Iowa State Freight Plan

Freight Planning: Better Data and Better Plans Technical Session
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Background

- 2016: MAP-21 compliant
- 2017: FAST Act compliant
- 5th plan accepted nationally
Linking state freight initiatives
State Freight Plan objectives

- Identify strategic goals
- Identify and document the economic importance of freight
- Document freight trends and issues
- Present freight-related forecasts
- Inventory existing assets
- Identify critical freight networks
- Describe conditions of the system and develop performance measures
- Identify the State’s decision making process
- Present freight strategies and improvements
- Develop a freight investment plan
Identify strategic goals

National Freight Goals

1. To identify and invest in infrastructure improvements, policies, and operational innovations
2. To improve the safety, security, efficiency, and resiliency of multimodal freight transportation
3. To achieve, maintain, and improve the state of good repair
4. To use innovation and advanced technology to improve the safety, efficiency, and reliability
5. To improve the economic efficiency and productivity
6. To improve the reliability of freight transportation
7. To improve the short- and long-distance movement of goods
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
Identify and document the economic importance of freight.
Document freight trends and issues

• What we heard
  – 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.
Freight-Related Forecasts

### Tonnage (millions of tons)

<table>
<thead>
<tr>
<th>Year</th>
<th>Within Iowa</th>
<th>From Iowa</th>
<th>To Iowa</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1018.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>1231.3</td>
<td>208.8</td>
<td>818.8</td>
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<tr>
<td>2030</td>
<td>1361.3</td>
<td>278.9</td>
<td>1083.9</td>
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<tr>
<td>2040</td>
<td>1454.3</td>
<td>339.7</td>
<td>1114.6</td>
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</table>

### Value ($ millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Within Iowa</th>
<th>From Iowa</th>
<th>To Iowa</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$453,296</td>
<td>$35.5</td>
<td>$45.3</td>
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<tr>
<td>2020</td>
<td>$58,971</td>
<td>$108.3</td>
<td>$129.3</td>
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<tr>
<td>2030</td>
<td>$80,992</td>
<td>$205.7</td>
<td>$225.7</td>
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<tr>
<td>2040</td>
<td>$99,805</td>
<td>$303.5</td>
<td>$333.5</td>
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</table>

### Comparison Table

<table>
<thead>
<tr>
<th>Mode</th>
<th>2012</th>
<th>2040</th>
<th>% change</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>$563,313</td>
<td>$838,457</td>
<td>48.8</td>
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<tr>
<td>Truck</td>
<td>$453,296</td>
<td>$643,508</td>
<td>42.0</td>
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<tr>
<td>Multiple modes and mail</td>
<td>$45,329</td>
<td>$79,719</td>
<td>75.9</td>
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<tr>
<td>Rail</td>
<td>$36,680</td>
<td>$58,971</td>
<td>60.8</td>
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<tr>
<td>Pipeline</td>
<td>$18,985</td>
<td>$25,147</td>
<td>32.5</td>
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<tr>
<td>Water</td>
<td>$5,230</td>
<td>$16,648</td>
<td>218.3</td>
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<tr>
<td>Air (include truck-air)</td>
<td>$3,595</td>
<td>$13,574</td>
<td>277.6</td>
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<tr>
<td>Other and unknown</td>
<td>$198</td>
<td>$890</td>
<td>348.6</td>
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</table>
International Trade - Exports

Trading Partners, Exports ($ millions)

- Canada: 30.6%
- Mexico: 15.3%
- Japan: 7.8%
- Brazil: 6.3%
- China: 6.3%
- All other: 36.8%

Exports, Value ($ millions)

- Corn: $1,000
- Tractors: $1,000
- Soybeans: $500
- Pork, fresh or chilled: $500
- Pork, frozen: $500
- Soybean meal: $500
- Herbicide: $500
- Civilian aircraft, engines, and parts: $500
- Aluminum alloy: $500
- Front-end shovel loaders: $500

Pages 62 – 81 of the document
International Trade - Imports

Trading Partners, Imports ($ millions)

- Canada 33.4%
- Mexico 17.1%
- China 14%
- Germany 7.5%
- Italy 3.2%
- All others 24.8%

Imports, Value ($ millions)

- Natural gas
- Parts and attachments for...
- Engine parts and accessories
- Sanitary products
- Road tractors for semitrailers
- Potassium chloride
- Oats
- Electrical equipment
- Agricultural parts
- Loading, lifting machinery

Pages 62 – 81 of the document
Inventory existing assets

- **108** public airports
- **2,391-mile** Commercial & Industrial Network
- Over **25,000** bridges
- Nearly **20,000** trucking companies
- **84** pipeline operators
- **18** railroad companies
- **60** barge terminals
- **11** Lock and Dams
- **1** intermodal container facility
- **15** biodiesel plants
- **44** ethanol plants
- **811** licensed grain elevators
- Public warehouses
- Distribution centers
- Transload facilities

![Pie chart showing the distribution of transportation assets]

- Roadways: 114,383 miles (72%)
- Pipelines: 41,410 miles (26%)
- Railroads: 3,825 miles (2%)
- Navigable waterways: 491 miles (<1%)
Critical Freight Networks

- Iowa Multimodal Freight Network
- National Highway Freight Network
  - Primary Highway Freight System (PHFS)
  - Critical Urban Freight Corridors (CUFCs)
  - Critical Rural Freight Corridors (CRFCs)
  - Remainder of the Interstate System
- National Multimodal Freight Network
Iowa Multimodal Freight Network

- **Air**
  - 2 airports handle over 99% of air cargo

- **Highway**
  - Roads with 30% truck traffic, over 1,000 trucks per day, or over 1,000 oversize/overweight permits per year

- **Railroad**
  - 5 million tons per mile or greater

- **Waterway**
  - 2 marine highways
National Highway Freight Network

- **Primary Highway Freight System**
  - Federally designated

- **Critical Urban Freight Corridors (CUFCs)**
  - Designated in consultation with MPOs

- **Critical Rural Freight Corridors (CRFCs)**
  - Designated by the State DOT (150 miles available)
  - Prioritized corridor continuity
  - Selected the non-Interstate corridor with most total truck traffic

- **Remainder of Interstate System**
National Multimodal Freight Network

- **Air**
  - Top 100 national cargo airports
- **Highway**
  - NHFN (previous slide)
- **Railroad**
  - All class I railroads
- **Waterway**
  - All marine highways
Describe conditions of the system

- Summary by mode
- Utilization
- Safety
- Bottlenecks
- Performance measures
Identify bottlenecks
Develop performance measures

- Air
- Highway
- Pipeline
- Railroad
- Waterway
- Alignment with national freight goals
Identify the State’s decision-making process

- Stakeholder and public engagement
- Decision-making tools
- Coordination with states, freight-related groups, and institutions
- Funding mechanisms
Present freight strategies and improvements

• Strategies
  – Multimodal
  – Freight Advisory Council
  – Statewide Freight Transportation Network Optimization Strategy
  – Internal discussions

• Improvements
  – Air (Des Moines International and Eastern Iowa Airports)
  – Highway (Value, Condition, and Performance matrix)
  – Railroad (Iowa railroad companies)
  – Waterway (U.S. Army Corps. of Engineers)
Statewide Freight Transportation Network Optimization Strategy

• Joint effort with Iowa Economic Development Authority
• Purpose
  – To identify and prioritize investment opportunities for an optimized public and private freight network to lower transportation costs for Iowa businesses
• Demand-based supply chain model
• Implementation strategies (State Freight Plan)
• Opportunity in east-central Iowa
  – Cedar Rapids Logistics Park (part of the Big Cedar Industrial Center)
  – FASTLANE grant
Top 5 priority freight strategies

1. Optimize the freight transportation network to minimize cost and travel time and improve supply chain efficiency
2. Target investment on the interstate system at a level that reflects the importance of this system for moving freight
3. Advance a 21st century Farm-to-Market System that moves products seamlessly across road, rail, and water to global marketplaces
4. Explore opportunities for increasing value-added production within the state
5. Target investment to address mobility issues that impact freight movements
Value, Condition, and Performance Matrix (VCAP)

1. Freight Mobility Issue Survey
   • Populate initial improvement list
2. Value – Iowa Travel Analysis Model (iTRAM)
   • How much the location improves efficiency of the network
3. Condition – Infrastructure Condition Evaluation (ICE) tool
   • Composite rating of seven condition and traffic criteria
4. Performance – INRIX Bottleneck Ranking tool
   • How often bottlenecks occur
5. Average the three rankings
6. Truck traffic counts (tiebreaker if necessary)
National Highway Freight Program

- Dedicated freight funding allocated to each state
- Iowa NHFP funding ($13 million - $18 million per year through 2020)
- At least 90% of allocated funding must be spent on the National Highway Freight System
- Up to 10% funding may be used on freight intermodal and/or freight rail projects
- Must document where the state will spend NHFP funding in a freight investment plan
Develop Freight Investment Plan

- NHFP funding ($13 million - $18 million per year through 2020)
- 90% of allocated funding
  - VCAP #1 – Interstate System (Council Bluffs, Pottawattamie County)
  - VCAP #3 – I-74 bridge replacement (Davenport, Scott County)
  - VCAP #7 – I-80/I-380 interchange (Iowa City, Johnson County)
- 10% flexible funding
  - Linking Iowa’s Freight Transportation System (LIFTS) program
  - Competitive grant program
Linking Iowa’s Freight Transportation System (LIFTS)

• 2016 pilot program ($2.7 million)
  – 25 grant requests ($17.2 million), 6 were awarded
  – Projects included studies, rail improvements/capacity enhancements, and transloading improvements

• 2017/2018 LIFTS program
  – Utilize flexible 10% of annual NHFP funds
  – Application based program for freight projects not eligible for typical highway and railroad funding
  – 7 grant requests ($4.6 million), 5 were awarded
## Stakeholder and public engagement

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**Legend:**
- General freight plan development
- Industry trends and issues
- Conditions of the system
- Performance measures
- Implementation strategies and improvements
Stakeholder and public engagement

• Stakeholder groups
  – Freight Advisory Council (11 meetings)
  – High Leverage Stakeholder Committee (2 meetings)
  – Rail Advisory Committee (2 meetings)
  – Issue Based Workshop (1 meeting)
  – Freight Mobility Issue Survey (targeted 6 groups)
  – CUFC recommendations (targeted MPOs)
  – Public input (45-day comment period, public meeting)

• Provided input on development of all plan sections
Current status

- American Transportation Research Institute (ATRI) ranked Iowa’s state freight plan 4th nationally in its report on best practices in freight planning
- Annual amendments to the Freight Investment Plan
- Next full update (2022)
  - Data review
  - Iowa Travel Analysis Model (iTRAM) update
Questions?

State Freight Plan website:
https://iowadot.gov/iowainmotion/specialized-system-plans/state-freight-plan

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