IOWA STATE FREIGHT PLAN

FAST ACT UPDATE – EXECUTIVE SUMMARY

IOWA DOT
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IOWA IN MOTION
planning ahead 2040

Iowa State Freight Plan

Executive Summary

2017

Amended 2018 (July LIFTS Program project awards)

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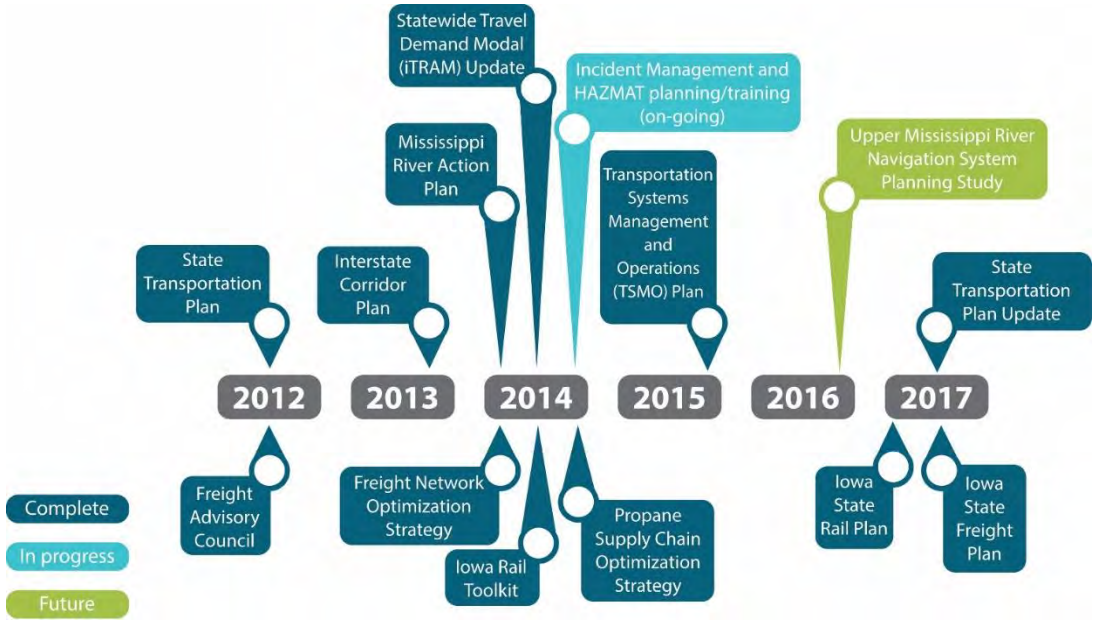
Purpose of the plan

Iowa's central geographic location and abundance of transportation options make it a major player in the global marketplace. The transport of goods and services is the backbone of the economy and investments in basic infrastructure components such as airports, highways, pipelines, railroads, and waterways secure and strengthen the economic vitality of the state. A safe, efficient, and convenient freight transportation system is a necessity not only for Iowa, but the nation as a whole.

The Iowa Department of Transportation recognizes the need to further incorporate freight considerations into the statewide transportation planning and programming process. As a result, Iowa DOT has developed a multimodal freight plan that will address each of the five modes of the freight transportation system: air, truck, pipeline, rail, and water. The Iowa State Freight Plan (State Freight Plan) will serve as a platform for safe, efficient, and convenient freight transportation in the state. This plan will also:

- Align with the state transportation plan, Iowa in Motion.
- Meet the requirements of the Fixing America's Surface Transportation (FAST) Act.
- Support national freight goals.
- Connect Iowa's freight-related initiatives and allow them to move forward toward a common goal of optimal freight transportation in the state (see Figure E.1)

Figure E.1: Iowa freight-related initiatives timeline

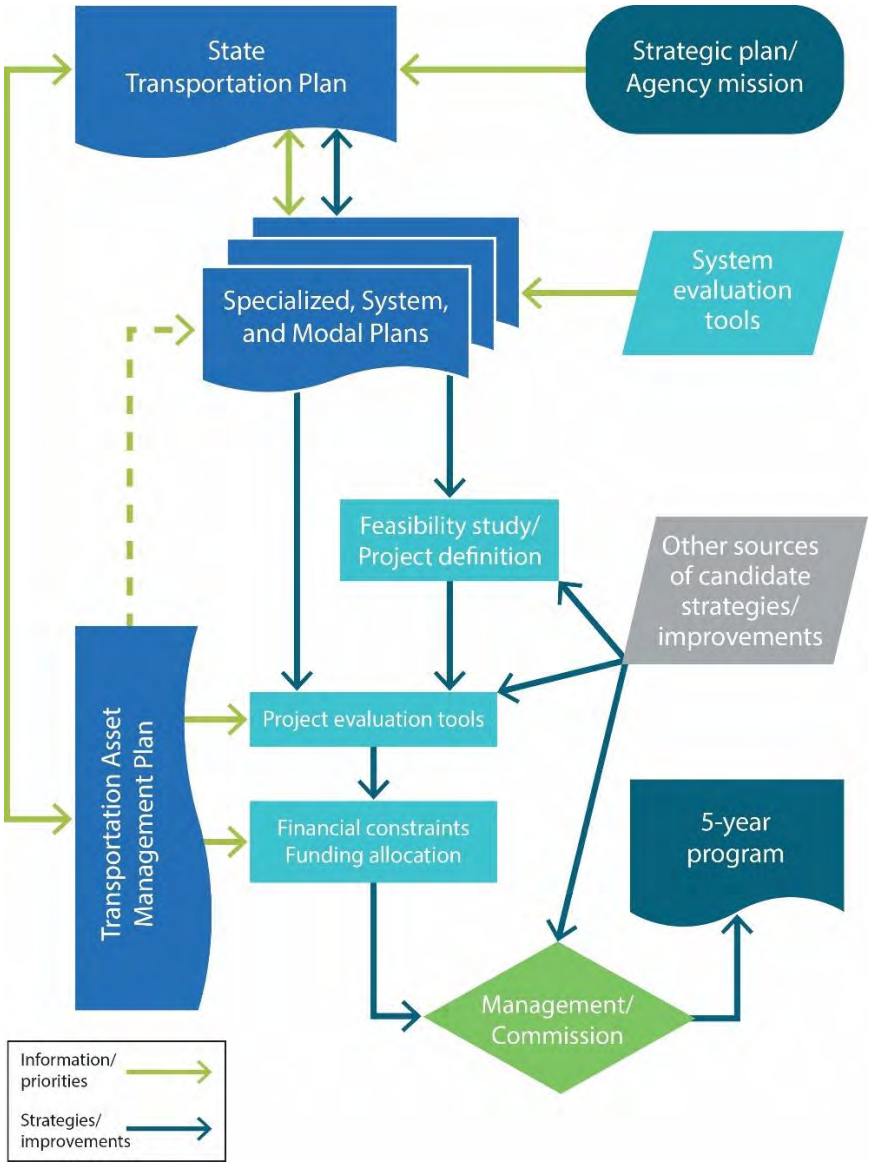


Source: Iowa Department of Transportation

Elements of planning/programming process

Each of Iowa's freight-related initiatives plays a role in a collaborative planning and programming process. The tools and studies are utilized to develop system/modal plans, such as the State Freight Plan, which are consistent with the state transportation plan. Projects are then identified, studied, and programmed based on the findings and recommendations provided from each of these initiatives. Figure E.2 shows the relationship between the tools, system/modal plans, state transportation plan, and the overall planning and programming process.

Figure E.2: Relationship between elements of the planning and programming process



Source: Iowa Department of Transportation

Freight goals

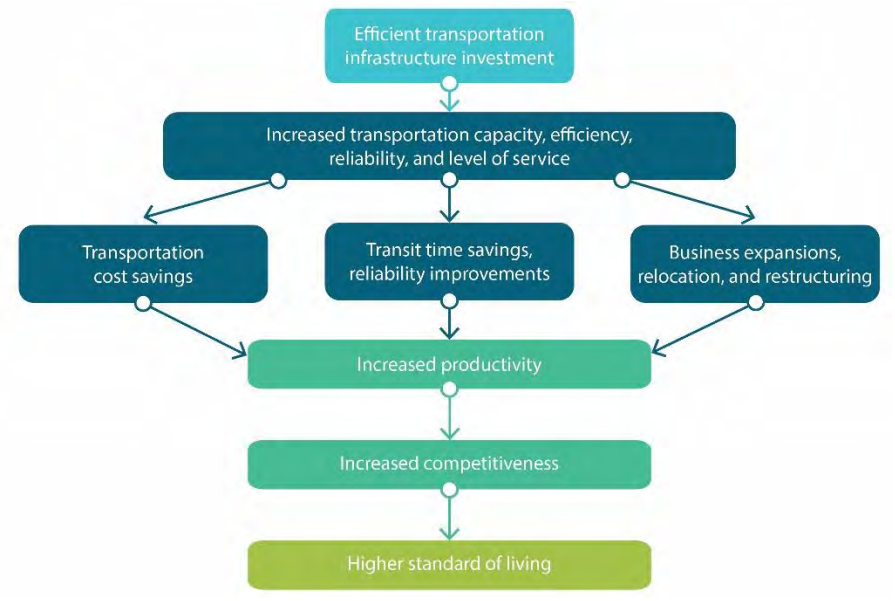
The FAST Act requires a state freight plan to include a description of how the plan will improve the ability of the State to meet the national multimodal freight policy goals described in 49 U.S.C. 70101(b) and the national highway freight program goals described in 23 U.S.C. 167. The national multimodal freight policy goals and the national highway freight program goals were combined into a single list in order to show alignment with the State Freight Plan. In addition to these goals, the Iowa DOT will consider the potential regulatory impact of all initiatives and how these could act as hindrances to freight movement. The national freight goals are:

1. To identify and invest in infrastructure improvements, policies, and operational innovations that:
    a. Strengthen the contribution of the National Multimodal Freight Network (NMFN) to the economic competitiveness of the United States.
    b. Reduce congestion and eliminate bottlenecks on the NMFN.
    c. Increase productivity, particularly for domestic industries and businesses that create high-value jobs.
    d. Reduce the cost of freight transportation.
    e. Improve the year-round reliability of freight transportation.
2. To improve the safety, security, efficiency, and resiliency of multimodal freight transportation.
3. To achieve, maintain, and improve the state of good repair on the NMFN.
4. To use innovation and advanced technology to improve the safety, efficiency, and reliability of the NMFN.
5. To improve the economic efficiency and productivity of the NMFN.
6. To improve the reliability of freight transportation.
7. To improve the short- and long-distance movement of goods that:
    a. Travel across rural areas between population centers.
    b. Travel between rural areas and population centers.
    c. Travel from the nation's ports, airports, and gateways to the NMFN.
8. To improve the flexibility of states to support multi-state corridor planning and the creation of multi-State organizations to increase the ability of states to address multimodal freight connectivity.
9. To reduce the adverse environmental impacts of freight movement on the NMFN.
10. To pursue the goals described in this subsection in a manner that is not burdensome to state and local governments.

Economic context of freight transportation planning

The performance of the freight transportation system affects economic productivity in several ways. Changes in the cost and the quality of freight movement affect both the amount of freight transport that firms buy and the ways in which they use it. At the most basic level, a drop in the cost of goods movement means firms will buy more, which will most likely take the form of shipping products and obtaining inputs, materials, and intermediate products from longer distances. This increases the market that can be served from a given facility by providing access to lower-cost inputs.

Figure E.3: Transportation and the economy



Source: ICF Consulting, 2010 and Beyond: A Vision of America's Transportation Future

Improvements in the quality of transportation (i.e., capacity, efficiency, and reliability) result in reduced transit times and greater reliability of delivery times. Both of these effects, and especially the latter, impact the way in which firms design their logistics systems. These improvements also open the door for transportation cost savings, as well as potential business expansions and restructuring. Lower transit times increase the "reach" of facilities such as factories and distribution centers; if these facilities can be more widely spaced, a given market area can be served with fewer facilities. Since fewer facilities for a given flow of goods means more volume per facility, operating costs, as well as investment costs, may be reduced. Thus, when firms consider their logistics arrangements and the design of their distribution systems, they will take into account improved freight transport to develop lower-cost systems. The result is more productivity, increased competitiveness with other businesses, and in turn, a higher standard of living for the area as more capital is invested in the region.

Trends and issues

The advancement of globalization leads to constantly shifting market variables. This makes adapting and evolving a challenge for all involved parties, including manufacturers, shippers, and government agencies. To be proactive in addressing developing patterns and overcoming new obstacles, it is necessary to identify current trends and issues and attempt to forecast the changes that will come.

What we heard during stakeholder engagement

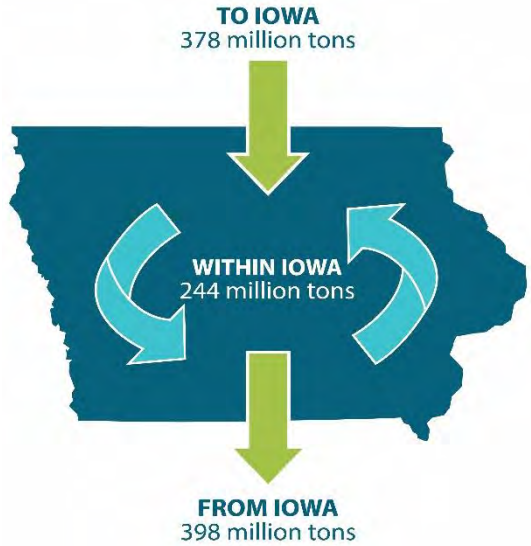
- Funding for all modes of freight transportation is a constant obstacle.
- Freight industries want reliable transportation above all else.
- There is a need for more intermodal connections.
- Heavy truck traffic on I-80 in eastern Iowa is a concern.
- The nation's locks and dams on the inland waterway system are in need of funding for maintenance and improvements.
- All freight transportation modes are important and impact each other.
- The State of Iowa should be thinking regionally, nationally, and internationally when considering freight movement.
- Some state and federal regulations hinder freight movement.
- Greater harmonization and standardization of rules in regulation between states is desired by shippers.

See pages 40 through 61 of the State Freight Plan (Chapter 4, *Trends and issues)* for an in-depth investigation of major freight trends and issues impacting Iowa.

Forecasts

According to the Federal Highway Administration's (FHWA) Freight Analysis Framework (FAF) tool, freight transportation in the United States will double by the year 2040. This growth will be reflected in Iowa but will not be uniform across all modes. If this becomes reality, it will prove to be a sizable challenge for the overall freight transportation system. The State Freight Plan builds on the freight trends and provides current Iowa commodity flow data and forecasts out to the year 2040. Understanding these changes is a crucial piece in any proactive planning approach.

Figure E.4: Iowa freight movement, 2012



Source: Federal Highway Administration's Freight Analysis Framework

Iowa's transportation system facilitated the movement of approximately 1.1 billion tons of freight with an estimated value exceeding $563 billion to, from, and within the state in 2012. Table E.1 illustrates the tonnage and value for freight movements in 2012, 2020, 2030, and 2040. The total weight of goods imported into and exported out of Iowa is expected to grow from 774 million tons in 2012 to 1.1 billion tons (a growth of 35.6 percent) in 2040. The total value of goods imported into and exported out of Iowa is expected to grow from $468 billion in 2012 to $715 billion (a growth of 52.6 percent) in 2040. Freight that has both an origin and destination in the state is expected to grow by 27.8 percent in weight and 30.5 percent in value from 2012 to 2040.

Table. E.1: Commodity flow into and out of Iowa, 2012-2040

	2012		2020		2030		2040	
	Tons (millions)	Value ($	Tons (millions)	Value ($	Tons (millions)	Value ($	Tons (millions)	Value ($
Total	**1018.1**	**$563,313**	**1181.3**	**$656,952**	**1279.7**	**$740,262**	**1361.3**	**$838,457**
Within Iowa	243.2	$95,335	277.2	$108,407	297.2	$116,511	310.7	$124,380
From Iowa	397.3	$241,115	480.0	$286,210	537.1	$333,513	592.7	$392,457
To Iowa	377.6	$226,863	424.2	$262,335	445.4	$290,237	457.9	$321,619

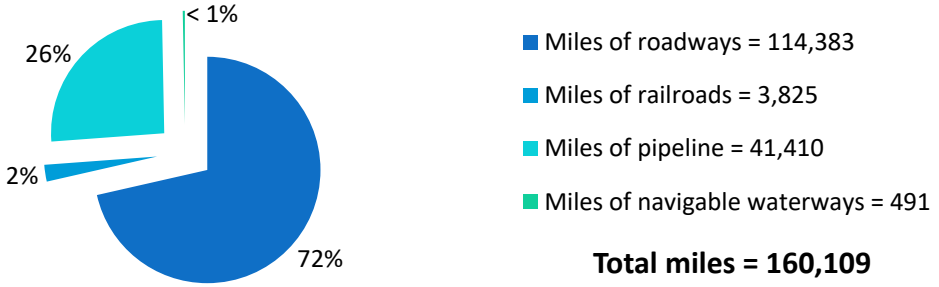
Source: Federal Highway Administration's Freight Analysis Framework

See pages 62 through 81 of the State Freight Plan (Chapter 5, *Freight forecasts*) for information on Iowa's freight flows.

Freight transportation assets

Iowa's 160,000-mile multimodal freight transportation system is comprised of multiple air cargo facilities, a well-developed highway system, an extensive rail network, a large web of pipelines, two bordering navigable waterways, and hundreds of freight-related facilities to assist in the movement of commodities. The State Freight Plan provides an inventory of the infrastructure and facilities that make up this system and how they interact to increase the efficiency of goods movement through the state and region.

Figure E.5: Iowa freight transportation system



Source: Iowa Department of Transportation

AIR

- 108 publicly owned airports
- More than 4,000 registered aircraft
- 5,550 active licensed pilots
- More than 300 licensed aerial applicators

HIGHWAY

- 114,383 miles of roadways
- 9,420-mile Primary Highway System
- 2,391-mile Commercial and Industrial Network
- Two transcontinental interstate highways
- Over 25,000 bridge structures
- Nearly 20,000 trucking companies operating in Iowa

RAILROAD

- 3,825 miles of railroads
- 18 railroad companies, including:
  - six Class I, one Class II, and 11 Class III
- Rail service in 90 of the 99 Iowa counties

FREIGHT-GENERATING FACILITIES

- One trailer-on-flat car/container facility
- 15 biodiesel producers
- 30 coal burning facilities
- 44 ethanol producers
- 60 barge terminals
- 811 licensed grain elevators

PIPELINE

- 41,410 miles of pipelines
- 84 pipeline operators
- Carry liquid petroleum, natural gas, anhydrous ammonia, crude oil, and highly volatile liquids

WATERWAY

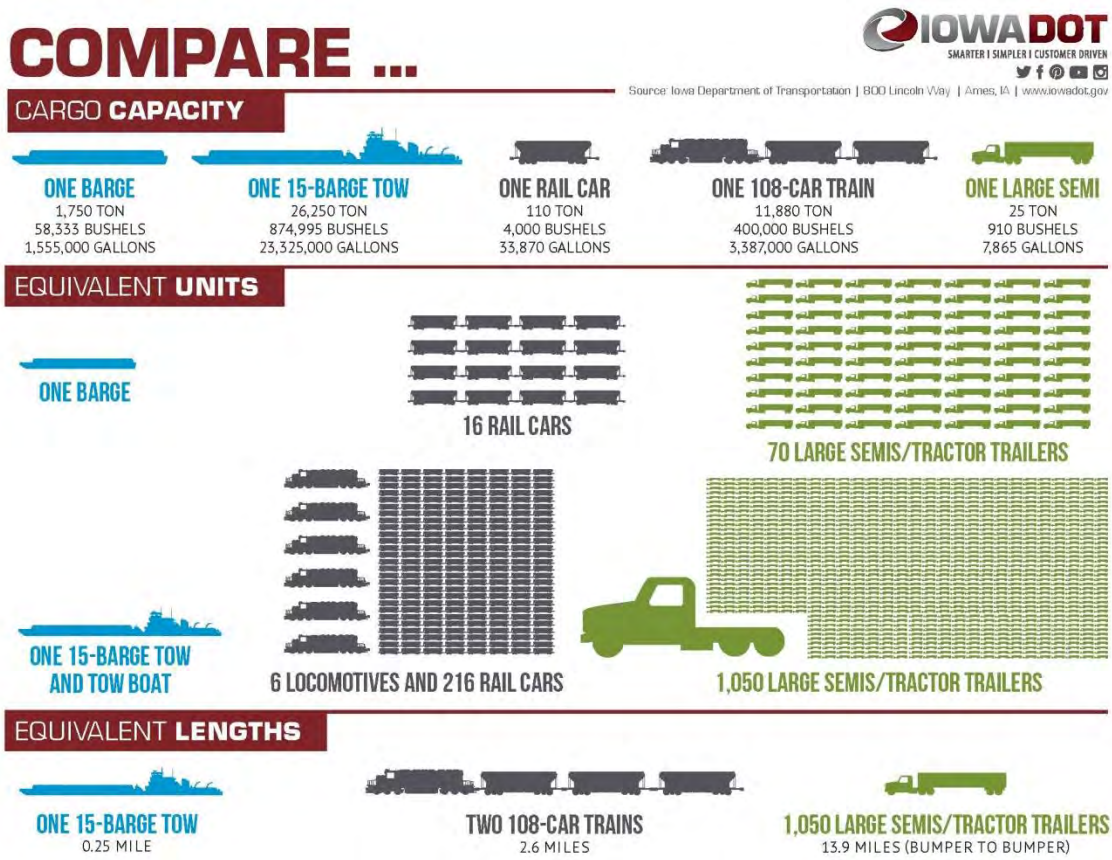
- Bordered by two marine highways
- 491 miles of navigable waterways
- 60 barge terminals
- 11 Mississippi River locks and dams on the border, five of which (10, 11, 12, 14, and 19) are on the Iowa side
- Keokuk, Iowa is the northernmost port on the Mississippi River that is open to barge traffic year-round

Currently, the majority of freight in Iowa is carried by truck, train, and barge. Although trucking is the most expensive per pound, it is the also the most flexible. Trucking companies provide various services to shippers. Full truckload service providers move products from one customer to another using a variety of equipment, including dry van, flatbed, hopper, and refrigerated. Trucks can move small amounts of a few hundred pounds all the way up to 50,000 pounds per shipment (see Figure E.6).

Rail is less expensive than trucking and more fuel-efficient, but is more restricted by the privately owned networks the trains move on. This mode is well suited for moving large volumes of freight between two shipping points and, like trucks, uses dry car, flatbed, hopper, and refrigerated equipment.

Transporting commodities via waterway is the slowest and least flexible of the three modes. However, it is the most fuel-efficient, the cheapest, and can handle the largest volumes per trip. Figure E.6 compares these three modes by the amount of freight each can carry at a time. This comparison shows that one barge can handle as much as 70 trucks or more than 16 rail cars.

Figure E.6: Iowa freight tonnage comparisons



Source: Iowa Department of Transportation

Iowa Multimodal Freight Network

As part of the State Freight Plan development process, the Iowa DOT identified and established a new Multimodal Freight Network in the state. This network will be the target of several freight strategies and improvements identified in the State Freight Plan (Chapter 9, *Freight improvement strategy)*.

Benefits of this network include:

- Recognition of corridors to protect and enhance for improved freight movement.
- Developing department policies for these corridors related to design and use.
- Assisting in programming decisions regarding where to invest in the overall transportation system.

Identification criteria used for each mode are outlined on page 106 of the State Freight Plan (Chapter 6, *Freight transportation assets*), and the final network is shown in Figure E.7.

Figure E.7: Iowa Multimodal Freight Network

Source: Iowa Department of Transportation

Freight mobility issues identification

As required by MAP-21 and the FAST Act, locations with freight mobility issues, or bottlenecks, were identified for each of the freight transportation modes. This process included analysis and extensive input from public and private stakeholders throughout the state who are familiar with the networks and operations of freight movement. Below is a summary of the identification process for each mode.

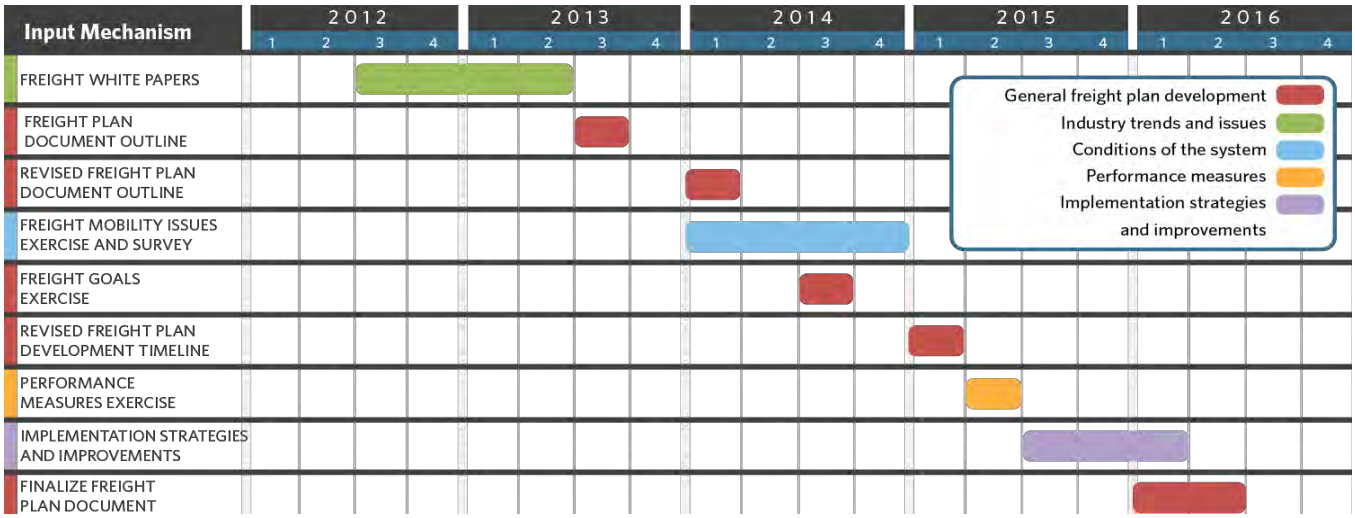
- **Air:** The Iowa DOT's Office of Aviation was contacted, along with the two largest air cargo airports in the state, to determine locations. After consulting these sources, it was determined that major air freight mobility issues do not currently exist in the state. There is currently excess capacity.
- **Highway:** INRIX traffic data was analyzed to identify bottleneck locations in the state and the number of occurrences for each during a one-year period. These locations were reviewed and additions were made by the Freight Advisory Council (FAC), Metropolitan Planning Organizations (MPOs), Regional Planning Affiliations (RPAs), and the Iowa DOT's districts on multiple occasions through exercises and the Freight Mobility Issues Survey.
- **Pipeline:** Locations with freight mobility issues were not identified for pipelines.
- **Railroad:** Surveys and exercises to identify locations were carried out on multiple occasions with the railroads operating in Iowa. Surveys were then sent to the MPOs, RPAs, and the Iowa DOT's districts for additions through the Freight Mobility Issues Survey.
- **Waterway:** Data from the U.S. Army Corps of Engineers was gathered and reviewed. Due to age, delay, and unavailability, each lock along Iowa's border was identified. All swing-span bridges, which cause delays for barges and trains, were also identified as locations with freight mobility issues.

See pages 118 through 124, 129 through 133, and 139 through 142 of the State Freight Plan (Chapter 7, *Conditions and performance of the freight transportation system*) for an in-depth summary and full listings of freight mobility issues in the state.

Plan development driven by FAC and designated stakeholder committees

Utilizing input from freight stakeholders and the general public is crucial for the development of strong plans and implementation of successful strategies. Iowa DOT engaged a number of public and private sector stakeholders, such as the FAC, in various ways throughout the process to gather input on plan development. This included 15 face-to-face meetings and exercises, a multi-state webinar, email correspondence, online surveys, and a 45-day public comment period. The figure below shows a timeline of major input gathering efforts preceding and throughout plan development.

Figure E.8: Stakeholder and public engagement



Source: Iowa Department of Transportation, HDR

Freight strategies

The following strategies represent the primary elements of the Iowa DOT's overall freight improvement strategy going forward. Each element of the Iowa DOT's freight improvement strategy will support one or more of the national freight goals identified in the Fixing America's Surface Transportation (FAST) Act and will pursue and align with the national freight goals in a manner that is not burdensome to state and local governments.

1. Maximize the advantages inherent to Iowa's geographic proximity
2. Explore/Create other funding sources to increase investment in the freight transportation system
3. Target investment to address mobility issues that impact freight movements
4. Emphasize the Multimodal Freight Network and utilize designs that are compatible with significant freight movements
5. Target investment on the interstate system at a level that reflects the importance of this system for moving freight
6. Right-size the highway system and apply cost-effective solutions to locations with existing and anticipated issues
7. Advance a 21st century Farm-to-Market System that moves products seamlessly across road, rail, and water to global marketplaces
8. Implement asset management tools and practices and promote their use at the local level
9. Optimize the freight transportation network to minimize cost and travel time and improve supply chain efficiency
10. Optimize the availability and use of freight shipping containers
11. Explore opportunities for increasing value-added production within the state
12. Continue to advance efforts on the M-35 Marine Highway Corridor
13. Promote freight movement on the M-29 Marine Highway Connector
14. Provide real-time information on system conditions to support the movement of freight
15. Leverage real-time information from users of the system to support advanced decision-making and incident avoidance
16. Provide measured, clear, nontechnical performance results for the freight system
17. Streamline and align freight-related regulations and minimize unintended consequences
18. Act as a point of contact and educator on freight transportation options
19. Explore new truck cross-docking operations to enable greater opportunities to consolidate truck freight for Iowa shippers

20. Explore a new rail intermodal facility to enable access to lower cost rail services for Iowa businesses
21. Explore additional transload facilities to provide Iowa businesses with more access to lower cost railroad freight services
22. Explore opportunities to leverage a barge and rail multimodal solution to provide a cost-effective freight transportation alternative
23. Explore opportunities to build a logistics park to co-locate cross-docking, intermodal, transloading and warehousing facilities
24. Collaborate with the railroads to provide Iowa companies with more access and capacity to accommodate additional Iowa freight shipments
25. Explore opportunities to reposition empty containers by barge and reduce repositioning costs
26. Explore and implement strategies to reduce deadhead truck miles
27. Explore opportunities for railroads to provide additional lower cost freight rail transportation for high volume traffic lanes within Iowa

Freight improvements

In addition to the strategies outlined, specific improvements are necessary to address the freight mobility issues in Iowa. These improvements were identified using the state's decision-making process and newly updated/developed tools outlined in the State Freight Plan (Chapter 8, *Iowa's decision-making process).* They will support the state's freight strategies as well as the national freight goals identified in Chapter 2, *Strategic goals*, and will be analyzed using the state's freight performance measures outlined in Chapter 7, *Conditions and performance of the freight transportation system*.

Air

Most commercial airports in Iowa have the capacity, acreage, and necessary services to accommodate freight movement. However, the presence of freight service depends on whether or not a company chooses one of those locations for its operations. In Iowa, DSM and CID handle more than 99 percent of reported air freight; therefore, current and future improvements at both locations were highlighted.

Highway

In order to identify and prioritize candidates for highway freight improvements, the Iowa DOT utilized the Value, Condition, and Performance (VCAP) matrix. This approach takes advantage of multiple tools available at the Iowa DOT, including the Freight Mobility Issues Survey, Iowa Travel Analysis Model, (iTRAM), Infrastructure Condition Evaluation (ICE), INRIX bottleneck ranking tool, and Iowa's annual traffic counts.

Railroad

Iowa railroad improvements were identified through input opportunities with the railroad companies operating in Iowa and other stakeholders. Due to the fact that most railroads are private entities, the companies make the ultimate decisions on when and where to complete improvement projects. The list of freight railroad improvements included in the State Freight Plan is intended to highlight potential future projects that could be considered. Some of these improvements do have funding partially committed, but most do not have set schedules or committed funding sources.

Waterway

The U.S. Army Corps of Engineers (USACE) is responsible for all inland waterway navigation projects in the United States. In Iowa, the USACE Rock Island and St. Paul Districts maintain the M-35 and the Omaha District maintains the M-29. The State Freight Plan outlines current and future navigation projects provided to the Iowa DOT by each of the three districts.

See pages 180 through 202 of the State Freight Plan (Chapter 9, *Freight improvement strategy*) for more on improvements for all modes.

Value, Condition, and Performance (VCAP) matrix

Location list (Freight Mobility Issues Survey): The Iowa DOT initially developed a draft list of highway locations with freight mobility issues (see Chapter 7, *Conditions and performance of the freight transportation system,* of the State Freight Plan). This was completed by analyzing INRIX traffic data that can, among other things, identify "bottleneck" locations in the state and the number of times each occurs throughout the year. This data was retrieved for 2014 and overlaid with the Iowa DOT's truck traffic count data. INRIX bottleneck locations that occurred in each quarter of the year and had either 30 percent truck traffic or more than 5,000 total trucks per day were flagged as locations with potential freight mobility issues.

This draft list was presented to the FAC for input and was sent to the Iowa DOT districts, metropolitan planning organizations, and regional planning affiliations. Each of these groups was asked to review the list, make necessary additions, and assign priority votes to each location. This was used to populate the initial candidate list.

Value (iTRAM): iTRAM is a statewide travel demand model used in the evaluation of Iowa's transportation system (see Chapter 8, *Iowa's decision-making process*). This tool 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.

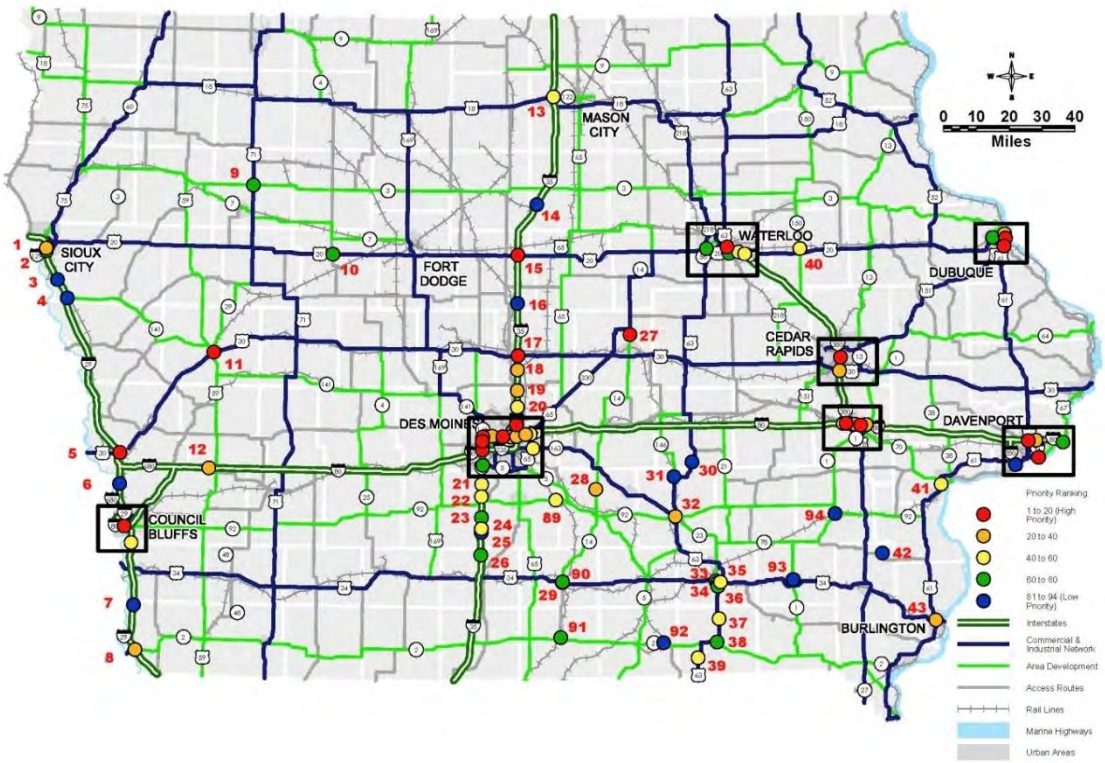
Condition (ICE): ICE was originally developed as a tool for evaluating the Interstate Highway System based on seven criteria: Pavement Condition Index, International Roughness Index, structure sufficiency rating, passenger traffic, single-unit truck traffic, combination truck traffic, and congestion (see Chapter 8, *Iowa's decision-making process,* of the State Freight Plan). 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. The original tool was recently expanded to the entire Primary Highway System in Iowa. ICE was used to evaluate the current condition of each candidate location. The segments that make up each location were analyzed using

the seven criteria and the normalization and weighting processes that had already been established. This resulted in a composite rating for each location.

Performance (INRIX Bottleneck Ranking tool): INRIX has a tool to identify and rank bottleneck locations (see Chapter 7, *Conditions and performance of the freight transportation system,* of the State Freight Plan). This tool, with additional analysis using traffic data, was used to develop a draft list of highway locations with freight mobility issues. To determine the performance of each candidate location, the number of annual bottleneck occurrences for each location was used, with higher priority being assigned to locations with more occurrences.

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

Figure E.9: Highway freight priority locations



Source: Iowa Department of Transportation

See pages 183 through 193 of the State Freight Plan (Chapter 9, *Freight improvement strategy*).

Freight investment plan

Section 167 of the FAST Act documents the National Highway Freight Program (NHFP), a policy developed to improve the condition and performance of the National Highway Freight Network (NHFN). The NHFP created a formula program funded at $1.15 billion to $1.5 billion per year to be used for freight-related projects 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.

A state may not obligate these funds unless the state has developed a freight plan in accordance with 49 U.S.C. 70202[1] of the FAST Act. Under this section, freight investment plans that include a list of priority projects and describe how funds made available would be invested and matched are a required element of state freight plans. Iowa's allocation of NHFP funding is shown in Table E.2.

Table E.2: National Highway Freight Program funding allocation – Iowa, 2016-2020

	Allocation	10% of allocation
FY2016	$14,085,949	$1,408,595
FY2017	$13,386,574	$1,338,657
FY2018	$14,627,929	$1,462,793
FY2019	$16,535,678	$1,653,568
FY2020	$18,372,976	$1,837,298

Source: Iowa Department of Transportation, Federal Highway Administration

These NHFP funds may be spent on any of the following components of the NHFN:

- Primary Highway Freight System (PHFS)
- Critical Rural Freight Corridors (CRFCs)
- Critical Urban Freight Corridors (CUFCs)
- Portions of the Interstate Highway System not designated as part of the PHFS

See Chapter 6, Freight transportation assets, for more information on the routes in Iowa that are on the NHFN.

[1] 49 U.S.C. 70202 of the FAST Act provides requirements for state freight plans. See Chapter 1, Introduction for a listing of these requirements.

Each fiscal year, a state may obligate no more than 10 percent (see Table 9.4) of the total apportionment to the state for freight intermodal or freight rail projects, including projects:

- Within the boundaries of public or private freight rail or water facilities (including ports); and
- That provide surface transportation infrastructure necessary to facilitate direct intermodal interchange, transfer, and access into or out of the facility.

The Iowa DOT and Iowa Transportation Commission have chosen to allocate these flexible funds through a competitive grant program known as Linking Iowa's Freight Transportation System (LIFTS), an updated version of the original LIFTS pilot program described in Chapter 8, Iowa's decision-making process. LIFTS allows stakeholders outside of the Iowa DOT to apply for the flexible funding for use on freight projects. Project evaluation criteria will be designated and communicated prior to the initial application cycle and Iowa DOT staff, with support from external freight stakeholders, will review and prioritize applications on an annual basis. Following each funding cycle, this freight investment plan will be amended to incorporate the awarded projects.

Table E.3 shows Iowa's freight investment plan for the use of allocated NHFP funds through 2020. The majority of NHFP funds (90 percent) will be used for highway projects ranking in the top 10 of the VCAP matrix in Section 9.2, Iowa's freight improvements. The remaining 10 percent will be used to fund freight projects through the LIFTS program (see Table E.4).

Table E.3: Iowa freight investment plan, 2016-2020 (funding in 1,000s)

County	Location, Project	Funding	FY2016	FY2017	FY2018	FY2019	FY2020	Total
Pottawattamie	Council Bluffs, Interstate Highway System *VCAP #1*	NHPP	$118,353,646	$86,520,083	$102,107,032			$306,980,761
		NHFP	$12,677,354	$12,047,917	$12,462,968			$37,188,239
		Primary Road Fund match	$14,559,000	$10,952,000	$12,730,000			$38,241,000
		Total project cost	$145,590,000	$109,520,000	$127,300,000			$382,410,000
Scott	Davenport, I-74 bridge replacement *VCAP #3*	NHPP			$216,083,294	$55,110,890		$271,194,184
		NHFP			$702,168	$14,882,110		$15,584,278
		Primary Road Fund match			$24,016,300	$7,777,000		$31,793,300
		Total project cost			$240,801,762	$77,770,000		$318,571,762
Johnson	Iowa City, I-80/I-380 interchange *VCAP #7*	NHPP					$24,924,222	$24,924,222
		NHFP					$16,535,678	$16,535,678
		Primary Road Fund match					$4,609,100	$4,609,100
		Total project cost					$46,069,000	$46,069,000
	LIFTS projects (Table E.4)	NHPP						
		NHFP		$2,528,931	$1,681,114	$1,653,568	$1,837,298	$7,700,911
		Match						
		Total project cost						

(continued on following page)

County	Location, Project	Funding	FY2016	FY2017	FY2018	FY2019	FY2020	Total
	Totals	Allocated	$14,085,949	$13,386,574	$14,627,929	$16,535,678	$18,372,976	$77,009,106
		Carryover previous year		$1,408,595	$218,321			
		Programmed	$12,677,354	$14,576,848	$14,846,250	$16,535,678	$18,372,976	$77,009,106
		Fiscally constrained	Yes, the amount programmed is less than or equal to the amount available	Yes, the amount programmed is less than or equal to the amount available	Yes, the amount programmed is less than or equal to the amount available	Yes, the amount programmed is less than or equal to the amount available	Yes, the amount programmed is less than or equal to the amount available	Yes, the amount programmed is less than or equal to the amount available

Source: Iowa Department of Transportation

Table E.4: FY2017 LIFTS Grant Program awards

Awardee	Project Description	Total Awarded
Iowa Northern Railway and City of Garner	Construction of 4,100 feet of track to allow Zinpro Corporation to receive and ship hydrochlorid acid by rail. This will also allow other local businesses to utilize truck-to-rail or rail-to-truck transloading.	$1,112,068
Pattison Sand Company	Construction of a bridge over rail tracks to keep their existing supply hauling route open for the sand plant operation during and after the construction of a $25 million unit train expansion facility.	$513,012
Growmark, Inc.	Construction of a propane unloading and storage facility on the Iowa Southern Railway in Moravia.	$497,000
Keokuk Junction Railway Company	Replacement of an existing rail structure in Keokuk on the KJRY railway that was damaged by a previous derailment and is beyond repair. Structure will be replaced with triple box culverts.	$222,851
Cerro Gordo County	Construction of a permanent ground level storage tank with a containment dike and piping to improve the efficiency of transferring liquid sulfuric acid from truck to rail.	$184,000
Available Funding		**$2,747,252**
Total Awarded		**$2,528,931**
Remaining Funds (available for future awards)		**$218,321**