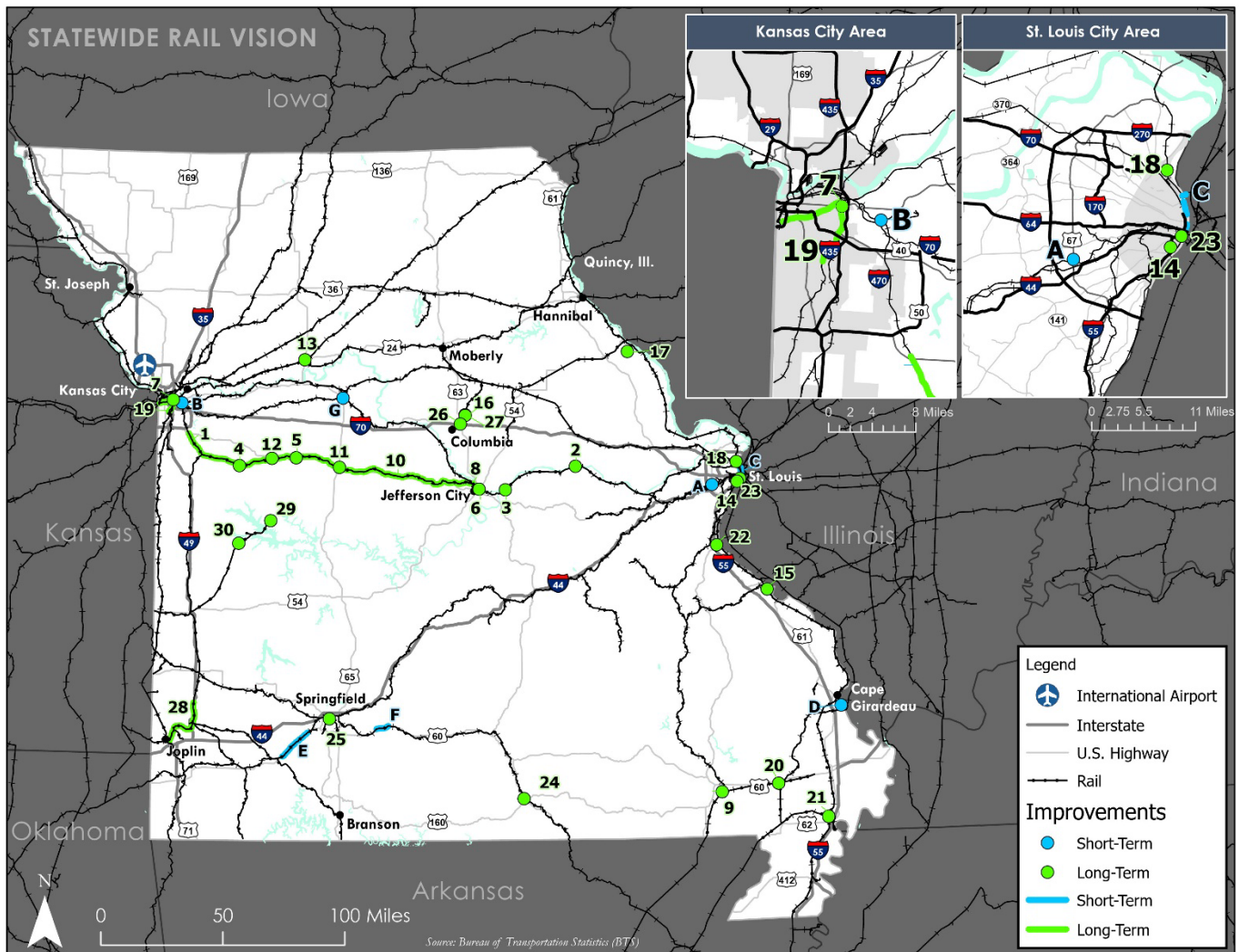
FIGURE 6. LONG-TERM PASSENGER RAIL VISION



Source: Bureau of Transportation Statistics (BTS).

Note: Exact routing of future passenger routes is subject to extensive review. Lines indicating potential passenger routes are to convey cities being connected and generalized corridors.

FIGURE 7. STATEWIDE RAIL VISION IMPROVEMENTS



Source: Bureau of Transportation Statistics (BTS).

TABLE 4. STATEWIDE RAIL VISION IMPROVEMENTS

Project Title	Figure 7 Map Identifier
Short-Term Passenger Rail Improvements	Blue
Kirkwood—Station Upgrades	A
Independence—Station Upgrades	B
Short-Term Freight Rail Improvements	Blue
St. Louis City Municipal River Terminal Rail Upgrades	C
SEMO Port—Loop Track Terminal	D
Cherokee Rail Corridor Safety Project	E
Thayer North Rail Corridor Safety Project	F
Marshall—Corridor Crossing Consolidation Project	G
Long-Term Passenger Rail Improvements	Green
Second Main Line—Lee's Summit to Strasburg	1
Hermann—Universal Crossover	2
Bonnots Mill—Universal Crossover	3
Holden—Siding	4
Knob Noster—Siding	5
Jefferson City—Third Main Line	6
Independence Avenue Bridge	7
Jefferson City—New Station	8
Poplar Bluff—Station Upgrades	9
Pleasant Hill to Jefferson City—Second Main Line	10
Sedalia Station Bicycle/Pedestrian Improvements	11
Warrensburg Station Bicycle/Pedestrian Improvements	12
Carrollton Amtrak Station	13
Track Reconstruction—St. Louis	14
Long-Term Freight Rail Improvements	Green
New Bourbon Port—Rail Improvements	15
COLT Railroad—Capacity Improvements	16
COLT Railroad—Transload Facility Improvements	16
Pike/Lincoln County Port Rail Improvements	17
St. Louis City Port Improvements	18
KCT North-South Corridor Improvements	19
Stoddard County Industrial Park Rail Improvements	20
Lilbourn Industrial Park Rail Improvements	21
Jefferson County Port Development	22
TRRA Tunnel Arch Riverfront Dewatering	23
West Plains—Railroad Overpass	24

Project Title	Figure 7 Map Identifier
West Meadows Yard—Track Realignment	25
COLT Railroad—I-70 Bridge Repair	26
Aurora Organic Dairy—Rail Spur	27
MNA Switch Replacement Program	28
Clinton—Rail Expansion	29
Montrose—Rail Expansion	30

Source: MoDOT.

Note: Discrete highway-rail crossing safety improvements or other small-scale project with capital costs under \$2 M have been excluded from this table and accompanying map graphic to improve readability. Safety projects with a limited geographic scope are further defined in Table 14.

SFRP Goals and Objectives

MoDOT produced a set of goals and corresponding objectives for the 2022 SFRP to achieve the Department's desired multimodal freight and passenger rail vision.¹⁸ Seven goals were developed to align with national and State priorities, based on prior planning efforts and collaboration with stakeholders. The 2022 SFRP goals are:

- **Safety:** Improve safety and security of the multimodal freight and passenger rail system by supporting efforts to decrease the number and severity of freight vehicle crashes, increase truck parking options, and improve safety throughout the multimodal freight system and the passenger rail network.
- **Connectivity and Mobility:** Improve the connectivity and mobility of the multimodal freight and passenger rail system by reducing congestion on the roadways; increasing the reliability of the roadways and passenger rail network; supporting improved efficiency of rails, waterways, and airports; and improving connections between freight modes and between passenger rail and other passenger travel modes.
- **Equity and Environmental Resiliency:** Reduce and/or mitigate the adverse environmental and community impacts of multimodal freight and passenger rail and strengthen the resilience of the multimodal freight network against extreme weather events.
- **Customers and Partnership:** Improve coordination and collaboration with regional planning partners and multimodal freight and passenger rail stakeholders.
- **Maintenance:** Maintain the multimodal freight and passenger rail system in good condition by keeping highways and bridges in good condition and supporting the maintenance of railways, waterways, airports, and multimodal connections.

¹⁸ More information on this process is available in the Goals, Objectives & Performance Measures Report produced as part of the 2022 SFRP.

- **Economy:** Support economic growth and competitiveness in Missouri through strategic improvements to the multimodal freight network and passenger rail system.
- **Process and Innovation:** Institute policies and practices that support the multimodal freight and passenger rail systems, encourage innovation, and promote an efficient use of resources.

The 2022 SFRP also defines clear objectives to guide MoDOT through each goal area. The updated objectives address both the multimodal freight and passenger rail priorities of the SFRP, building upon previously established objectives and integrating new objectives related to connectivity and mobility, equity and environmental resilience, and economic growth. The 2022 SFRP goals and objectives are shown in Table 5.

TABLE 5. 2022 SFRP GOALS AND OBJECTIVES

MoDOT Core Value	2022 SFRP Goal Area	2022 SFRP Objectives
Safety	Safety	• Decrease the number and severity of crashes involving commercial motor vehicles. • Improve grade crossing surfaces, utilize warning devices, and pursue road closures and grade separations, where appropriate. • Support the safe movement of maritime and aviation freight. • Promote the safe transportation of hazardous materials. • Support cooperative efforts with Amtrak and freight railroads to enhance the security of passenger and freight operations. • Support the maintenance and development of safe and secure truck parking facilities for commercial vehicle drivers.
Service	Connectivity and Mobility	• Support the development of intermodal freight facilities to increase connectivity between air, rail, truck, and water modes to increase access to domestic and global markets. • Reduce congestion and increase reliability on roadways and freight intermodal connectors, including connections to freight generators. • Support and encourage improved efficiency of railroads, waterways, and airports. • Support intermodal connectivity between intercity passenger rail and other passenger modes, including air, local transit, auto, intercity bus, and nonmotorized transportation to facilitate efficient and reliable passenger mobility. • Support new and enhanced passenger rail service to Missouri communities and travelers as an efficient and cost-effective mobility alternative. • Reduce passenger rail travel times through increased speeds and reduced delays. • Improve passenger rail reliability and performance. • Increase frequencies on the existing rail route. • Support the connectivity of Missouri passenger rail service to other corridors regionally, nationally, and internationally to maximize network benefits in terms of increased ridership, revenues, and passenger mobility.

MoDOT Core Value	2022 SFRP Goal Area	2022 SFRP Objectives
	Equity and Environmental Resiliency	- Support opportunities for alternative fueling infrastructure. - Support expanded multimodal freight and passenger rail service as a part of an overall state energy conservation policy to protect Missouri travelers and shippers from the adverse mobility and economic impacts of expected increases in future transportation energy costs. - Support expanded multimodal freight and passenger rail service as a means of reducing carbon emissions and fuel consumed per ton- and per passenger-mile and increasing the resiliency and redundancy of the system against extreme weather events. - Increase passenger rail accessibility to low-income, elderly, and special needs groups who have limited access to auto and other modes.
	Customers and Partnership	- Provide a satisfactory ridership experience for passenger rail customers. - Regularly and meaningfully engage with multimodal freight and passenger rail stakeholders, industry, and planning partners.
Stability	Maintenance	- Keep Missouri highways and bridges in good condition. - Support and encourage the maintenance of railways, waterways, airports, and multimodal connections.
	Economy	- Enhance and support opportunities for economic development, business expansion and attraction, and job growth through improvements to the multimodal freight system. - Promote multimodal freight service, infrastructure improvements, and intermodal connectivity to increase the efficiency of multimodal freight modes, lower transportation costs for Missouri businesses, and provide increased access to global markets. - Enhance resiliency and develop redundancy for the multimodal freight and passenger rail system. - Provide enhanced passenger rail service to Missouri communities as a part of an overall economic development strategy to increase employment, household incomes and property values based on the increased accessibility and mobility. - Leverage federal and state dollars through discretionary funding opportunities to deliver critical multimodal freight and passenger rail infrastructure investments.
	Process and Innovation	- Support the efficient use of resources in multimodal freight and passenger rail planning efforts. - Encourage the use of technology to improve the safety, efficiency, and accuracy of multimodal freight and passenger rail planning efforts.

5.2 Program Coordination

The 2022 Missouri State Freight and Rail Plan was coordinated with various prior planning efforts, public and private, at the local, regional, statewide, multistate, and national levels. Previously completed plans, studies, and programs related to passenger and freight rail have laid the groundwork for this RSIP. Notable rail planning

initiatives dating back 15 years from the compilation of this plan are provided in Table 6. Further detail is provided in the section for major planning initiatives. When applicable, prior initiatives are tied into the content of this plan's vision, goals, objectives, and proposed investments.

TABLE 6. MISSOURI LOCAL, STATE, AND FEDERAL RAIL INITIATIVES

	Year Released or Updated
Statewide Plans and Programs	
MoDOT Tracker: Measures of Departmental Performance	2021 ¹
Statewide Transportation Improvement Program SFY 2022 – 2026 (STIP)	2021
Missouri Long Range Transportation Plan Update	2018
Missouri State Freight Plan	2017
Missouri State Rail Plan	2012
Applications Submitted by MoDOT to FRA to Secure Additional Stimulus Funding	2011
Union Pacific Sedalia and Jefferson City Subdivisions Freight and Passenger Rail Analysis Phase 2	2009
Impact of Public Policy on Rail Development in Missouri	2009
Missouri Freight Transportation, Rail Freight	2008
Missouri Freight and Passenger Rail Capacity Analysis	2007
Report on Proposed Operation of Passenger Train Service Between St. Louis and Southwest Missouri	2007
Capacity of Missouri Railroads	2007
Regional and Metropolitan Area Plans and Studies	
St. Louis Regional Freightway—2022 Priority Freight Projects Fact Sheet	2021
St. Louis Regional Freightway—Highway-Railroad Grade Crossing Study	2021
Connected KC Regional Transportation Plan	2020
Connected2045 Long-Range Transportation Plan for the St. Louis Region	2019
CAMPO 2045 and Beyond: Capital Area Metropolitan Transportation Plan	2019
St. Louis Region Emerging Transportation Technology Strategic Plan	2017
Kansas City Regional Freight Outlook Studies	2009
Northside Southside Study—Planning Transit Improvements for St. Louis City	2008
Multistate and National Plans and Studies	
Midwest Regional Rail Plan, Final Report	2021
Midwest Regional Rail Planning Study, Phase II	2019
Midwest Regional Rail Planning Study, Phase I	2017
Kansas City-Wichita-Oklahoma City-Fort Worth Corridor Passenger Rail Service Development Plan	2011
Feasibility Report of Proposed Amtrak Service (Kansas City—Oklahoma City—Fort Worth)	2010
Final Metrics and Standard for Intercity Passenger Rail Service	2010
Preliminary National Rail Plan	2009
Chicago to St. Louis 220 mph High Speed Rail Alternative Corridor Study—Volumes 1 and 2	2009
Vision for High-Speed Rail in America	2009

¹ MoDOT's Tracker tool is used to measure and report on the department's performance measures and is updated quarterly.

Statewide Plans and Programs

This State Rail Plan replaces the prior plan which was officially adopted in May 2012 to establish Missouri's rail transportation vision. The contents of this new plan build on the direction of statewide planning efforts, including the 2012 SRP.

Long Range Transportation Plan

Missouri's *Long Range Transportation Plan*, updated in 2018, reaffirms elements of the preceding plan's strategic direction while evolving for the future. The LRTP was developed through a collaborative process, which engaged public and private sector stakeholders in establishing the priorities of the State's multimodal transportation system. The five goals of the 2018 LRTP are:

- Take care of the transportation system and services we enjoy today.
- Keep all travelers safe, no matter the mode of transportation.
- Invest in projects that spur economic growth and create jobs.
- Give Missourians better transportation choices.
- Improve reliability and reduce congestion on Missouri's transportation system.

The first four of these goals were carried over from the 2014 LRTP after widespread support as guiding principles for the development and management of the State's transportation system. Both the LRTP goals and the State's rail vision address the importance of safety, economic growth/competitiveness, transportation choice, and efficient movement.

A series of objectives was created for each of the five LRTP transportation goals. Those directly relating to or explicitly referencing rail transportation are:

- Identifying and improving intermodal connectors that better link the State's rivers, rails, roads, and runways.
- Connecting all travel options (e.g., passenger rail to bus stops to sidewalks to airports).
- Expanding and improving transit, air, passenger rail, bicycle, and pedestrian options throughout the State.
- Supporting improved efficiency of rail, waterways, and airports.

Many of the goals and objectives expressed in Missouri's LRTP align directly with the goals and objectives provided in this rail plan. For example, the objective to support and encourage the maintenance of railways and multimodal connections is in line with the LRTP's goal to take care of the transportation system and services we enjoy today, and the objective to identify and improve intermodal connectors. This also is the case with goals and objectives speaking to network efficiency, safety, economic development, and other themes.

Statewide Transportation Improvement Program

MoDOT prepares an STIP every year. Each STIP covers a period of five years and sets forth the specific construction projects MoDOT plans to undertake in that time period. The STIP provides a fiscally constrained accounting of upcoming projects proposed for funding by State revenue and under the Infrastructure Investment and Jobs Act of 2021.¹⁹ For rail funding levels within the 2022 – 2026 STIP, see the **Missouri Freight & Profile Volume 2**.

High-Speed Intercity Passenger Rail Program

MoDOT submitted requests to secure stimulus funding under the FRA High-Speed Intercity Passenger Rail Program for fiscal year 2011. Approved projects included crossover and siding upgrades to improve rail operations and efficiency. Projects not selected for funding under this program and remain necessary system improvements include:

- Kansas City Terminal—Independence St. Bridge Replacement.
- Jefferson City Third Mainline.
- Jefferson City Station.
- Pleasant Hill to Jefferson City.

More information on these projects, including cost estimates, can be found in Section 5.8.

MoDOT Tracker: Measures of Departmental Performance

MoDOT's Tracker tool is used to measure and report on the department's performance measures. Each Tracker metric includes the measure's purpose, data collection methodology, results, and improvement status. The performance measures relevant to rail are:

- **Safe Transportation System:**
 - » Number of fatalities and injuries in work zones.
 - » Number of highway-rail crossing fatalities and collisions.
- **Advance Economic Development:**
 - » Economic return from transportation investments.
 - » Impacts of job creation for government sector industries.
 - » Percent of public support by transportation funding source.
 - » Number of jobs and businesses in freight industry.

¹⁹ Alternately known as the Bipartisan Infrastructure Law, this legislation was signed into law on November 15, 2021, and replaced the Fixing America's Surface Transportation (FAST) Act.

- **Efficient Movement of Goods:**

- » Freight tonnage by mode.

- **Easily Accessible Modal Choices:**

- » Number of transit passengers.
- » Number of rail passengers.
- » State funding for multimodal programs.
- » Percent of customers satisfied with transportation options.
- » Number of claims and amount paid for general liability.

This plan promotes a vision and relevant infrastructure improvements to aid in the achievement of the Tracker performance measures.

Regional and Metropolitan Area Plans and Studies

Transportation planning documents have been developed and are regularly updated by Missouri's nine Metropolitan Planning Organizations. These comprehensive long-range plans display the necessary cooperation between local, regional, and State partners in transportation planning. Three of Missouri's MPOs host passenger rail service. These are the metropolitan areas of St. Louis, Kansas City, and Jefferson City.

Some of the Missouri MPOs without passenger rail service mention long-term goals of introducing service. These include the Columbia Area Transportation Study Organization LRTP, which provides the goal "promote rail as a viable option for freight and passenger movement throughout the region". This aspiration is joined by the performance measure "develop passenger rail opportunities". Similar is the case for the Ozark Transportation Organization's 2016 LRTP, which established as a goal "increase accessibility and mobility for all transportation modes" and an action to achieve this of "continue to support efforts to bring intercity passenger rail to Springfield".

Connected KC 2050

The latest iteration of the regional Long-Range Transportation Plan for the Kansas City metro area, Connected KC 2050, was adopted by the Mid-American Regional Council in 2020. The plan presents five goals, which are at the foundation of transportation planning in the region.

Connected KC 2050 identifies the necessity of the Independence Street Bridge Improvements project, which is proposed for construction in the long term by this plan. Regional and State partners agree on the importance of this bridge to facilitate the safe and efficient movement of freight over the bridge and freight and passengers on the roadway below.

Connected2045 Long-Range Transportation Plan

The East-West Gateway Council of Governments released *Connected2045 Long-Range Transportation Plan* for the St. Louis Region in 2019. The plan lays out 10 guiding principles, one of which is "Strengthen Intermodal Connections." The plan also prescribes strategies to accomplish its 10 goals. It calls upon the region to "support the

national High-Speed Intercity Passenger Rail Program, in particular the Chicago to St. Louis route.” *Connected 2045* identifies the Merchants Bridge Replacement project as a priority, which will help revitalize this critical link in the transcontinental railroad system. The replacement of this important river crossing is expected to be completed in 2022.

St. Louis Regional Freightway—2022 Priority Projects

Critical rail-related projects identified by the St. Louis Regional Freightway,²⁰ an enterprise of Bi-State Development, include:

- Crystal City Port Development with Access Roadway.²¹
- St. Louis City Municipal River Terminal Rail Upgrades.
- TRRA Tunnel-Arch Riverfront Dewatering.

More information on these projects including cost estimates can be found in Section 5.8.

Multistate and National Plans and Studies

Cooperation between MoDOT and DOTs of neighboring States is critical to realizing a national passenger rail system capable of meeting the needs of the 21st century. Representatives from Missouri are active in a number of regional and national rail planning efforts intended to foster a collaborative environment to achieve shared freight and passenger rail goals.

Midwest Interstate Passenger Rail Commission

The MIPRC is composed of nine member States. Missouri is joined on the commission by Illinois, Indiana, Kansas, Michigan, Minnesota, North Dakota, Ohio, and Wisconsin. The purpose of the MIPRC is to organize the efforts of midwestern State leaders and DOTs as they advocate and plan for passenger rail improvements. The commission has been working since 1996 to promote the growth and development of a modern regional passenger rail system.

States for Passenger Rail Coalition

Missouri also belongs to the States for Passenger Rail Coalition, a multistate organization which brings together State DOTs, decision-makers, public and private stakeholders, and advocates of intercity passenger rail. The SPRC advocates the development, implementation, and expansion of intercity passenger rail in the U.S.

Feasibility Report, Kansas City—Oklahoma City—Fort Worth

The Kansas DOT enlisted Amtrak to conduct a feasibility study of potential rail service expansion in Kansas. Commencing in 2008, study findings were published in 2010. This feasibility study was followed up in 2011 with the creation of a service development plan. Two of the three service alternatives explored in the SDP would stop in

²⁰ St. Louis Regional Freightway. *Priority Freight Projects Fact Sheet 2022*, 2021.

²¹ As the particular location of the proposed port facility has not been determined, this project is referred to in this document as Jefferson County Port Development.

Kansas City, Missouri. MoDOT aided during the production of this SDP in cooperation with the DOTs of Kansas, Oklahoma, and Texas; Federal partners; and BNSF Railway.

5.3 Rail Agencies

Missouri's railroad program is administered by the MoDOT Multimodal Division. This rail plan does not recommend any changes to the division's duties, nor does it recommend the creation or abolition of any other agency or authorities. The program and policy recommendations provided in Table 7 are intended to address deficiencies and encourage preservation of the statewide rail network.

TABLE 7. POLICY AND PROGRAM RECOMMENDATIONS

Proposed Policy/Program	Description	Need Addressed
Short-Term Recommendations		
Revise legislation to allow more flexible use of State funding	Prioritize a legal proposal to revise RSMo 389.612 to increase the motor vehicle registration fee and apply funds to pedestrian treatments, trespasser prevention, administration and railroad safety outreach and education.	Safety and Crossings
Establish a dedicated funding source for passenger rail	Establishment of a funding mechanism to provide operating support for the <i>Missouri River Runner</i> service.	Funding Shortfall for <i>Missouri River Runner</i>
Long-Term Recommendations		
Expand STAR Loan Program	The STAR program, which provides loans to local entities for non-highway projects, has remained at stagnant funding levels in recent years and is expected to remain the same. Expansion of this program would result in more funding available for rail-related improvements across the State.	Infrastructure
New MORE Freight Grant Program	A Missouri Rail Enhancement (MORE) program could provide grants for rail infrastructure necessary for economic development.	Infrastructure
Advertising for passenger rail services	Advertising of the <i>Missouri River Runner</i> would market the service as an efficient means of travel through the heart of Missouri. The goal would be the capture of increased funding through improved ridership.	Funding Shortfall for <i>Missouri River Runner</i>

5.4 Program Effects

The selection of rail projects for the Passenger and Freight Rail Capital Program of this RSIP was informed by a process, which included stakeholder outreach, coordination with rail carriers and prior MoDOT planning studies, and long-range planning efforts. Projects proposed for the short term (from SFY 2022 to SFY 2025) and the long term (SFY 2026 to SFY 2042) were identified for their ability to preserve and enhance rail transportation in the State. Projects proposed in this plan offer substantial potential benefits to the State's rail network, including the elimination of bottlenecks, improved safety and reliability, and reduced environmental impacts.

Certain benefits are expected from the short- and long-term rail improvement projects depending on their purpose. For example, investments in at-grade crossing are designed to improve safety. Aside from the chief benefit of

safety, it is understood crossing improvements improve efficiency for road and rail users alike. Robust crossing consolidation and rail over/underpasses construction projects reduce or eliminate highway-rail interactions. Aside from being the best improvements to advance rail safety, these types of investments reduce automobile VMT and emissions expended while dwelling at block at-grade crossings. Typical benefits expected to result from different improvement types are provided in Table 8.

TABLE 8. POTENTIAL BENEFITS OF IMPROVEMENT TYPES

Improvement Type	Example	Potential Benefits
Grade crossing	Installation/upgrade of lights, gates, signage, etc.	Improved safety, travel time savings, reduced automobile VMT, improved efficiency
Rail and structures	Crossovers, sidings, new main lines, bridges, etc.	Travel time savings, reduced congestion, reduced automobile VMT, improved efficiency
Intermodal/industrial/port facilities	New/improved rail spurs to businesses, access to ports, etc.	Reduced automobile VMT, improved efficiency
Passenger rail station	Structural improvements, amenities, improved access, etc.	Reduced automobile VMT, improved efficiency

Public and Private Benefits

Investments to the State's rail infrastructure would produce numerous benefits to the traveling public, regardless of mode. Enhanced passenger rail service through targeted investments would produce travel time savings, reduce automobile VMT, and improve network efficiency. Improved rail infrastructure also creates a more efficient and interconnected freight system, providing shippers with expanded modal options. Highway-rail crossing improvements can improve safety, reduce delays for passengers and freight, and reduce emissions.

Most of the benefits expected from implementing freight and passenger rail improvement projects can be attributed to the elimination of existing bottlenecks and improved rail capacity. It is understood that improvements to the efficiency of the rail network would promote higher passenger rail ridership, either by expanding to new areas or providing a more competitive service with reduced travel times. Passenger rail service provides important economic development benefits to Missouri communities by providing improved accessibility, connectivity, and travel efficiency. Projects proposed in this RSIP designed to improve passenger rail operations on the Missouri River Runner are largely concentrated in the UP-owned Springfield to Kansas City corridor (see Figure 7). Further discussion of the benefits generated by passenger rail improvements is provided in Section 5.5.

Freight rail improvements would produce similar benefits by reducing travel times, in turn, attracting new customers and creating a more balanced modal share. The enhanced competitiveness of freight rail would result in lower costs for shippers and improved efficiency. The railroad industry benefits the economic well-being of Missouri. The rail transportation sector directly and indirectly supports 4,350 Missouri jobs, \$347 million in labor income and \$687 million in gross state product, giving rise to \$119 million in total tax revenue.

Further benefits created by proposed freight rail projects are discussed in Section 5.6.

Rail Capacity and Congestion

A major benefit of implementing the rail infrastructure investments provided in this RSIP is to improve service on corridors operating at- or near-capacity. LOS was determined for each rail corridor in Missouri using the AAR-established methodology (explored in **Section 2.4** of the **Missouri Freight & Rail Profile – Volume 2**) and 2012 – 2018 Carload Waybill data. This analysis assigned LOS grades to Missouri rail corridors. The most congested corridors, those rating E or F, are presented in Table 9 below.

TABLE 9. MISSOURI RAIL CORRIDORS AT OR NEAR CAPACITY

Owner	Rail Segment	LOS	Volume/ Capacity Ratio	Description
KCS	Kansas City—South	E	0.8 to 1.0	Very heavy train flow with very limited capacity to accommodate maintenance and recover from incidents
UPRR	Kansas City—Iowa			
NS	Hannibal—St. Louis			
BNSF	Tulsa—Springfield—St. Louis		≥ 1.0	Unstable flows; service breakdown conditions
BNSF	Kansas—Springfield—Jonesburg, AR			
KCS	Kansas City—Iowa			
BNSF	Burlington, IA—St. Louis—Arkansas			
UPRR	Kansas City—Jefferson City			
BNSF	Cape Girardeau—Arkansas			
UPRR	St. Louis—Ste. Genevieve			
UPRR	Cape Girardeau—Arkansas			

Source: 2018 Carload Waybill Data; AAR.

Many of the rail projects proposed for the short and long term are focused on the corridors identified above. Projects on these corridors include extensive crossing safety improvements near Springfield, improved rail access for intermodal port facilities along the Mississippi River, and infrastructure for industrial parks in the southeast. These corridors are of regional and national importance due to Missouri's central location in the regional rail network. Investments to these corridors will improve rail operations and advance Missouri's economic competitiveness.

Environmental and Economic Impact

On average, railroads are four times more fuel efficient than trucks, and one train can carry as much as several hundred trucks. The AAR estimates that it would have taken nearly 23 million additional trucks to transport the millions of tons of freight that originated in, terminated in, or moved through Missouri by rail in 2017.²² Improvements to rail infrastructure would create a more reliable network capable of meeting current and future

²² Association of American Railroads. *Freight Railroads in Missouri: Rail Fast Facts for 2017*. 2019.

demand. By maintaining modal competitiveness, the investments presented in this RSIP would help reduce greenhouse gas emissions, as well as particulate matter which has been shown to cause adverse health outcomes.

Capital improvements also result in temporary and sustained employment benefits for Missourians. Infrastructure investments support construction and engineering personnel in the short term with additional benefits coming in some cases from the maintenance, administration, and operation of new infrastructure or services. The *Missouri River Runner* service alone sustains 1,250 jobs and roughly \$65M in labor income each year. See **Freight & Rail Profile Volume 2, Section 2.2** for more on the economic and environmental impacts of rail travel.

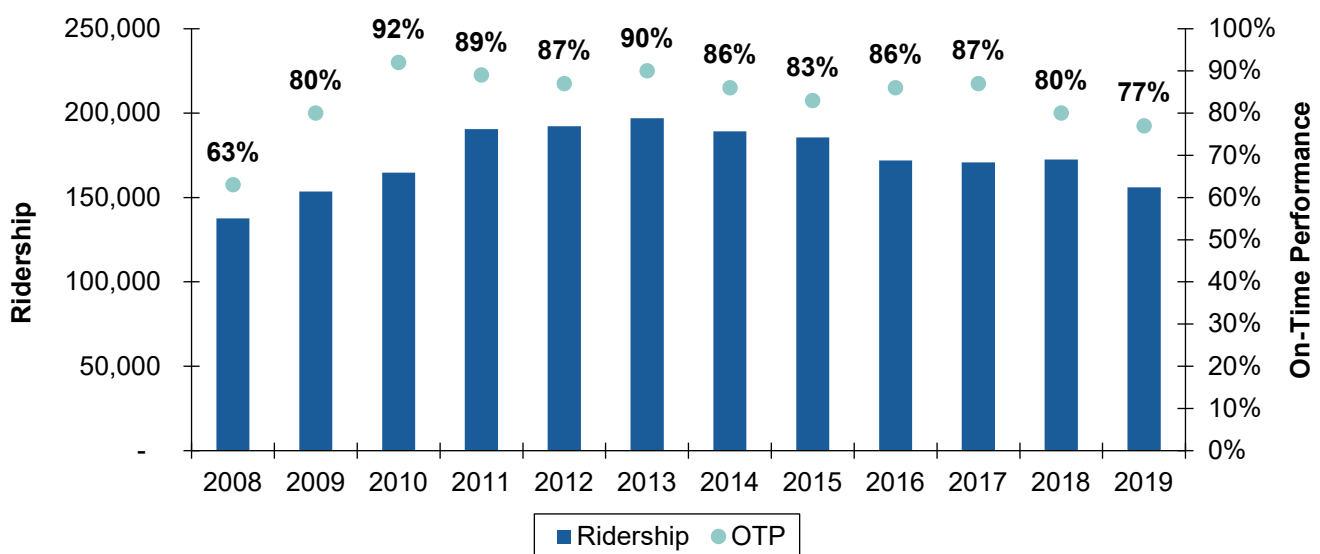
5.5 Passenger Element

Limited revenue is available for passenger rail improvements, therefore, extensive analysis to identify public benefits of each proposal. Only projects with significant public benefits identified are selected for construction.

Operations and Revenue Effects

Most passenger rail projects result in improved rail passenger ridership, increased rail passenger miles traveled, modal diversion from highway and air, and increased rail passenger revenues and/or reduced costs. Investments to passenger rail infrastructure produce benefits for the overall rail system and transportation network of the State. For example, as can be seen in Figure 8, ridership on the Missouri River Runner can be somewhat attributed with changes in on-time performance. However, the largest factors determining ridership are demand for the service and fare prices. Many passenger rail projects identified here would improve OTP by improving corridor efficiencies and reducing bottlenecks and constraints.

FIGURE 8. MISSOURI RIVER RUNNER RIDERSHIP AND OTP (2008 TO 2019)



Source: Amtrak.

Missouri, as is the case with all States, has a limited amount of control over the operations of long-distance passenger rail services. Two Amtrak long-distance routes operate within the State and represent only a portion of the track miles of the multistate *Texas Eagle* and *Southwest Chief*. Therefore, MoDOT has limited ability to influence operational decisions regarding passenger rail on these routes even though that could result in modal diversions. MoDOT has greater influence on the State-sponsored *Missouri River Runner* through contract provisions with Amtrak. This lack of control over long-distance service operations further limits MoDOT's ability to make decisions regarding passenger rail, which would have beneficial outcomes such as promoting modal diversion.

This plan recommends feasibility and service studies to explore new intercity passenger rail services (see Table 13). These studies would evaluate estimated ridership, passenger-miles, and projected costs and revenue. This information will assist in determining the need for further study and/or service enhancements.

Capital Financing Plan

MoDOT is limited in its ability to improve passenger rail infrastructure as it is largely owned by private railroads companies. However, funding is available at the State level to support strategic projects, which produce well-defined public benefits. Funding sources available through the State include the Highway-Rail Crossing Safety Program and Station Improvements Program. Federal grant programs also are available for capital improvements, which benefit the public. One grant program utilized by MoDOT in recent years is the rail-specific Consolidated Rail Infrastructure and Safety Improvements Program. Table 10 presents State and Federal programs typically utilized to fund Missouri passenger rail initiatives. Additional funding sources not specific to rail projects are available at the State and Federal levels, including the Congestion Mitigation and Air Quality Improvement Program administered by the Federal Highway Administration. CMAQ funding can be applied to passenger rail improvements designed to reduce traffic congestion and improve air quality.

TABLE 10. PASSENGER RAIL CAPITAL PROJECT FUNDING

Funding Opportunities/Sources	Agency	Description
Station Improvement Program (SIP)	MoDOT	Funding from this program can be used to fund improvements at city-owned rail stations.
Grade Crossing Safety Account (GCSA)	MoDOT	This program supports improvements at public crossings, including safety devices, pavement markings, and closure of crossings.
Rebuilding American Infrastructure with Sustainability and Equity Program (RAISE)	USDOT	Competitive discretionary grant program for surface transportation infrastructure.
Consolidated Rail Infrastructure and Safety Improvements Program (CRISI)	USDOT, Federal Railroad Administration (FRA)	Provides funding to projects that improve the safety, efficiency, and/or reliability of passenger and freight rail systems.
Federal-State Partnership for State of Good Repair Grant Program (SOGP)	USDOT, FRA	Funding for capital projects that repair, replace, or rehabilitate qualified railroad infrastructure.
Infrastructure for Rebuilding America Program (INFRA)	USDOT, FRA	Discretionary grant program to fund highway and rail projects with regional and national significance.
Railway-Highway Crossing (Section 130) Program	USDOT, FHWA	Can fund costs associated with projects designed to eliminate hazards at railroad-highway crossings.

Long-term rail projects will need to secure funding to cover capital costs. Capital funds for these projects may be in part provided through State programs or secured by MoDOT in the form of Federal grants. New or expanded grant programs may be made available for capital funding of rail infrastructure in future Federal transportation legislation in addition to any current programs which may remain. MoDOT will continue to investigate potential funding sources to advance long-term passenger rail capital projects.

Operating Financial Plan

While this RSIP recommends the study of extending existing passenger rail service and establishing service on new corridors, no proposed services are ready for implementation. Extensive analysis is required for all new services presented in this plan, including the study and selection of preferred routing and service schedules, as well as environmental and economic analysis. As identified in the passenger rail needs section (Section 2.3), a dedicated funding source for the operation of passenger services currently is not in place in Missouri.

Public and Private Economic Benefits

Capital improvements intended to preserve or enhance passenger rail in Missouri produce benefits for the State and its residents. A recent economic analysis of the *Missouri River Runner* service identified direct, indirect, and induced economic benefit totaling 450 jobs; \$35.2 million in labor income; \$122.6 million in economic activity; and \$11.3 million in Federal, State, and local tax revenue. When factoring other aspects such as tourism, the *Missouri River Runner* is credited with generating \$208 M in annual economic activity within the State, supporting 1,250 jobs paying \$65 M to Missourians annually. See *Economic Impact of the Missouri River Runner Passenger Rail Service* for more on this topic.

Improvements to rail infrastructure and passenger rail stations and the expansion of new or improved services often increase passenger rail ridership. Higher ridership facilitates economic growth within the State and produces a series of additional benefits, including transportation efficiencies, increased employment, improved safety, and the capture of out-of-State spending. Transportation efficiencies come in the form of, but are not limited to, the following benefits:

- **Travel time savings:** Improved rail efficiencies often reduce the total travel time of passenger service while typically also benefiting freight trains and other travel modes. Benefits are not limited to passenger service when considering improved on-time performance resulting from infrastructure investments. While improved on-time performance means time savings for train passengers, the ability of these trains to better adhere to its schedule benefits connected modes.
- **Reduced automobile vehicle miles traveled:** Shifting passengers away from automobiles and into more efficient passenger trains removes cars from the roadway. This reduces auto congestion and vehicle emissions. Another benefit is the reduction of wear and tear on Missouri's roads and highways by shifting trips away from auto travel and to passenger rail (or other available modes).
- **Improved efficiency:** More efficient train operations lead to other efficiencies in the transportation network. This can include improved freight operations spurred by more efficient interactions with passenger trains sharing the same track.

Passenger rail investments proposed in this plan would create efficiencies, like those detailed above, in Missouri's rail network and the larger transportation system. These efficiencies would benefit the public and the economy of the State and region.

5.6 Freight Element

As is the case with improvements to passenger rail, freight projects also produce public benefits, including transportation efficiencies, supporting employment, creating a more balanced mode share, improved safety, and increased outside investment. However, due to the nature of freight rail improvements, there is a distinction in the ways public benefits are created and to what degree they do so compared to passenger rail. Benefits resulting from freight rail investments are created by reduced truck VMT, reduced train dwell times, more efficient and timely freight shipments, better intermodal operations, improved highway-rail crossing safety, and improved passenger rail on freight rail corridors. The following sections detail the freight element of the rail plan, including financial plan and expected benefits.

Financing Plan

Missouri rail owners and their planning partners have access to federal, regional, and state funding designated for certain freight and passenger rail uses. Funding opportunities available to assist in funding freight projects are presented in Table 11.

Funding Sources

TABLE 11. FUNDING OPPORTUNITIES FOR FREIGHT RAIL PROJECTS

Funding Opportunities/Sources	Agency	Description
State Transportation Assistance Revolving Fund (STAR)	MoDOT	Fund which provides loans for non-highway transportation projects.
Grade Crossing Safety Account (GCSA)	MoDOT	This program supports improvements at public crossings, including safety devices, pavement markings, and closure of crossings.
Missouri Port Capital Improvement Program (CIP)	MoDOT	Provides funding to develop port infrastructure and improve intermodal connections.
Missouri Transportation Finance Corporation loan (MTFC)	MoDOT	Can provide financial support to certain rail projects in addition to many other surface transportation improvements.
Freight Enhancement Program (FRE)	MoDOT	Provides funding for high priority non-highway freight capital projects.
States Economic Development Assistance Program (SEDAP)	Delta Regional Authority	Provides funding for strategic investments within the DRA service area; one-half of which is dedicated to transportation and infrastructure improvements.
Rebuilding American Infrastructure with Sustainability and Equity Program (RAISE)	USDOT	Competitive discretionary grant program for surface transportation infrastructure.
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	USDOT	Provides funds for transportation projects intended to reduce traffic congestion and improve air quality.

Funding Opportunities/Sources	Agency	Description
Consolidated Rail Infrastructure and Safety Improvements Program (CRISI)	USDOT, FRA	Provides funding to projects that improve the safety, efficiency and/or reliability of passenger and freight rail systems.
Federal-State Partnership for State of Good Repair Grant Program (SOGP)	USDOT, FRA	Funding for capital projects that repair, replace, or rehabilitate qualified railroad infrastructure.
Infrastructure for Rebuilding America Program (INFRA)	USDOT, FRA	Discretionary grant program to fund highway and rail projects with regional and national significance.
Railway-Highway Crossing (Section 130) Program	USDOT, FHWA	Can fund costs associated with projects designed to eliminate hazards at railroad-highway crossings.
Port Infrastructure Development Program (PIDP)	USDOT, Maritime Administration	This program makes funding available for improvements at intermodal port facilities.

Source: MoDOT, USDOT, FRA.

Funding is provided at the State level through programs including STAR and FRE that offer funds dedicated to non-highway transportation projects. Missouri also has access to other funds to assist with freight rail improvement projects, including investments from the Delta Regional Authority's SEDAP program. DRA serves segments of eight States, including southeastern Missouri. One recently completed project to receive DRA assistance is the Pemiscot County Port Authority Railroad Siding project, which provided funding for the construction of a 2,425-foot siding track on port property. DRA funding totaled 23 percent of capital costs. Sometimes nonstate or nonlocal dollars make up most of a project's capital costs if the project has a proven regional or national importance.

Federal grant opportunities are the largest source of funding that can be secured for Missouri rail projects. The largest entity providing capital funding for rail improvements at the federal level comes from the FRA in the form of numerous programs. Each program offered by the FRA, or the USDOT in general, provides funds for a targeted purpose. Port improvement funding may be available for rail-port intermodal facilities as is the case with the USDOT Maritime Administration's Port Infrastructure Development Program.

Project Funding

Table 12 details the anticipated financing plan for short-term freight rail capital projects. The projects are funded through a variety of different programs with completion expected in the next four years.

Funding is not yet identified for freight projects in the long term. As private enterprises, Missouri rail carriers must weigh the importance of capital spending against the projected benefits. This reality limits MoDOT's ability to enact investments on privately owned rail infrastructure. However, state, regional, and federal funding sources are available for the purposes of advancing safety and spurring economic development. MoDOT will continue to assist rail carriers in securing funding and pursue new or expanded in-State programs to improve Missouri rail infrastructure.

TABLE 12: SHORT-TERM FREIGHT RAIL CAPITAL PROJECT FUNDING

Proposed Project	Capital Cost (\$YOE)	Federal Funds; Source	State Funds; Source	Local/Private Funds; Source	Anticipated Construction/Expenditure Years
SEMO Port—Loop Track Terminal	\$33 M	\$19.8 M USDOT, BUILD	\$13.2 M State of Missouri	--	2024
St. Louis City Municipal River Terminal Rail Upgrades	\$13.8 M	\$7.2 M USDOT, BUILD	\$3.8 M State of Missouri	\$2.8 M SCF Marine	2023
Cherokee Rail Corridor Safety Project	\$5.2 M	\$2.6 M FRA, CRISI	\$1.8 M GCSA	\$0.8 M BNSF	2022
Thayer North Rail Corridor Safety Project	\$18.5 M	\$4 M FRA, CRISI	\$1.5 M GCSA	\$13 M BNSF	2022-2024
Highway-Rail Crossing Safety Improvements*	\$23.18 M	\$19.26 M FHWA, Safety Funding	\$3.55 M Grade Crossing Safety Account	\$0.36 M Railroad Contributions	2022-2025

Note: Crossing improvements are included as one item in this table to avoid duplication of information. See Table 14 for more details on each project funding split.

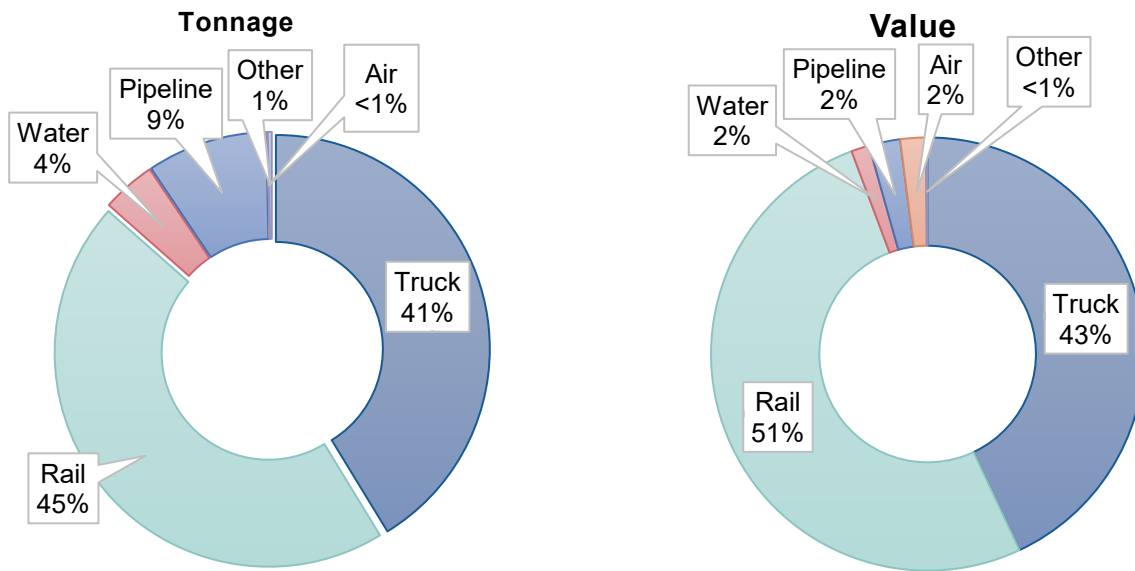
Public and Private Economic Benefits

There are considerations unique to freight rail that must be examined when selecting projects. Rail investments diverge from other modes in the fact that a majority of rail in Missouri is privately owned so improvements upon it produce some different—and also some of the same—benefits compared passenger rail. Improved rail infrastructure would create a more efficient and interconnected freight system, providing shippers with expanded modal options. Highway-rail crossing improvements can improve safety, reduce delays for passengers, and freight and reduce emissions.

More freight is moved via the rail network in Missouri than by any other mode. Rail accounted for 45 percent and 51 percent of freight shipments in 2018 by ton and value, respectively²³ (see Figure 9 below). Trucking accounted for the second highest modal share of goods by weight and by value (41 percent and 43 percent). The sizable portion of freight shipments moving by rail represent half of the \$1.1 T moved in, out, through, and within the State. The total value of freight transported using Missouri's multimodal transportation network is forecast to grow to \$1.8 T by 2045.²⁴ This is an increase of 57 percent, growing by an average of \$25.9 B annually from 2018 to 2045. Improving freight rail operations through targeted infrastructure projects would benefit businesses moving products and resources within Missouri by reducing train delays and speeding up shipments.

²³ IHS Transearch and STB Confidential Carload Waybill Sample.

²⁴ MoDOT. *Commodity Flow Profile*. January 2021.

FIGURE 9. MISSOURI FREIGHT TONNAGE AND VALUE BY MODE, 2018

Source: IHS Transearch and STB Confidential Carload Waybill Sample.

Proposed long-term improvements have not yet been fully analyzed for their economic and environmental impacts. Additional study of these projects and their definitive benefits will occur prior to implementation. Improvements in the long term are expected to produce similar benefits to recently completed freight rail projects, improving system safety and efficiency while reducing highway repair costs, air pollution, and carbon emissions.

5.7 Rail Studies and Reports

Analysis of current rail conditions and feedback received during this plan's public outreach efforts were used to develop recommendations for rail studies and reports (see Table 13). New or otherwise improved passenger rail services require adequate study and identification of capital and operational funding before becoming a reality. Service improvements presented within this section would improve transportation access and produce the economic and environmental benefits associated with passenger rail.

This plan does not recommend any rail studies or reports to be conducted in the short term (next 4 years). However, MoDOT has identified noteworthy corridors and connections which require further study. Limitations on the department's ability to study new or expanded services in the long term include projected demand, funding, and staff availability. Recommended plans and reports which may be conducted in the long term (next 20 years) can be divided into three categories: service enhancements, service feasibility, and station connections. MoDOT will continue to monitor the needs of the State's passenger and freight rail infrastructure and weigh the benefits of conducting or updating reports and studies with their associated costs.

Service Enhancements

Higher speed services have long been the ambition of multistate entities of the Midwest Regional Rail Initiative and the Midwest Interstate Passenger Rail Commission. One corridor highlighted for future higher speed service is the *Missouri River Runner*. Reducing travel times on this corridor would complement efforts underway to establish high-speed rail service between Chicago and St. Louis. A comprehensive study of the *Missouri River Runner* corridor also would investigate bottlenecks and other infrastructure constraints between St. Louis and Kansas City and examine potential service improvements.

There are aspects of the *Missouri River Runner* corridor worth studying beyond infrastructure improvement to increase speeds and reduce travel times. MoDOT will examine increased or altered service frequencies and added on-train and station amenities. For example, public support emerged during outreach activities that identified better accommodation for bicycles as the Missouri River Runner largely travels parallel to the Katy Trail, the longest recreational rail-trail in the U.S.

Service Feasibility

Several potential passenger rail routes were supported by the public. To be implemented, potential routes will need to go through extensive study, planning, and design. MoDOT will advance plans to implement new services if they are supported by adequate ridership, population, and economic forecasts; and continue to receive public support. Potential future corridors for passenger rail service recommended for study are shown in Figure 6.

In addition to the study of new services, MoDOT supports planning efforts by neighboring States and other entities to expand the region's passenger rail system. One example of this is MoDOT's support of the Kansas DOT and their exploration of passenger rail service connecting Kansas City, Missouri, and Topeka, Kansas.

Station Connections

Passenger rail in the U.S. is increasingly multimodal at rail stations. Missouri cities are connected by intercity and local bus services, as well as other mobility options operated by private providers. Further study is needed to explore potential bus-to-rail connections on routes with appropriate need for intercity and local connections, which are not conducive to rail. This cost-effective method of connecting Missouri cities would benefit passenger rail in the State by creating greater access to the Amtrak network, particularly for travelers without access to automobiles. Comments received during the creation of this plan noted strong public support for a service connecting Columbia with the State's capitol of Jefferson City. This plan proposes a comprehensive study analyzing communities, which currently are underserved or unserved by passenger rail service to determine potential connections. An intercity connection could be provided via bus or rail depending upon study findings.

Other important aspects of multimodal connectivity at rail stations include connecting services and facilities, such as local bus service; pedestrian and bike accommodations; adequate station parking; and the presence of taxis, rideshare, and car rentals.

TABLE 13. PROPOSED LONG-TERM RAIL PLANNING STUDIES, BY CORRIDOR

Project Title	Study Description
St. Louis—Jefferson City—Kansas City	
St. Louis—Jefferson City—Kansas City Corridor Enhancement Study	Preliminary engineering and environmental planning for service improvements within the Missouri River Runner corridor.
Hannibal—Quincy, Ill	
Carl Sandberg and Illinois Zephyr Service Extension to Hannibal Study	Extension of existing State-supported (Ill.) routes, connecting Chicago to Hannibal via Quincy, Ill.
Kansas City—St. Joseph	
Kansas City—St. Joseph Service Study	Study of passenger rail service connecting Kansas City to St. Joseph and other population centers.
Kansas City—Southwest Missouri	
Branson—Springfield—Joplin—Kansas City Service Study	Study of potential alignments for a Kansas City originating service to southwestern Missouri cities.
St. Louis—Southwest Missouri	
Updated Branson—Springfield—Joplin—St. Louis Service Study	Update to the 2007 study of passenger service between St. Louis and Southwestern Missouri.
Statewide	
Intercity Connection Service Feasibility Study	Study the feasibility of connecting service between station cities and non-served population centers.

Source: MoDOT.

5.8 Passenger and Freight Rail Capital Program

Capital projects advancing the functionality of Missouri's passenger and freight rail network are presented in this section in the short term, a four-year planning horizon (2022 to 2025), and in the long term, 2026 to 2042. Sections below detail the proposed passenger and freight rail improvements needed to achieve Missouri's rail vision. This section provides capital costs and secured or prospective funding sources for these improvements.

Short-Term Capital Rail Investment Program

Some projects in the short-term capital rail investment program are fully funded while others await additional capital funding to be implemented. Grant award amounts and other funding sources are provided in Table 14 for short-term projects with secured funding. Other known needs are presented in the long-term program. Projects not included in this section may be implemented in the short-term if there is a pressing need, for example, rail infrastructure sustaining damage from inclement weather.

TABLE 14. SHORT-TERM CAPITAL RAIL INVESTMENT PROGRAM, BY CORRIDOR

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions) 1) Nonpublic 2) Federal 3) Non-Federal	Funding Sources 1) Nonpublic 2) Federal 3) Non-Federal
St. Louis—Jefferson City—Kansas City (<i>Missouri River Runner</i> Corridor)					
Kirkwood—Station Upgrades	Station	Updates to the station building and amenities to modernize and improve structural longevity.	\$3.5	\$ —	
				\$1.5	TA-S
				\$2	
Independence—Station Upgrades	Station	Updates to the station building and amenities to modernize and improve structural longevity.	\$0.43	\$ —	
				\$0.35	
				\$0.09	
Scott City—Cape Girardeau					
SEMO Port—Loop Track Terminal	Intermodal Network, Facilities and Connectivity	Construction of a new rail-barge terminal and loop track and a rail-to-barge conveyor.	\$33	\$ —	
				\$19.8	BUILD
				\$13.2	State of Missouri
St. Louis					
St. Louis City Municipal River Terminal—Rail Upgrades	Intermodal Network, Facilities and Connectivity	Rail upgrades at the St. Louis City Municipal River Terminal to increase the efficiency of intermodal operations.	\$13.8	\$2.8	SCF Marine
				\$7.2	BUILD
				\$3.8	State of Missouri
BNSF					
Cherokee Rail Corridor Safety Project	Safety and Crossings	Closure of 5 crossings and corridor wide upgrades and site improvements.	\$5.2	\$0.8	BNSF
				\$2.6	CRISI
				\$1.8	State
Thayer North Rail Corridor Safety Project	Safety and Crossings	Creation of a grade-separated crossing, associated road realignments on U.S. 60 and the closure of 8 at-grade crossings.	\$18.4	\$1.5	BNSF
				\$10.4; \$4.0	CRISI; Section 130
				\$1.5; \$1.0	State; Webster County
Springfield—Crossing Safety Improvements National/Division	Safety and Crossings	Installation of new lights, cantilevers and intersection improvements at public crossing 664172S	\$1	\$ —	—
				\$0.8	Section 130
				\$0.2	GCSA
Hardin—Crossing Safety Improvements, Hisinger Lake Road	Safety and Crossings	Installation of lights and gates at public crossing 005326H.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
			\$0.1	\$ —	—

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions)		Funding Sources
				1) Nonpublic	2) Federal	
Medill—Crossing Safety Improvements, County Road 134	Safety and Crossings	Roadway safety improvements at public crossing 005019J		\$0.09		Section 130
				\$0.01		GCSA
Mendon—Crossing Safety Improvements, County Road 113/ Porche Prairie Road	Safety and Crossings	Installation of lights and gates and roadway improvements at public crossing 005284Y.	\$0.4	\$ —		—
				\$0.325		Section 130
				\$0.075		GCSA
St. Joseph—Crossing Safety Improvements, Atchison Avenue	Safety and Crossings	Installation of gates and new circuitry at public crossing 856472M.	\$0.1	\$ —		—
				\$0.09		Section 130
				\$0.01		GCSA
Triplett—Crossing Safety Improvements, Atchison Avenue	Safety and Crossings	Installation of lights, gates, and a new crossing surface at public crossing 005286M.	\$0.3	\$ —		—
				\$0.24		Section 130
				\$0.06		GCSA
Triplett—Crossing Safety Improvements, Snyder Road	Safety and Crossings	Installation of lights, gates, and a new crossing surface at public crossing 005287U.	\$0.3	\$ —		—
				\$0.24		Section 130
				\$0.06		GCSA
Triplett—Roadway Approach Improvements	Safety and Crossings	Improvements to the roadway approaches at 3 public crossings: Atchison Avenue, Snyder Avenue, and Porche Prairie Avenue	\$0.4	\$ —		—
				\$0.36		Section 130
				\$0.04		GCSA
Hayti—Crossing Safety Improvements, Gettings Lane	Safety and Crossings	Installation of lights and gates at public crossing 665539N.	\$0.3	\$ —		—
				\$0.24		Section 130
				\$0.06		GCSA
Portageville—Crossing Safety Improvements, Rte. YY	Safety and Crossings	Installation of lights and gates at public crossing 665561B.	\$0.3	\$ —		—
				\$0.24		Section 130
				\$0.06		GCSA
Norborne—Crossing Safety Improvements, County Road 121	Safety and Crossings	Installation of lights and gates at public crossing 005324U.	\$0.25	\$ —		—
				\$0.2		Section 130
				\$0.05		GCSA
Bucklin—Crossing Safety Improvements, Meadow Road	Safety and Crossings	Installation of lights and gates at public crossing 005133J.	\$0.25	\$ —		—
				\$0.2		Section 130
				\$0.05		GCSA
Stafford—Crossing Safety	Safety and Crossings	Installation of lights and gates at public crossing 673253R.	\$0.25	\$ —		—
				\$0.2		Section 130

				Funding Levels (\$YOE in Millions) 1) Nonpublic 2) Federal 3) Non-Federal	Funding Sources 1) Nonpublic 2) Federal 3) Non-Federal
Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)		
Improvements, Farm Road 245				\$0.05	GCSA
Everton—Crossing Safety Improvements, East Dade 162	Safety and Crossings	Installation of lights and gates at public crossing 669780D.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Springfield—Crossing Safety Improvements, County Road 140	Safety and Crossings	Installation of gates at public crossing 673269M.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Bois D’Arc—Crossing Safety Improvements, Rte. UU	Safety and Crossings	Installation of gates at public crossing 669811A.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Willow Springs—Crossing Safety Improvements, County Road 5500	Safety and Crossings	Installation of lights and gates at public crossing 667851R.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Webster Groves—Crossing Safety Improvements, Big Bend Boulevard	Safety and Crossings	Installation of cantilevers at public crossing 664297S.	\$0.2	\$ —	—
				\$0.08	Section 130
				\$0.1; \$0.02	Local; GCSA
Barnhart—Crossing Safety Improvements, Marble Springs Road	Safety and Crossings	Installation of lights and gates at public crossing 663871N.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Cuba—Crossing Safety Improvements, Scott Road	Safety and Crossings	Installation of lights and gates at public crossing 664560R.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Verona—Crossing Safety Improvements, County Road 1130	Safety and Crossings	Installation of lights and gates at public crossing 664560R.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Verona—Crossing Safety Improvements, County Road 1140	Safety and Crossings	Installation of lights and gates at public crossing 673319N.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
UPRR					
Jefferson City—Crossing Safety Improvements, Industrial Drive	Safety and Crossings	Installation of lights and gates at public crossing 442661N.	\$0.25	\$ —	—
				\$0.225	Section 130
				\$0.025	GCSA

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions)	
				1) Nonpublic	Funding Sources
				2) Federal	1) Nonpublic
				3) Non-Federal	2) Federal
					3) Non-Federal
Brentwood—Crossing Safety Improvements, Brentwood Boulevard	Safety and Crossings	Installation of lights and gates at public crossing 425018L.	\$0.5	\$ —	—
				\$0.45	Section 130
				\$0.05	GCSA
UP Crossing Lighting Improvements	Safety and Crossings	Industrial lead LED upgrades at various public crossings.	\$0.2	\$ —	—
				\$0.18	Section 130
				\$0.02	GCSA
Trenton—Crossing Safety Improvements, Rte. A	Safety and Crossings	Installation of lights and gates at public crossing 605670R.	\$0.25	\$ —	—
				\$0.225	Section 130
				\$0.05	GCSA
Independence—Crossing Safety Improvements, Ferguson Spur Road	Safety and Crossings	Installation of lights and gates at public crossing 442272H.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Hillsboro—Crossing Safety Improvements, Rte. P	Safety and Crossings	Installation of gates and a new crossing surface at public crossing 445855E.	\$0.35	\$ —	—
				\$0.315	Section 130
				\$0.035	GCSA
Marshall—Crossing Safety Improvements, Watermill Road	Safety and Crossings	Installation of lights and gates at public crossing 442421G.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Campbell—Crossing Safety Improvements, County Road 214	Safety and Crossings	Installation of lights and gates at public crossing 787967X.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Fisk—Crossing Safety Improvements, County Road 691	Safety and Crossings	Installation of lights and gates at public crossing 446324L.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Dexter—Crossing Safety Improvements, Ray Street	Safety and Crossings	Installation of lights and gates at public crossing 789115B.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Poplar Bluff—Crossing Safety Improvements, County Road 603	Safety and Crossings	Installation of gates at public crossing 446276Y.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions)	Funding Sources
				1) Nonpublic 2) Federal 3) Non-Federal	1) Nonpublic 2) Federal 3) Non-Federal
Columbia Terminal Railroad (COLT)					
Columbia—New Crossing Surface, Rte. B	Safety and Crossings	Installation of new crossing surfaces at a public crossing.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Kansas City Southern (KCS)					
Kansas City—Crossing Safety Improvements, Front Street (329718F)	Safety and Crossings	Installation of lights, gates, cantilevers and a new surface at public crossing 329718F.	\$0.4	\$ —	—
				\$0.36	Section 130
				\$0.04	GCSA
Kansas City—Crossing Safety Improvements, Front Street (328709G)	Safety and Crossings	Installation of lights, gates, and cantilevers at public crossing 328709G.	\$0.4	\$ —	—
				\$0.36	Section 130
				\$0.04	GCSA
Glasgow—Crossing Safety Improvements, 8 th Street	Safety and Crossings	Installation of lights and gates at public crossing 293421U.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Blackburn—Crossing Safety Improvements, MO 20	Safety and Crossings	Installation of cantilevers, lights, and gates at public crossing 293500F.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Alma—Crossing Safety Improvements, Rte. W	Safety and Crossings	Installation of lights and gates at public crossing 293502U.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Odessa—Crossing Safety Improvements, Blue Book Road	Safety and Crossings	Installation of lights and gates at public crossing 293544F.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Marshall—Corridor Crossing Consolidation Project	Safety and Crossings	Consolidation of 7 public crossings.	\$2.85	\$ —	—
				\$2.59	Section 130
				\$0.26	GCSA
Missouri and Northern Arkansas Railroad (MNA)					
Joplin—Crossing Safety Improvements, Main Street	Safety and Crossings	Installation of new cantilevers and lights at public crossing.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions)	Funding Sources
				1) Nonpublic 2) Federal 3) Non-Federal	1) Nonpublic 2) Federal 3) Non-Federal
Joplin—Crossing Safety Improvements, Pennsylvania Avenue	Safety and Crossings	Installation of new gate mechanisms and circuitry at public crossing 669436C.	\$0.1	\$ —	—
				\$0.09	Section 130
				\$0.01	GCSA
Joplin—Crossing Closure, 5 th Street	Safety and Crossings	Permanent closure of public crossing 669556T.	\$0.1	\$ —	—
				\$ —	—
				\$0.1	GCSA
Joplin—New Crossing Surfaces	Safety and Crossings	Installation of new crossing surfaces at 6 public crossings.	\$0.39	\$ —	—
				\$0.35	Section 130
				\$0.034	GCSA
Jasper—Crossing Safety Improvements, Rte. M	Safety and Crossings	Installation of gates at public crossing 443252A.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Jasper—Crossing Safety Improvements, MO 126	Safety and Crossings	Installation of gates and cantilevers at public crossing 443233V.	\$0.35	\$ —	—
				\$0.28	Section 130
				\$0.07	GCSA
Clinton—New Crossing Surfaces	Safety and Crossings	Installation of new crossing surfaces at 9 public crossings.	\$0.59	\$ —	—
				\$0.53	Section 130
				\$0.06	GCSA
Galena—Crossing Safety Improvements, Railey Creek Road	Safety and Crossings	Installation of lights and gates at public crossing 435055R.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Harrisonville—Crossing Safety Improvements, County Road 263	Safety and Crossings	Installation of gates at public crossing 443014G.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Pleasant Hill—Crossing Safety Improvements, Rte. P	Safety and Crossings	Installation of gates and cantilevers at public crossing 442998S.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Arkansas and Missouri Railroad (AM)					
Seligman—Crossing Upgrades and Closures	Safety and Crossings	Upgrade of three public crossings and permanently closing two public crossings.	\$1	\$ —	—
				\$0.8	Section 130
				\$0.2	GCSA

			Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions)	Funding Sources
Project Title	Need Addressed	Project Description		1) Nonpublic 2) Federal 3) Non- Federal	1) Nonpublic 2) Federal 3) Non- Federal
Washburn— Crossing Safety Improvements, MO 90	Safety and Crossings	Installation of lights, gates, and new surface at public crossing 667062C.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA
Norfolk Southern (NS)					
Hardin—Crossing Safety Improvements, Hisinger Lake Road (483824H)	Safety and Crossings	Installation of lights and gates at public crossing 483824H.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Henrietta— Crossing Safety Improvements, Main Street	Safety and Crossings	Installation of lights and gates at public railroad crossing 483840S.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Monroe City— Crossing Safety Improvements, Buckeye Road	Safety and Crossings	Installation of lights and gates at public crossing 480653Y.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Holliday—Crossing Safety Improvements, County 217	Safety and Crossings	Installation of lights and gates at public crossing 480700E.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Clark—Crossing Safety Improvements, County Road 2795	Safety and Crossings	Installation of lights and gates at public crossing 483677X.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Keytesville— Crossing Safety Improvements, Cal Hubbard Avenue	Safety and Crossings	Installation of lights and gates at public crossing 483753N.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Brunswick— Crossing Safety Improvements, County Road 403/ Bourgmond	Safety and Crossings	Installation of lights and gates at public crossing 483767W.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Norborne— Crossing Safety Improvements, County Road 121 (483823B)	Safety and Crossings	Installation of lights and gates at public crossing 483823B.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Moberly—Crossing Safety Improvements, Coates Street	Safety and Crossings	Installation of lights and gates at public crossing 483697J.	\$0.3	\$ —	—
				\$0.24	Section 130
				\$0.06	GCSA

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Funding Levels (\$YOE in Millions)	Funding Sources
				1) Nonpublic 2) Federal 3) Non-Federal	1) Nonpublic 2) Federal 3) Non-Federal
Hannibal—Crossing Safety Improvements, Ely Road	Safety and Crossings	Installation of lights and gates at public crossing 480611M.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Kaw River Railroad (KAW)					
Kansas City—Crossing Lighting and Safety Improvements	Safety and Crossings	Installation of LED streetlights and Crossbuck Stop Yield assemblies at a public crossing.	\$0.1	\$ —	—
				\$0.09	Section 130
				\$0.01	GCSA
Central Midland Railway (CMR)					
Villa Ridge—Crossing Safety Improvements, E. Villa Ridge Road	Safety and Crossings	Improvements to the roadway approaches at public crossing 596283W.	\$0.2	\$ —	—
				\$0.18	Section 130
				\$0.02	GCSA
Maryland Heights—Crossing Safety Improvements, Dorsett Road	Safety and Crossings	Improvements to the roadway approaches at public crossing 596283W.	\$0.1	\$ —	—
				\$0.09	Section 130
				\$0.01	GCSA
Maryland Heights—Crossing Safety Improvements, Warson Road	Safety and Crossings	Installation of gates at public crossing 596323S.	\$0.25	\$ —	—
				\$0.2	Section 130
				\$0.05	GCSA
Maryland Heights—Crossing Safety Improvements, Prichard Farm Road	Safety and Crossings	Installation of lights, gates, a new crossing surface, and roadway improvements at public crossing 596336T.	\$0.5	\$ —	—
				\$0.45	Section 130
				\$0.05	GCSA
Belton, Grandview and Kansas City Railroad (SHRX)					
Belton—Crossing Safety Improvements, Rte. Y	Safety and Crossings	Installation of new circuitry public railroad crossing 672195U.	\$0.05	\$ —	—
				\$0.045	Section 130
				\$0.005	GCSA
Other					
St. Louis—InBev/ Prairie Rail Crossing Improvements, Broadway	Safety and Crossings	Installation of new circuitry and crossing surface at a public crossing.	\$0.5	\$ —	—
				\$0.45	Section 130
				\$0.05	GCSA

The investments presented here are improvements to existing rail and passenger stations, except for new, limited rail infrastructure at the SEMO Port (Southeast Missouri Regional Port Authority) intended to connect to the existing interstate rail network. Safety improvements are presented in Table 14 by rail carrier. Improved efficiency on the State's rail network is the purpose of establishing a second main line from Lee's Summit to Strasburg, adding crossovers at Hermann and Bonnots Mill and adding a new siding track at Holden and Knob Noster.

Two projects on the TRRA Merchants Subdivision in St. Louis address deficiencies with aging infrastructure. Continued investments in Merchants Bridge are needed to maintain this critical link in the national rail system. The structure spans the Mississippi River and effectively links the eastern and western U.S. rail networks. Due to its importance, replacement of the bridge was labeled a top priority by State, local, and private partners alike.

Long-Term Capital Rail Investment Program

In addition to the short-term projects detailed above, long-term improvements have been identified through statewide needs analysis and are in line with statewide rail goals and objectives. Estimated ranges have been developed for the capital costs of projects provided in the long-term except for three programmed safety improvements which are already programmed. These improvements have been placed in the long-term as they fall outside of the four-year window to be considered in the short-term.

Details on long-term rail investment projects can be found below in Table 15. Where estimated capital costs were available, but no funding source yet identified, funding levels were produced using an assumption of 80 percent Federal dollars and 20 percent non-Federal public funds.

TABLE 15. LONG-TERM CAPITAL RAIL INVESTMENT PROGRAM

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Potential Funding Levels (\$YOE in Millions)
				1) Nonpublic 2) Federal 3) Non-Federal
Second Main Line—Lee's Summit to Strasburg	Infrastructure	Double track from Lee's Summit to Strasburg to improve capacity for both passenger and freight rail traffic.	\$120 – \$140	\$ —
				\$96 – \$112
				\$24 – \$28
Hermann—Universal Crossover	Infrastructure	Installation of a universal crossover to improve passenger and freight rail operations.	\$6 – \$8	\$ —
				\$4.8 – \$6.4
				\$1.2 – \$1.6
Bonnots Mill—Universal Crossover	Infrastructure	Installation of a universal crossover to improve passenger and freight rail operations.	\$7.3	\$ —
				\$5.8
				\$1.5
Holden—Siding	Infrastructure	New siding track to improve passenger and freight rail capacity.	\$16 – \$18	\$ —
				\$12.8 – \$14.4
				\$3.2 – \$3.6

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Potential Funding Levels (\$YOE in Millions)
				1) Nonpublic 2) Federal 3) Non-Federal
Knob Noster—Siding	Infrastructure	New siding track to improve passenger and freight rail capacity.	\$15 – \$16	\$ —
				\$12 – \$12.8
				\$3 – \$3.2
Poplar Bluff—Station Upgrades	Station	Updates to the station building and amenities to modernize and improve structural longevity.	\$2.2	\$ —
				\$1.8
				\$0.4
Jefferson City—Third Main Line	Infrastructure	Addition of a third main line track to increase fluidity through Jefferson City yard.	\$12 – \$14	\$ —
				\$9.6 – \$11.2
				\$2.4 – \$2.8
Independence Street Bridge (Kansas City) Improvements	Infrastructure	Bridge work to enhance freight and passenger rail service.	\$25 – \$30	\$ —
				\$20 – \$24
				\$5 – \$6
Jefferson City—New Station	Station	Development of a new Jefferson City station necessary due to structural issues at the current station.	\$14.4	\$2.88
				\$11.52
				\$ —
Pleasant Hill to Jefferson City—Second Main Line	Infrastructure	PE/NEPA for Addition of a second track to enhance capacity.	\$10	\$ —
				\$8
				\$2
New Bourbon Port—Rail Improvements	Intermodal Network, Facilities and Connectivity	Construction of rail siding track to service the dock area.	\$11.2	\$ —
				\$9.0
				\$2.2
Pike/Lincoln Port—Improvements	Intermodal Network, Facilities and Connectivity	Engineering for dock and rail improvements.	\$1.03	\$ —
				\$0.82
				\$0.21
Jefferson County Port Development	Intermodal Network, Facilities and Connectivity	Property Acquisition, rail design, permitting, site work and rail construction to create a public freight port on the Mississippi River.	\$242.5	\$ —
				\$194
				\$48.5
Lilbourn Industrial Park—Rail Improvements	Funding for Spurs Serving Local Businesses	Construction of a Lilbourn Industrial Park rail spur.	\$1.0 – \$2.0	\$ —
				\$0.8 – \$1.6
				\$0.2 – \$0.4
Stoddard County Industrial Park—Rail Improvements	Funding for Spurs Serving Local Businesses	Construction of a Stoddard County Industrial Park rail spur.	\$1 – \$2	\$ —
				\$0.8 – \$1.6
				\$0.2 – 0.4

Project Title	Need Addressed	Project Description	Estimated Capital Cost (\$YOE in Millions)	Potential Funding Levels (\$YOE in Millions)
				1) Nonpublic 2) Federal 3) Non-Federal
COLT Railroad—Transload Facility Improvements	Intermodal Network, Facilities and Connectivity	Expansion of the transload facility to accommodate increased capacity.	\$1.5	\$ —
				\$1.2
				\$0.3
COLT Railroad—Capacity Improvements	Track Capacity	Increase in the rail gauge to accommodate heavier loads.	\$0.9	\$ —
				\$0.72
				\$0.18
KCT North-South Corridor Improvements	Track Capacity	Realignment and raising of existing track and the creation of a new third track.	\$23	\$ —
				\$72
				\$4.6
St. Louis City Port—Rail Improvements	Intermodal Network, Facilities and Connectivity	Upgrades to the north rail yard.	\$0.45	\$ —
				\$0.36
				\$0.09
TRRA Tunnel Arch Riverfront Dewatering	Bottlenecks and Constraints	Installation of wells and pumps to abate flood waters limiting water in the tunnel to allow for continued operation.	\$8 ¹	1
				1
				1
Sedalia Station Bicycle/Pedestrian Improvements	Modal Connectivity	Addition of bicycle and pedestrian facilities connecting Sedalia's Amtrak station with the historic Katy Depot.	\$0.99	\$ —
				\$0.79
				\$0.20
Warrensburg Station Bicycle/Pedestrian Improvements	Modal Connectivity	Addition of a sidewalk and ADA-compliant facilities at Warrensburg's Amtrak station.	\$0.27	\$ —
				\$0.22
				\$0.05
Carrollton Amtrak Station	Unserved and Underserved Communities	Creation of a new Amtrak station between Kansas City and La Plata to be served by the Southwest Chief.	\$2.28	\$ —
				\$1.82
				\$0.46
West Plains—Railroad Overpass	Intermodal Network, Facilities and Connectivity	Construction of a railroad overpass on Howell Avenue.	\$12	\$ —
				\$9.6
				\$2.4
West Meadows Yard—Track Realignment	Track Capacity	Realignment of track in the West Meadows Yard.	\$5.8	\$ —
				\$4.64
				\$1.16
COLT Railroad—I-70 Bridge Repair	Safety and Crossings	Repair of the COLT bridge over I-70.	\$1.2	\$ —
				\$0.96
				\$0.06

			Estimated Capital Cost (\$YOE in Millions)	Potential Funding Levels (\$YOE in Millions) 1) Nonpublic 2) Federal 3) Non-Federal
Project Title	Need Addressed	Project Description		
Aurora Organic Dairy—Rail Spur	Funding for Spurs Serving Local Businesses	Creation of a rail spur to access Aurora Organic Dairy.	\$1.41	\$ —
				\$1.13
				\$0.28
Clinton—Rail Expansion	Funding for Spurs Serving Local Businesses	Expansion of rail to new industrial site at Rte. 52 and Vansant Road.	\$2.5	\$ —
				\$2
				\$0.5
Montrose—Rail Expansion	Funding for Spurs Serving Local Businesses	Expansion of rail infrastructure.	\$1	\$ —
				\$0.8
				\$0.2
Highway-Rail Crossing Projects ²				
Butler—Corridor Safety Improvements	Safety and Crossings	Installation of lights and gates at 3 public crossings and the permanent closure of 2 public crossings.	\$1	\$ —
				\$0.68
				\$0.32
Ashbury—Crossing Safety Improvements	Safety and Crossings	Installation of lights and gates at 1 public crossing and closure of 1 public crossing.	\$0.5	\$ —
				\$0.4
				\$0.1
Greene County—Crossing Consolidation and Upgrade	Safety and Crossings	Consolidation of 3 public rail crossings and accompanying safety upgrades.	\$0.75	\$ —
				\$0.6
				\$0.15

Source: MoDOT.

¹ Construction costs could be significantly lower than this figure produced in 2020 depending on test well infiltration rates.

Note: An 80 – 20 Federal-local split has been assumed where funding is not dedicated or otherwise known.

² These projects are programmed in the final year of the 2022 – 2026 STIP (Appendix A), placing them outside of the short term as defined for this plan. These projects have been allocated funding for SFY 2026. Note: An 80 – 20 Federal-local split has been assumed where funding is not dedicated or otherwise known

6.0 Coordination and Review

MoDOT recognizes the importance of support from railroads, shippers, and rail travelers alike for the success of this Freight and Rail Plan. Opportunities for stakeholder and public engagement were offered to provide a space for public input while attempting to garner support for the plan's rail vision. In the development of this plan, MoDOT sought to increase understanding of rail transportation in the State while strengthening partnerships with public and private stakeholders.

6.1 Approach to Public and Agency Participation

A variety of opportunities was offered to the public and agencies to engage in the creation of the Statewide Freight and Rail Plan. Given the state and local guidance to combat COVID-19 during the time engagement was taking place, most efforts to engage with agencies, elected officials, and the public took place in an online setting. A Public Stakeholder Involvement Plan was created prior to the engagement process to receive buy-in on the methods used. The MoDOT project team created an approach that included four industry forums, four regional stakeholder meetings, one open house, two steering committee meetings, a public survey, various stakeholder interviews, various social media releases, a project website, and direct contact with partner agencies.

The industry forums and stakeholder meetings took place using the online platform Zoom. The project team utilized the Public Involvement Management Application (PIMA) to record, track, and survey responses and public comments that were collected during the open house period. The project team also used PIMA to collect participant information as they signed into the open house. This allowed the team to monitor where statewide participation was coming from and focus greater attention to promoting the plan in areas that were not seeing reasonable levels of participation.

Fliers, as shown in Figure 10, were sent to rail stations, RPCs, and MPOs to promote public participation in the plan. The project team also utilized MoDOT's Facebook and Twitter pages to promote participation in the stakeholder meetings and the virtual open house. Posts and fliers were sent out weeks before and during the engagement period to remind people to participate.

6.2 Coordination with Neighboring States

Emails and phone calls were made to neighboring State organizations, elected officials, and industry leaders inviting them to participate in the industry forums, stakeholder meetings, and steering committee meetings. Participants from neighboring States included:

- Illinois DOT
- Iowa DOT
- Kansas DOT
- Nebraska DOT
- Johnson County, Kan. Government
- Nebraska State Patrol
- Nebraska Energy Office
- Grand Island, Neb. MPO
- Corridor, Iowa MPO (Cedar Rapids, Iowa)
- Des Moines, Iowa MPO
- Illinois Soybean Association
- Nebraska Farm Bureau
- Greater Omaha, Nebraska Chamber
- Iowa State University
- Nebraska Public Power District

6.3 Stakeholder Engagement

MoDOT conducted four industry forums between February 23, 2021 and March 2, 2021, via Zoom covering the topics of agriculture/agribusiness; freight carriers; warehousing and distribution; and shippers and manufacturers. Industry leaders in these areas were identified and invited to join the discussions. Approximately 70 industry leaders from the public and private sectors attended these forums designed to cover specific topics and gain feedback. Input was used to identify freight assets, refine the freight transportation needs assessment, and finalize the Missouri Priority Freight Network.

Four regional stakeholder meetings took place that focused on four different regions in the State of Missouri. Regional Meetings were held in the Northwest, St. Louis/Southeast, Kansas City/Central and Southwest on May 4, 5, 11, and 13 from 9 a.m. to 11 a.m. The objectives of the meetings were to gather insight, input, and feedback from Missouri planners and policy-makers on regional economic and industry trends, as well as important freight transportation needs.

In addition to industry forums, regional meetings were held on May 4, 5, 11, and 13, 2021. Email notices were sent out to all local, county, regional, and State officials to invite them to participate. Approximately 155 local and regional planning partners joined these talks. The objectives of the meetings were to gather insight, input, and feedback from Missouri planners and policy-makers on regional economic and industry trends, as well as important freight transportation needs.

FIGURE 10. VIRTUAL PUBLIC OPEN HOUSE FLIER



The Missouri Department of Transportation is hosting a virtual public open house on passenger rail as part of the development of the 2021 State Freight and Rail Plan. Learn more about Missouri's passenger rail network, ask questions to MoDOT and the Project Team and share your thoughts on how passenger rail service can better serve the citizens of Missouri. The information will be available from May 4 to June 16, 2021. You can participate in the open house by scanning the QR code or visiting:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

**SCAN HERE
TO GET STARTED!**



MoDOT also hosted a virtual passenger rail public open house from May 3 to June 11, 2021, via MoDOT's website. About 232 members of the public attended the virtual open house. The content included:

- The purpose and schedule of the SFRP.
- Goals and objectives of the SFRP.
- MoDOT's role in passenger rail.
- Existing passenger rail conditions throughout the State.
- On-time performance (OTP) and funding for passenger rail.
- The economic impact of passenger rail line.

Lastly, two steering committee meetings were hosted on August 17, 2020, and November 17, 2020. The purpose of the meetings was to get feedback on the development of the Rail Plan and seek out ideas for policy and implementation from industry experts in various freight and rail capacities around the State and nationally.

6.4 Issues Raised

The summary below captures the most common issues noted by the public during the virtual open house:

- Accessibility.
- Convenience.
- Service Times.
- Routes.
- Right-of-Way.

The common themes from the four stakeholder meetings that were conducted in May of 2021 included:

- The need for multimodal connections in all districts (including increased access to ports).
- The future of electric vehicles, charging stations, and how that could affect the gas tax.
- Partnering with nearby States as most of the freight traveling in the State goes through the State and Missouri is not its destination.

The common themes from the four industry forums that took place in February and March of 2021 included:

- Deficient structures on and along the Missouri River.
- Agriculture imports and exports via ports.
- Airports in relation to agriculture.
- Improved freight and rail lines between Kansas City and St. Louis.
- Engaging railroads early in the planning process.
- More at-grade separations of roads and railroad lines.
- The need to work with the State on river crossings and adding ports.
- Truck parking is a major challenge.
- How future funding relates to the SFRP.
- Connectivity between rural and urban ports seeming better from the urban perspective than from the rural perspective.
- Growing and expanding ports in rural areas.
- Exploring technology in more detail in the recommendations and strategies.
- Improving crash clearance zones and predetermined detour routes.
- Access between urban and rural areas.
- Safety, technology, mobility and reliability, asset preservation, and rural highways.
- Increased access to truck parking.
- The need for improvements at Highway 6 east of Kirksville and U.S. 63.
- Peak-hour travel reliability.
- A focus on economic development.

Responses to questions and comments at industry forums and stakeholder workshops were done at those meetings. Questions and comments that were received through the online open house requiring a response were done so through either a phone call or email, depending on the preference of the individual(s) requesting the response.

Those areas and questions and issues raised help the project team understand issues and influence how priorities and goals are identified.

6.5 Consideration of Feedback

MoDOT reviewed and categorized all comments and recommendations received throughout the public outreach process to inform this plan's direction and identify specific needs. Sentiments expressed by the public helped MoDOT craft the passenger and freight rail needs. Public comments and information shared by rail carriers also helped in the development of the long-term rail investment program. Details on stakeholder outreach efforts for this plan are provided in **Missouri Freight & Rail Profile—Volume 2**. Regardless of the source, feedback received during the development of this plan helped confirm the importance of known investments and system goals. Recommended actions which have been incorporated into this plan include:

- Continued State support of the Missouri River Runner service.
- Further study of new and expanded passenger rail services, including service between Kansas City and southwestern Missouri communities.
- Continued partnerships between rail carriers and MoDOT to secure Federal funding for rail improvements.
- Emphasis on improving multimodal facilities using public private partnerships.
- Work with Amtrak to better accommodate bicycles on Missouri River Runner trains.

6.6 Coordination of Rail with Other Planning Efforts

MoDOT coordinated with MPOs, city/town representatives, county officials, and other government entities in the State of Missouri and neighboring States so that the plan includes thoughts from stakeholders who would be impacted by the plan's recommendations. This plan was further coordinated with internal processes, including the statewide long-range transportation plan and statewide transportation improvement program. The vision, goals, and objectives for this rail plan were developed to align with the sentiments expressed in the LRTP. Regional and metropolitan transportation plans were consulted for insights into granular local transportation conditions and future needs. More information on coordinated planning efforts can be found in Section 5.2.