

DETERMINING SYSTEM CAPACITY TO ACCOMMODATE GRAIN FLOWS BY RAIL TO THE PORT OF ST. LOUIS

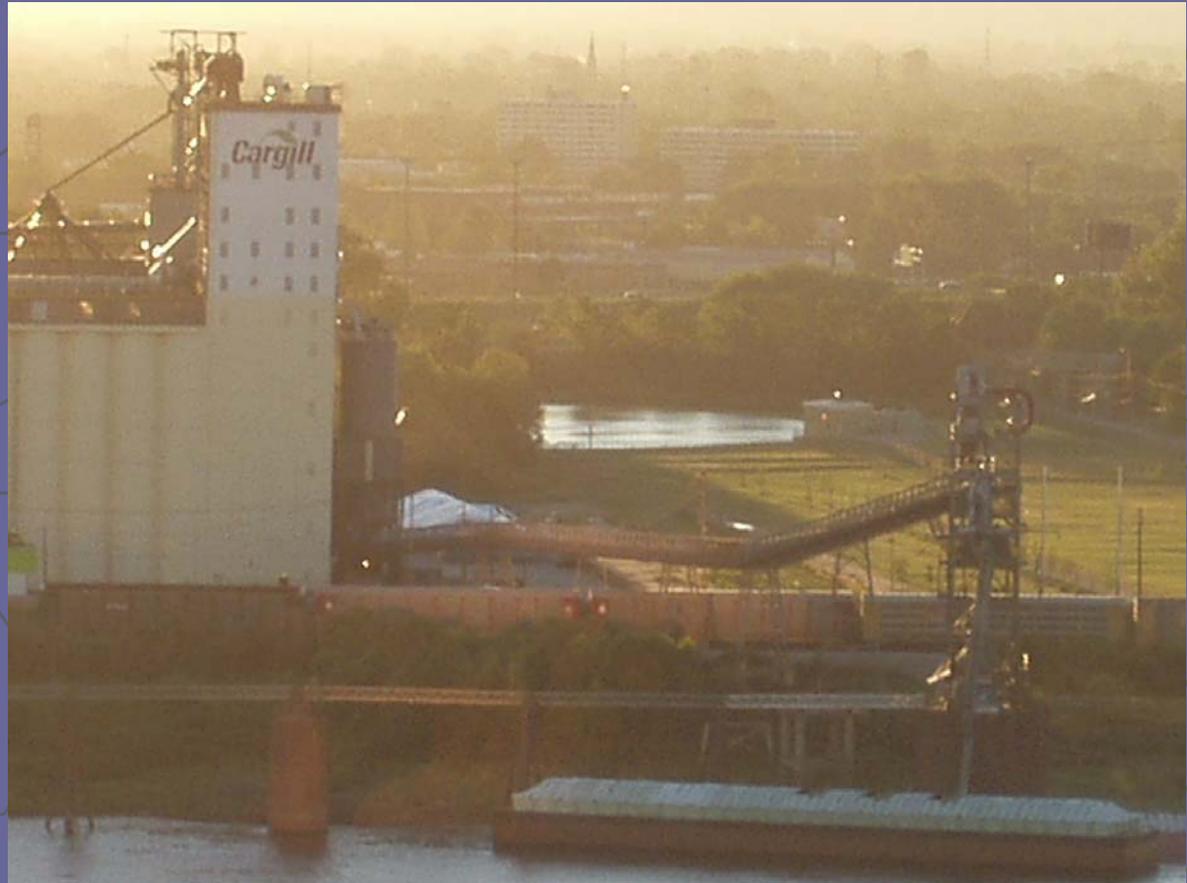


The Louis Berger Group, Inc.

January, 2006

Study Directive

Determine system capacity to accommodate grain flows by rail to the Mississippi River at St. Louis



Study Tasks

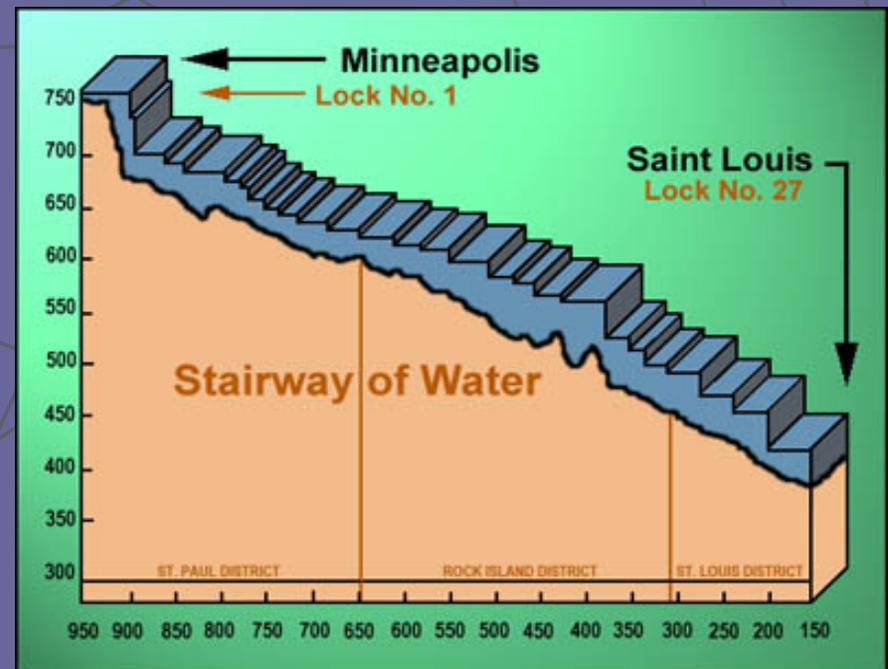
1. Meet with IWR
2. Conduct research
3. Conduct interviews with major grain handlers and railroads
4. Draft report
5. Meet with IWR, obtain comments
6. Finalize Report – Tasks 2-3
7. Develop forecast model framework approach
8. Meet with IWR, obtain comments
9. Finalize Task 8 Report



Grain Flows to St. Louis

Basic Study Findings

- ▶ 90% of all grain moving to St. Louis for barge loading arrives by truck, not rail.
- ▶ Rail is more important to the Upper Mississippi, but mainly in winter, when the River is iced-over.
- ▶ St. Louis' peak loadings occur December through March, since it is the most northerly barge terminal that stays ice-free.



(photo source ACE, IWR)

Grain Flows to St. Louis

Basic Study Findings: Rail vs. Barge St. Louis to New Orleans

- ▶ Rail cannot compete with barge from St. Louis to New Orleans (NO) because:
 - NO allows mid-stream transfer of grain from barge to ocean-going ships
 - Barges allow a 5-day window for delivery, making it easy to mesh with ship schedules
 - Rail only allows a 16-hour window, then charges apply
 - Export terminals in NO have poor rail unloading facilities, and little storage room.



Grain Flows to St. Louis Decreases Since Peak in 1997

- ▶ Grain flows to St. Louis have decreased 25-40% since 1997, because:
 - Information flow to farmers and grain brokers has improved, leading to a more perfect market, where sellers can select freely among many alternative markets.
 - More grain is being used domestically than ever before – due to ethanol and methyl ester production, and a paradigm shift in rail transportation.
 - The market share of grain exports has stayed flat, even as grain production has increased.

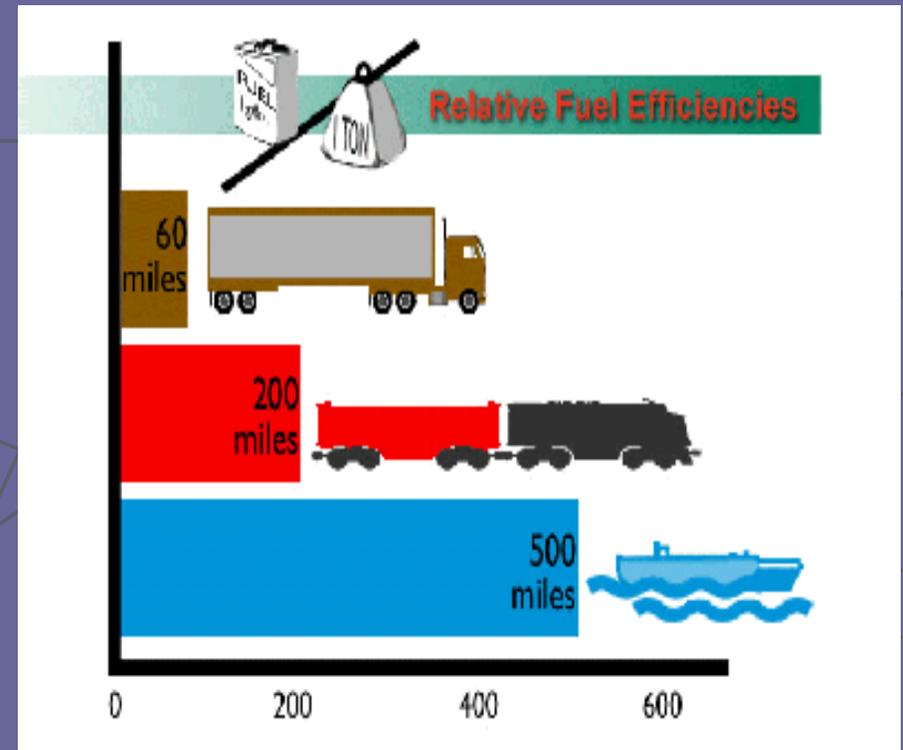


Grain Flows to St. Louis

Railroads Improved Access to Domestic Markets

Unable to compete with barges for direct moves to NO, the railroads have aggressively introduced intervening opportunities, lowering costs with dedicated equipment on shuttle trains that move grain directly to livestock/ poultry markets in Texas or the Southeast, or to ethanol plants. They have redirected grain away from export.

In Illinois alone, BNSF Railway has built six new shuttle terminals, each moving up to 50 million bushels of grain to the Texas/ Oklahoma livestock area, freeing up that local grain to move to California or the Pacific Northwest for export.

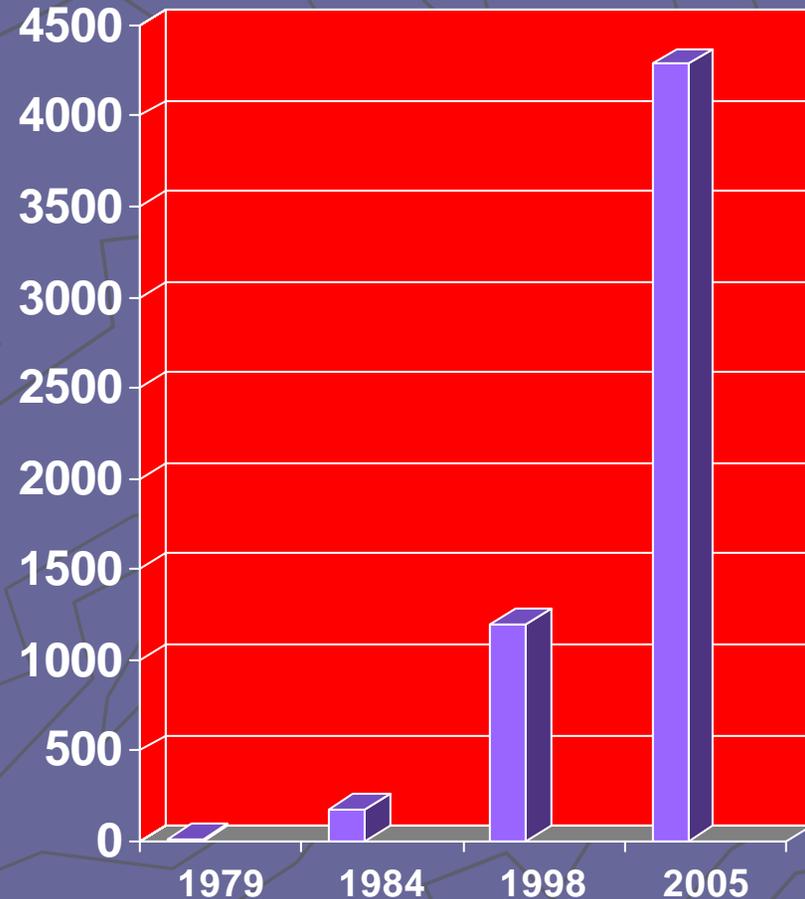


Grain Flows to St. Louis

Added reasons for decline in St. Louis-based exports

The exponential increase in ethanol production

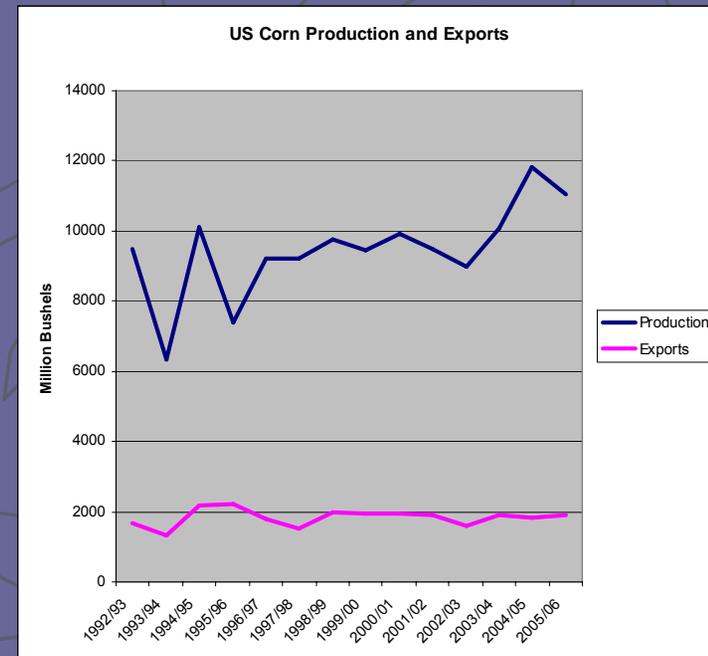
- ▶ Only 10 million gallons of ethanol were produced in 1979.
- ▶ This grew to 50 million gallons in 1980 (in less than 10 facilities)
- ▶ By 1984 163 facilities produced nearly 200 million gallons.
- ▶ The Renewable Fuels Association estimates 2005 total production at 4.2 billion gallons.
- ▶ 1.8 billion gallons of production capacity is under construction.
- ▶ High gas prices, low corn prices, processing facilities with low-cost transportation support the trend.



Grain Flows to St. Louis

Added Domestic and International Market Insights

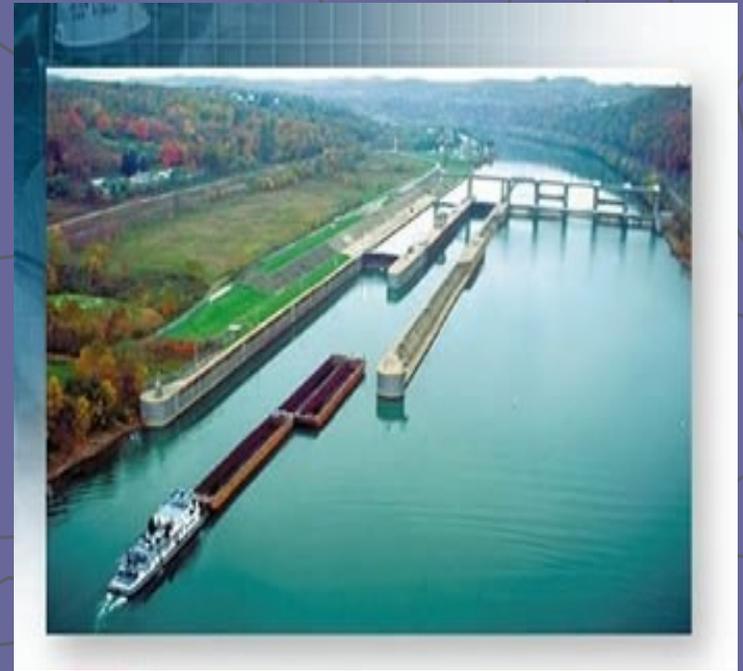
- ▶ In 2004, ethanol consumed 1.26 billion bushels of corn – 11% of the US total crop, plus 11% of grain sorghum. In 2005, it will be 13%.
- ▶ A modern dry mill converts one bushel of corn (56 pounds) into 28 gallons of ethanol and 17 pounds of livestock feed. A wet mill produces even more valuable by-products.
- ▶ Corn exports are about 18% of the total crop –see graph.
- ▶ The European market is down due to the genetically-modified grain issue, political issues, and increased production in Eastern Europe and in South America.
- ▶ South American production, especially of soybeans, also competes in Asian markets.



Grain Flows to St. Louis

Short-Term Issues with Barge Supply and Pricing

- ▶ Barge rates were too low for several years, and both the scrap and export markets were up, leading many operators to sell their barges for scrap or to South America, as Brazil, especially, builds up its inland waterway system.
- ▶ The recent hurricanes also took some barges out of service (175 loaded barges were stuck at NO, unable to unload, plus others were damaged).
- ▶ All together, some 2500 barges have "left the market," raising prices. In 2004, the Criton Corp. listed only 11,572 covered hopper barges on the entire Mississippi/Illinois/Missouri/Ohio river system.
- ▶ St. Louis is currently charging 350% over the base price for moving grain – in 2004, this surcharge never exceeded 400%, but it has already been over 900% in 2005, and the same is expected in 2006. Anything >150% drags down the market.



Grain Flows to St. Louis

Major Conclusions

There are currently no capacity constraints on rail movement of grain to St. Louis. Instead, rail shipments there are restricted by intervening opportunities, and by infrastructure and barge competition issues in New Orleans.

Grain movements to export through St. Louis are threatened by barge pricing, by South American competition, by the genetically-modified grain issue, and most of all, by increasing domestic usage, mainly due to ethanol production.

