5. ACTION PLAN

5.1 Implementation strategies | 5.2 Improvements | 5.3 Performance 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. The high and medium priority items represent those that are considered to be most urgent by freight industry representatives.

Building from the FAC-identified priorities and the original strategies from the 2017 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, flow, and accessibility (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. **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. Exploring other funding mechanisms, or even 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.

2. **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), blockchain, 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.

3. **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.

4. **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.

5. **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.

6. **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. This would provide an opportunity for the state to consider investments that would allow for such value-added processes to occur in-state, prior to these products being exported.

7. **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.

8. **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.

9. **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.

10. **Target investment to address mobility issues 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 flow, 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.

11. **Continually monitor international trade deals and negotiations.** 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.

12. **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 the recent partnership 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).

13. **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.

14. **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.

15. **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.

16. **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.

17. **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, produce 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.

18. **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 pages 104-105 for freight design considerations.

19. **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 Iowa Rest Area Management Plan, which provides a strategy to reallocate existing truck parking spaces and strategically add new spaces along high-demand corridors, and the Truck Parking Information and Management System (TPIMS), which is a region-wide system that helps commercial vehicle drivers find available truck parking spaces. See pages 106-107 for the most recent commercial motor vehicle parking facilities assessment conducted by Iowa DOT.

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[1] 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.

Diverging diamond interchange at I-35 and 1st Ave. in Ankeny. (Source: Iowa DOT)

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(s)
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 (multi-lane)

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

Source: Iowa DOT

[1] 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).

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.

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 5.2 shows the state's current rest area system.

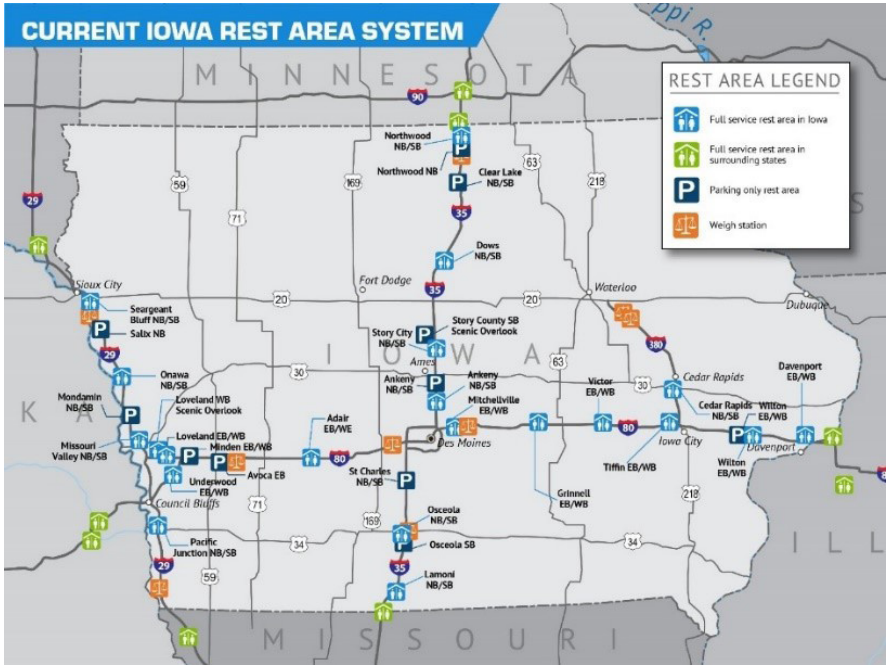
During the study, observers recorded the usage of commercial vehicle parking spaces to help estimate parking demand across the system. The study found that many of Iowa's rest areas lack commercial vehicle parking spaces and drivers must park along rest area entry ramps, in car parking spaces, and in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

Reallocation of Parking Spaces

To reduce the financial and maintenance burden of underutilized or redundant rest areas, the truck parking study recommends closing eight full-service rest areas and ten parking only rest areas. This would reduce commercial vehicle parking.

To account for this, the Iowa DOT intends to increase available parking at the remaining rest areas. This reallocation process will add commercial vehicle parking to corridors with the greatest needs and remove parking from those with less demand resulting in an overall net increase in total spaces. Figure 5.3 shows the net changes in truck parking on each interstate corridor.

Figure 5.2: Iowa rest area system, 2020



Source: Iowa DOT

Figure 5.3: Proposed additional truck parking

Source: Iowa DOT

Impact on Truck Parking

When closing rest areas, reductions in truck parking are the single largest impact to the traveling public. In consideration of these impacts, the Iowa DOT is evaluating and implementing mitigation efforts that will offset inconveniences that may be experienced by commercial drivers. Mitigation efforts include parking cameras and real time parking availability updates, and augmenting truck parking at adjacent rest areas and weigh stations.

Parking Cameras and Real-time Updates

The Iowa DOT placed real time truck parking availability cameras in operation at the rest areas along I-35 that provide real time truck parking availability to those in need. While it has been useful, it is time consuming for those looking for a spot to quickly assess multiple locations along a particular route.

With this in mind, a Transportation Investment Generating Economic Recovery grant funded implementation of a Mid America Association of State Transportation Officials (MAASTO) regional TPIMS program that collects and broadcasts real-time parking availability to drivers through a variety of media outlets including smart phone applications and traveler information websites. This helps drivers proactively plan their routes and make safer, smarter parking decisions at rest areas as well as private parking areas. TPIMS became operational in January 2019 and provides real time availability information along I-80, I-29, I-35, I-235, and I-380.

Augmenting Truck Parking at Adjacent Rest Areas & Weigh Stations

Strategies to address truck parking issues and needs in Iowa were developed and refined to include the following recommendations:

- Expand TPIMS solutions with additional sites, educational outreach to drivers and carriers, and integration with other parking apps and Electronic Logging Devices.
- Invest in vehicle-to-infrastructure technology to provide real-time parking information.
- Add a truck parking reservation system, particularly for oversize trucks.
- Use TPIMS historical data and predictive analytics to predict parking availability.
- Expand truck parking at remaining rest areas and parking only sites to offset parking loss from rest area closures and expand total truck parking by an estimated 247 spaces on the state system.
- 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.

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 the majority of 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.

There are an additional 76 acres, of an original 106 acres, identified in the airport's master plan for future cargo development and additional cargo apron space is programmed for construction in 2023. An update to the master plan started in 2021, with air cargo movement and capacity at CID being a primary focus during the planning process as e-commerce and other industry drivers continue to impact cargo needs.

Highway

There were 27 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 5.2 show Iowa's freight highway priority locations.

VCAP Matrix

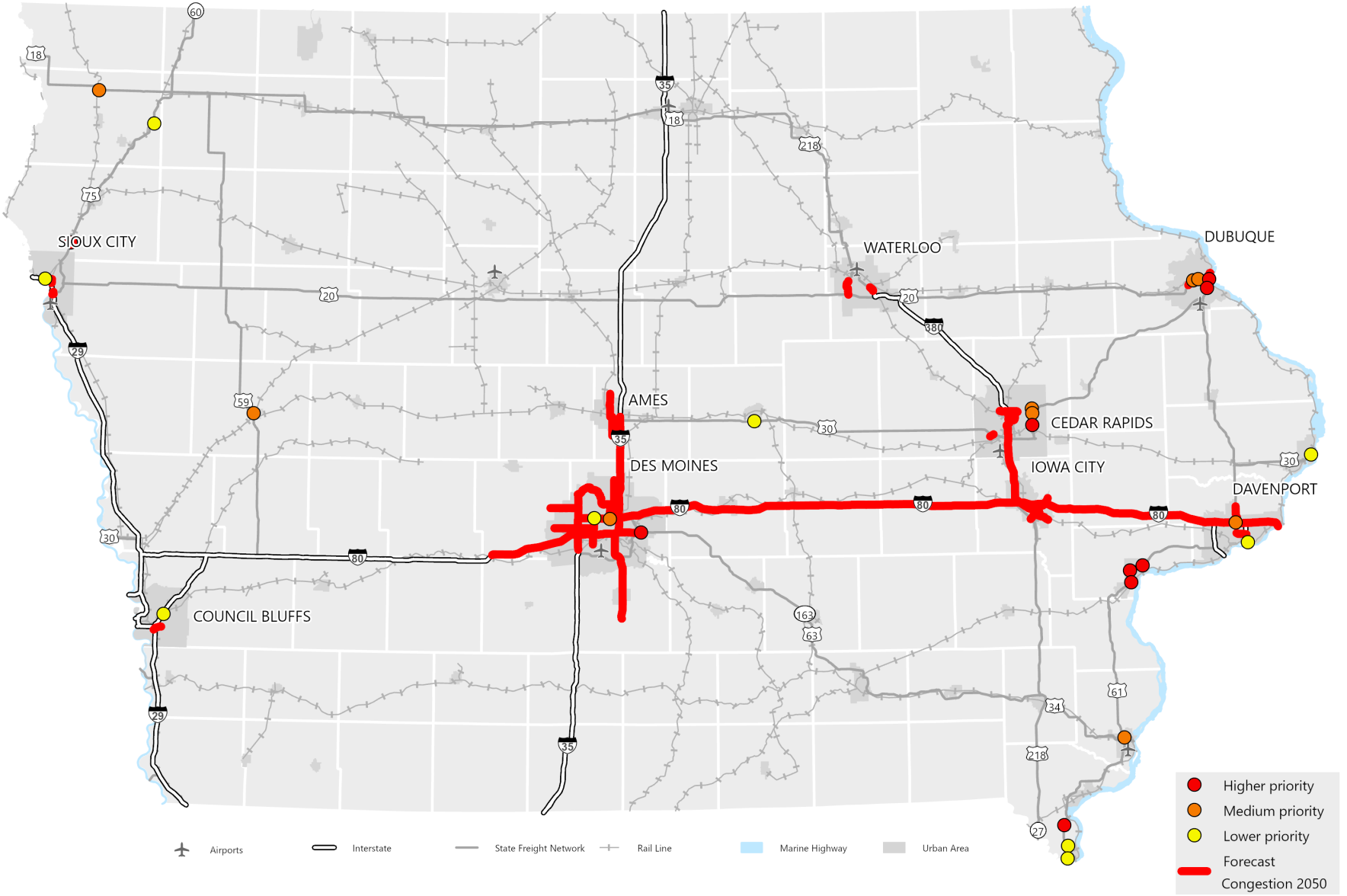
In order to identify and prioritize candidates for highway freight improvements, the Iowa DOT utilized the VCAP matrix. This approach takes advantage of multiple tools available at the Iowa DOT, including the Iowa Travel Analysis Model (iTRAM), Infrastructure Condition Evaluation (ICE), INRIX travel 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. An initial run of the model was completed first to show a base case scenario. A second run was then completed that excluded each one of the candidate locations individually. Once complete, the truck vehicle-hours traveled (VHT) was compared from the before-and-after scenarios and the difference was assigned as the value of the location. This process was completed for each individual candidate location, with higher priority being 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 per mile 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 5.2: Highway freight priority locations

	City	Location	Length	Value[2]		Condition[3]		Performance[4]		Average
1	Dubuque	U.S. 52 at U.S. 61/U.S. 151	0.01	131.4	2	55.5	2	14,357,435	2	2.0
2	Altoona	NE 70th Street at Iowa 163	0.03	114.5	3	63.0	6	8,354,943	4	4.3
3	Muscatine	U.S. 61 at Grandview Ave and Dick Drake Way	0.09	68.0	5	65.5	8	6,061,731	6	6.3
4	Cedar Rapids	U.S. 151/Iowa 13 at Mt Vernon Road	0.66	14.8	13	59.5	4	13,541,271	3	6.7
5	Dubuque	U.S. 20 at U.S. 61/U.S. 151	0.01	54.5	7	38.1	1	1,268,577	16	8.0
6	Keokuk	U.S. 218 at U.S. 61	0.11	34.1	8	64.0	7	1,917,954	13	9.3
7	Muscatine	Iowa 22 at U.S. 61	0.02	17.3	12	71.5	16	19,002,289	1	9.7
8	Muscatine	U.S. 61 at Iowa 38	0.10	19.8	11	67.4	11	2,648,475	8	10.0
9	Hinton	U.S. 75 at C60	0.45	141.8	1	62.7	5	298	27	11.0
10	Denison	U.S. 59 at Iowa 39	0.01	58.1	6	68.9	13	1,318,122	15	11.3
11	Burlington	Mt Pleasant Street at U.S. 61	0.13	6.6	18	65.5	9	2,286,496	9	12.0
12	Marion	U.S. 151 at Iowa 13	0.06	83.5	4	76.6	21	1,741,501	14	13.0
13	Hull	U.S. 18 at U.S. 75	0.39	10.2	15	57.0	3	576,743	21	13.0
14	Marion	U.S. 151/Iowa 13 at Iowa 100	0.14	9.1	17	78.3	22	8,145,963	5	14.7
15	Dubuque	U.S. 20 at NW Arterial	0.03	21.6	10	75.7	19	1,165,967	17	15.3
16	Dubuque	U.S. 20 at John F Kennedy Road	0.02	3.4	21	70.5	14	1,965,023	12	15.7
17	Davenport	U.S. 61 at I-80	0.13	25.0	9	70.8	15	2,382	26	16.7
18	Des Moines	Iowa 415/NW 2nd Avenue at I-80/35	0.17	1.3	23	66.0	10	1,087,158	18	17.0
19	Davenport	U.S. 67 at I-74	0.16	12.8	14	68.1	12	296,664	25	17.0
20	Des Moines	Iowa 28/Merle Hay Road at I-80/35	0.11	5.9	20	79.0	23	2,074,782	11	18.0
21	Keokuk	U.S. 61 at U.S. 136	0.01	3.0	22	84.0	26	4,269,800	7	18.3
22	Marshalltown	Iowa 14 at U.S. 30	0.04	9.6	16	81.0	24	748,215	19	19.7
23	Hospers	400th Street at Iowa 60	1.37	-1.8	27	83.0	25	2,212,836	10	20.7
24	Keokuk	U.S. 61 at U.S. 218 and Wirtz Lane	0.02	1.2	24	76.5	20	556,611	22	22.0
25	Clinton	U.S. 30 at U.S. 67	0.12	-0.6	26	72.0	17	512,472	23	22.0
26	Council Bluffs	U.S. 6/Kanesville Boulevard at I-80	0.32	5.9	19	89.0	27	681,358	20	22.0
27	Sioux City	U.S. 77 at I-29	0.01	0.2	25	72.5	18	322,172	24	22.3

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

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

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

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

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.

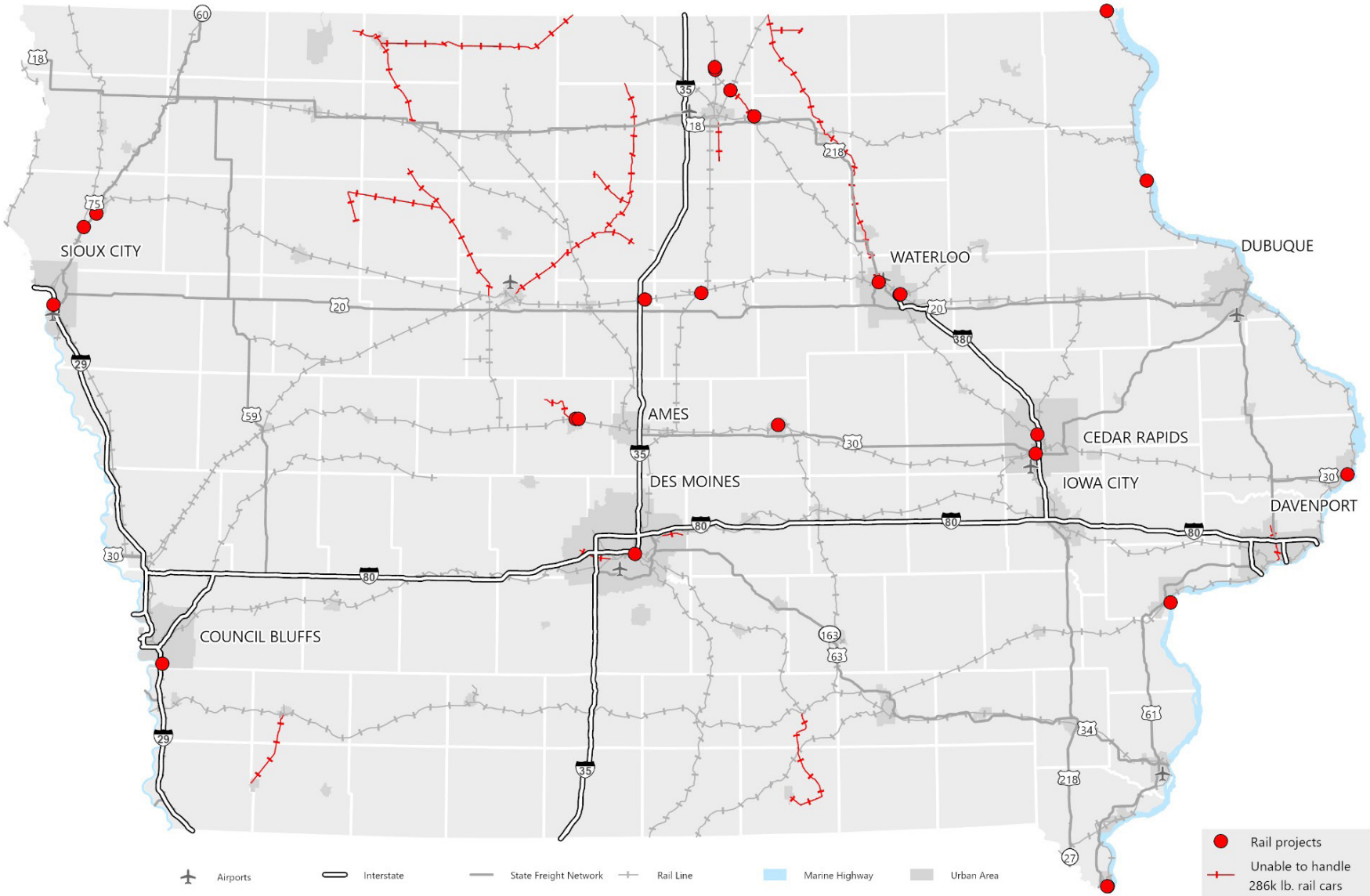
The full list of short-range (1-4 years) and long-range (5 or more years) projects is available in the ISRP. The railroad improvement list included in Figure 5.5 and Table 5.3 includes only the short-range freight rail projects on the railroad portion of the IMFN. The list is not prioritized but is listed 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; improve 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 5.3: Short-range freight rail projects

	Railroad(s)	Project	Description
1	BJRY	Le Mars Transload expansion	Construct improvements and expand capacity of the transload facility in the Le Mars Industrial Park to handle additional commodities.
2	BNSF	Grade separation conceptual design at Merrill	Develop a concept for grade separation of US 75 and the BNSF Marshall Subdivision.
3	UP	Big Soo Terminal rail expansion at Sioux City	Construct a new industrial spur to supplement the existing rail capacity.
4	BNSF	Siding track construction at Council Bluffs	Develop a siding track for use in serving a transload facility under development on the BNSF Council Bluffs Subdivision.
5	UP	Add yard/working track support at Boone	Support switching operations at location to handle increased local business.
6	BSV	Boone Industrial Park upgrade Phase I	Install a 1700-foot siding track (including grading, ties, and ballasting) and on a spur into the existing industrial park allowing for the accommodation of 286K rail cars.
7	BSV	Boone Industrial Park upgrade Phase II	Upgrade 4200 feet of rail to 286K standard to increase track availability to stage rail cars, increase operational capacity at UP interchange, and install new 900-foot spur to allow for improved sorting of customer rail cars.
8	UP	Add yard/working track support at Marshalltown	Support switching operations to handle increased local business.
9	BNSF, IAIS, NS, and UP	Des Moines Transload Facility expansion	Future expansion of the private transload facility constructed in 2021.
10	IANR	Expanded capacity at Manly	Expand track capacity, develop land, and build access road entrance and exit to the Manly Logistics Park.
11	IANR	Intermodal facility construction at Manly	Develop a new intermodal facility on the IANR Manly Subdivision.
12	CP AND IANR	Remote control switches at Plymouth Junction	Install remote control switch machines to expedite train movements between IANR and CP at Plymouth Junction.
13	CP AND IANR	Remote control switches at Nora Springs	Install remote control switch machines to expedite train movements between IANR and CP at Nora Springs Junction.
14	CP and IANR	Interchange track capacity at Nora Springs	Increase track capacity at interchange to accommodate increasing traffic growth between CP and IANR.
15	CN	Transload services expansion at Williams	Convert the existing Alliant Energy coal transloading facility on the CN Waterloo Subdivision to a standard transload facility that could handle additional commodity and product types.

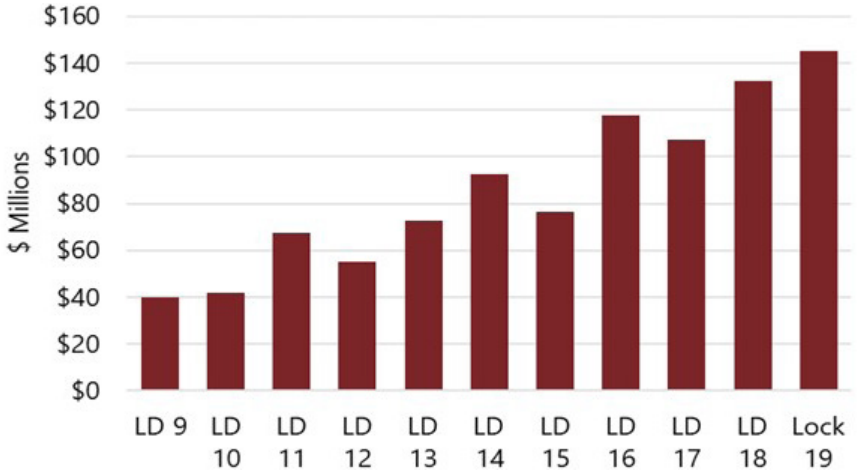
	Railroad(s)	Project	Description
16	CN and UP	Dual-rail connection in Hardin County and transload facility construction at Iowa Falls	Construct a dual-rail connection track to the CN Waterloo Subdivision and the UP Mason City Subdivision, four yard tracks and a siding each near CN and UP interchanges, and a transload/terminal facility.
17	CN	Standard Distribution Company Rail Transload Facility expansion at Cedar Falls	Increase facility size and track capacity at the transload facility on the CN Osage Subdivision.
18	CN and IANR	Bypass track construction at Waterloo	Construct a bypass track to connect the CN Industrial lead to the IANR Oelwein Subdivision which would eliminate reverse moves and blocked crossings.
19	CN AND IANR	Remote control switches at Waterloo	Install remote control switch machines to expedite train movements between IANR and CN.
20	CIC	Bypass track construction at Cedar Rapids	Construct a track to bypass ADM allowing trains to travel around rather than through the plant, promoting efficiency and minimizing potential operating conflicts for trains.
21	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.
22	CP	Fauser Rail Terminal rail access at New Albin	Construct a rail spur to serve industries located on the CP Marquette Subdivision.
23	CP	Pattison Sand unit train capacity expansion at Garnavillo	Phases 1 and 2 of a six-phase project to expand the unit train capacity for Pattison Sand on the CP Marquette Subdivision.
24	CP and UP	ADM "S" curve improvement at Clinton	Reconfigure rail spur at the Clinton ADM Plant straightening the current "S" curve to allow for multiple cars transiting the spur.
25	CP	Transload/intermodal/port facility construction at Muscatine	Construct a multimodal transload/intermodal/port facility on the CP Ottumwa Subdivision and the Mississippi River.
26	KJRY	Yard and main track enhancements at Keokuk	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 and the Mississippi River.
27	KJRY	Yard enhancements II at Keokuk	Two phase project to expand the KJRY Twin Rivers Yard by adding track capacity through track and switch improvements.
28	Multiple	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.

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 $948 million 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 5.4. 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



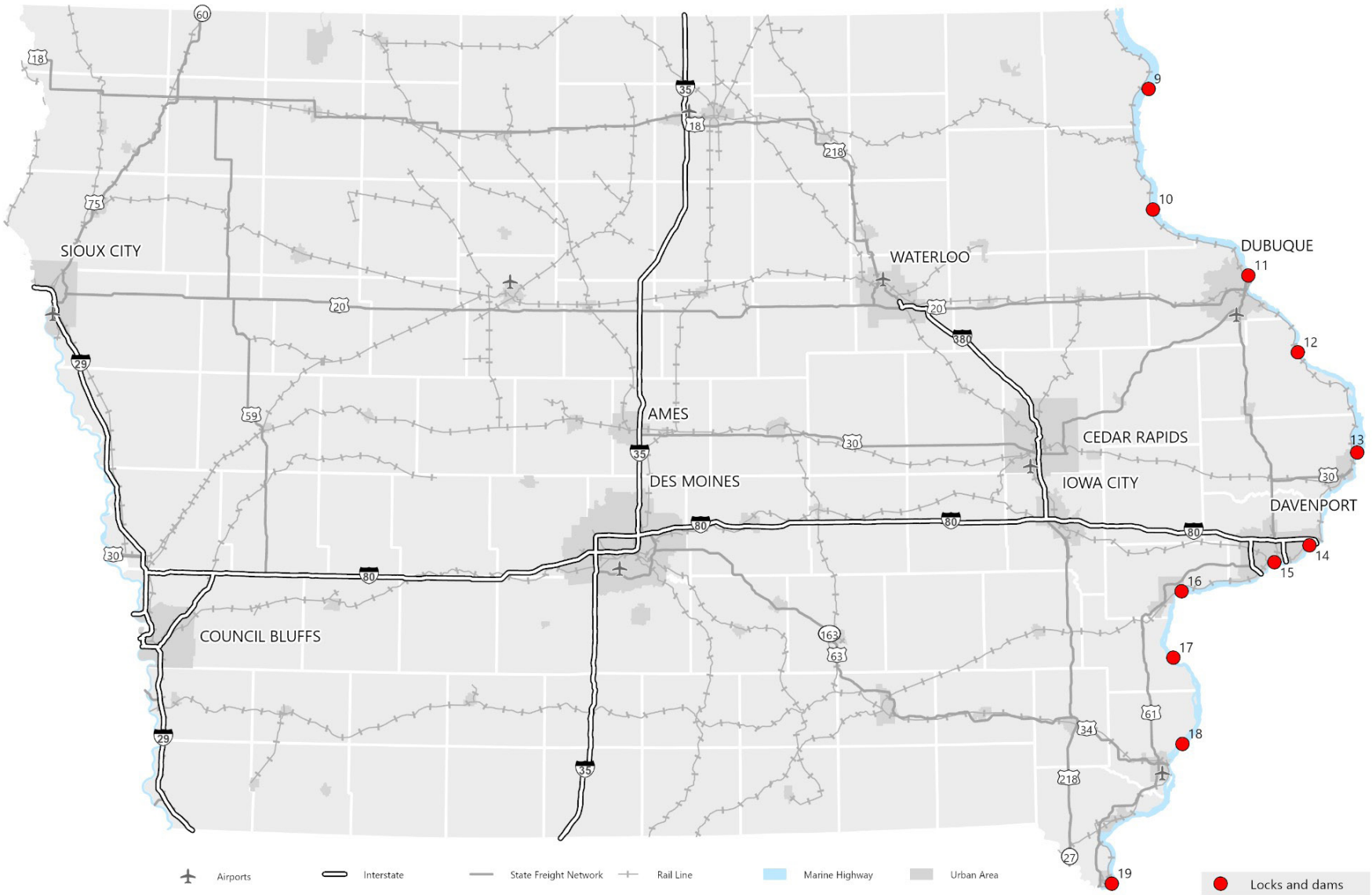
Source: U.S. Army Corps of Engineers

Table 5.4: Prioritized maintenance projects for Iowa locks and dams

1	Lock 18 Miter Gate Anchorage Replacement
2	Lock 17 Miter Gate Anchorage Replacement
3	Lock 19 PLC System Replacement
4	Lock 17 Upstream Guidewall Sheetpile Transition Wall Repair
5	Lock 13 Filling and Emptying System Replacement
6	Lock 19 Hydraulic Cylinder Rod Replacement
7	Dam 13 Spillway Seepage Cutoff Wall Repairs
8	Lock 14 - Auxiliary Lock/MRPO Guidewall
9	Lock 18 Access Road Repairs
10	6 Sites Dam Gate Trunnion Repairs
11	Lock 16 Filling and Emptying System (Drums and Wire Ropes)
12	Lock & Dam 14 Replace Bridge Crane & Bulkhead Lifter (Prototype)
13	Replace Bridge Crane & Bulkhead Lifter 10 Sites
14	Lock 11 & 12 Replace Miter Gate Anchorages Including A-Frame
15	Lock 13 & 14 Replace Miter Gate Anchorages Including A-Frame
16	Lock 15 & 16 Replace Miter Gate Anchorages Including A-Frame
17	12 Sites Lock & Dam Safety Hand Rail Replacement
18	12 Sites Lock & Dam Safety Signage - Restricted, etc.
19	Lock 13 Pressure Relief Wells
20	Lock 16 Floor Stability "Relief Wells"
21	Lock & Dam 11 - 19 Gates (Various maintenance/replacement)
22	Lock & Dam 12 - 10 Gates (Various maintenance/replacement)
23	Lock & Dam 13 - 13 Gates (Various maintenance/replacement)
24	Lock & Dam 14 - 17 Gates (Various maintenance/replacement)
25	Lock & Dam 15 - 11 Gates (Various maintenance/replacement)
26	Lock & Dam 16 - 19 Gates (Various maintenance/replacement)
27	Lock & Dam 17 - 11 Gates (Various maintenance/replacement)
28	Lock & Dam 18 - 17 Gates (Various maintenance/replacement)
29	Wingdam Repairs Pool 11-22
30	Fairlead Replacement at 6 Lock Sites
31	Lock & Dam 15 Checkposts

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 efficient 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), Chapter 3, Industries and commodities (Section 3.2, Commodity movement), and/or the Annual Implementation and Performance Report available on the State Freight Plan webpage. 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 vehicles 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 1200 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.

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 ultimate 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, networks, bottlenecks, implementation strategies, improvements/projects, and performance measures.

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.

MAASTO

MAASTO is one of four geographical regions of the American Association of State Highway and 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 on 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 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.

The Iowa Transportation Commission and Iowa DOT now allocate NHFP flexible funds to a competitive grant program and updated version of the original LIFTS pilot program. The updated version of LIFTS allows stakeholders outside of the Iowa DOT to apply for the flexible funding for use on freight projects. Project evaluation criteria are used to determine which projects are funded as part of each funding cycle. Specific projects funded through the LIFTS program are identified in Section 5.6, Freight Investment Plan.

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 5.5).

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 documents the use of NHFP funds, National Highway Performance Program (NHPP) funds, and Primary Road Fund match.

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 2021 were awarded and/or authorized to the following projects:

- Council Bluffs Interstate Highway System (I-29/I-80) (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)
- LIFTS projects (see Table 5.6)

Table 5.5: Iowa NHFP apportionment, 2016-2026

	Apportionment total	Apportionment (98%)*	Freight projects (90%)	Flexible funding (10%)
FY 2016	$14,085,949	$13,804,230	$12,423,807	$1,380,423
FY 2017	$13,386,574	$13,118,843	$11,806,958	$1,311,884
FY 2018	$14,627,929	$14,335,370	$12,901,833	$1,433,537
FY 2019	$16,511,333	$16,181,106	$14,562,996	$1,618,111
FY 2020	$18,276,135	$17,910,612	$16,119,551	$1,791,061
FY 2021	$18,161,883	$17,798,645	$16,018,781	$1,779,865
FY 2022	$17,043,984	$16,703,104	$15,032,794	$1,670,310
FY 2023	$17,384,864	$17,037,167	$15,333,450	$1,703,717
FY 2024	$17,732,561	$17,377,910	$15,640,119	$1,737,791
FY 2025	$18,087,213	$17,725,469	$15,952,922	$1,772,547
FY 2026	$18,448,957	$18,079,978	$16,271,980	$1,807,998
Total	**$183,747,382**	**$180,072,434**	**$162,065,191**	**$18,007,243**

**Apportionment (98%) includes a 2% reduction to account for SPR*

Source: Iowa DOT and Federal Highway Administration

Table 5.6: LIFTS projects awarded

Grant recipient(s)	Project description
TSL Company	Redevelopment and expansion of the existing container terminal in Council Bluffs, IA in three phases, including upgrading the lot to concrete and constructing a temporary transload facility.

Source: Iowa DOT

Table 5.7: Iowa Freight Investment Plan, 2022-2026

Iowa NHFP funds		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	Total
Apportionment (98%)*		$16,703,104	$17,037,167	$17,377,910	$17,725,469	$18,079,978	$86,923,627
Total funds available including carryover		$18,519,312	$18,889,116	$17,377,910	$18,056,858	$18,079,978	
Location, project	**Funding**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Total**
Freight projects							
I-80 in Johnson County capacity *1.5 miles East of Iowa 1 to 0.5 miles East of County Road X30* *VCAP capacity need*	NHPP	$17,639,706		$0	$17,139,078		$34,778,784
	NHFP	$16,667,363		$14,458,137	$12,816,922		$43,942,422
	Primary Road Fund match	$5,787,792		$2,550,181	$7,489,000		$15,826,972
	Total project cost	$40,094,861		$17,008,318	$37,445,000		$94,548,179
I-80 in Cedar County capacity *East of Cedar River to west of County Road Y26* *VCAP capacity need*	NHPP		$0	$0			$0
	NHFP		$18,889,116	$1,052,384			$19,941,500
	Primary Road Fund match		$4,552,939	$263,096			$4,816,035
	Total project cost		$23,442,055	$1,315,480			$24,757,535
I-80 in Polk County capacity and interchange improvements *Univresity Ave. to N of Douglas Ave.* *VCAP capacity need*	NHPP				$58,809,664	$7,099,222	$65,908,886
	NHFP				$5,239,936	$18,079,978	$23,319,914
	Primary Road Fund match				$16,012,400	$6,294,800	$22,307,200
	Total project cost				$80,062,000	$31,474,000	$111,536,000
Flexible funding (LIFTS program)							
TSL Company City of Council Bluffs at I-80/I-29	NHFP			$1,536,000			$1,536,000
	Match (City of Council Bluffs)			$589,517			$589,517
	Total Project Cost			$2,125,517			$2,125,517
Totals							
Freight projects subtotal		$16,667,363	$18,889,116	$15,510,521	$18,056,858	$18,079,978	$87,203,836
Flexible funding projects subtotal				$1,536,000			$1,536,000
Total funds spent		$16,667,363	$18,889,116	$17,046,521	$18,056,858	$18,079,978	$88,739,836
Total funds remaining		$1,851,949	$0	$331,389	$0	$0	$0

Source: Iowa DOT

** Total apportionment figures include a 2% subtraction to account for State Planning and Research Funds*