NETSCORE 21

Freight and Passenger Transportation in Iowa

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Iowa Transportation

- Infrastructure
  - Railroads
  - Highways

- Freight Transportation
  - Truck
  - Rail

- Passenger Transportation
Rail Transportation
Infrastructure–Shipments
Rail Transportation—Iowa

Key 2007 facts

• 3,969 miles of track
• 19 Railroads
• 50.6 million tons shipped
• 42.8 million tons received
• 2 Amtrak routes
• 62,356 Rail passenger rides
### Rail Operations–Iowa

- **Class I** – Large freight, revenue based > $277.7 million
- **Class II** – mid-sized, revenue > $20.5 million < $277.7 million
- **Class III** – local short lines, Revenue < $20 million

<table>
<thead>
<tr>
<th></th>
<th>Class I</th>
<th>Class II</th>
<th>Class III</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Companies</td>
<td>21%</td>
<td>16%</td>
<td>63%</td>
<td>19</td>
</tr>
<tr>
<td>Miles Operated</td>
<td>66%</td>
<td>25%</td>
<td>9%</td>
<td>3969</td>
</tr>
<tr>
<td>Tons Originated</td>
<td>71%</td>
<td>19%</td>
<td>10%</td>
<td>50.6 million</td>
</tr>
<tr>
<td>Tons Terminated</td>
<td>73%</td>
<td>20%</td>
<td>7%</td>
<td>42.8 million</td>
</tr>
<tr>
<td>Ton-Miles</td>
<td>91%</td>
<td>8%</td>
<td>1%</td>
<td>66.8 billion</td>
</tr>
<tr>
<td>Revenues Earned</td>
<td>87%</td>
<td>10%</td>
<td>3%</td>
<td>1.5 billion</td>
</tr>
</tbody>
</table>
Rail Freight Transportation—Iowa

Miles Operated versus Net Ton-Miles

<table>
<thead>
<tr>
<th>Year</th>
<th>Mileage</th>
<th>Net Ton Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1986</td>
<td>105</td>
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<td>2001</td>
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<td>2004</td>
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<td>2005</td>
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<td>200</td>
</tr>
<tr>
<td>2006</td>
<td>205</td>
<td>205</td>
</tr>
<tr>
<td>2007</td>
<td>210</td>
<td>210</td>
</tr>
</tbody>
</table>

Index x 1985 = 100
Rail Freight Transportation—Iowa
Shipment by Weight (2002)

Within State
From State
To State

Millions of Tons

0
5
10
15
20
25
30
35
40
45

Within State
From State
To State
Rail Freight Transportation—Iowa

Commodities Originating from Iowa (Ton-Miles)
- Cereal grains: 8837 (24%)
- Other prepared foodstuffs and fats and oils: 5993 (16%)
- Animal feed and products of animal origin, n.e.c.: 5173 (14%)
- Other agricultural products: 4661 (12%)
- Milled grain products and preparations, and bakery products: 12887 (34%)

Commodities Terminating in Iowa (Ton-Miles)
- Coal: 17358 (62%)
- Gravel and crushed stone: 4645 (17%)
- Cereal grains: 2483 (9%)
- Base metal in primary or semifinished forms and in finished basic shapes: 1532 (5%)
- Fertilizers: 1915 (7%)

Cereal grains
Other prepared foodstuffs and fats and oils
Animal feed and products of animal origin, n.e.c.
Other agricultural products
Milled grain products and preparations, and bakery products
Coal
Gravel and crushed stone
Cereal grains
Base metal in primary or semifinished forms and in finished basic shapes
Fertilizers
Economics and Investment

• On avg., it costs 21% less to move freight by rail now than in 1985.
• Cost per ton-mile declined from 2.64 cents in 1985 to 2.10 cents in 2006.
• In 2006, Iowa railroads spent an estimated $178 million on maintenance and $213 million on upgrades.
• 3,969 miles of track and 19 railroads.
• $391 million / 3,969 miles = $98,513 per mile per year on maintenance and upgrades.
Highway Infrastructure
Highway Transportation–Iowa

Primary VMT (millions)

*NOTE: In 2007, Passenger=83% of VMT, Truck =17% of VMT
Highway Transportation–Iowa

AADT on Iowa Interstates

Truck
Passenger
Freight Truck Transportation
Truck Freight Transportation–Iowa

Ton-miles of truck freight (1995-2005)
Truck Freight Transportation—Iowa
Shipments by Ton-miles (millions)

Total: 25429
Within: 6539
To: 2676
From: 3098
Through: 13116

Ton-Miles of Truck Shipments by Iowa
Truck Freight Transportation—Iowa

Shipments characteristics by distance shipped (shipments originated in Iowa-2002)

Distance shipped

Source: Iowa Department of Transportation
Truck Freight Transportation—Iowa

Commodities originating from Iowa (tons-thousands)
- Animal feed and products of animal origin, nec
- Machinery
- Motorized and other vehicles (including parts)
- Base metal in prim. or semifin. forms & in finished basic shapes
- Fertilizers

Commodities terminating in Iowa (tons-thousands)
- Other agricultural products
- Mixed freight
- Base metal in prim. or semifin. forms & in finished basic shapes
- Other prepared foodstuffs and fats and oils
- Meat, fish, seafood, and their preparations
Truck Freight Transportation—Iowa

Commodities originating from Iowa (ton-miles-millions)

- Animal feed and products of animal origin, nec: 2,536
- Machinery: 964
- Motorized and other vehicles (including parts): 1,548
- Base metal in prim. or semifin. forms & in finished basic shapes: 1,330
- Fertilizers: 926

Commodities terminating in Iowa (ton-miles-millions)

- Base metal in prim. or semifin. forms & in finished basic shapes: 802
- Other prepared foodstuffs and fats and oils: 544
- Other agricultural products: 390
- Mixed freight: 374
- Meat, fish, seafood, and their preparations: 299
Freight Transportation–Iowa

- Trucks are mainly used to transfer shipments within State.
- Rail are used to transfer shipments out of State (longer distances).

This conclusion is the same for the whole nation (as it is shown in the next slide):

- Most of transportation is operated by trucks
- Longer transportation is operated by rail
### Freight Transportation—US

**Characteristics of shipments by mode**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Tons (thousands)</th>
<th>Percentage of Total</th>
<th>Ton-miles (millions)</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>8,957,687</td>
<td>74.11%</td>
<td>1,390,102</td>
<td>47.02%</td>
</tr>
<tr>
<td>Rail</td>
<td>1,928,530</td>
<td>15.95%</td>
<td>1,294,921</td>
<td>43.85%</td>
</tr>
<tr>
<td>Water</td>
<td>423,282</td>
<td>3.5%</td>
<td>175,973</td>
<td>5.96%</td>
</tr>
<tr>
<td>Air</td>
<td>3,525</td>
<td>0.03%</td>
<td>4,014</td>
<td>0.14%</td>
</tr>
</tbody>
</table>

Source: Commodity Flow Survey 2007

- The majority of commodities is moved by truck (74%).
- Average rail shipment-miles higher than average truck shipment-miles.
- Total of ton-miles for truck almost equal to total of ton-miles for rail (47%-43.85%).
Freight Transportation—US

(Forecasts for total of shipments and by mode)

Source: Freight Analysis Framework
Passenger Transportation
Passenger Transportation—Iowa

Round Trip Distance Based on Passenger Origin and Destination

![Bar graph showing the number of passenger trips based on round trip distance. The categories are:
- 0-299 miles
- 300-499 miles
- 500-999 miles
- 1000-1999 miles
- 2000+ miles

The categories are divided into:
- Origin Outside IA to Destination In IA
- Origin in IA to Destination Outside IA
- Origin In IA to Destination In IA]
Passenger Transportation–Iowa
Average Person Trip Lengths

Long Trips (> 50 miles)

- Purpose to Commute 128 miles (23%)
- Purpose Not to Commute 438 miles (77%)

Daily Travel Trips

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Daily Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Home-Based</td>
<td>11.33</td>
</tr>
<tr>
<td>Home-Based Social/Recreational</td>
<td>10.22</td>
</tr>
<tr>
<td>Home-Based Shopping</td>
<td>9.80</td>
</tr>
<tr>
<td>Home-Based Work</td>
<td>8.22</td>
</tr>
<tr>
<td>Other Home-Based</td>
<td>7.00</td>
</tr>
<tr>
<td>All</td>
<td>9.61</td>
</tr>
</tbody>
</table>
Passenger Transportation
Principal modes to work

**Iowa**
- 78% Drives Self
- 11% Carpooled
- 4% Walked
- 5% Taxi, Motorcycle, Bicycle, Other
- 1% Public Transportation
- 1% Work at Home

**US**
- 76.1% Drives self
- 10.4% Carpool
- 10.4% Public transportation
- 8.0% Taxicab
- 4.9% Bicycle or motorcycle
- 1.4% Walks only
- 1.0% Other means
- 0.1% Works at home
Passenger Transportation

Annual long distance trips

**Iowa**
- Personal vehicle: 84%
- Air: 13%
- Bus: 3%
- Train: 0.1%

**US**
- Personal vehicle: 89.5%
- Air: 7.4%
- Bus: 2.1%
- Train: 0.8%
- Other: 0.2%