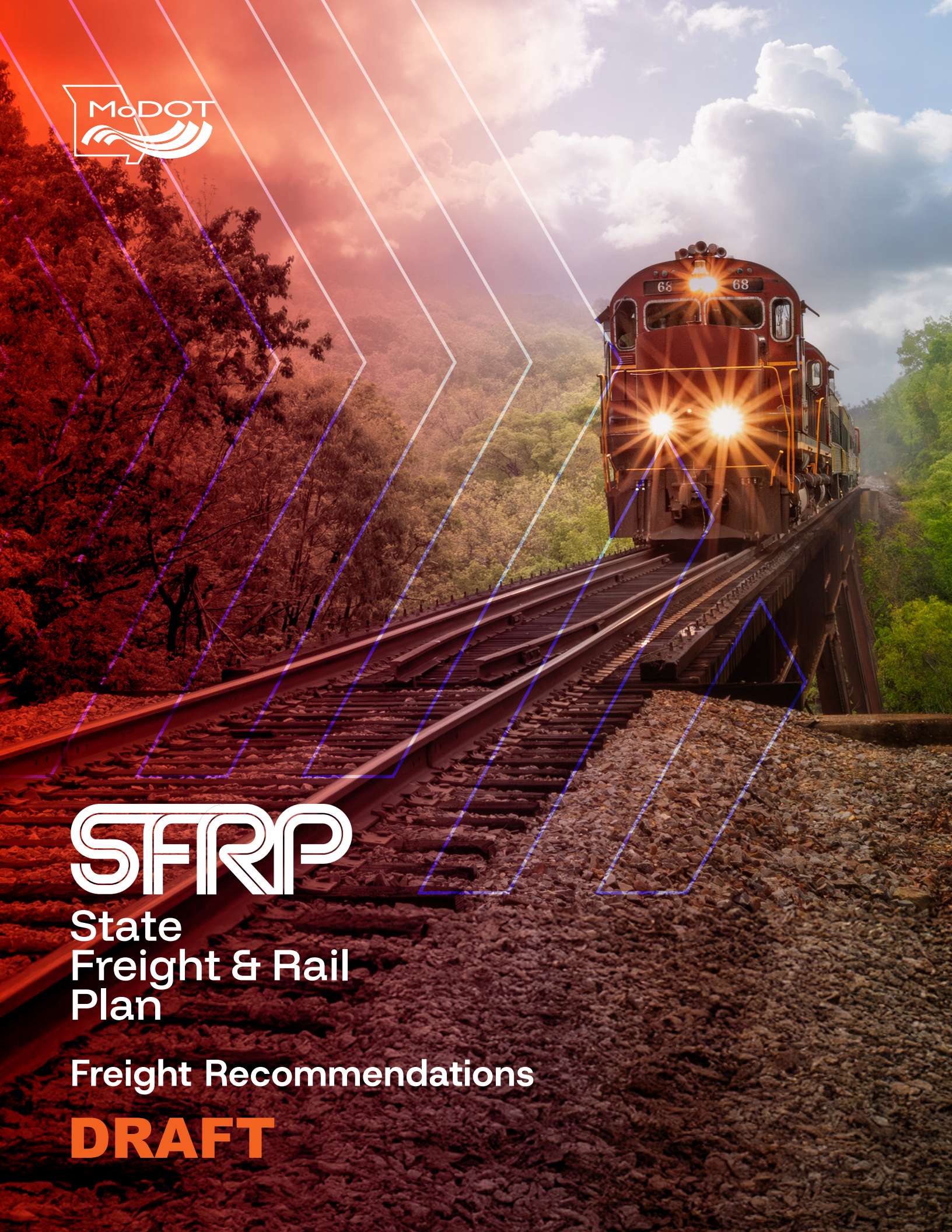


SFRP

State Freight & Rail Plan

Freight Recommendations

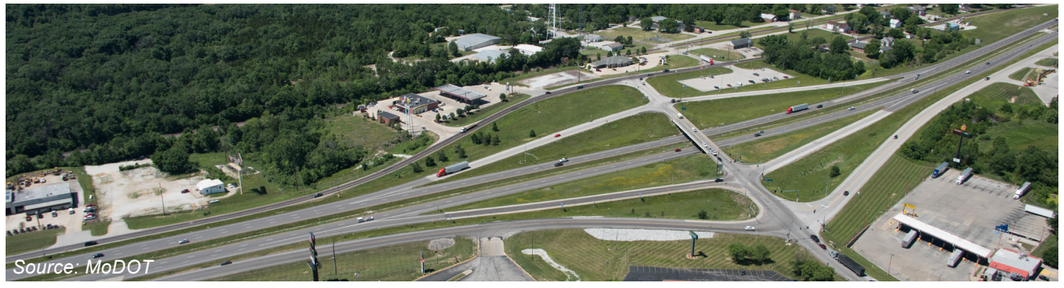
DRAFT

Introduction

This chapter presents a set of strategic, actionable recommendations that advance Missouri's freight system in alignment with federal freight planning guidance and the goals of the NMFN. These recommendations identify infrastructure improvements, policies and operational innovations that strengthen Missouri's contribution to national economic competitiveness; reduce congestion and eliminate bottlenecks; improve safety, security, efficiency and resiliency; and enhance the productivity and reliability of freight movement for industries that support high-value jobs.

The recommendations reflect analyses of system conditions, freight bottlenecks, modal integration, future demand and performance gaps, as well as opportunities to improve modal shift for both short and long distance movements across rural and urban corridors. They emphasize strategies to achieve and maintain a state of good repair, reduce heavy-vehicle impacts on critical roadways, improve first/last-mile connectivity between ports, airports, gateways and the National Multimodal Freight Network (NMFN) reduce the environmental impacts of freight movement. Stakeholder and regional input helped refine these priorities and support their relevance to Missouri's freight shippers, carriers and communities.

Recommendations are organized into four categories — Policy, Operations, Project Development and Capital Improvements and Communications — the recommendations support multi-state corridor coordination, enhance multimodal connectivity and position Missouri to leverage innovation and advanced technologies to improve safety, efficiency and reliability. They also reflect the need for implementable, high-value strategies that are not burdensome to state or local governments and that align with federal discretionary grant programs in an environment of variable funding availability.



Source: MoDOT

Policy

Recommendation: Continue monitoring Truck Parking Information Management System (TPIMS) and Truck Parking Availability System (TPAS) efforts nationwide to evaluate whether these technologies are appropriate and cost-effective for implementation in Missouri.

Discussion: Missouri continues to have a large deficit of truck parking spaces across the system. States across the country are piloting technology-based solutions to more effectively use the available safe and reliable truck parking. Some states have identified issues related to reliability and long-term maintenance of existing technology-based information systems. Missouri trucking industry stakeholders consistently noted a preference for increasing inventory of spaces significantly before implementing an electronic system. Until a significant number of truck parking spaces are added to Missouri's inventory, monitoring efforts in other states can help The Missouri Department of Transportation (MoDOT) identify best practices and continued advancements in artificial intelligence (AI) before committing to a system. MoDOT may explore public-private partnerships or cooperative data-sharing agreements, consistent with its statutory authority and procurement policies, to enhance system efficiency and reduce implementation costs. Existing third-party platforms such as Trucker Path and Dock411 offer crowd-sourced parking data that could inform or supplement future state-led systems. Insights from these efforts, along with findings from the **4.02 Truck Parking Analysis Technical Memorandum** should guide any future technology investments.

Action Items:

- Track TPIMS/TPAS pilot outcomes and funding mechanisms in peer states and freight corridors.
- Engage third-party platform providers to assess integration opportunities and data-sharing protocols.
- Evaluate long-term maintenance, funding and interoperability requirements before pursuing a pilot program or funding.
- Revisit feasibility as part of future MoDOT freight plan and statewide truck parking plan updates.

Missouri SFRP Goals:

- ***Prosperous –*** *Increase partnership coordination with local communities, regional and metropolitan organizations, businesses, transportation service providers and other sectors to identify what transportation projects can better support local economies.*
- ***Reliable –*** *Take a practical/life cycle approach to highway system capacity expansion.*
- ***Innovative –*** *Explore technology and develop business practices that result in lower life-cycle costs.*

Recommendation: Increase reliable investment in first- and last-mile non-highway freight infrastructure to reduce highway congestion and improve statewide system efficiency.

Discussion: Modal stakeholders consistently emphasized that lack of capital funds to support non-highway freight movement was limiting the efficiency of Missouri's freight system. Missouri's Freight Enhancement Program (FRE) was highlighted as an example of a critical tool for supporting multimodal freight investments that improve reliability and reduce highway congestion. The program's quick turnaround and ease of application were highlighted as positives with calls for substantial expansion of the available funds. FRE has enabled ports, railroads and airports to complete small but high-impact projects that enhance freight connectivity, safety and economic competitiveness. Stakeholders noted that many freight projects—such as cargo aprons, rail spurs and port access improvements—are not competitive for federal programs, which typically prioritize passenger or highway-centric infrastructure. Increasing flexible, state-level funding for multimodal needs would strengthen the supply chain resilience and statewide freight mobility. This recommendation also aligns with regional priorities outlined in the St. Louis Freightway Freight Development Plan and the Mid-America Regional Council (MARC) Connected Freight Kansas City (KC) 2050 Plan, both of which emphasize increased investment in first- and last-mile connectivity, intermodal access and industrial site readiness. Increasing available funds can help advance regional priority freight projects identified in these plans, supporting coordinated multimodal development across Missouri's economic centers. Additional details are provided in **Freight Condition and Performance Chapter.**

Action Items:

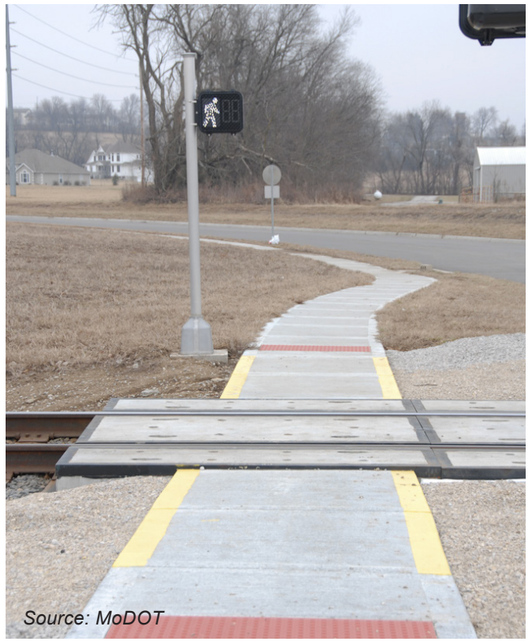
- Evaluate opportunities to increase annual FRE appropriations or development of a new larger non-highway grant program for first- and last-mile freight investments through complementary fundings sources (e.g., legislative allocation, public-private cost-share).
- Prioritize projects that improve multimodal connectivity and enhance economic competitiveness.
- Support short line tax credit state legislation that encourages investment in Class III rail lines.
- Track FRE project outcomes using consistent performance metrics to demonstrate program effectiveness.
- Flex a portion of the National Highway Freight Program (NHFP) funds to non-highway freight projects as permitted by Title 23 U.S. Code Section 167.

Missouri SFRP Goals:

- ***Stewardship -*** *Explore and secure stable funding to support the current system and services for each mode of transportation.*
- ***Reliable -*** *Provide reliable and accessible multimodal transportation options for all users.*
- ***Innovative -*** *Identify and plan for alternative funding sources to recoup gas tax revenue lost from alternatively fueled vehicles and to supplement gaps in federal funding programs.*

Recommendation: Modify at-grade railroad crossing prioritization framework to incorporate approach grades and other physical factors that hinder sightlines and increase safety risks.

Discussion: MoDOT uses an exposure index and the Federal Railroad Administration (FRA) accident prediction formula as the primary factors to prioritize crossing projects. Approach grades that hinder sightlines increase safety risks. Modifying the Section 130 program's methodology would allow Missouri to target investments more effectively, reduce crash risk, mitigate bottlenecks and adopt next-generation technologies that improve safety and mobility at crossings. This action aligns with the Show-Me Zero Plan and the Highway-Rail Grade Crossing State Action Plan (2022-2026), both of which emphasize proactive risk reduction through engineering upgrades, education and public outreach. This recommendation also complements MARC's data-driven approach to freight corridor safety.



Source: MoDOT

Action Items:

- Review the existing Section 130 prioritization criteria to identify gaps related to approach grade and visibility conditions.
- Coordinate with the FRA and peer Departments of Transportation (DOTs) to identify best practices for incorporating geometric risk factors into crossing safety programs.
- Pilot new data collection or assessment tools (e.g.,Light Detection and Ranging (LiDAR), Geographic Information System (GIS) based slope analysis) to quantify sightline limitations.
- Update internal procedures and prioritization models to verify that future safety investments address both historical crash data and proactive risk indicators.

Missouri SFRP Goals:

- ***Safe -*** *Invest in system-wide safety improvements to reduce fatalities and serious injuries for all modes.*
- ***Reliable -*** *Increase reliability of the transportation system in bottleneck areas.*
- ***Innovative -*** *Understand and deploy innovative work zone warning and protection devices.*

Recommendation: Establish a coordinated statewide freight data and governance framework to support continuous collaboration among MoDOT, Metropolitan Planning Organizations (MPOs), Regional Planning Commissions (RPCs), ports, railroads and private-sector partners.

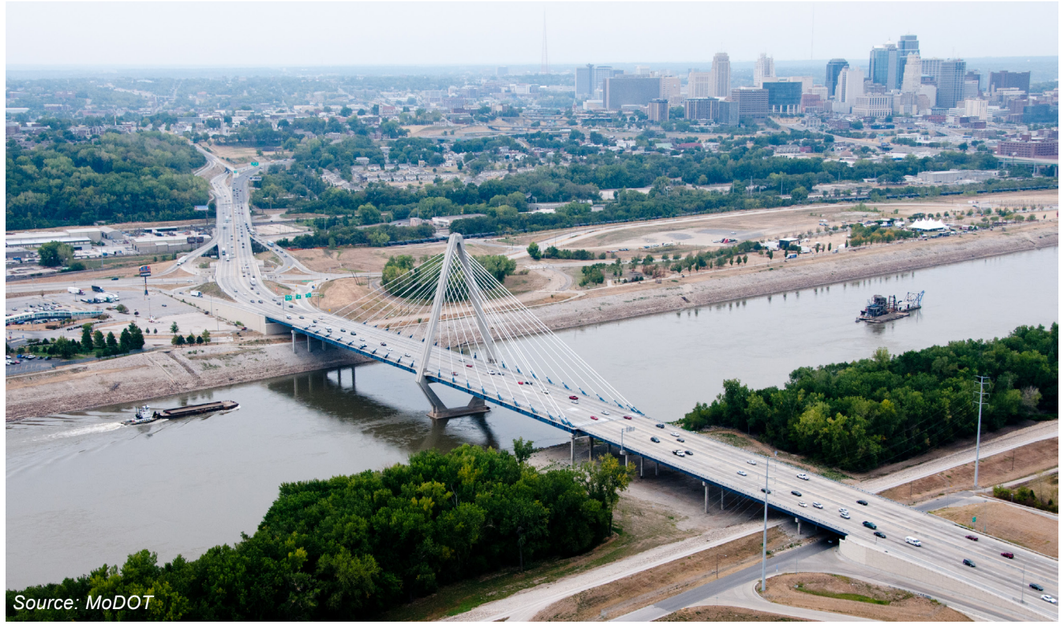
Discussion: Regional freight plans highlight the importance of institutional coordination to sustain effective multimodal planning and data-sharing. Missouri can lead freight planning by providing structure for a statewide practitioner freight team to integrate state, regional and private-sector freight datasets; coordinate project prioritization; and monitor performance outcomes. This would align with MARC's Connected Freight KC 2050 call for an expanded Goods Movement Committee and strengthen MoDOT's statewide leadership role in freight planning.

Action Items:

- Convene a standing freight practitioner's working group to support regional freight planning.
- Develop standardized data protocols for sharing commodity flows, truck GPS and port/rail volumes.
- Integrate data from regional freight plans into MoDOT Tracker and freight dashboards.

Missouri SFRP Goals:

- ***Stewardship -*** *Preserve the assets and services currently in place by fostering data transparency, sharing and coordination among all stakeholders.*



Source: MoDOT

Operations

Recommendation:: Incorporate trucking industry perspectives into work-zone standard protocols for construction and maintenance operations to improve freight safety and reliability.

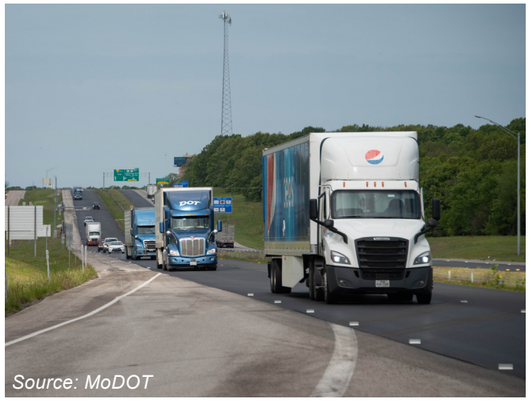
Discussion: MoDOT has standardized protocols used to plan work zones. The trucking industry emphasized that inconsistent work zones, limited real-time communication and substantially reduced lane width can create safety risks and operational inefficiencies for commercial drivers. Stakeholders cited examples along major freight corridors—particularly the I-70 projects—where temporary concrete barriers were struck or displaced, narrowing travel lanes and creating hazards for trucks. Establishing statewide work zone practices that consistently incorporate trucking industry perspective and improving real-time communication about active construction can help improve safety, reduce uncertainty and maintain freight mobility during construction activities. MARC's Connected Freight KC 2050 Plan highlights corridor reliability and consistent operations as key freight mobility goals. Implementing standardized work-zone practices will help achieve those objectives and reduce delays for freight carriers across the Kansas City region and statewide.

Action Items:

- Engage freight carriers and driver associations in work zone safety standards, protocols and best practices to identify recurring issues and recommended improvements.
- Expand smart work zones Intelligent Transportation Systems (ITS) technology and its integration into drivers' GPS notification systems.
- Evaluate whether planned freight detour routes should be incorporated into work zone standards to increase freight reliability on freight corridors.

Missouri SFRP Goals:

- ***Reliable –*** *Maintain a transportation network that is efficient and dependable.*



Source: MoDOT

Recommendation: Identify and implement strategies for improving freight resiliency through innovative operation enhancements and improving infrastructure on key corridors and freight facilities.

Discussion: To promote infrastructure resilience and operational continuity, MoDOT can incorporate a more proactive, data-driven and technology-enabled strategy. Investing in real-time monitoring systems, adaptive infrastructure and innovative approaches such as the use of AI, can lead to faster response times and reduce the duration and cost of disruptions. Planning for Freight resiliency was also identified as a strategic priority in MARC's Connected Freight KC 2050 Plan and peer-state freight plans reviewed in **Missouri's Context Chapter.** These emphasize proactive planning for weather events, infrastructure redundancy and coordinated response capabilities — frameworks Missouri can build upon through this recommendation.

Action Items:

- Conduct a freight system resiliency assessment to identify vulnerable corridors, facilities and intermodal connectors.
- Pilot technology-based solutions (e.g., predictive analytics, remote sensing, automated inspections) to support real-time monitoring and response.
- Coordinate with ports, railroads and airports to share data and develop joint contingency plans for critical disruptions.
- Integrate freight resiliency goals and metrics into MoDOT's long-range planning and performance reporting processes.

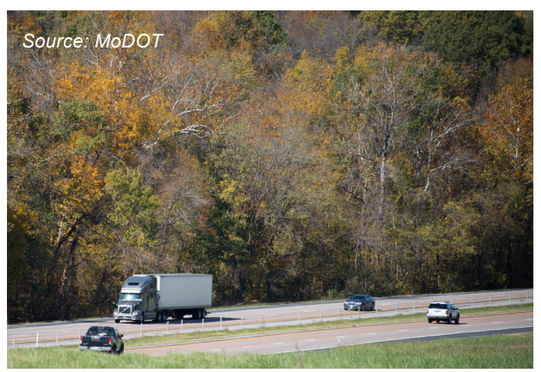
Source: MoDOT

Missouri SFRP Goals:

- ***Reliable -*** *Enhance emergency and alternative routes; Enhance transportation infrastructure resilience to maintain the movement of people and goods during traffic disruptions.*
- ***Innovative -*** *Explore technology and develop business practices that result in lower life-cycle costs. Integrate traffic management systems and vehicle detection systems to monitor and improve traffic congestion.*

Recommendation: Work with regional planning organizations to identify locations needed for truck staging to reduce congestion, unauthorized parking and improve effectiveness of state-provided long-term parking.

Discussion: Freight generators often limit truck pickup and delivery to specified appointment times. In urban areas where authorized parking is limited, drivers often choose to wait at MoDOT-owned truck parking facilities far from the freight generator, reducing the available parking spaces for drivers stopping due to Hours of Service regulations. Then when traveling to the freight generator the truck is operating during peak congestion times on the roadway, decreasing the driver's available time to carry cargo and unnecessarily contributing to peak congestion. If truck staging areas are located at or near the freight generators, the drivers can better plan trips to effectively use available Hours of Service (HOS) and travel to these staging areas outside of peak congestion. This effort complements MARC's corridor analysis and freight data initiatives, which use similar metrics to identify staging areas and parking needs along key urban freight corridors. More detailed information is contained in the **4.02 Truck Parking Analysis Technical Memorandum.**



Source: MoDOT

Action Items:

- Analyze statewide GPS and American Transportation Research Institute (ATRI) truck movement data to identify high-frequency stopping locations with one- to seven-hour duration trends which can indicate stage parking.
- Coordinate with local public officials, MPOs and RPCs to identify potential locations and strategies to implement stage parking for freight generators.
- Incorporate results into future truck parking plans and multimodal freight planning activities to guide funding and policy priorities.

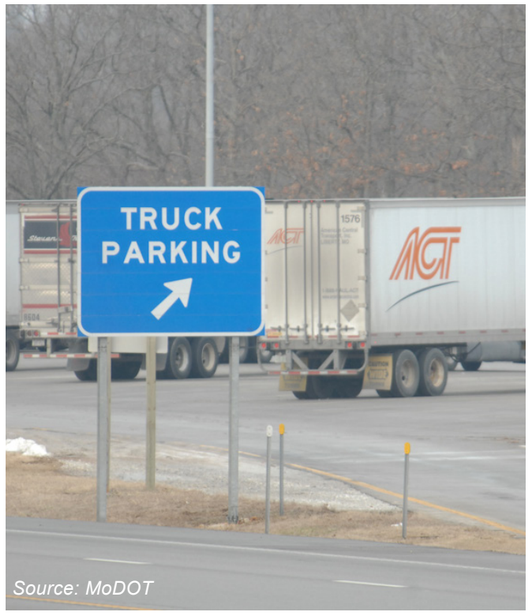
Missouri SFRP Goals:

- ***Prosperous -*** *Increase partnership coordination with local communities, regional and metropolitan organizations, businesses, transportation service providers and other sectors to identify what transportation projects can better support local economies.*
- ***Innovative -*** *Explore technology and develop business practices that result in lower life-cycle costs.*

Project Development and Capital Improvements

Recommendation: Expand truck parking spaces along Missouri freight corridors to increase safety and reduce operational costs.

Discussion: Missouri has a substantial shortage in truck parking as described in the **4.02 Truck Parking Analysis Technical Memorandum.** MoDOT pioneered conversion of weigh stations and rest areas to truck parking. The gap of supply compared to demand is projected to grow from 875 (2024) to 1,450 (2050) spaces for public parking and from 2,542 (2024) to 5,010 (2050) for private parking. The recent discretionary grant to increase parking availability on I-70 will reduce this gap slightly.



Source: MoDOT

Action Items:

- Identify opportunities to expand existing truck parking facilities on all freight corridors.
- Publish the Truck Parking Analysis Technical Memorandum to provide information to private facilities to potentially expand availability.
- Collaborate with MPOs, RPCs and local public agencies to identify areas where staging parking could be implemented to reduce demand at MoDOT's long-term sites.
- Consider the addition of truck parking facilities during project scoping.
- Apply for corridor-wide truck parking discretionary grants using the I-70 application as a model.

Missouri SFRP Goals:

- ***Safe -*** *Invest in system-wide safety improvements to reduce fatalities and serious injuries for all modes.*

Recommendation: Consider development of intermodal and transload facilities as eligible projects to strengthen modal shift opportunities, reduce roadway deterioration from heavy vehicle movementstt enhance connections between Missouri's highway, rail, waterway and air freight networks.

Discussion: Interviews with Missouri freight-dependent industries show that improving modal transfer efficiency remains a major opportunity to strengthen competitiveness and reduce pressure on the highway system. Heavy agricultural, mining, energy and timber truck movements contribute disproportionately to pavement deterioration and the Federal Highway Administration (FHWA) requires states to identify where these impacts are occurring and where modal alternatives may help reduce long-term maintenance costs.

Expanding intermodal and transload capacity—particularly rail-served or port-based facilities—would provide shippers with viable modal-shift options and relieve corridors experiencing high heavy-truck volumes. These strategies align with the St. Louis Freightway's Freight Development Plan and MARC's Connected Freight KC 2050 Plan, both of which emphasize investments that improve multimodal connectivity and reduce reliance on long-haul trucking.

Action Items:

- Identify and prioritize strategic locations for new or expanded intermodal facilities based on freight flows, commodity types and access to key corridors.
- Collaborate with railroads, port authorities, MPOs and private developers to advance site planning, design and funding.
- Evaluate opportunities for state support or cost-sharing through programs such as the Freight Enhancement Program or federal discretionary grants.

Missouri SFRP Goals:

- ***Prosperous -*** *Increase partnership coordination with local communities, regional and metropolitan organizations, businesses, transportation service providers and other sectors to identify what transportation projects can better support local economies.*
- ***Connected -*** *Provide an accessible and connected transportation system for all users.*

Recommendation: Partner with Class III railroads for funding to upgrade trackage to accommodate industry standard railcars and increase safety at grade crossings.

Discussion: While the majority of the Missouri Freight rail network is capable of handling industry standard railcars (286,000 lb) gaps remain, predominately on Class III rail lines, where infrastructure limitations prevent full network efficiency. Class III rail lines have limited resources for capital investment. As first- and last- mile connectors, these rail lines provide much needed access to Class I's which is critical for attraction of freight generators to the state while also providing an alternative to truck thereby reducing congestion and goods movement cost. Some track upgrades have been accomplished through the FRE program, however, that program funding is severely limited. Class III stakeholders noted that recent changes at MoDOT reduced eligibility for maintaining active warning systems at crossings. With limited capital funds for on-going maintenance of these systems, the railroad is less likely to pursue these improvements thus reducing safety for both rail and truck freight at these locations. These proposed partnering initiatives also align with the Freightway's call for targeted rail-infrastructure upgrades and bridge improvements that remove freight chokepoints in the St. Louis region. See the **Freight Conditions and Performance Chapter** for more details on the impact of weight limit tracks on the network.

Action Items:

- Support short line tax credit state legislation that encourages investment in Class III rail lines.
- Evaluate whether retiring and replacing dated Class III at-grade crossings should be included in eligible activities for rail crossing program.

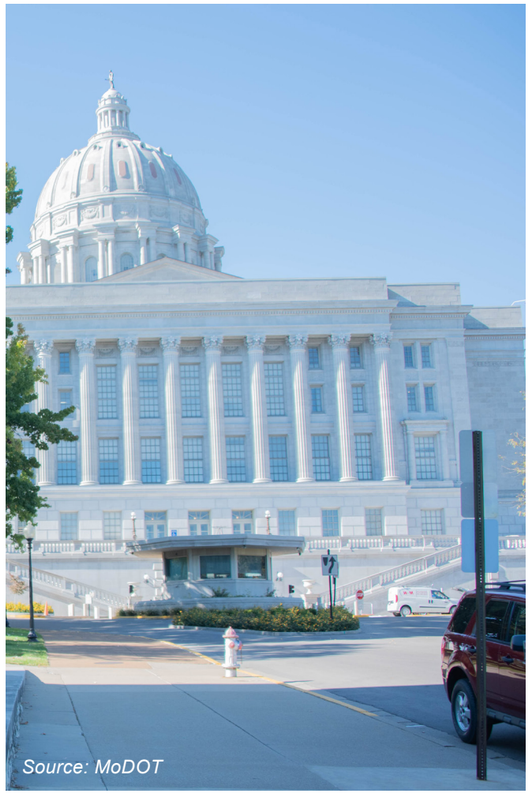
Missouri SFRP Goals:

- ***Stewardship -*** *Explore and secure stable funding to support the current system and services for each mode of transportation.*
- ***Reliable -*** *Increase reliability of the transportation system in bottleneck areas.*

Source: MoDOT

Recommendation: Prioritize targeted improvements in partnership with Amtrak and railroads to maintain and improve on-time performance for the Missouri River Runner and other shared use corridors.

Discussion: Competing interest between freight and passenger rail can pose operational challenges along shared use corridors; targeted investments can help alleviate chokepoints along these critical corridors. This recommendation complements the Freightway Priority Projects List, which includes bridge and rail-corridor enhancements improving both passenger and freight reliability within shared-use corridors. See **Freight Conditions and Performance Chapter** for additional information.



Source: MoDOT

Action Items:

- Work with Amtrak and freight railroads to identify and prioritize shared-use corridor bottlenecks impacting on-time performance.
- Evaluate infrastructure improvements such as siding extensions, universal crossovers, double-tracking and signal modernization to enhance reliability.
- Monitor and report on-time performance metrics to evaluate the effectiveness of targeted improvements and inform future planning.

Missouri SFRP Goals:

- ***Prosperous -*** *Increase partnership coordination with local communities, regional and metropolitan organizations, businesses, transportation service providers and other sectors to identify what transportation projects can better support local economies.*
- ***Reliable -*** *Increase reliability of the transportation system in bottleneck areas.*

Recommendation: Support development and marketing of “freight-ready” industrial sites adjacent to multimodal corridors.

Discussion: Missouri Partnership, the Missouri’s Department of Economic Development (DED), SmartPort and Freightway all have programs to identify properties ready for freight generator development with utility connections and modal access. MoDOT can coordinate with local and regional partners to advance site readiness for logistics-focused industries. Site readiness complements MoDOT’s infrastructure role by aligning land development with transportation investments.

Action Items:

- Incorporate site-readiness metrics into FRE Program project selection.
- Coordinate with DED, Missouri Partnership, SmartPort and Freightway to identify sites being actively marketed to assess any modal access needs anticipated for inclusion in project prioritization.
- Promote freight-ready sites through MoDOT and regional economic development communications.

Missouri SFRP Goals:

- ***Prosperous -*** *Increase partnership coordination with local communities, regional and metropolitan organizations, businesses, transportation service providers and other sectors to identify what transportation projects can better support local economies.*

Source: MoDOT

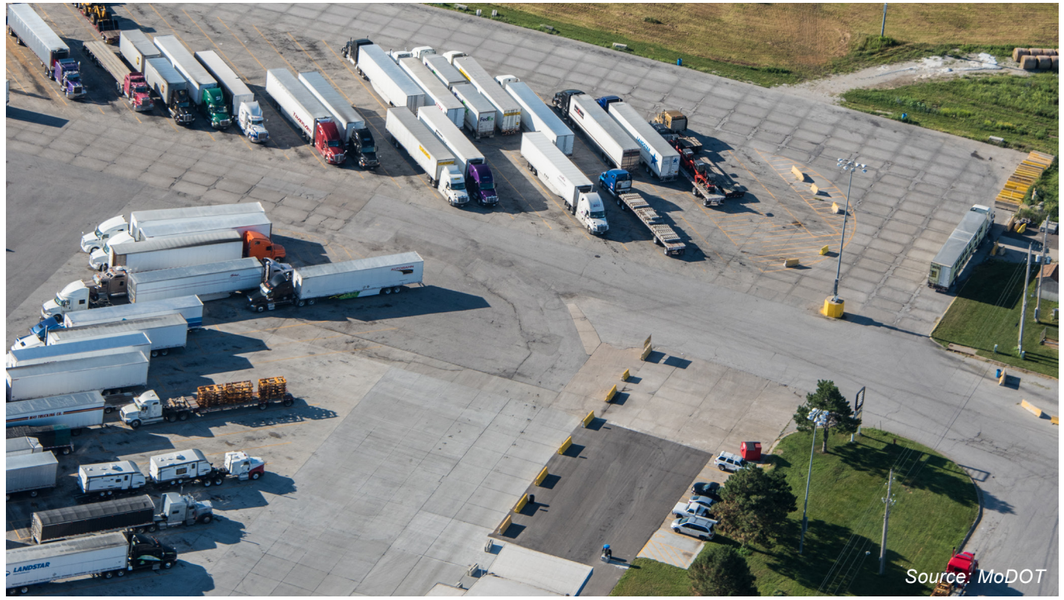
Communications

Recommendation: Add welcome center, rest area and public truck parking sites to the MoDOT Traveler Information Map and/or update the existing rest area, welcome center and truck parking map.

Discussion: Truck drivers and other motorists would benefit from improved visibility of truck parking information on MoDOT’s web resources, particularly during emergencies. Improving traveler information supports corridor-management goals identified in MARC’s Connected Freight KC 2050 Plan, which encourages consistent freight communication tools across regions. Additional details are provided in **Truck Parking Analysis Technical Memorandum.**

Missouri SFRP Goals:

- ***Reliable –*** *Enhance transportation infrastructure resilience to maintain the movement of people and goods during traffic disruptions.*


Source: MoDOT

Recommendation: Incorporate freight infrastructure resilience into the project prioritization and scoping.

Discussion: Reliability is a key factor for goods movement. Extreme weather events reduce reliability. Impacts of weather hazards on modal components of the freight system can be found in the Freight and Rail Impacts Chapter. This analysis provides general guidance for scoping and project prioritization. Some states have performed a proactive, data-driven vulnerability and impact assessment on individual infrastructure elements to incorporate into project prioritization and scoping. Leveraging resources through interagency coordination can provide a more holistic understanding of system risk, guide investment prioritization and enhance emergency preparedness. This effort parallels MARC's and the Freightway's shared focus on freight system resilience and interagency coordination for emergency preparedness.

Action Items:

- Engage with partner MPOs and relevant state agencies.
- Consider freight route weather hazard risk as higher priority in project prioritization process.
- Include major freight routes consideration in development of emergency response tiers.

Missouri SFRP Goals:

- ***Prosperous -*** *Increase partnership coordination with local communities, regional and metropolitan organizations, businesses, transportation service providers and other sectors to identify what transportation projects can better support local economies.*
- ***Reliable -*** *Enhance transportation infrastructure resilience to maintain the movement of people and goods during traffic disruptions.*

Source: MoDOT