CORPS FACTS Comparing Navigation

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Water Transportation

The St. Paul District is responsible for supporting inland navigation by operating 13 locks and dams and by maintaining the 9-foot navigation channel on the Mississippi River. The district's navigation program provides a safe, reliable, cost-effective and environmentally sustainable waterborne transportation system on the Upper Mississippi River for the movement of commercial goods and for national security needs.

In 2012, 13.5 million tons of commodities were shipped on the Mississippi River with the St. Paul District's area of operation, including 7 million tons of grain grown in the Upper Midwest. The industries making these shipments saved nearly $288 million by using the inland waterways instead of overland shipping methods.

Water transportation consumes much less energy per ton-mile of freight carried than either rail or truck. This factor, combined with the remoteness of the vessel's operating environment from population centers, substantially reduces the impact of its exhaust emissions. Hydrocarbon vapor emissions from tank ships and barges, while loading or unloading petroleum products, amount to approximately .02 percent of all volatile organic emissions nationally.

Protection of the marine environment from pollution is a major concern shared by the barge and towing industry with both federal and state environmental agencies. The U.S. Coast Guard has law enforcement responsibilities relating to the protection of the marine environment, and many of its vessel safety regulations have been enacted to serve this purpose. Additionally, the Clean Air Act of 1990 required installation of vapor recovery systems to reduce emissions of petroleum and petrochemical vapors on barges designed to carry liquid.

Source: U.S. Environmental Protection Agency

Transportation Mode Comparison: Energy-Environment Efficiency

A semi can carry one ton of cargo 155 miles per one gallon of fuel.

A train can carry one ton of cargo 413 miles per one gallon of fuel.

An inland barge can carry one ton of cargo 576 miles per one gallon of fuel.

One barge (no tows) can transport 1,500 tons. Approximately 58 semi trucks or 15 jumbo railroad cars would be needed to transport the same amount of goods.

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One 15-barge tow can transport 22,500 tons of goods. Approximately 870 semi trucks or 200 jumbo railroad cars would be needed to transport the same amount of goods.

Source: U.S. Department of Transportation

Transportation Mode Comparison: Emissions Produced

Pollutants (grams/ton-mile) produced in moving one ton of cargo 1,000 miles:

Emissions (Grams/Ton-Mile)				
Mode	**HC**	**CO**	**NOx**	**PM**
Inland Towing	.01737	.04621	. 46907	.01164
Eastern Railroads	.02419	.06434	.65312	.01624
Western Railroads	.02423	.06445	.65423	.01621
Truck	.020	.136	.732	.018
HC= hydrocarbon emissions, CO= carbon monoxide emissions, NOx= nitrogen oxide emissions, PM= particulate matter emissions				

Source: U.S. Department of Transportation

The U.S. Environmental Protection Agency predicts that a shift in transportation from vessels to trucks would cause: a 826 percent increase in fuel use annually, a 709 percent increase in exhaust emissions: annually, a 5,967 percent increase in probable accidents each year, the need to annually dispose of 2,746 used truck tires and an additional truck traffic load of 1,333 heavy vehicles on the roads each day.

Source: Minnesota Department of Transportation

Organization

Located in downtown St. Paul, Minn., the St. Paul District employs around 650 people at more than 40 field sites in five states. The district is one of six districts that make up the U.S. Army Corps of Engineers' Mississippi Valley Division, which is headquartered in Vicksburg, Miss.

The "Mighty Mississippi River" starts its long journey through the middle of the United States of America to the Gulf of Mexico within the district's boundaries at Lake Itasca, near Bemidji, Minn. The district borders follow the edges of four river basins – the Mississippi River, the Red River of the North, the Souris River and the Rainy River – and cover an area of approximately 139,000 square miles.

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