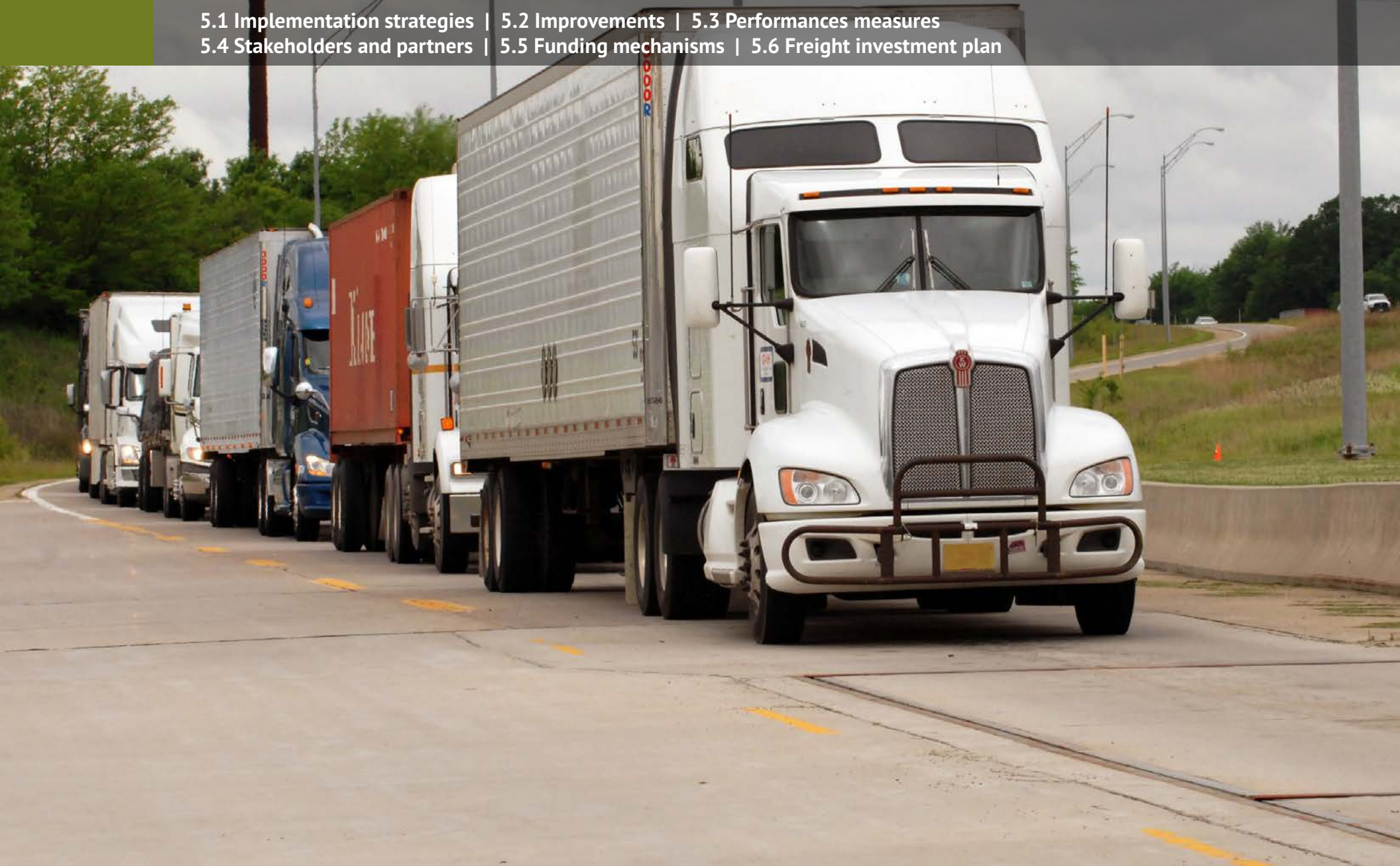
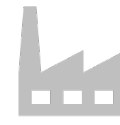




5. ACTION PLAN

5.1 Implementation strategies | 5.2 Improvements | 5.3 Performances measures
5.4 Stakeholders and partners | 5.5 Funding mechanisms | 5.6 Freight investment plan





5.1 Implementation Strategies

Iowa's overall freight improvement strategy includes a listing of prioritized implementation strategies that were developed in consultation with freight stakeholders.

Chapter 4, Planning considerations, introduced critical issues that were identified through a series of discussions and exercises between the Iowa Department of Transportation and the Iowa Freight Advisory Council (FAC) over the last decade.

Building from the FAC-identified priorities and the original strategies from the 2022 State Freight Plan, the following strategies represent the primary elements of Iowa DOT's overall freight improvement strategy going forward. Some of the activities associated with these strategies are already underway, while others will be initiated in the near future as new tools and technologies are implemented.

Each element of the department's strategy aims to address freight specific needs and aligns with both the priorities of the FAC and the national freight goals.

Additionally, these strategies relate to the Iowa DOT system objectives of safety, sustainability, accessibility, and flow (Figure 5.1). These are described in Chapter 1, Introduction (Section 1.1, Plan purpose). The icon preceding each strategy shows which of the four objectives it supports.

Figure 5.1: Iowa DOT system objectives



Source: Iowa DOT

Prioritized Implementation Strategies



1. **Improve freight transportation system resiliency.** A resilient freight transportation system is responsive. It is able to provide reliable service when small disruptions occur and return to service quickly after large disruptions. Reducing the vulnerability of highway infrastructure by investing in improvements such as roadway grade raises and foreslope erosion countermeasures and working with partners to do the same for other modes and supply chains should be a priority. Operational improvements to address small disruptions can also be made by leveraging real-time information from users of the system to support advanced decision-making, incidence avoidance, and faster response times, as well as by providing real-time information on system conditions to support the movement of freight.



2. **Explore additional sustainable funding sources to increase investment in the freight transportation system.** Growing demands, deteriorating conditions, and diminishing buying power are impacting the efficiency and reliability of freight movement. Increasing revenue from existing funding mechanisms, or even exploring and creating new ones, would be advantageous to the state of Iowa. Options include, but are not limited to, strategically targeting funding to freight projects, using public-private partnerships to expedite investment, or allowing more flexibility in current funding mechanisms to make multimodal freight improvements.



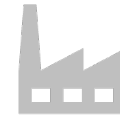
3. **Work with local stakeholders and railroads to improve safety at railroad crossings.** A highway-railroad grade crossing is an intersection where a roadway crosses railroad tracks at the same level. Because a grade crossing is a point at which more than one mode of transportation meets several public and private stakeholders, both stakeholders have jurisdiction over various aspects of the intersection. There are 6,467 total at-grade crossings in Iowa. On average, 4.2 million vehicles cross public at-grade railroad crossings each day. Railroad companies own and maintain the tracks. These crossings can become points of conflict between highway and rail transportation, so addressing these conflicts is critical for improving safety.



4. **Target investment to address mobility issues and bottlenecks that impact freight movements.** Investments that target the elimination or reduction of freight mobility issues are a key element to Iowa's freight improvement strategy. This includes addressing operational and capacity needs, as well as increasing connectivity of modes through intermodal facilities. These improvements will increase efficiency and reduce bottlenecking on the freight network, while also helping to reduce freight emissions and associated air pollution. Additionally, congestion in surrounding areas outside of the state's borders may have an impact on Iowa freight movement. Collaboration with other states and exploration of regional solutions is needed to maximize the effectiveness of investments made within the state.



5. **Collaborate with railroad operators to provide Iowa companies with increased access and capacity to accommodate additional Iowa freight shipments.** Iowa's railroad network provides significant opportunities for reducing transportation costs for shippers. Implementation of strategies and initiatives from the State Freight Plan and the Iowa State Rail Plan (ISRP) will help to further enhance railroad capacity and access points, which are essential for Iowa shippers to leverage rail freight movements.



6. **Partner with law enforcement and the trucking industry to combat human trafficking.** Human trafficking has been reported in all 50 states, and the number of victims in the United States is estimated to be in the hundreds of thousands. Traffickers typically target professions deemed “transient in nature” as consumers and they regularly travel across multiple states to places such as oil and gas fields, truck stops, hotels along highways, etc. The trucking industry is critical in helping to spot these types of activities. Law enforcement, government agencies, and the trucking industry should continue to work together to facilitate the investigation of human trafficking and combat this crime.



7. **Advance a 21st century Farm-to-Market System that moves products seamlessly across road, rail, and water to global marketplaces.** Per Iowa Code, the “Farm-to-Market System” means intra- and intercounty roadways under county jurisdiction that serve principal traffic generating areas and connect them to other farm-to-market routes, city streets, and primary roads. Given the rapidly changing agricultural landscape and the diminishing buying power of existing transportation resources, the size and operation of the Farm-to-Market System should be re-examined. All potential alternatives to improve efficiency should be examined with stakeholders, including road abandonments, vacations, service conversions, and links to other transportation modes.



8. **Streamline and align freight-related regulations and minimize unintended consequences.** The regulatory environment can encourage or deter business in a state, and not all state and federal regulations have a positive impact on freight mobility. State departments should partner to analyze negative impacts, coordinate with stakeholders, and attempt to minimize any unintended consequences of regulations that may hinder freight movement and/or discourage businesses from investing in the state. Additionally, since freight movements are often multistate in nature, there is a need for improved reciprocity between states regarding issues not standardized at the federal level.



9. **Explore opportunities for increasing value-added production within the state.** Iowa is a major producer of agricultural commodities. Efforts should be made to identify economic development opportunities related to value-added production goods utilizing agricultural products. One of the major value-added productions currently within the state is bio renewable fuel from corn. Improving rural transportation infrastructure would provide an opportunity for the state to consider investments that would allow for more value-added processes to occur in-state, prior to these products being exported.



10. **Support the development and adoption of emerging freight technologies to increase safety and efficiency.** Emerging technologies such as automation, autonomous vehicles, unmanned aircraft systems (e.g., drones), AI, and others have the potential to be transformative for freight industries by increasing safety and efficiencies, enhancing supply chains, and disrupting business models. These types of opportunities should be explored and supported so industries can address various challenges such as consumer acceptance and expectations, increased competition, rising labor costs, and labor availability. As opportunities arise, work to align and coordinate the activities of the Iowa Advisory Council on Automated Transportation and the FAC.



11. Advocate for the funding and improvement of the inland waterway system and explore ways to expand Iowa's role. The M-35 (Mississippi River) and M-29 (Missouri River) marine highways support the economic competitiveness of the nation, relieve landside congestion on highways and railroads, reduce air emissions, and increase the efficiency of other transportation modes. The state of Iowa continues to work with other regional states to promote the value of these rivers, advocate for infrastructure investments, facilitate regional dialogue, market current services, and seek out new tools. Opportunities to invest in and improve the system should continue to be explored, such as discussions between the Iowa DOT and the U.S. Army Corps of Engineers (USACE) to build a mooring cell on the Upper Mississippi River, the construction of the Port of Blencoe on the Missouri River, and the establishment of the Mississippi River Ports of Eastern Iowa and Western Illinois (doing business as Upper Mississippi River Ports).



12. Target investment in the Iowa Multimodal Freight Network (IMFN) at a level that reflects the importance of this system for moving freight. The IMFN consists of priority airports, highways (including Interstate, U.S., and Iowa routes), railroads, and waterways representing the most critical freight corridors in the state. Operational and physical improvements that increase the safety, efficiency, reliability, and resilience of this network, as well as associated first/last mile connections, should be prioritized.



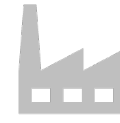
13. Rightsize the highway system and apply cost-effective solutions to locations with existing and anticipated issues. Rightsizing of the system is the application of cost-effective solutions (e.g., Super-2 improvements) to address existing and anticipated issues. This will require significant investment in stewardship, some focused capacity expansion as resources allow, and perhaps even some contraction of the highway system. Applied correctly, such solutions will balance mobility needs with revenue limitations and the need to rightsize the system, while also having more favorable long-term asset management outcomes, and limit the amount of agricultural land and wildlife habitat that is converted to highway right-of-way.



14. Work with partners to address increasing truck parking demand. Continued implementation of initiatives to address truck parking needs to remain an emphasis, including for oversize/overweight trucks. These initiatives include the Truck Parking Study, which provides a strategy to prioritize truck parking improvements along interstate corridors. Iowa DOT should also explore technological solutions to communicate to drivers about where to park safely. See page 112 for the most recent commercial motor vehicle parking facilities assessment conducted by Iowa DOT.



15. Support opportunities to develop new intermodal freight facilities in the state. Intermodal facilities are critical connections between freight modes that allow shippers to take advantage of the cost, speed, and capabilities of more than one mode. Development of these facilities, including air cargo facilities, truck cross-docking operations, rail intermodal facilities, transload facilities, barge terminals, and logistics parks, will improve the efficiency of the overall freight transportation system.



16. Partner with freight stakeholders to find innovative ways to address labor shortages across industry sectors. Commercial vehicle driver shortages and labor shortages across supply chains continue to plague freight and transportation industries for a variety of reasons. Public and private stakeholders should partner to find innovative solutions designed to aid in reducing shortages and improve recruiting, training, and retention.



17. Optimize the availability and use of freight shipping containers, including exploring other options for repositioning empty containers. A significant imbalance exists in the use of in- and outbound shipping containers. This is a problem that is inherent to many intermodal facilities in major metropolitan areas. Cost effective opportunities may exist to utilize different transportation modes to relocate some of these empty containers to locations in Iowa for reloading. With significant volumes of production, Iowa is well-positioned to provide potential loads for outbound movements of these containers, which could prevent them from being shipped back to international markets such as Asia without back-loads.



18. Mitigate the impacts of freight transportation on communities, wildlife, and the environment. Potential negative impacts of freight transportation include emissions, noise pollution, congestion, and accelerated deterioration of local infrastructure. State and local partnerships should continue to work to mitigate negative impacts to citizens, wildlife (including habitat), and the natural environment as freight volumes increase.



19. Enhance planning and asset management practices for the IMFN by utilizing designs and treatments that are compatible with significant freight movements. Investments targeted for facilities that handle significant freight traffic, including oversize/overweight vehicles, should incorporate designs compatible with these types of freight movements, and avoid improvements that unintentionally create new obstructions to freight movement such as restrictive roundabouts, overhead structures, and turn radii. Particular emphasis should be placed on the highway portion of the IMFN. In addition, future routing and access control decisions and processes should consider those facilities that are most compatible with freight movement. See Page 110 for freight design considerations.



20. Continually track and evaluate international trade deals, negotiations and tariffs. New and ongoing trade negotiations will have impacts on Iowa's commodity markets and associated supply chains. These should be monitored to better understand the implications to all modes of freight transportation in Iowa, and strategies should be developed to mitigate negative consequences and take advantage of economic opportunities. International tariff discussions have become more prominent in recent years, and it is important to monitor and track all tariffs implemented by the US and any retaliatory tariffs.



21. Enhance cybersecurity measures to protect Iowa's freight systems from digital threats, ensuring a safe, resilient, and reliable transportation network. Managing schedules, deliveries, timelines, and coordinating with partners all require modern technology. Cybersecurity is the tool to prevent threats from hacking and disrupting the already delicate and complicated freight network. By being proactive with cybersecurity, we can prevent unnecessary delays and loss of economic value.

Freight Design Considerations

Critical infrastructure (e.g., IMFN) should be protected and enhanced for improved freight mobility. This can be done by implementing department policies for these corridors relating to design and use while also considering adjacent communities and land uses.

Although the following recommendations are focused on freight traffic, other modes such as bicycles, pedestrians, and public transit should be considered by investigating things like visibility, sight distance for truck drivers, and traffic speeds. These recommendations were informed by the Iowa DOT Road Design Manual (Chapter 1C-1), Kentuckiana Regional Planning & Development Agency Freight Design Guide, and NCHRP 943: Design and Access Management Guidelines for Truck Routes: Planning and Design Guide (2020).

Corridors

Considerations for roadway segments depend on the type, location, operating conditions, and adjacent land uses (urban or rural). Table 5.1 includes physical recommendations for roadways that allow for improved truck accessibility and maneuverability.

Table 5.1: Roadway corridor design recommendations

Item	Recommendation
Lane width	12 ft. (urban and rural)
	11 ft. minimum (urban)
Shoulder width	10 ft. effective width
	6 ft. paved width
Vertical clearance	16.5 ft. (secondary over primary and interchanges)
	15 ft. (primary over secondary)
Horizontal clearance	3 ft. from curb face (two lane)
	2 ft. from curb face (multilane)

Refer to the Iowa DOT Road Design Manual for the latest on design guidance.

Source: Iowa DOT

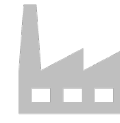
Intersections and Interchanges

Without proper designs and considerations, urban and rural intersections and interchanges can be a challenge for trucks to navigate. Things like turning radii, lane widths, interactions with other traffic, access management, lane striping, and signage need to be considered.

The volume and size of the trucks that are estimated to use a facility under design development shall be considered to appropriately accommodate the needed **turning paths** of these larger vehicles. The design should typically eliminate off-tracking of the rear trailer axles onto unpaved shoulders and eliminate off-tracking onto **pedestrian facilities**. Low raise curbs, lane encroachment and shoulder encroachment can be considered as part of the design to facilitate truck movements when appropriate.

Left turn lanes with appropriate length lane tapers or storage bays should be considered to decrease delays for through vehicles. Long tapers accommodate multiple trucks, while signal phasing, when appropriate, allows drivers to turn without yielding to pedestrians. In non-urban areas, exclusive **right-turn lanes** for accommodating trucks should be considered.

Additionally, adjacent intersections and interchanges should be spaced appropriately from ramps to avoid long queues of trucks blocking other traffic movements.



Innovative Design Considerations

Innovative intersection and interchange designs are implemented to improve the safety and capacity of high traffic areas but require special considerations to sufficiently accommodate trucks.

Roundabouts are utilized throughout Iowa, on and off the primary system. Truck traffic needs should be considered prior to the construction of a roundabout on the IMFN and the remainder of the Primary Highway System.

If roundabouts are constructed on the IMFN, full size truck turning radii and mountable aprons should be included for increased maneuverability. Multi-lane roundabouts should consider signage, lane markings, and sight distance for truck drivers when being designed. If oversize/overweight (OSOW) trucks are expected, additional clearances should be implemented.

Diverging Diamond Interchanges shift traffic to the left side of the road through the middle of the interchange to reduce left turn conflicts and improve traffic flow. These interchanges are being utilized in certain parts of Iowa. The design of lane widths, lane markings, and signage should consider truck needs.

Other types of innovative designs such as intersections utilizing U-turns (e.g., restricted crossing U-turn and median U-turn intersections) are generally challenging for trucks and should be avoided on major truck routes. If these designs are constructed, considerations should include similar things like turning radii, median width, and number of lanes.

Truck Parking and Loading/Unloading Zones

Access to adequate truck parking for single unit, combination, and OSOW trucks is a top industry need. This includes not only parking along major highway corridors but also in urban areas to serve as short-term loading/unloading zones.

Efforts to reallocate existing truck parking spaces and strategically add new spaces along high-demand corridors are underway at Iowa DOT. Considerations of accommodating typical OSOW loads (e.g., wind turbine blades) should be included when designing additional truck parking areas.

In urban areas, the creation or designation of loading/unloading zones should be considered. Options include reserving designated spaces for delivery drivers and/or assigning spaces with time restrictions during peak periods.

Figure 5.2: Diverging diamond interchange at I-35 and 1st Avenue in Ankeny.



Source: Iowa DOT

Commercial Motor Vehicle Parking Facilities Assessment

From 2012 to 2020, the Iowa DOT undertook an in-depth, multi-phase analysis of the rest area system throughout the state to assess current conditions of rest area facilities, user needs, freight truck parking, and overall public sentiment towards the Department's plan for future investment of state funds. As part of this analysis, the Iowa DOT examined the parking needs for commercial vehicles (truck parking). Figure 5.3 shows the state's current rest area system.

During the study, observers recorded the usage of commercial vehicle parking spaces to help estimate parking demand across the system. The study found that many of Iowa's rest areas lack commercial vehicle parking spaces and drivers must park along rest area entry ramps, in car parking spaces, and in other unauthorized parking areas.

The results of the study called for the addition of truck parking spaces at twenty rest areas and the closure or reduction in parking spaces at eighteen locations. **In totality, the state would add 247 spaces.** After the department received feedback from the trucking industry, it decided to delay the closure of several locations until additional capacity was added.

Additional Recommendations

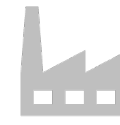
To further address truck parking issues and needs in Iowa, strategies were developed and refined to include the following recommendations:

- Invest in vehicle-to-infrastructure technology to provide real-time parking information.
- Add a truck parking reservation system, particularly for oversize trucks.
- Explore partnerships with public agencies and private companies to supplement truck parking, optimize the locations of truck parking capacity, and maximize the benefits of Iowa DOT investment.
- Update design standards and templates to increase the number of required truck parking spaces and incorporate oversize truck parking.

Figure 5.3: Iowa rest area system, 2025



Source: Iowa DOT



2026 Truck Parking Study

To compliment the 2012-2020 study as well as the 2026 State Freight Plan, Iowa DOT recently conducted an additional study of truck parking in the state that will support the prioritization of truck parking improvements at existing locations. The study incorporates data from the American Trucking Research Institute (ATRI) to estimate the likelihood that a location is at or over capacity at any given moment. This probability, as well as the number of total minutes that a truck was observed at a parking location, were used to create a prioritization ranking. The top 20 highest priority locations are shown below in Table 5.2. Other factors, such as pavement and facility needs, will also be considered when determining the timing and locations of truck parking improvements.

Table 5.2: Truck Parking Study Results (2026)

Rank	Name	Route	Probability	Detections	Product	Capacity
1	Wilton EB Parking Only	I-80	99.5%	7,232	7,195.8	8
2	Grinnell WB Rest Area	I-80	78.7%	8,646	6,804.4	10
3	Minden WB Parking Only	I-80	98.3%	6,761	6,646.1	5
4	Minden EB Parking Only	I-80	98.8%	6,635	6,555.4	5
5	Wilton WB Parking Only	I-80	99.5%	6,557	6,524.2	8
6	Wilton EB Rest Area	I-80	79.4%	7,807	6,198.8	12
7	Wilton WB Rest Area	I-80	74.2%	8,292	6,152.7	15
8	Cedar Rapids NB Rest Area	I-380	75.2%	7,994	6,011.5	16
9	Cedar Rapids SB Rest Area	I-380	73.9%	8,125	6,004.4	16
10	Avoca EB Parking Only	I-80	87.5%	6,786	5,937.8	8
11	Adair EB Rest Area	I-80	78.2%	7,364	5,758.6	12
12	Underwood EB Rest Area	I-80	59.2%	9,584	5,673.7	19
13	Victor EB Rest Area	I-80	64.6%	8,230	5,316.6	22
14	Tiffin EB Rest Area	I-80	62.8%	8,247	5,179.1	23
15	Davenport WB Rest Area	I-80	57.3%	8,848	5,069.9	20
16	Tiffin WB Rest Area	I-80	61.8%	8,016	4,953.9	23
17	Elkhart NB Rest Area	I-35	64.6%	7,517	4,856.0	22
18	Avoca WB Weigh Station	I-80	87.0%	5,578	4,852.9	8
19	Underwood WB Rest Area	I-80	54.6%	8,887	4,852.3	20
20	Grinnell EB Rest Area	I-80	50.2%	9,633	4,835.8	25

Source: Iowa DOT

5.2 Improvements

Specific improvements are necessary to address the freight mobility issues experienced in Iowa. These will support the state's freight implementation strategies, the national freight goals, and the Iowa DOT system objectives.

Aviation

Most commercial airports in Iowa have the capacity, acreage, and necessary services to accommodate freight movement. However, the Des Moines International Airport (DSM) and Eastern Iowa Airport (CID) in Cedar Rapids handle more than 99 percent of reported air freight; therefore, current and future improvements at both locations are highlighted here. No air cargo bottlenecks were identified in Iowa as there is capacity to accommodate freight growth in the future. However, the existing air cargo facilities at DSM and CID are getting closer to full utilization.



DSM

The airport handled roughly 55 percent of Iowa's air cargo in 2020 and has about 50 acres reserved for cargo operations between two quadrants.

The south cargo area has approximately 43 acres that includes facilities for all-cargo carriers Amazon Air, FedEx, and UPS Inc. This area handles most air cargo operations and was recently renovated, including roadways, new pavement, and a new FedEx facility. The east cargo area has approximately eight acres that includes some cargo facilities for United Airlines and the Federal Inspection facility (primary function is to perform inspections on cargo merchandise).

The current facilities are not fully utilized. However, DSM has a development plan that includes areas that may be developed into cargo operations as demand increases. With the addition of Amazon Air service in 2021, continued air cargo growth is expected.

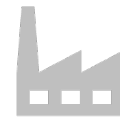


CID

The airport handled roughly 44 percent of Iowa's air cargo in 2020. The majority moves through the airport via the integrated express carriers FedEx, UPS Inc., and DHL Express, with FedEx being the market leader.

There are four cargo-handling buildings and three cargo ramps currently at 90 percent utilization. Cargo carriers do not have exclusive use of these facilities, so coordination is necessary at times depending on cargo carrier schedules. CID has planned the following expansion projects:

- Construct cargo apron phase 2 - \$7.5 million
- Construct west joint-use cargo building - \$11 million
- Construct Beech Way extension - \$6.3 million



Highway

There were 33 locations identified as highway freight bottlenecks in Iowa. Highway segments with capacity needs that impact freight mobility were also identified. See Chapter 2, System inventory and performance (Section 2.3, Inventory and performance by mode) for information on the identification process for bottlenecks and capacity needs.

Since this bottleneck analysis is a very granular segment-level analysis, most bottlenecks occur at intersections, which is to be expected. However, to diagnose the specific issue and most effective treatment, a broader look at the surrounding network will likely be needed. Bottlenecks may have solutions as simple as retiming stoplights or as complex as access changes or new construction.

It should also be noted that identifying capacity needs at a corridor level involves professional judgment, as the existing or forecasted volume-to-capacity ratio throughout a corridor may vary substantially. Being identified as a capacity need does not necessarily mean additional lanes will need to be constructed. There are many other strategies and project types that may be appropriate for corridors other than capacity expansion, such as operational strategies, demand management, and intersection/interchange improvements.

The bottleneck locations were prioritized using the Value, Condition, and Performance (VCAP) matrix. After each candidate location was assigned a Value, Condition, and Performance value, each was ranked for the three categories. The average of these three rankings was calculated, and the locations were assigned an overall priority rank. If multiple locations had the same average ranking, total truck traffic at the location was used as a tiebreaker.

Figure 5.4 and Table 5.3 show Iowa's freight highway priority locations.

VCAP matrix

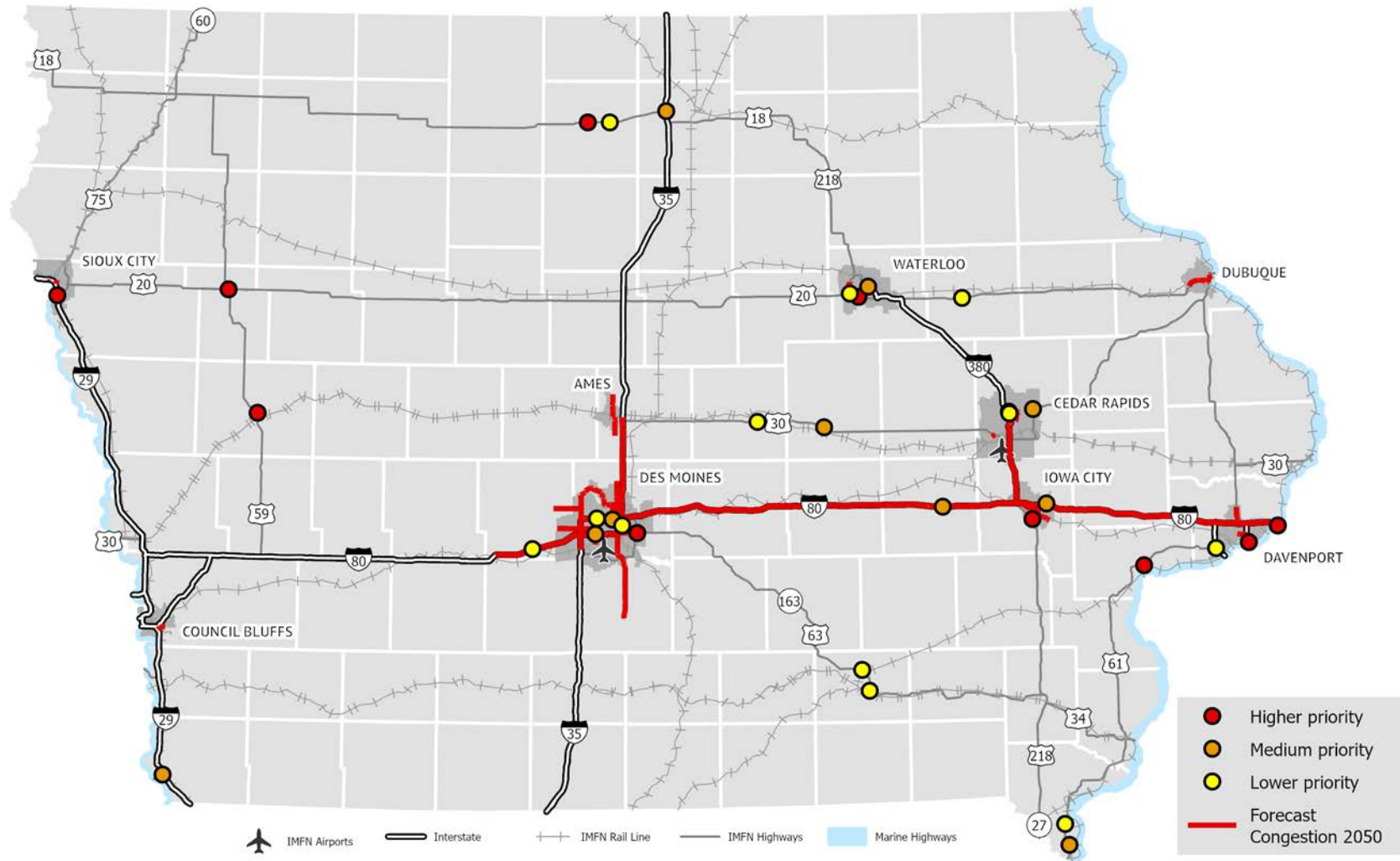
To identify and prioritize candidates for highway freight improvements, the Iowa DOT utilized the VCAP matrix. This approach takes advantage of multiple tools available at the Iowa DOT, including the Iowa Travel Analysis Model (iTRAM), Infrastructure Condition Evaluation (ICE), INRIX travel speed data, and Iowa's annual traffic counts.

Value: iTRAM was used to assess the value of each candidate location to the overall freight transportation network. The model is first run to show a base case scenario. Subsequent runs were then completed that excluded each one of the candidate locations individually. Next, the truck vehicle-hours traveled (VHT) was compared from the before-and-after scenarios for each candidate location and the difference was assigned as the value of the location. Higher priority was assigned to locations with larger VHT increases when excluded from the network. In other words, higher priority was assigned to locations that make the truck network more efficient from a VHT perspective.

Condition: ICE is a tool used for evaluating the primary highway system based on seven criteria: Pavement Condition Index (PCI), International Roughness Index, Bridge Condition Index, passenger traffic, single-unit truck traffic, combination truck traffic, and congestion. A normalization and weighting process is applied to each criterion and used to analyze highway segments before ultimately ranking them against each other based upon a final composite rating.

Performance: The total bottleneck minutes for each location was determined during the bottleneck identification process using INRIX travel speed data. Those values were assigned to each location as the overall performance rating.

Figure 5.4: Highway freight priority locations and capacity needs



Source: Iowa Travel Analysis Model, Infrastructure Condition Evaluation, and INRIX



Table 5.3: Highway freight priority locations

Rank	City/County	Location	Length	Value ¹		Condition ²		Performance ³		Average
1	Bettendorf	I-74 & US-67	0.67	12	13	66	4	846,995	1	6.0
2	Muscatine	US-61 & IA-38	1.87	14	10	69	8	826,605	2	6.7
3	Hancock County	US-18 & Lake Ave	1.24	112	2	57	1	164,090	24	9.0
4	Denison	US-59 & IA-39	1.21	134	1	80	20	513,035	9	10.0
5	Le Claire	I-80 & US-67	0.47	20	6	79	19	521,635	8	11.0
6	Sioux City	I-29 & Singing Hills Blvd	0.39	1	28	67	6	587,400	5	13.0
7	Holstein	US-59 & US-20	0.18	50	4	90	32	775,840	3	13.0
8	Pleasant Hill	US-65 & IA-163	0.73	52	3	71	9	119,420	29	13.7
9	Iowa City	US-218 & IA-1	0.79	28	5	82	26	465,535	10	13.7
10	Waterloo	US-20 & US-63	0.50	6	17	75	13	412,740	13	14.3
11	Waterloo	W jct US-63 & US-218	0.21	9	16	80	21	559,400	6	14.3
12	Des Moines	I-35 & IA-415	0.70	6	18	81	22	618,590	4	14.7
13	Fremont County	I-29 & IA-2	1.81	3	20	73	12	437,305	12	14.7
14	Toledo	US-30 & US-63	0.31	20	7	88	31	536,700	7	15.0
15	Iowa City	I-80 & IA-1	0.64	17	9	76	14	186,025	23	15.3
16	Williamsburg	I-80 & IA-149	1.02	14	11	81	24	439,500	11	15.3
17	Des Moines	I-235 & IA-28	0.77	2	23	64	2	187,025	22	15.7
18	Clear Lake	I-35 & US-18	0.52	11	14	73	10	148,020	26	16.7
19	Marion	US-151 & IA-13	0.41	18	8	83	27	393,975	15	16.7
20	Keokuk	S jct US-61 & US-218	0.10	3	19	73	11	208,500	21	17.0
21	Urbandale	I-35 & IA-28	1.10	(1)	33	67	7	352,775	16	18.7
22	Marshalltown	US-30 & IA-14	0.69	12	12	77	15	109,975	30	19.0
23	Lee County	N jct US-61 & US-218	0.05	1	25	77	16	293,800	19	20.0
24	Cedar Rapids	I-380 SB off ramp & 42nd St NE	0.03	-	29	66	5	122,525	27	20.3
25	Davenport	I-280 & US-61	0.01	1	27	66	3	92,985	33	21.0
26	De Soto	US-169 & I-80	0.42	10	15	87	30	307,205	18	21.0
27	Cedar Falls	US-20 & IA-27	1.21	2	24	81	23	337,025	17	21.3
28	Cedar Rapids	I-380 & IA-100	0.71	-	32	79	18	394,265	14	21.3
29	Des Moines	I-235 & US-6	0.13	1	26	78	17	159,395	25	22.7
30	Ottumwa	US-34 & US-63	0.07	3	21	84	29	220,255	20	23.3
31	Hancock County	US-69 & US-18	0.07	2	22	83	27	119,465	28	25.7
32	Buchanan County	US-20 & IA-150	0.01	-	30	81	25	104,600	32	29.0
33	Wapello County	US-63 & IA-149	0.01	-	31	94	33	107,900	31	31.7

¹Value score is determined by the change in truck vehicle hours traveled when each location is unavailable as part of the transportation system.

²Condition is determined by the composite Infrastructure Condition Evaluation score for the segments at each location.

³Performance is determined by calculating the total bottleneck minutes per mile for each location.

Source: Iowa Travel Analysis Model, Infrastructure Condition Evaluation, and INRIX

Addressing Highly Ranked Locations

Projects or initial studies are planned to address the top ten highway freight priority locations as described below.

- #1: Monitor (recently reconstructed)
- #2: Potential future study
- #3: Targeted Super-2 corridor (not programmed)
- #4: Roundabouts planned
- #5: Partial rebuild planned
- #6: Potential future study
- #7: Reduced Conflict Intersections planned
- #8: Potential future study
- #9: Consider signalization
- #10: Potential future study

Railroad

The ISRP outlines potential projects and initiatives Iowa might consider proposing to improve existing services in the state. This includes possible future railroad improvements and investments that could address passenger rail, freight rail, and rail safety needs of Iowa, as identified through railroad company and stakeholder outreach and internal Iowa DOT coordination during development of the ISRP.

The full list of short-range (1-4 years) and long-range (5 or more years) projects is available in the ISRP. The railroad improvement list included in Figure 5.5 and Table 5.4 includes only the short-range freight rail projects on the railroad portion of the IMFN. The list is not prioritized but is listed from West to East through the state. Types of freight rail projects identified include the following.

- Enhancement of existing or construction of new transload or intermodal facilities
- Enhancement of existing rail access or development of new rail access for shippers/receivers
- Improvements to track infrastructure
- Enhancements to the capacity of the state's rail network
- Improvements to bridge infrastructure
- Address operating bottlenecks
- Mitigation measures in flood prone areas
- Grade separation of highway/rail grade crossings

In addition to these specific projects, there are multiple projects that utilize funds from the following programs annually.

- **Federal Highway-Railroad Crossing Safety Program:** Statewide grade crossing improvement and upgrade projects, including upgrading crossings with passive warning devices including crossbucks to active warning devices including flashing light signals and gate arms; upgrading existing signals; improving crossing surfaces; and to provide low-cost improvements such as increased sight distance, medians, widened crossings, or to close crossings.
- **State Highway-Railroad Surface Repair Program:** Includes statewide grade crossing improvement and upgrade projects to promote safety through surface replacement programs at public highway-railroad grade crossings.
- **Statewide Grade Crossing Safety Fund:** Includes funding for a portion of the maintenance costs for traffic control devices activated by the approach or presence of a train installed under the Highway-Railroad Crossing Safety Program.

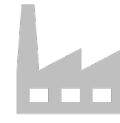
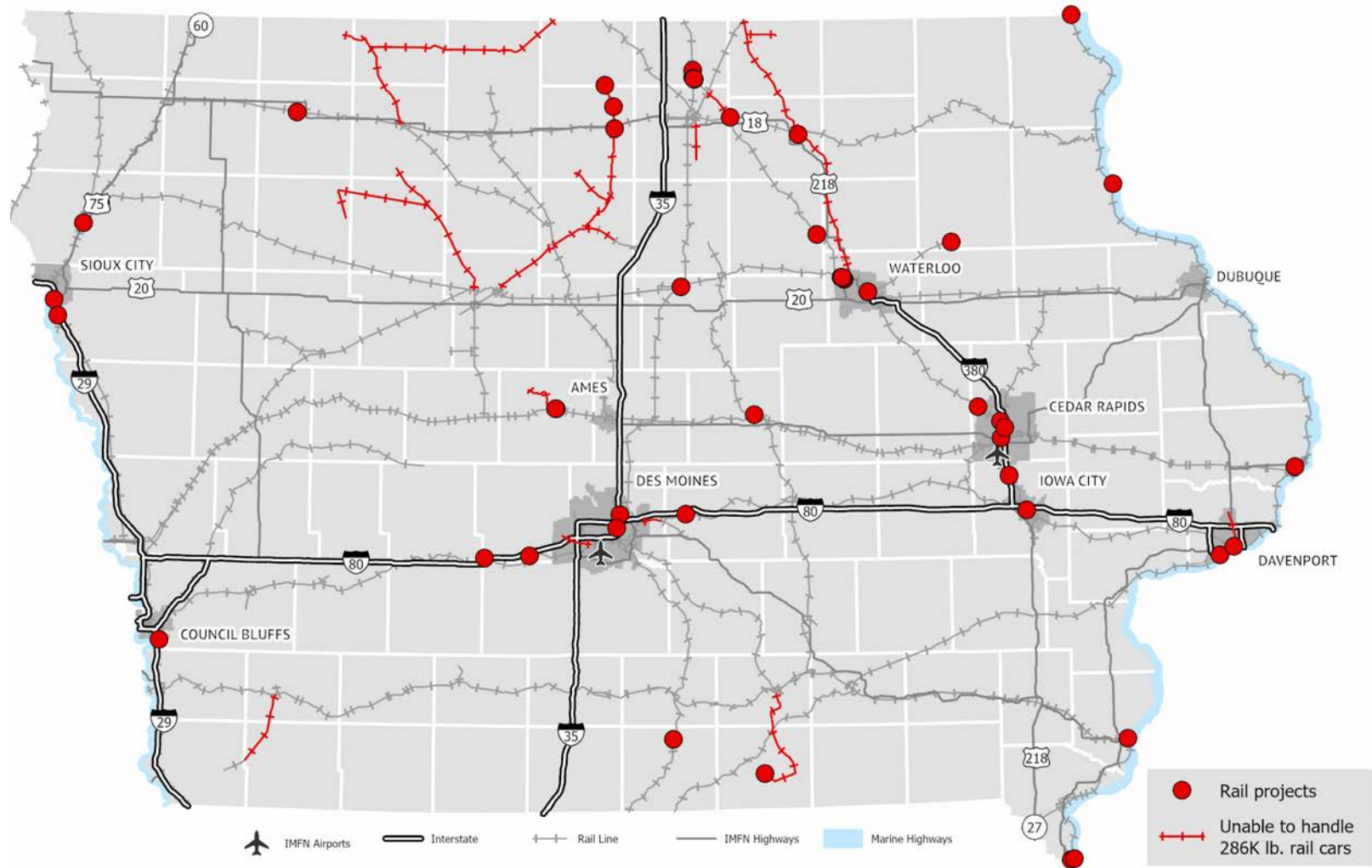


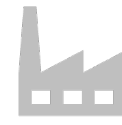
Figure 5.5: Short-range freight rail projects



Source: Iowa railroad companies

Table 5.4: Short-range freight rail projects

Railroad(s)	Project	Description
IANR	City of Cedar Falls Railroad Crossing Elimination/Rail Asset Relocation	Remove IANR's Cedar Falls Spur, Railroad Crossing Elimination of 22 rail crossings & relocation of rail assets.
IANR	City of Waterloo – Railroad Crossing Elimination Study	Conduct Safety Study for crossing improvements between IANR's Linden and Bryant Yards.
IANR	Butler County/Shell Rock Railroad Crossing Elimination and Road Realignment	Railroad Crossing Elimination and County Road realignment.
CPKC	Clay County Railroad Crossing Elimination at County Road B24 in Clay County	The project will realign approximately ½ mile of County Road B24 to County Road M50 at a location North of the Railroad crossing on M50. The B24 RR crossing will be eliminated along with the reduced speed s-curves on B24.
UP	SE Corporate Woods Drive Over pass in Ankeny, Iowa	Project will comprise replacing the existing at grade rail-roadway crossing with an overpass bridge over the Union Pacific Railroad. The SE Corporate Woods Drive roadway replacement required for constructing the overpass will extend from SE Convenience Boulevard to SE 72nd Street. The overpass bridge will accommodate four travel lanes, a recreational trail, and a sidewalk.
CPKC	Eliminate two crossings and construct a new bridge and access road over the railroad	Improve safety by eliminating crossings and building a bridge and access road over the railroad east of Nahant Rail Yard. The bridge and access road will allow safe access to the Davenport Regional Water Pollution Control Plant, Compost Facility, and Nahant Rail Yard. The bridge will be above 500-yr flood levels and allow freight to be moved along the rails with no interruptions from vehicular traffic.
IANR and CPKC	Add Interchange Track Capacity at Nora Springs Junction	Increase track capacity at the IANR/CP Nora Springs Interchange to enhance increasing traffic growth from Northeast Iowa Customers to CPKC origins and destinations.
BNSF	Grade separation Conceptual Design at Merrill	Conduct a feasibility study of highway-rail grade crossing safety upgrades and a potential high-way-rail grade separation at the intersection of U.S. Highway 75 in Merrill, along with two other adjacent highway-rail grade crossings.
UP	Big Soo Terminal Rail Expansion at Sioux City	Construct a new industrial spur to supplement the existing rail capacity at the Big Soo Terminal Facility in Sioux City.
UP	Add Yard/Working Tracks support at Boone	Support switching operations at location to handle increased local business.
UP	Add Yard/Working Tracks Support at Marshalltown	Support switching operations at location to handle increased local business.



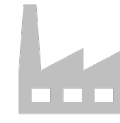
Railroad(s)	Project	Description
IANR	Expanded Facility Capacity at Manly Logistics Park	Expand track capacity, develop land, and build access road entrance and exit to the Manly Logistics Park.
IANR	Intermodal Facility Construction at Manly	Develop a new intermodal facility on the IANR Manly Subdivision at Manly.
IANR	Bridge Infrastructure Improvements on Manly Subdivision	Improve bridge infrastructure to allow for the handling of 286k Railcars at 40 MPH track speeds at IANR Bridge 177.3, Bridge 178.2, Bridge 202.6, and Bridge 208.7.
IANR	Bridge Infrastructure Improvements on Garner Subdivision	Improve bridge infrastructure to allow for the handling of 286k Railcars between Garner and Forest City by replacing IANR Bridge 73.89 and Bridge 74.11.
BNSF	Siding Track for Transload Facilities at Pottawattamie and Mills Counties in Council Bluffs Area	Develop and construct a siding track for use in serving a transload facility under development near Council Bluffs on the BNSF Council Bluffs Subdivision.
CN and UP	Iowa Falls/Hardin County Dual Rail Connection and Transload Facility at Iowa Falls	Construct a dual-rail connection track to the CN Waterloo Subdivision and the UP Mason City Subdivision, four yard tracks, and a siding each near CN and UP interchanges, and a transload/terminal facility.
IANR	Wayside Detector Equipment for Cedar Rapids and Manly Subdivisions	Install Hot Box and Dragging Equipment detectors every 20 miles on the IANR. Install a site with a Wheel Impact Load Detector, Acoustic Bearing Monitor, Truck Hunting, and Weigh-in-Motion Scale in the vicinity of Shell Rock.
IANR	Advanced Switch Point Protection on Cedar Rapids and Manly Subdivisions	Install advanced switch point protection on the IANR Cedar Rapids and Manly Subdivisions to provide increased safety utilizing locomotive PTC equipment.
IANR	Bridge Infrastructure Improvements on Cedar Rapids Subdivision	Improve bridge infrastructure to allow for the handling of 286K Railcars at 40 MPH track speeds at IANR Bridge 103.1, Bridge 124.9, Bridge 142.7, and Bridge 143.9.
IANR	Flood Mitigation Measures at Cedar Rapids	Address flood prone area along the Cedar River by performing bank stabilization measures on the Cedar Rapids Subdivision from MP 101.2 to MP 200.9 at Linn Junction near Cedar Rapids.
IAIS	Bridge Modifications at Colfax	Complete modifications to bridges that restrict the movement of high-wide loads due to the truss construction at Colfax (Newton Subdivision MP 329.1).
IAIS	Bridge Modifications at De Soto	Complete modifications to bridges that restrict the movement of high-wide loads due to the truss construction at De Soto (Council Bluffs Subdivision MP 380.4).
CIC	Rail Corridor Rehabilitation	Replacement of railroad ties along 56 miles of main line track from Cedar Rapids to Hills, Iowa
CIC	Rail Corridor Rehabilitation	Replacement of railroad ties along 56 miles of main line track from Cedar Rapids to Hills, Iowa

Railroad(s)	Project	Description
CPKC	Fausser Rail Terminal Rail Access at New Albin	Construct a rail spur to serve Kermin Industries located on the CPKC Marquette Subdivision at New Albin.
CPKC	Pattison Sand Unit Train Capacity Expansion at Garnavillo	A six-phase project to expand the unit train capacity for Pattison Sand on the CPKC Marquette Subdivision near Garnavillo.
KJRY	Yard and Main Track Enhancements at Keokuk	The project would expand the Twin Rivers Yard by adding new yard tracks and undertaking other major yard rehabilitation, including replacing damaged infrastructure from derailments and flooding. Improvements will also be made to the main track between US 136 Overpass to the Mississippi River Bridge.
IANR	Iowa Northern Education and Training Program	Development and delivery of virtual, and in-person education and training courses, development of a customized learning platform to deliver those courses, as well as remote and in-person locomotive simulator education and training.
CIC	Construct Bypass Track at Cedar Rapids	Rail traffic currently moves through ADM Plant in Cedar Rapids, affecting the efficiency of operations. Project would construct a track that bypasses ADM that would allow CIC trains to travel around the plant, thus promoting efficiency and minimizing potential operating conflicts for CIC trains.
KJRY	Rail Upgrade Project	Replace ties, resurface, and upgrade rail over 100 miles on the KJRY improving the track excepted and Class 1 FRA track safety standard to Class 2
CIC	Iowa River Bridge Project	Replacement of a 118-year -old Iowa River Bridge at MP 18.15 on the CIC's Amana Subdivision, spanning the Iowa River near Middle Amana, Iowa. The project will raise the new bridge 30 inches to clear the 100-year flood height, lengthen and widen the through truss span of the bridge, and increase the load capacity to accommodate 286K rail cars.
IANR	Industrial Park Development at Forest City	Construct a rail served industrial park on North Central Iowa Rail Corridor in Forest City.
IANR	Industrial Park Development at Garner	Construct a rail served industrial park on North Central Iowa Rail Corridor in Garner.
IANR	Industrial Park Development at Oelwein	Construct a rail served industrial park on the IANR Oelwein Subdivision in Oelwein.
IANR	Industrial Park Development at Palo	Construct a rail served industrial park on the IANR Cedar Rapids Subdivision in Palo.
IANR	Advanced Switch Point Protection	Install advanced switch point protection on IANR Manly and Cedar Rapids Subdivisions to provide increased safety utilizing Locomotive PTC equipment.
IANR	Remote Control Switches	Install Remote Control Switch Machines in Waterloo, Nora Springs Jct. and Plymouth Jct. on IANR
BJRY	Le Mars Transload Expansion	Construct improvements that expand the capacity of a transload operated by the BJRY in the Le Mars Industrial Park and allow it to handle additional commodities.



Railroad(s)	Project	Description
BJRY	Transload/Intermodal Investments	Investments in new transloading and intermodal capabilities, terminals, and operations across network.
CPKC	CTC on Kansas City Subdivision	Add CTC to 102 miles of the Kansas City Subdivision. Anticipated to be complete in 2025.
CPKC	Davenport Riverfront Rail Crossing Safety Improvements Project	Project includes various safety improvements (e.g., signals, gates, crossing signage, etc.) at multiple highway-rail grade crossings, as well as trespassing prevention measures (e.g., barriers and/or fencing in Davenport. With the proximity of the CPKC rail line to the city's commercial riverfront district and multi-purpose trails, there are many conflict points along the rail line, creating safety challenges that require the trains to frequently sound the horn for an estimated nine-mile distance
CPKC	South Concord Street Grade Separation	Project would eliminate two highway-rail grade crossings (elimination of one crossing and creation of a grade separation at another) to provide better access to critical infrastructure, including the regional wastewater treatment plant
BSV	New Interchange and Access at Boone	One of BSV's customers has an expansion planned in 3-4 years, which would significantly increase the railcar traffic. BSV is working on designs for a new interchange with UP, along with additional areas for rail served customers, are being developed to accommodate customer expansion planned in 3-4 years.
UP	Network Renewal Projects	Rail, tie, and signal renewals throughout the state.
CIC	Bridge Replacement at Iowa River	Construction of new Iowa River Bridge (Bridge I-142) that will replace the 2 existing steel truss spans and 2 existing through girder spans.
CIC	Bridge Replacement at Cedar Rapids	UP Overhead Bridge replacement will replace the 106' 5 span bridge and timber trestles with 182'5" span and steel trusses with concrete piers.
CIC	Streamline Rail Operations and Improve Yard Safety in Cedar Rapids	Includes various improvements (e.g., new tracks, station building, and equipment) to expand the CIC Smith-Dows Rail Yard. The Project will remove capacity and facility constraints, make interchanging and switching operations safer, ensure fewer locomotive and crew truck traffic emissions, and create a dependable reporting location and storm shelter for CIC operation staff.
BNSF	Transload Facility and Rail Industrial Park in Mills County	Develop transload facility and rail industrial park in Mills County. This is in preliminary design.
CN and CPKC	Charles City Transload	The proposed project will re-purpose the former Oliver/White Tractor Manufacturing plant site as a railcar-truck transload center for transshipment of propane, bio-renewables, and specialized fuels through connections with both CP and CN railroads. Project is expected to create 20-25 new jobs.

Railroad(s)	Project	Description
UP	Cold Links Logistics	Project is adding a switch and 2,500-foot rail spur to the planned industrial facility connecting it to the railroad network. The project is expected to create 60 new jobs (plus additional contractor jobs to support daily operations of the finished manufacturing facility).
UP	Ten D/Merchants Distribution Service	Project will add 1 mile of new rail and replace/upgrade/make accessible 1.5 mile of existing rail. Also will add additional transloading service capacities and capabilities.
UP	New Horizons Switching Track and Additions	Atlas Roofing Corporation, Clinton, Co is building a new roofing materials plant that will produce asphalt shingles. The \$218M plan includes rail infrastructure that will also benefit future rail access in the industrial park.
CN	A-line EDS	A-line E.D.S. recycles electrical transformers from utilities companies. This new rail spur would allow mineral oil and scrap metal to be shipped out by rail using Canadian National (CN) and the potential for larger transformers to be processed at this facility.
IAIS	Davenport Elevated Trainway	The height of railroad bridges restricts vehicle traffic in downtown Davenport. Existing railroad clearance of around 11 feet could be improved to 13.5 feet on three main bridges.
BJRY	BJRY Rail Yard and Transload Expansion	This project will demolish a 19,000 SF building and construct a spur into a 16,000 SF building to the North for use as a transload facility.
BNSF and CPKC	Appanoose County Rail Extension	This project would add a new rail spur and up to 6-miles of new track connecting Iowa Southern Railway (IASR) to proposed industrial sites East of Centerville, with connection to Canadian Pacific Kansas City (CPKC) . Two large agricultural produces are nearing the commitment stage in the development of these sites.
UP	Heartland Co-op Greenfield Rail Loading Elevator	This project will construct a loading facility and unit train capable loop track with a connection to Union Pacific (UPRR), Northeast of Millerton.
IAIS	Reid Line LLC Dexter Rail Yard Improvements	This project will make improvements to an existing spur and add additional rail car storage, an under track unloading pit and support a potential rail accessible warehouse. The area rail service provider is Iowa Interstate RR Ltd (IAIS).
MULTIPLE	Railroad Revolving Loan and Grant Program	This program administered by Iowa DOT provides financial assistance to improve rail facilities that will create jobs, spur economic activity and improve the rail transportation system in Iowa.
MULTIPLE	Statewide Grade Crossing Improvement and Upgrade Projects (Federal Highway-Railroad Crossing Safety Program)	Includes anticipated annual funding from the Federal Highway- Railroad Crossing Safety Program (approximately \$5.31 Million per year) to upgrade crossings with passive warning devices including crossbucks to active warning devices including flashing light signals and gate arms; upgrading existing signals; improve crossing surfaces; and to provide low-cost



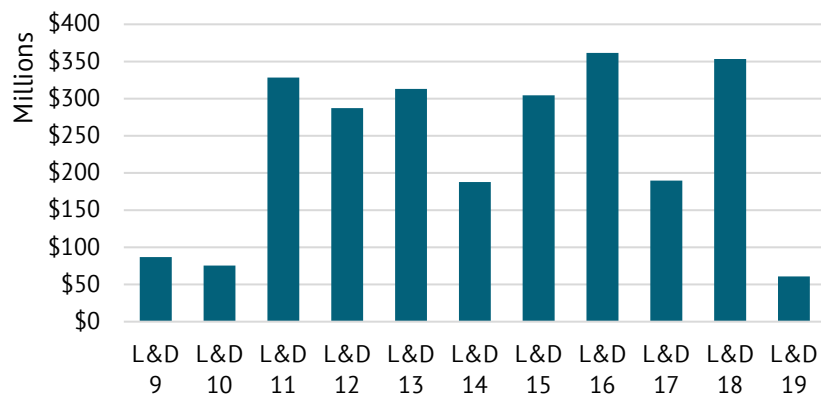
Railroad(s)	Project	Description
		improvements such as increased sight distance, medians, widened crossings, or to close crossings.
MULTIPLE	Statewide Track and Bridge Infrastructure Upgrades to Accommodate 286K Rail Cars	Upgrade segments, including track and bridges, of the rail network that were identified as being incapable of handling 286K rail cars.
MULTIPLE	Statewide Grade Crossing Improvement and Upgrade Projects (State Highway-Railroad Surface Repair Program)	Includes anticipated annual funding from the State Highway-Railroad Crossing Surface Repair Program (approximately \$900,000 per year) to promote safety through surface replacement programs at public highway-railroad grade crossings.
MULTIPLE	Statewide Grade Crossing Safety Fund	Includes funding for a portion of the maintenance costs for traffic control devices activated by the approach or presence of a train installed under the Highway-Railroad Crossing Safety Program.

Source: Iowa railroad companies

Waterway

With growing barge traffic on the Missouri River, it will be important for USACE to continue focusing on the Bank Stabilization and Navigation Project with the authorized purpose of providing a reliable, self-scouring navigation channel from St. Louis, Missouri to Sioux City, Iowa that is 9 feet deep and not less than 300 feet wide. However, most water-related needs for Iowa are associated with the infrastructure in and along the Mississippi River. Given the condition, size, and average delay of the 11 locks bordering Iowa, all are considered freight bottlenecks. It is clear that a lack of repairs, maintenance, and modernization will continue to have a negative impact on the efficiency and condition of the infrastructure. Failure or closure of a lock could be catastrophic for the region. The USACE has identified over \$4.1 billion in deferred/backlog maintenance and major rehabilitation and repair costs for the 11 locks and dams bordering Iowa, shown in Figure 5.6 and Table 5.5. Addressing these needs is essential to ensure continued viability of the Mississippi River for transporting freight to and from Iowa.

Figure 5.6: Deferred/backlog maintenance and major rehabilitation and repair costs for Iowa locks and dams (2025)



Source: U.S. Army Corps of Engineers

Table 5.5: Deferred/backlog maintenance projects for Iowa locks and dams

Lock	Project
9	Installation of auxiliary chamber sheet pile closure; facility infrastructure refurbishment; miter gate installation, painting of dam gates, service bridges, and bulkheads; replace lower guide wall monolith with end cell; replacement of miter gates and anchorages; replacement of miter gates
10	Dam gate seals; facility infrastructure refurbishment; machinery electrical repair; painting of dam gates and service bridge; replace tow haulage system; replace upper guide wall monolith with end cell; installation of miter gates; painting of dam roller gates
11	Kevel rail replacement; crane and bulkhead lifter replacement; upper mooring cell system; tainter gate spare parts; infrastructure repairs
12	Kevel rail replacement; downstream guide wall repair; bulkhead lifter replacement; infrastructure repairs;
13	Kevel rail replacement; pressure relief wells; bulkhead lifter replacement; infrastructure repairs
14	Kevel rail replacement; auxiliary lock dewatering; bulkhead lifter replacement; infrastructure repairs
15	Kevel rail replacement; lower mooring cell system; bulkhead lifter replacement; infrastructure repairs
16	Filling, emptying system; gate and service bridge repairs; kevel rail replacement; bulkhead lifter replacement; infrastructure repairs
17	Dam crane and bulkhead lifter replacement; infrastructure repairs
18	Bulkhead lifter replacement; access road repairs; infrastructure repairs
19	Building repairs; dewatering; nose pier replacement; infrastructure repairs

Source: U.S. Army Corps of Engineers

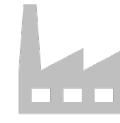
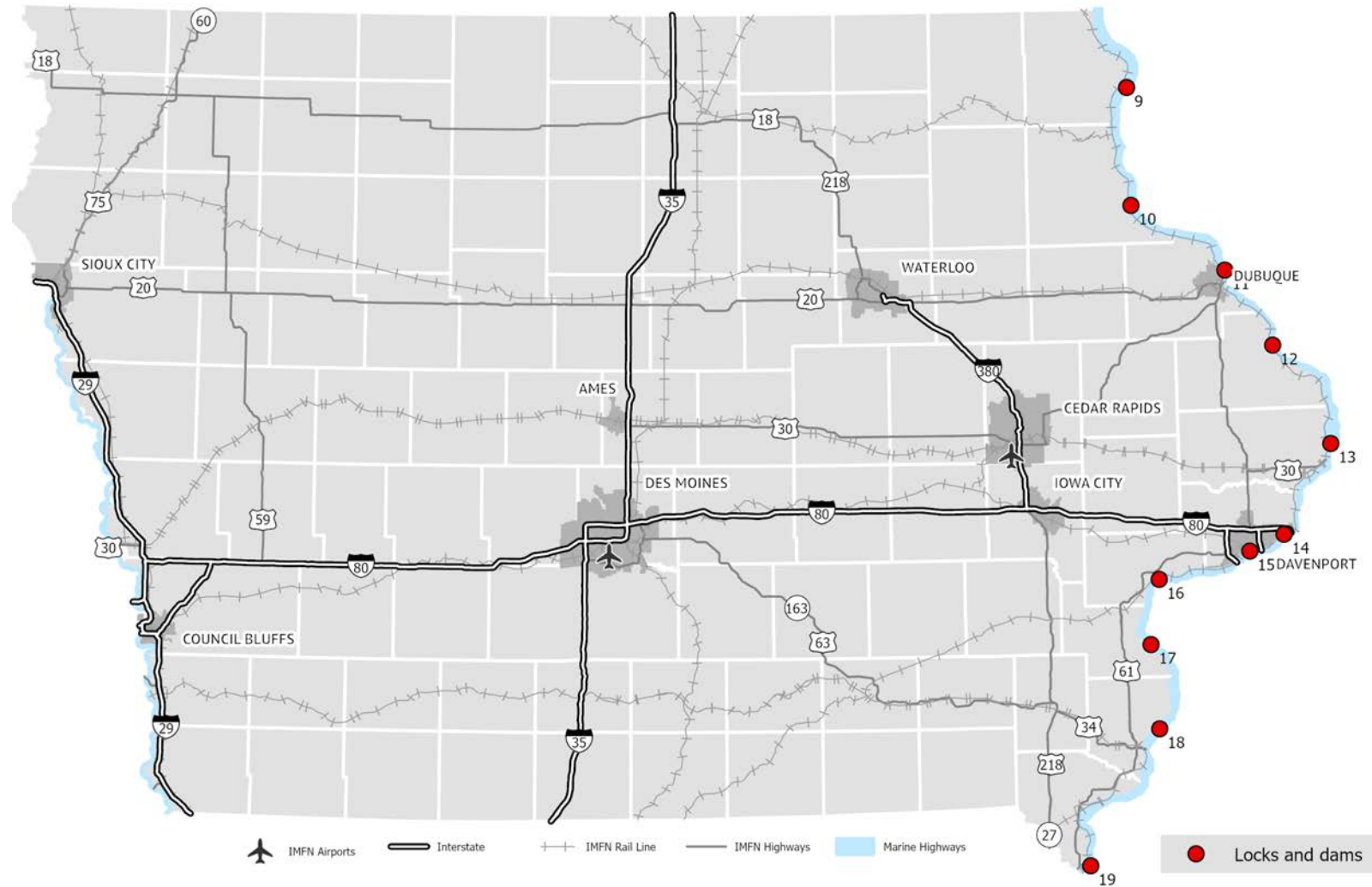


Figure 5.7: Waterway freight priority locations



Source: U.S. Army Corps of Engineers

5.3 Performance Measures

Performance monitoring allows for the demonstration of how well the freight transportation system is performing relative to defined system objectives.

Iowa's freight performance measures reflect the most critical metrics for tracking the condition, utilization, safety, reliability, and sustainability of the overall freight system. These performance measures will be used to assess how the freight transportation system is currently performing and whether it is meeting the initiatives of the national freight goals. Reviewing performance of the network is an important piece of implementation. As the gap between transportation maintenance needs and available funding continues to grow, it is increasingly important to spend resources in the most strategic and effective way possible.

Most of these freight performance measures are being tracked regularly, as shown in Chapter 2, System inventory and performance (Section 2.3, Inventory and performance by mode) and Chapter 3, Industries and commodities (Section 3.2, Commodity movement). The emissions-related measures for each mode are to be developed.



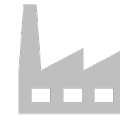
All measures are categorized by mode and the relationship of each to the Iowa DOT system objectives (safety, sustainability, accessibility, and flow), as defined in Chapter 1, Introduction. These measures will be revisited and reevaluated during each future update of the State Freight Plan.

Aviation

	• Number of freight-related aviation accidents • Number of freight-related aviation fatalities
	• State investments in IMFN airports • Total estimated aviation emissions
	• Total tons of air cargo at commercial airports • Total value of air cargo at commercial airports
	• Percent of IMFN airports with excess cargo-handling capacity

Highway

	• Number of freight-related highway crashes • Number of freight-related highway fatalities
	• State investments in IMFN highways • Infrastructure Condition Evaluation rating of the IMFN • Total estimated truck emissions
	• Change in public truck parking spaces
	• Total truck vehicle miles traveled on the IMFN • Total tons of truck cargo on the highway system • Total value of truck cargo on the highway system • Bottleneck minutes per mile on the IMFN • Truck Travel Time Reliability Index for the IMFN
	• Improvements made at highway bottleneck locations
	• Total oversize/overweight loads permitted on the IMFN • Percentage of the IMFN without capacity needs



Pipeline

	Number of freight-related pipeline fatalities
	State investments in pipelines
	- Total tons of commodities on the pipeline system - Total value of commodities on the pipeline system
	Number of freight-related pipeline incidents (including leaks)

Railroad

	- Number of freight-related railroad crashes and/or derailments - Number of freight-related railroad fatalities
	- State investments in IMFN railroads - Private maintenance and improvement spending on the railroad system - Total estimated locomotive emissions
	- Total gross ton-miles per mile on the railroad system - Total tons of cargo on the railroad system - Total value of cargo on the railroad system - Number of choke points identified on the railroad system
	Improvements made at rail chokepoints
	Percentage of track-miles able to handle 286,000-pound cars

Waterway

	- Number of freight-related inland waterway allisions, collisions, and/or groundings - Number of freight-related inland waterway fatalities
	- State investments in IMFN inland waterways - Age of Mississippi River locks - Total estimated vessel emissions
	Length of navigation season on the Mississippi and Missouri Rivers
	- Total tons of cargo on the waterway system - Total value of cargo on the waterway system - Total delay at Mississippi River locks
	Improvements made at inland waterway bottlenecks
	- Total unscheduled closures at Mississippi River locks - Percentage of Mississippi River locks bordering Iowa that are 1,200 ft. long

5.4 Stakeholders and Partners

Utilizing input from freight stakeholders is crucial for the development of strong plans and implementation of successful strategies. The Iowa DOT engaged a number of state, regional, and national public and private sector stakeholders throughout the process to gather input on plan development and will continue to consider any findings or recommendations from these groups when carrying out freight activities.

Coordinating freight planning activities with stakeholders provides benefits and opportunities that include identifying and prioritizing investment opportunities, sharing design standards, and harmonizing regulations on specific corridors. It also assists in the sharing of resources and minimizing the duplication of efforts by multiple agencies. Although not an exhaustive list, this section provides an overview of the freight-related groups with which the Iowa DOT is most actively involved.

Freight Advisory Council (FAC)

The FAC is a group of Iowa-based public and private stakeholders serving as an advisory body to the Iowa DOT on freight mobility policies, programs, and investments. This group was created in 2012 as a forum to assist with understanding the complexities associated with freight movements through education, discussion, and review.

Members representing the agriculture, energy, distribution, logistics, and multimodal transportation industries, as well as local and state government agencies (see FAC webpage for the most up-to-date membership list), meet on a quarterly basis to address critical topics cooperatively identified by the FAC Chair and Iowa DOT staff. This guidance allows the Iowa DOT to more effectively guide public investment in the freight transportation system with the goal of enhancing the competitiveness of Iowa's business and industry.

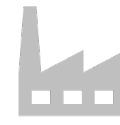
The FAC was engaged and consulted regularly throughout the development of the State Freight Plan. The group provided input on goals, trends, issues, implementation strategies, improvements/projects, and performance measures. Current membership and meeting materials are available at <https://iowadot.gov/transportation-development/systems-planning/areas-planning/freight/freight-advisory-council>.

Rail Advisory Committee (RAC)

The mission of the RAC is to guide the Iowa DOT in fostering a safe and efficient rail transportation system. Through education, discussion, and sharing of concerns and opportunities, the RAC assists and advises the Iowa DOT on rail policies, programs, and investments. Responsibilities may include but are not limited to:

- Serving as an advisory body to Iowa DOT staff,
- Assisting in the development of the Iowa State Rail Plan,
- Reviewing proposals for policies, programs, and investments,
- Proactively identifying emerging trends that may impact the rail transportation system, and
- Advising on legislative issues impacting rail transportation.

The group, which includes representatives from each of the railroads operating in Iowa, meets a minimum of twice per year or as issues require. The Iowa DOT also communicates and consults with the RAC, as needed, outside of regular biannual meetings. The RAC was consulted on rail-specific portions of the State Freight Plan, including rail choke points and improvements.



Mid-American Association of State Transportation Officials (MAASTO)

MAASTO is one of four geographical regions of the American Association of State Highway Transportation Officials, which is an association representing highway and transportation departments in the 50 states. MAASTO consists of 10 states primarily in the Midwest, including Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. The goal of MAASTO is to foster the development, operation, and maintenance of an integrated and balanced transportation system that adequately serves the transportation needs of the states.



Mid-America Freight Coalition (MAFC)

Serving as the freight planning and research arm of MAASTO, the MAFC is a regional organization that cooperates in the planning, research, operation, preservation, and improvement of transportation infrastructure in the ten member states. These states meet regularly to collaborate on freight trends and initiatives.



Upper Mississippi River Basin Association (UMRBA)

UMRBA is a regional interstate organization coordinating Illinois, Iowa, Minnesota, Missouri, and Wisconsin river-related programs and policies, as well as work with federal agencies. UMRBA is involved primarily with programs related to commercial navigation, ecosystem restoration, water quality, aquatic nuisance species, hazardous spills, flood risk management, and water supply. The UMRBA Navigation Group, consisting of the five state transportation departments, has primary responsibility for implementing activities under the M-35 Marine Highway Corridor.



North American Strategy for Competitiveness (NASCO)

The goal of NASCO is to increase economic development activity while supporting multimodal infrastructure improvements, technology and security innovations, and environmental initiatives along the NASCO Corridor. This includes cities, counties, states, provinces, and private sector representatives along the corridor in Canada, Mexico, and the United States. The corridor also shadows U.S. interstates 29, 35, and 94, and the connecting transportation system in Canada and Mexico critical to national and international trade.



Intelligent Transportation Systems (ITS) Heartland Corridor Coalition

The ITS Heartland Chapter of ITS America is intended to facilitate information sharing for ITS projects and activities and to showcase ITS applications in five heartland states: Missouri, Iowa, Kansas, Nebraska, and Oklahoma. To date, all five state transportation departments, along with major universities in each state and the FHWA, have been involved in developing the organization.

5.5 Funding Mechanisms

Most highway projects in Iowa are paid for using revenue from the Road Use Tax Fund (RUTF). However, the State of Iowa also has several different grant and loan programs that aid freight-related projects. Each has specific eligibility requirements, but all support projects intending to improve the movement of goods.

This section provides a brief overview of the following funding programs. For a more detailed guide on the grant and loan programs, see the Iowa DOT's website.

- RUTF
- Linking Iowa's Freight Transportation System (LIFTS) Program
- State Airport Improvement Program
- Revitalize Iowa's Sound Economy (RISE)
- Railroad Revolving Loan and Grant (RRLG) Program
- Highway-Railroad Crossing Surface Repair Program
- Iowa Clean Air Attainment Program (ICAAP)
- County and City Bridge Construction Fund
- County-State Traffic Engineering Program (C-STEP)
- Iowa Traffic Engineering Assistance Program (TEAP)
- Traffic Safety Improvement Program
- Urban-State Traffic Engineering Program (U-STEP)

Federal funding programs not specific to Iowa are not included. A summary of the National Highway Freight Program (NHFP) funds allocated to Iowa is included in Section 5.6, Freight Investment Plan.

RUTF

Dedicated highway use revenue, collected through vehicle registration fees and a state excise tax on fuels, is deposited into the RUTF. No state General Fund (i.e., general tax) revenue is used for highway projects in Iowa. Established in 1949, the RUTF has provided a stable and reliable source for investing in the state's primary, secondary, and municipal roadway systems. After some off-the-top diversions, receipts into the RUTF are distributed according to a formula of 47.5 percent for the primary road system, 24.5 percent for secondary county roads, 8 percent for farm-to-market county roads, and 20 percent for city streets.

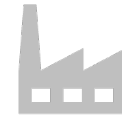
LIFTS Program

The LIFTS program was created in fall 2015 as a one-time, flexible funding source of \$2.6 million for multimodal freight-related projects utilizing State Infrastructure Bank funds. This was used for an initial round of project solicitation and awards that helped demonstrate the demand and value of a freight funding program.

In 2016, the Iowa Transportation Commission and Iowa DOT expanded LIFTS into a competitive grant program and allowed stakeholders outside of the Iowa DOT to apply for the flexible funding for use on freight projects. After 8 years the DOT was only able to successfully award one project. Due to the challenges related to federal funding requirements, Iowa DOT discontinued the program in 2024. However, LIFTS will remain in the Freight Investment Plan on page 135 until the final project is completed.

RISE

The RISE program was established to promote economic development in Iowa through construction or improvement of roads and streets. Iowa cities and counties are eligible for these funds, which may be in the form of a grant, loan, or a combination thereof. Projects must involve construction or improvement of a public roadway.



State Airport Improvement Program

This program provides funding for airport improvements, navigational aids, communications equipment, marketing, safety, security, outreach, education, and planning. Airport Development and Immediate Safety Enhancement are specific funding programs under the Airport Improvement Program. Publicly owned airports in Iowa are eligible.

RRLG Program

RRLG is a state loan and grant program established to build or improve rail infrastructure or facilities that will spur economic development and job growth and provide assistance to railroads for the preservation and improvement of the rail transportation system. Those eligible include businesses, industries, railroads, local governments, and economic development agencies. Justification for projects focuses on improving the rail network, job creation, wage quality, and project investment.

Highway-Railroad Crossing Surface Repair Program

This program assists railroad companies and public road jurisdictions with rebuilding public highway-railroad grade crossing surfaces in Iowa. Those eligible include railroad companies, private entities that own a railroad track, and public road jurisdictions.

ICAAP

ICAAP funds highway/street, transit, bicycle/pedestrian, and freight projects, as well as programs that help maintain Iowa's clean air quality by reducing transportation-related emissions. Eligible highway/street projects must be on the federal-aid system, which includes all federal functional class routes except rural minor collectors. The state, a county, or a city may sponsor an application or may co-sponsor for private, nonprofit organizations or individuals. Eligible projects reduce emissions via traffic flow improvements, reduce vehicle-miles of travel, reduce single-occupant vehicle trips, or other transportation improvement projects that improve air quality or reduce congestion.

County and City Bridge Construction Fund

This program provides funding for construction or replacement of public roadway bridges. Iowa counties and cities are eligible. Candidate bridges must be classified as structurally deficient or functionally obsolete according to federal guidelines.

C-STEP

The intent of C-STEP is to solve traffic operations and safety problems on primary roads outside incorporated cities. Any Iowa county is eligible to use these funds on spot and/or linear improvements.

U-STEP

The intent of U-STEP is to solve traffic operation and safety problems on primary roads in Iowa cities. Spot and/or linear improvements must involve a municipal extension of a primary road.

TEAP

TEAP provides traffic engineering expertise to local units of government. The purpose is to identify effective traffic safety and operational improvements, as well as potential funding sources to implement the recommendations. Typical studies address high-crash locations, unique lane configurations, obsolete traffic control devices, school pedestrian traffic, truck routes, parking issues, etc.

Traffic Safety Improvement Program

This program provides funding for traffic safety improvements or studies on any public road under county, city, or state jurisdiction. Eligible projects will fall into one of three categories: construction or improvement of traffic safety and operations at a specific site with crash history; purchase of materials for installation of new traffic control devices; or transportation safety research, studies, or public information initiatives.

5.6. Freight Investment Plan

The NHFP was developed to improve the condition and performance of the National Highway Freight Network (NHFN). The NHFP includes a formula program providing funding to be used for freight-related projects on the NHFN across the country. Each state receives funds in proportion to the amount of funds a state receives compared to other states under all formula-apportioned programs (see Table 5.6).

A state may not obligate these funds unless the state has developed an approved freight plan which includes a freight investment plan listing of priority projects and describes how NHFP funds made available would be invested and matched. Table 5.7 shows Iowa's Freight Investment Plan for FY2026-2030, documenting the planned use of NHFP funds, National Highway Performance Program (NHPP) funds, and Primary Road Fund (PRF) match. Table 5.8 summarizes NHFP funding available and allocated by year.

Each federal fiscal year (FY), a state may obligate up to 30 percent of the total apportionment to the state for freight intermodal or freight rail projects. The Iowa Transportation Commission allocated NHFP flexible funds to the LIFTS competitive grant program for use on freight projects.

NHFP funds from FY 2016 to FY 2025 were awarded and/or authorized to the following projects:

- Council Bluffs I-29/I-80 capacity and interchange improvements (Priority #1 in 2017 SFP)
- Davenport I-74 bridge replacement (Priority #3 in 2017 SFP)
- Iowa City I-80/I-380 interchange (Priority #7 in 2017 SFP)
- Johnson County I-80 capacity (Need identified in 2022 SFP)
- Cedar County I-80 capacity (Need identified in 2022 SFP)
- Polk County I-80 capacity and interchange improvements (Need identified 2022 SFP)
- Council Bluffs TSL Company container terminal (LIFTS program)

Table 5.6: Iowa NHFP apportionment, 2016-2030

Year	Apportionment	98% Apportionment*
FY 2016	\$14,085,949	\$13,804,230
FY 2017	\$13,386,574	\$13,118,843
FY 2018	\$14,627,929	\$14,335,370
FY 2019	\$16,511,333	\$16,181,106
FY 2020	\$18,276,135	\$17,910,612
FY 2021	\$18,161,883	\$17,798,645
FY 2022	\$17,043,984	\$16,703,104
FY 2023	\$17,384,864	\$17,037,167
FY 2024	\$17,732,561	\$17,377,910
FY 2025	\$18,087,213	\$17,725,469
FY 2026	\$18,448,957	\$18,079,978
FY 2027**	\$18,448,957	\$18,079,978
FY 2028**	\$18,448,957	\$18,079,978
FY 2029**	\$18,448,957	\$18,079,978
FY 2030**	\$18,448,957	\$18,079,978
Total	\$257,543,210	\$252,392,346

* Includes a 2% subtraction from full apportionment to account for State Planning and Research funds

** All NHFP funding apportionments for FY2027-FY2030 are estimates based on FY2026 funding levels

Source: Iowa DOT and Federal Highway Administration

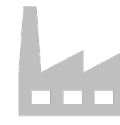


Table 5.6: Iowa Freight Investment Plan, 2026-2030

Category	Project	Funding Source	FY2026	FY2027	FY2028	FY2029	FY2030	Total
Freight Projects	I-80 in Polk County capacity <i>University Ave to N of Douglas Ave</i>	NHPP	\$7,099,222					\$7,099,222
		NHFP	\$18,079,978					\$18,079,978
		PRF match	\$6,294,800					\$6,294,800
		Total project cost	\$31,474,000					\$31,474,000
	I-80 in Polk County interchange improvements <i>Southwest MixMaster</i>	NHPP		\$2,955,272				\$2,955,272
		NHFP		\$18,079,978				\$18,079,978
		Mega Grant Program		\$68,014,000				\$68,014,000
		PRF match		\$19,790,750				\$19,790,750
		Total project cost		\$108,840,000				\$108,840,000
	I-80 in Scott County major bridge replacement <i>Mississippi River Bridge</i>	NHPP			\$54,820,022	\$53,820,022	\$53,820,022	\$162,460,066
		NHFP			\$18,079,978	\$18,079,978	\$18,079,978	\$54,239,934
		PRF match			\$8,100,000	\$8,100,000	\$8,100,000	\$24,300,000
		Total project cost			\$81,000,000	\$80,000,000	\$80,000,000	\$241,000,000
Flexible Funding Projects	<i>(No projects identified)</i>	NHFP						\$0
		Match						\$0
		Total Project Cost						\$0

Source: Iowa DOT

Table 5.7: Summary of Iowa NHFP Funds

	FY2026	FY2027**	FY2028**	FY2029**	FY2030**	Total
Total apportionment (98%)*	\$18,079,978	\$18,079,978	\$18,079,978	\$18,079,978	\$18,079,978	\$90,399,889
Freight projects subtotal	\$18,079,978	\$18,079,978	\$18,079,978	\$18,079,978	\$18,079,978	\$90,399,889
Flexible funding projects subtotal	\$0	\$0	\$0	\$0	\$0	\$0
Total funds spent	\$18,079,978	\$18,079,978	\$18,079,978	\$18,079,978	\$18,079,978	\$90,399,889
Total funds remaining	\$0	\$0	\$0	\$0	\$0	\$0

* Includes a 2% subtraction from full apportionment to account for State Planning and Research funds

** All NHFP funding apportionments for FY2027-FY2030 are estimates based on FY2026 funding levels

Source: Iowa DOT