

# Soybean Movement in Minnesota

## Soybean Production

Minnesota farmers grow over 284 million bushels of soybeans per year at a total value of \$2.6 billion, making soy the second most valuable agricultural commodity in the state. The economic value of soybeans in Minnesota exceeds that of all other non-corn crops combined. Nationally, Minnesota ranks third amongst states in total production. Local grain elevators, which store soybeans before they are sold to the market, employ approximately over 9,000 people at 600 locations and pay over \$100 million in taxes annually.

## Soybean Transport

First Stage: After production, farmers haul their yields either to local grain elevators or directly to processing plants located nearby.

- To local grain elevators (Mode: Truck or Tractor)
  - Farmers haul their yields to cooperatively or privately owned elevators who then store the soybeans until their sale within the marketplace (nearly a 50/50 split between cooperative and private)
  - There are usually one to three elevator options available within a 30 mile radius, about half of which do not have rail access
- To local processing plants (Mode: Truck)
  - Increasingly farmers are investing in semi-trucks and other equipment to haul their yields directly to local soy-meal or oilseed production plants
  - These shipments are generally within a 100 mile radius

Second Stage: For those that are hauled to local elevators, shipments are made to both foreign and domestic end users. About 40% of soybeans are exported through the Pacific and Gulf ports, while about 60% are processed domestically.

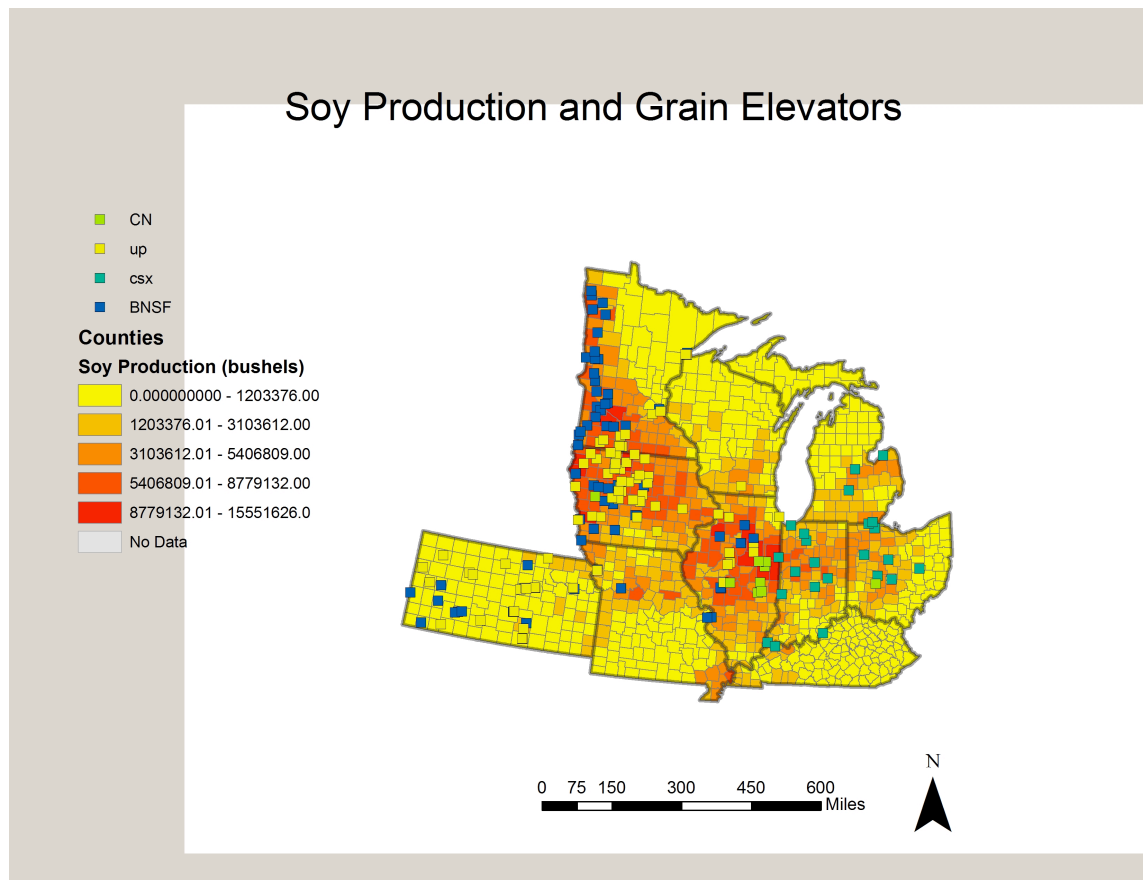
- To Pacific ports (Mode: Rail)
  - About 70% of all exports are shipped to the Pacific ports—including Seattle, Tacoma, Portland, and L.A.—for end use in Asian markets.
  - Non-GMO soybeans (about 3% of total production) are shipped in separate containers, mostly to Japan
- To Gulf Coast ports (Mode: Truck to Barge)
  - About 30% of exports are shipped via barge to Gulf Coast ports for end use in Europe or South America (though Brazil is the largest foreign competitor, they have a different growing season)
  - Elevators without barge access use truck to haul soybeans to those along the Mississippi River
  - A small percentage of shipments through the Gulf Coast are sent to West through the Panama Canal.

- To local processing plant (Mode: Truck)
  - Over 95% of domestic processing takes place in Minnesota, with the remainder in Iowa.
  - There are five soy-meal and oilseed production plants located in the state. There are also several bio-diesel production plants that use soybean for fuel.

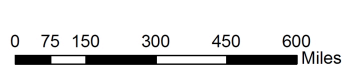
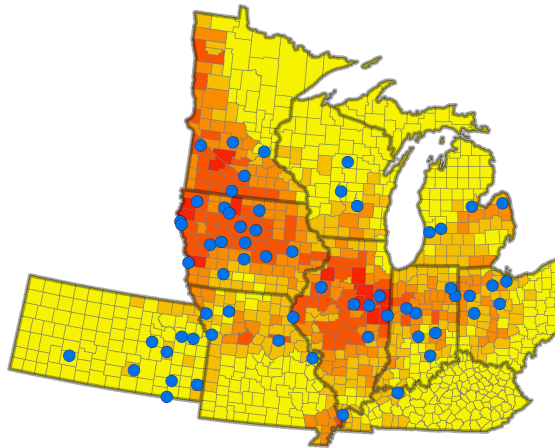
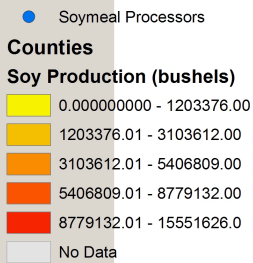
Third Stage: Soy-meal and oilseed are shipped via rail and truck to agricultural and food processing/end-use facilities Bio-diesel is shipped via truck, though there has been some experimentation with pipeline transport. See attached sheet for more detail.

### Soybean Issues

1. Congestion: Many grain elevators report that DDG, a byproduct of ethanol frequently used as livestock feed, requires an increasing number of containers and has been congesting rail and barge transport
2. Geography: Amongst major soybean producing states, Minnesota is the farthest from coastal ports, making it more vulnerable to delays and increases in the cost of shipment
3. Competition: Unrelated to transportation issues, Minnesota's soybeans generally have a lower protein and oil content than those of neighboring states, which compounds existing price pressures.



## Soy Production and Soymeal Processors



### Sources

Minnesota Grain and Feed Association; National Soybean Research Laboratory; Minnesota Soybean Alliance; Minnesota Soybean Processors; The American Soybean Association; USDA NASS; Corn and Soybean Digest; Soybean Transportation Coalition

### Interview:

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# Soy Transportation Coalition

## Railroad Movement of Soybeans and Soy Products



# MINNESOTA

	<u>Soybeans</u>	<u>Soybean Meal</u>	<u>Soybean Oil</u>
Tons Produced	8,019,750	4,895,500	1,218,699
Tons Originated by Railroads	3,478,097	2,357,552	678,300
% of Tons Moved by Railroads	43.37%	48.16%	55.66%
Total Rail Carloads	33,565	24,064	7,064
Average Railroad Mileage Haul	1,665	1,038	806
<u>Railroads – Tons Originated by:</u>			
BNSF	2,377,131	29,520	124,920
Canadian National	32,228	0	0
Canadian Pacific	940,154	38,800	11,000
CSX	0	0	0
Kansas City Southern	0	0	0
Norfolk Southern	0	0	0
Union Pacific	10,648	2,289,232	542,280
Other Railroads	117,936	0	0
TOTAL	3,478,097	2,357,552	678,300

### Railroad Rates & Revenues:

Total Railroad Freight Charges	\$140,222,784	\$76,606,404	\$17,667,572
Average Railroad Charges Per Car	\$4,178	\$3,183	\$2,501
Average Railroad Charges Per Ton	\$40.32	\$32.49	\$26.05

### Revenue/Variable Cost Ratios (R/VC)\*:

<b>% Tons: &gt;180% (R/VC) – Excessive Rates?</b>	<b>29.77%</b>	<b>11.53%</b>	<b>24.51%</b>
Tons: ≥180% (R/VC)	178,973	55,512	0
Tons: ≥180% and <200% (R/VC)	582,460	88,308	55,052
Tons: >200% and <300% (R/VC)	273,828	128,016	113,904
Tons: >300% (R/VC)	178,973	55,512	0
Average R/VC	181%	138%	141%
Tons: Under 180% (R/VC)	2,442,836	2,085,716	520,344
% Tons: Under 180% (R/VC)	70.23%	88.47%	75.49%

\*Revenue to Variable Cost Ratios (R/VC) are used by the U.S. Surface Transportation Board (STB) to evaluate and measure the profitability and reasonableness associated with railroad freight charges. For example, if a railroad's freight charges are \$2,000 per carload and the variable costs for that movement are \$1,000 per carload, the R/VC would be 200%. In order for a rate to be regarded as potentially excessive, and subject to STB jurisdiction, the R/VC ratio must be equal to or greater than 180%.

Full report can be accessed at [www.soytransportation.org](http://www.soytransportation.org)