



# NAVIGATION

US ARMY CORPS OF ENGINEERS ★ MISSISSIPPI VALLEY DIVISION ★ BUILDING STRONG®

## INTRODUCTION

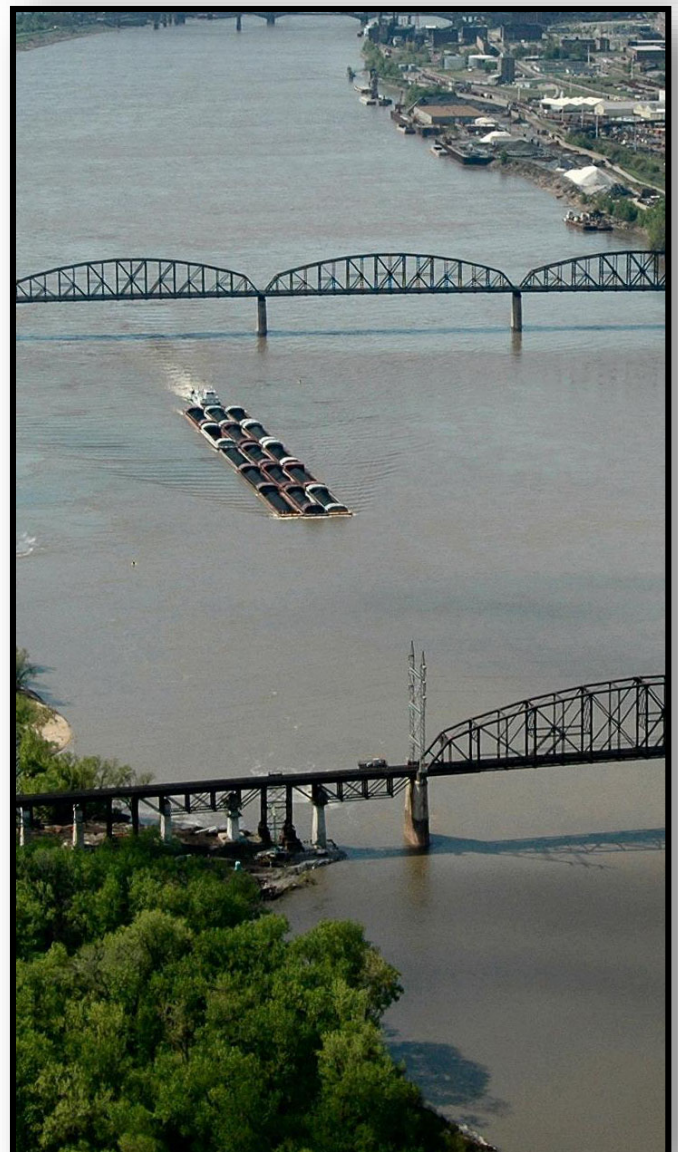
As the world's leading maritime and trading nation, the United States relies on an efficient Maritime Transportation System to maintain its role as a global power. The federal government's involvement in navigation projects dates to the early days of the United States, when rivers and coastal harbors were the primary paths of commerce in the new country.

Today, navigable inland waterways provide a cost-effective means for moving major bulk commodities, such as grain, coal and petroleum. Inland navigation is a key element of state and local government economic development and job-creation efforts, and is essential in maintaining economic competitiveness and national security.

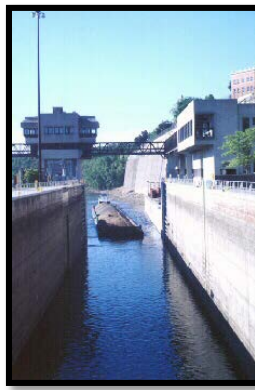
The responsibility of the U.S. Army Corps of Engineers is to facilitate the safe, reliable and economically efficient movement of vessels, and it does so by constructing and maintaining navigation channels and harbors, and regulating water levels on inland waterways.

## NAVIGATION

- 4,267 miles of commercial waterways
  - 11 Inland Waterway systems
  - 19 other waterway systems
  - 1/3 of U.S. inland waterways
  - Moves 47% of U.S. inland waterborne commerce
- 670 million tons of cargo move on the Mississippi River system each year
- Main Commodities: petroleum & petroleum products, crude materials, food & farm products, chemicals and related products, primary manufactured goods, and coal
- 7 deep-draft ports
- 51 shallow-draft ports
- \$5.6 billion in domestic transportation savings.



- 62 locks:
  - ◆ 29 – Mississippi River
  - ◆ 8 – Illinois River
  - ◆ 6 – Gulf Intracoastal Waterway, LA
  - ◆ 5 – Red River, LA
  - ◆ 4 – Ouachita & Black Rivers, AR & LA
  - ◆ 1 – Kaskaskia River, IL
  - ◆ 1 – Old River, LA
  - ◆ 1 – Bayou Teche, LA
  - ◆ 3 – Atchafalaya Basin, LA
  - ◆ 1 – Freshwater Bayou, LA
  - ◆ 3 – West Pearl River, LA



## NAVIGATION PROGRAM BENEFITS

- **Annual Tonnage:** 670 million tons
- **Annual Transportation Savings:** \$5.6 billion
- **Jobs:** 2.7 million
- **Personal Income:** \$105 billion
- 8:1 return on each dollar invested.
- 95% of overseas trade is via ship.
- Inland navigation provides a safe and cost efficient alternative to truck and train and provides billions in transportation savings annually. It also reduces highway congestion and pollution.
- Key component of world trade.
- New Orleans area is the #1 port in the United States based on tonnage.



## WATERWAYS TRANSPORTATION ... IT'S EFFICIENT, ENVIRONMENTALLY RESPONSIBLE, AND SAFE




Waterways provide great cargo capacity and move freight more safely than truck or rail. In fact, they carry the equivalent of 58 million truck trips per year, with room to spare.

If waterborne cargo were diverted to highway or rail:




- Truck traffic would double on the Interstates
- Rail tonnage would increase by 25%

**A loaded tank barge carries 27,500 barrels of gasoline, enough to keep about 2,500 automobiles running for an entire year.**

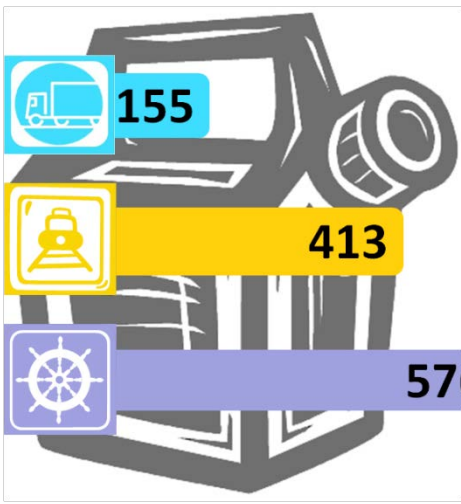
**Units to Carry 27,500 Barrels of Liquid Cargo**

- 144 trucks 
- 46 rail cars 
- 1 barge 

**Units to Carry 1,750 Short Tons of Dry Cargo**

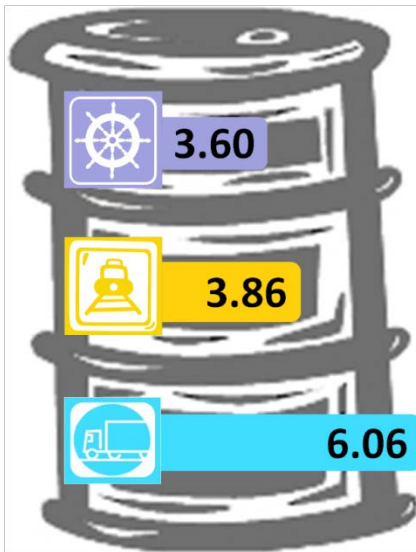
- 70 trucks 
- 16 rail cars 
- 1 barge 

**One loaded covered hopper barge carries 58,333 bushels of wheat, enough to make almost 2.5 million loaves of bread**



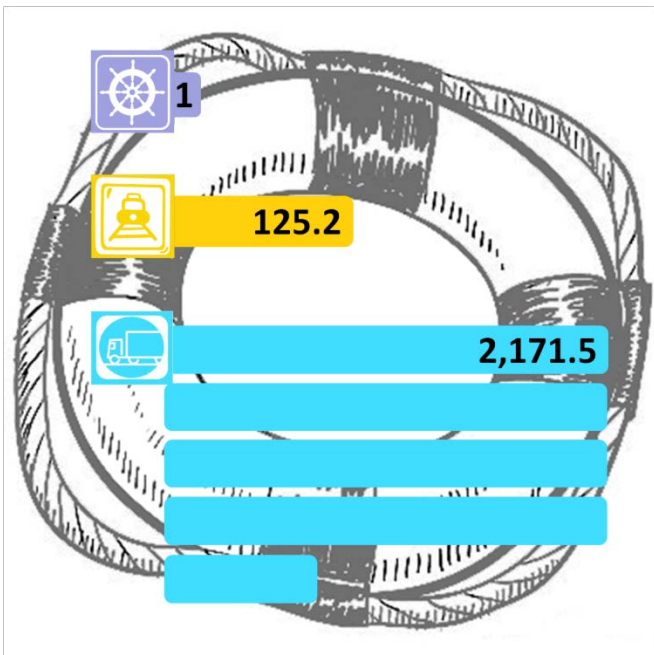
**Transporting freight by water is the most energy-efficient choice.**

Barges can move one ton of cargo 576 miles per gallon of fuel. A rail car would move the same ton of cargo 413 miles, and a truck only 155 miles.



**Inland waterways transport hazardous material safely.**

Overall, spill rates remain low. Trucks lose 6.06 gallons per one million ton-miles, rail cars 3.86 gallons and barges 3.6 gallons per one million ton-miles.



**Inland waterways transport has a low injury record compared to rail or truck.**

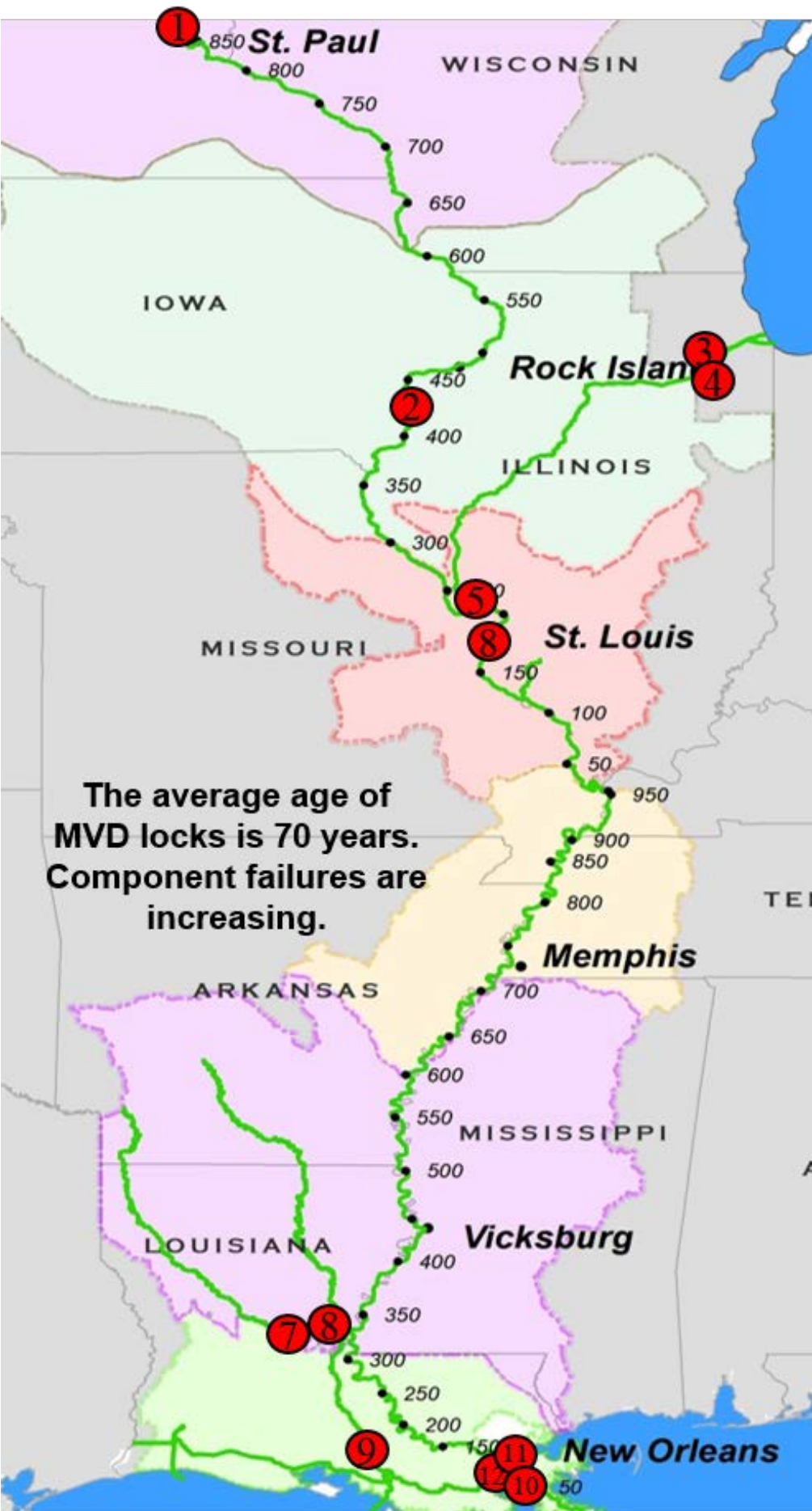
For each injury involving barge transportation, there are 125.2 injuries related to rail and 2,171.5 truck-related injuries.

# 2012-2015 Major Lock Outages

*(Averaging 1 failure  
every 3 months)*

1. USAF missing contact block, closed Oct. 9-11, 2014.
2. Lock 18 anchor bar, closed Jun. 25-26, 2014.
3. Lockport emptying valve failure, closed Jun. 21-22, 2015.
4. Dresden Island strut arm failure, closed Nov. 3-4, 2015.
5. Mel Price main chamber lift gate cables, Dec. 28, 2013, to August 8, 2014, closed 224 days.
6. Lock 27 protection cell, Sep. 2012, closed 6 days, \$16 million in transportation impacts.
7. Red River Lock 2 strut arm bushing failure, Apr. 2012, closed 15 days.
8. Jonesville Lock hydraulic cylinder failure, closed Sep. 22-26, 2014.
9. Bayou Sorrel Lock Hydraulic Pump Failure, closed Jan 28-29, 2014.
10. Algiers, closed Mar. 27–Jul. 18, 2013, (112 days, \$146 million in transportation impacts).
11. IHNC, Queue 86+, closed Jan. 4-14, 2014.
12. Harvey gate machinery, closed Feb. 15-18, 2013.

**The average age of  
MVD locks is 70 years.  
Component failures are  
increasing.**



February 2016