

SPECIAL BENEFIT STUDY  
PERTAINING TO THE MAINTENANCE OF THE  
9-FOOT RIVER CHANNEL IN THE MINNESOTA RIVER  
SUBJECT PROPERTIES LOCATED IN  
DAKOTA, HENNEPIN & SCOTT COUNTIES, MINNESOTA

DATE OF REPORT:

October 5, 2017

PREPARED FOR:

Lower Minnesota River Watershed District  
c/o: Rinke Noonan  
1015 W. St. Germain Street, Suite 300  
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PREPARED BY:

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VALUATION COUNSELORS

October 5, 2017

Lower Minnesota River Watershed District  
c/o: Rinke Noonan  
1015 W. St. Germain Street, Suite 300  
P.O. Box 1497  
St. Cloud, Minnesota 56302-1497

ATTN: Mr. John C. Kolb  
Attorney

RE: Special Benefit Study – Pertaining to the  
Maintenance of the 9-Foot River Channel  
In the Minnesota River – Subject Properties  
Located in Dakota, Hennepin & Scott  
Counties of Minnesota

Dear Mr. Kolb:

At your request, I have made a study regarding the special benefit that several specific properties derive from the on-going maintenance of a nine-foot deep river channel within a segment of the Minnesota River. As you know, the Lower Minnesota River Watershed District (the District) is required to maintain a nine-foot deep by 100-foot wide channel within the Minnesota River, from the confluence of the Minnesota and Mississippi Rivers to a point 14.7 miles upstream on the Minnesota River. It is understood the District's maintenance activities include, but are not limited to, dredging of the river channel as necessary, and stockpiling/disposing of the dredged material.

The channel, as maintained by the District, allows this segment of the Minnesota River to be navigated by cargo-carrying river barges. This segment of the Minnesota River is part of the navigable Mississippi River system, which extends as far south as the Port of New Orleans at the Gulf of Mexico. Individual barges can carry about 1,650 tons when fully loaded. Most often, several barges are lashed together to form what is known as a tow, thereby allowing vast quantities of cargo to be moved in a single shipment.

Therefore, it is not surprising that the lower 14.7 miles of the Minnesota River includes a number of commercial/industrial operators that utilize river barge transportation. A number of properties are specifically designed and constructed to access the river barge system.



There are currently six properties that actively use river barges to either receive or ship cargoes. These six properties are discussed in detail in the attached report, but are briefly summarized as follows.

**Property A:** Known as Cargill West, this property is owned by Cargill, Inc. The property is improved with a grain elevator with a reported licensed storage capacity of 5.43 million bushels. The property is located in the city of Savage, in Scott County. According to the Minnesota Grain & Feed Association's directory, this elevator handles corn, soybeans and wheat.

**Property B:** This property is owned by CHS, Inc. The property is improved with a grain elevator with a reported licensed storage capacity of 1,325,000 bushels. The property is located in the city of Savage, in Scott County. According to the Minnesota Grain & Feed Association's directory, this elevator handles all grains.

**Property C:** This property is owned by Riverland Ag Corp. The property is improved with a grain elevator with a reported licensed storage capacity of 9,276,000 bushels. The property is located in the city of Savage, in Scott County. The Minnesota Grain & Feed Association's directory does not specify which grains this elevator handles.

**Property D:** This property consists of five tax parcels, two of which is owned by Superior Mineral Corp, and three of which are owned by Acell, LLC. Superior Mineral Corp operates the property, and reportedly leases the Acell parcels as part of the operation. Calcium-rich limestone is received by river barge onto this property. The president of Superior Minerals reports that approximately 500,000 tons of the limestone are received annually. The company then processes the limestone and ships it to end users by truck.

**Property E:** This property is owned by GNS III (US), LLC and is operated by Mosaic Crop Nutrition, LLC. The property is improved as a bulk fertilizer terminal. Bulk fertilizer products, including phosphate and potash, are received on site by barge when the river is open. The on-site manager reports this facility has 65,000 tons of storage capacity, but handles approximately 400,000 tons per year. Thus, product is received by rail when the river is not open during the winter months.

This property also receives salt by barge for the adjacent Cargill East facility (Property F). The property is located in the city of Savage, in Scott County.

**Property F:** Known as Cargill East, this property is owned by Cargill, Inc. The property includes six tax parcels. Two of the tax parcels are located in the city of Savage (Scott County) and four of the parcels are located in the city of Burnsville (Dakota County). The various improvements are largely situated on the Scott County parcels, and the property uses a Savage street address.

**Property F (continued):** The property is improved with a grain elevator with an effective storage capacity of 11,083,000 bushels. According to the Minnesota Grain & Feed Association's directory, this elevator handles corn, soybeans and wheat. This property also includes a salt terminal. As noted above, the salt is received at the dock on Property E, and then transferred to salt terminal structures in Property F.

**Property G:** This property is owned by Port Marilyn, LLC. The property is operated by U.S. Salt as a salt terminal. It is understood that Port Marilyn, LLC and U.S. Salt are related entities. The property is located in the city of Burnsville, and in Dakota County.

All, or nearly all, of the grain (corn, soybeans and wheat) transported by barge on the Minnesota River is outbound cargo. That is to say, the grain is shipped from the subject grain elevators. The grain moves downriver, with most of it destined for export facilities in and around the Port of New Orleans. Some of the grain might move to domestic destinations that are located along the river system. An example of a domestic river grain destination is a large corn refining plant in Muscatine, Iowa.

Other bulk products (fertilizer, salt and aggregate) transported on the Minnesota River are inbound cargoes. These products are transported upriver and received into their respective subject facilities.

Previously there was a seventh property along the Minnesota River that included a river barge dock. That property is owned by Northern States Power (NSP), which operates the Black Dog electrical generating plant along the south side of the river in Dakota County. The Black Dog plant was historically operated on coal. For many years the plant received eastern coal by river barge. NSP then switched to a cleaner burning coal from the west, which was railed to the site. The Black Dog plant has recently been converted to operate on natural gas. NSP has since dismantled the barge dock. The NSP property is designated as **Property H** in the attached consultation report.

I have also identified number of properties along the Minnesota River that do not currently utilize river barge transportation, but could possibly do so. These properties are all located along the south side of the river, in either Scott or Dakota Counties. These properties are briefly summarized as follows.

**Property I:** This property is owned by Cargill, Inc., and is situated between Properties D and F. The property is comprised of two tax parcels with a combined size of just under 210 acres. Cargill owns and operates nearby Properties A and F. The property is located in the city of Savage, in Scott County. Like all of the other subject properties in Savage, Property I is zoned I-2 (Port of Savage Industrial District). The Scott County GIS indicates that the vast majority of this property is encumbered by wetland.



**Property J:** This property is owned by Burnsville Sanitary Landfill, Inc. As the owner's name implies, this property is operated as a landfill. The property is comprised of two tax parcels that have a combined size of just over 354 acres. That tax parcel which has frontage along the river is 44.39 acres in size. The property is located in the city of Burnsville, in Dakota County. The property is zoned CRD (Commercial Recreational District) with a PUD (Planned Unit Development) overlay.

**Property K:** This property is owned by Kraemer Mining & Materials, Inc. The property includes those Kraemer-owned tax parcels that are situated south of the Minnesota River and north of Cliff Road West. The Kraemer property is operated as a limestone quarry. Altogether, there are 21 contiguous tax parcels that total about 560 acres. Three of the tax parcels have frontage along the river. These three parcels have a combined area of 83.41 acres.

This property is located in the city of Burnsville, in Dakota County. Part of the property is zoned I-2 (General Industry), and part of the property is zoned I-2 GW (General Industry – Gateway). The entire property has a PUD overlay.

**Property L:** This property includes eight contiguous tax parcels. One of the tax parcels is owned by Quarry Property, LLC; three of the parcels are owned by R B McGowan Company, Inc.; and four of the parcels are owned by Freeway Transfer, Inc. These three ownership entities are closely related and all share the same business address. The owner(s) previously intended to develop an amphitheater on the property. In fact, the eight tax parcels makeup the Burnsville Amphitheater subdivision.

The property has a total area of 187.89 acres. The property is located in the city of Burnsville, in Dakota County. The property is zoned I-2 GW (General Industry – Gateway) with a PUD overlay.

I have determined that the likelihood of developing industrial river barge facilities on Properties I through L is highly unlikely. There is some potential to develop Properties J through K with recreational uses that would use river access. However, such recreational uses are speculative and unlikely to occur for several years, if at all.

Finally, I have identified a number of properties that benefit, or potentially benefit, from so-called fleeting rights. In a nutshell, fleeting rights allow for barges to be moored along the shoreline. River transport companies require stretches of shoreline to stage river barges in support of loading/unloading operations at nearby terminals. In some case, barges that are not currently in use might be moored (parked) for an extended period.

The U.S. Coast Guard and Army Corps of Engineers must approve a given stretch of shoreline for barge fleeting. Factors such as currents, the course of the river channel, and nearby structures/obstructions are considered when determining whether or not a given segment of



river is approved for barge fleeting. The approval process also includes a determination as to whether or not multiple rows of barges can be *stacked* along the shoreline. For example, a given stretch might be approved for only a single row of barges along the shoreline. In other cases, the circumstances may allow for two or more rows of barges to be stacked.

Generally speaking, such fleeting areas become more useful and, hence, valuable, along segments of the river that are in close proximity to active terminal facilities that load and/or unload barges. In some cases, properties with such terminals (i.e. grain elevators, etc.) will have sufficient river frontage to allow fleeting. Likewise, the owners of other nearby properties might lease their fleeting rights to barge owners and/or river transport companies. All else being equal, the fleeting rights along a given stretch of shoreline become more valuable as the number of barges that can be stacked increases.

As part of this study, I have not made an exhaustive investigation as to which parcels have, or could potentially have, marketable fleeting rights. The research undertaken does suggest that a number of the properties previously listed (Properties A – L) may have such rights. This matter is discussed in detail in the attached report. Suffice it to say here that I have concluded Properties J, K and L enjoy such right, in addition to some of the properties with active barge operation (A-G).

It is also noted that the City of Bloomington owns numerous land parcels along the north side of the Minnesota River in Hennepin County. The City of Bloomington currently leases 4,200 lineal feet (LF) of its shoreline to Upper River Services, LLC for an amount of not less than \$37,800 per annum. This equates to an annual rental rate of not less than \$9.00 per LF.

The special benefit which accrues to a given property is measured as the increase in market value to that property, specifically as a result of the nine-foot river channel. It is important to note that the Special Benefit Study (the study) did not entail an appraisal of the individual subject properties. Such appraisals could be performed in order to isolate the special benefit each property derives from the nine-foot river channel.

Rather, the study is meant to provide a preliminary determination as to which properties are likely to derive a special benefit from the on-going maintenance of the 9-foot channel (hereafter *the navigable channel*). The study then focuses on whether or not the navigable channel does in fact enhance the market value of those properties. Finally, the study attempts to determine, in a broad sense, the degree to which the properties' market values are enhanced by the navigable channel. The value enhancement is expressed a percentage range of the properties' values.

Again, the market values of the properties have not been appraised. Rather, the current assessed values of the properties are used as proxies for the various properties' potential market values. The assessed value of property in Minnesota is meant to reflect market values, as estimated by the assessor. Nevertheless, appraisals of the properties could result



in estimates of market value that are different from the assessed values. I refer you to the Scope of Work section of the attached report for a discussion of the methodology and the steps taken when completing the study.

Given that this Special Benefit Study does not constitute an appraisal, no Standards of the Uniform Standards of Professional Appraisal Practice (USPAP) are applicable. However, the assignment was performed in adherence with USPAP's Ethics Rule, Record Keeping Rule and Competency Rule. The study is also meant to comply with the applicable provisions of the Standards of Professional Practice of both the Appraisal Institute and the American Society of Appraisers.

I have concluded that several of the subject properties likely derive a special benefit from the ongoing maintenance of the navigable river channel. As discussed in the attached report, the degree to which the properties benefit varies. Those properties with active river barge docks benefit substantially, while a number of other properties do benefit, but to a far lesser extent. These conclusions are effective as of the date of this letter, October 5, 2017. The conclusions are stated in the attached report.

Thank you for the opportunity to be of assistance in this matter. Should you have any questions after reading this report, feel free to contact us at your convenience.

Sincerely,  
PATCHIN MESSNER DODD & BRUMM

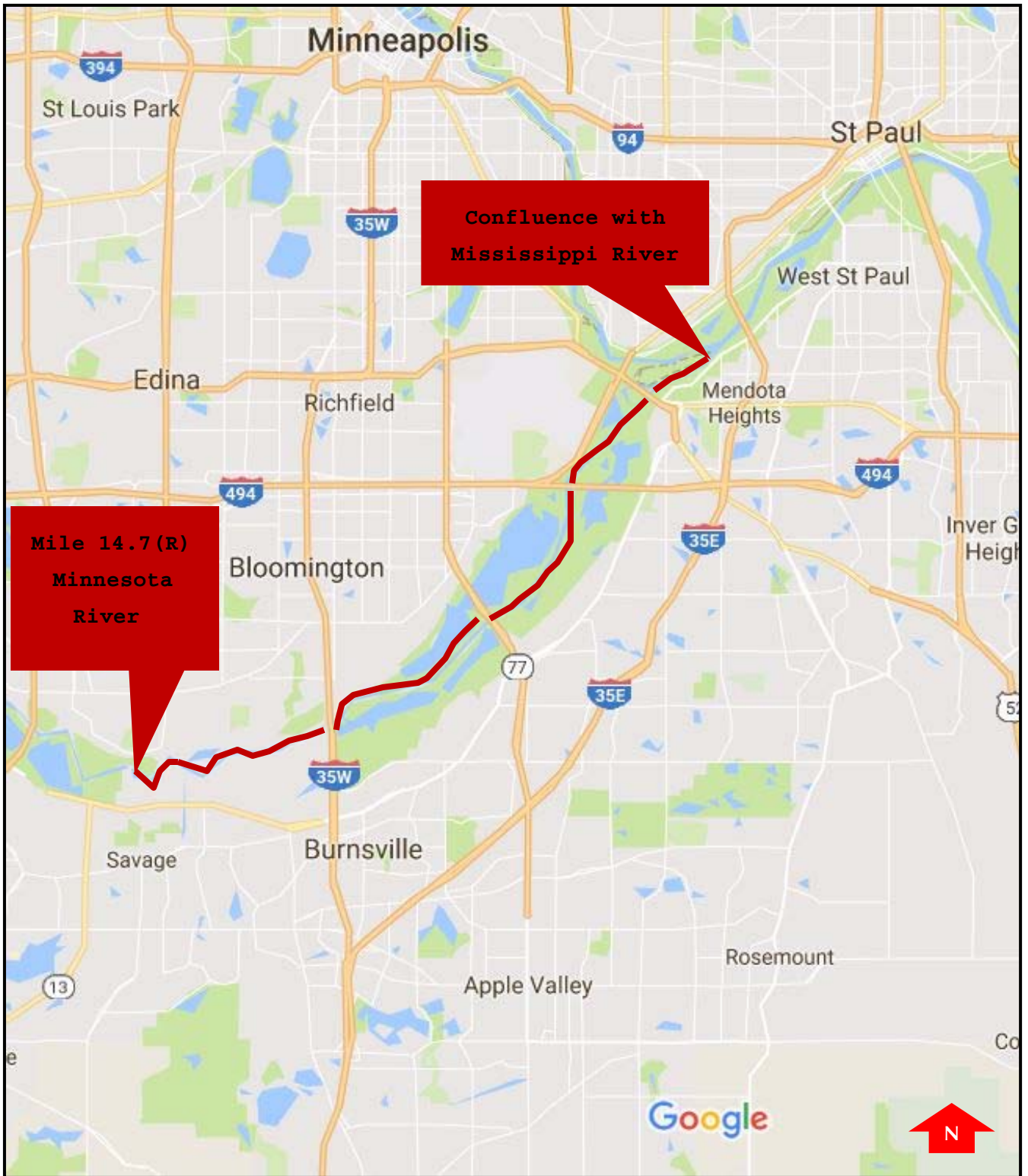
A handwritten signature in blue ink that reads "Clay M. Dodd". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

Clay M. Dodd, MAI, ASA  
Certified General Real Property Appraiser  
Minnesota License No. 20019812

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**MINNESOTA RIVER SEGMENT WHERE NAVIGABLE CHANNEL IS MAINTAINED**

## CLIENT

The client for this assignment is identified as the Lower Minnesota River Watershed District (hereafter *the LMRWD*).

## PURPOSE OF SPECIAL BENEFIT STUDY

As background, the LMRWD is responsible for maintaining a navigable channel within a segment of the Minnesota River. That segment extends from the confluence of the Minnesota and Mississippi Rivers, to a point 14.7 miles (river miles) upstream on the Minnesota River. The segment in question is depicted on the map on the previous page. Note: the depiction on the previous page is an approximation, and is presented for illustration purposes only.

The navigable channel within this 14.7-mile stretch of river is required to be nine feet deep by 100 feet wide. This allows loaded river barges to traverse the channel, thereby connecting the area to the Mississippi River transportation system. It is understood that the LMRWD's related activities include dredging the channel as needed, and stockpiling/dumping of the dredged material.

The purpose of this Special Benefit Study (hereafter *the study*) is essentially three-fold, as listed below.

- Identify those properties along the Minnesota River which are most likely to derive a special benefit from the LMRWD's efforts to maintain the navigable river channel.
- Determine whether or not the identified properties do in fact derive such special benefit.
- If the identified properties are determined to derive a special benefit from the navigable channel, then make a preliminary determination as to the likely extent to which the properties are benefited. In other words, to what extent, on relative basis, does the navigable channel enhance the market values of the properties.



## INTENDED USE OF SPECIAL BENEFIT STUDY

This study is made to assist the client in determining its policy regarding how it levies taxes on properties within its jurisdiction, particularly as it pertains to recovering the costs associated with maintaining the navigable river channel.

## SCOPE OF WORK

The assignment did not involve the appraisal of any property. As such, no standards of the Uniform Standards of Professional Appraisal Practice (USPAP) are applicable. However, the assignment was performed in adherence to USPAP's Ethics Rule, Record Keeping Rule and Competency Rule.

The assignment did involve making a determination as to whether the market values of certain properties are enhanced by the navigable channel and, if so, to what extent. Appraisals could be performed where the values of the individual properties are appraised under two scenarios; first by recognizing the navigable river channel exists, and second by assuming the navigable river channel does exist. The difference would isolate the special benefit (increase in market value) to the properties.

In the case, the study involved making a more generalized determination as to whether or not identified properties benefit from the navigable channel and, if so, to what extent. The conclusions reached are preliminary in nature. The current assessed value of each property is used as an approximation of the market value.

The following were also examined as part of the work process.

- 1) Planning and Zoning data
- 2) Property tax and assessment data
- 3) Physical data regarding the subject properties, as reported by the applicable assessor's office
- 4) Aerial photographs of the individual properties
- 5) Statistics pertaining to river barge tonnages on the Mississippi River system in general and the Minnesota River in particular

## SCOPE OF WORK

- 6) Information pertaining to the U.S. river barge industry, as obtained from various sources cited herein
- 7) Information pertaining to the subject river terminals, as found in various directories, including Minnesota Department of Transportation's (MnDot) Minnesota's River Terminals directory; Sosland's 2017 Grain & Milling Annual directory; and the Minnesota Grain & Feed's directory.
- 8) Research of recent developments along the Mississippi River system
- 9) Research of barge activity and trends on the Missouri River
- 10) Sales of river terminal facilities, including river grain elevators
- 11) Examination of a recently negotiated lease of fleeting rights, between Upper River Services and the City of Bloomington
- 12) Interviews with various individuals, as cited herein

An attempt was made to contact a representative of each property that has an active river dock. Some level of contact was made with individuals representing five of the six properties. The author was able to tour Properties A, D, E and F. Representatives of those companies were present during these on-site visits, and provided useful insights into the operations of their properties.

The discussions and contacts with the property owners are summarized in latter sections of this report. Beyond the onsite visits noted above, the author traversed the public rights of way abutting all of the properties.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

The navigable channel on the lower 14.7 miles of the Minnesota River allows that segment of the river to connect with the wider Mississippi River transport system. The map on the following page depicts the navigable Mississippi River transport system.

As the map shows, the navigable Mississippi River system includes that portion of the Mississippi River that begins in Minneapolis, Minnesota and extends to the Gulf of Mexico at New Orleans. The system also includes the navigable parts of the major tributaries that flow into the Mississippi River. Such tributaries include the Illinois Waterway, the Ohio River, the Arkansas River and the White River.

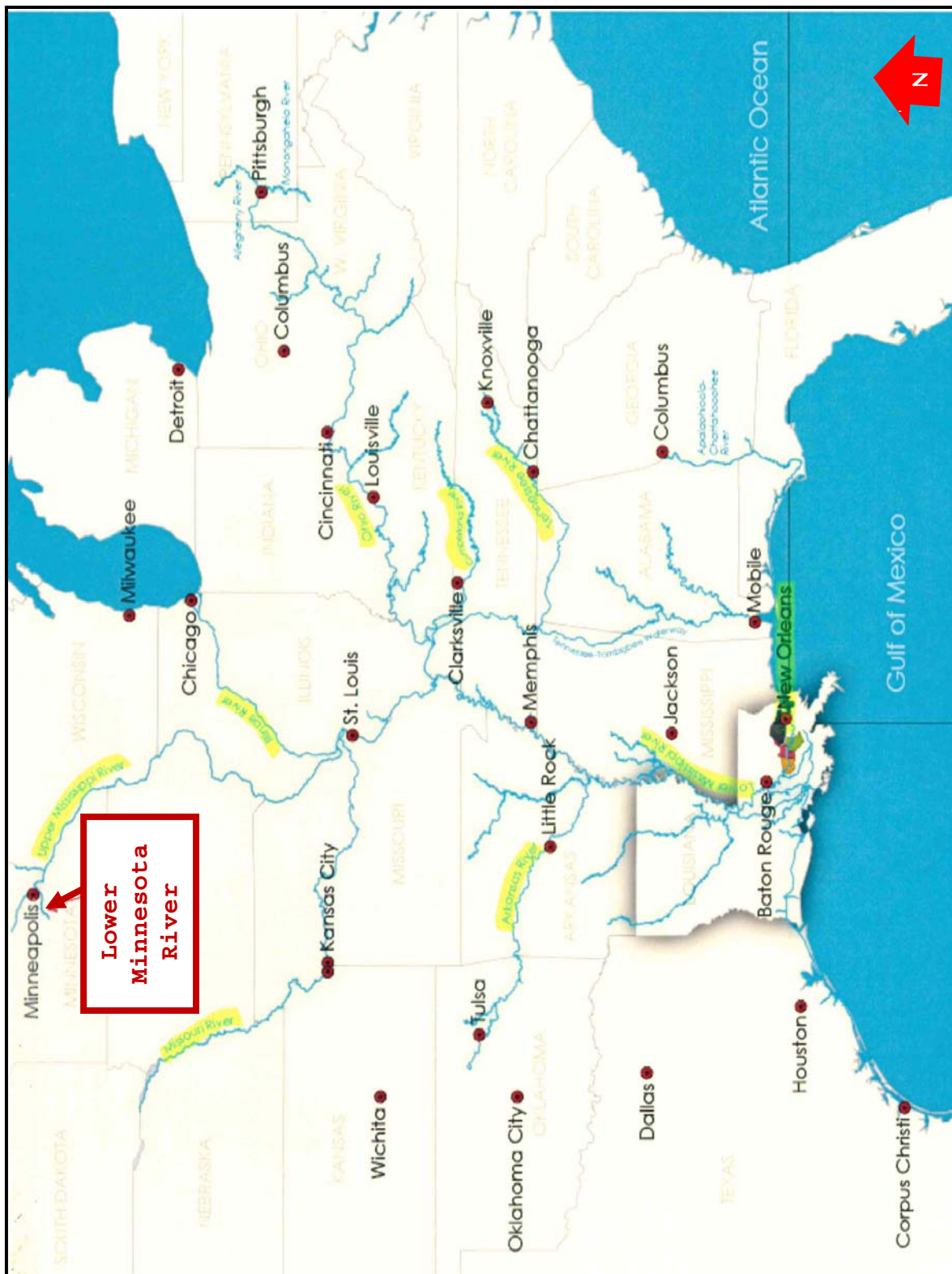
The navigational system spreads out from these major tributaries as well. For example, the Tennessee and Cumberland Rivers connect with the Ohio River, which in turn flows to the Mississippi River. It is not the intent to provide a comprehensive discussion of the entire Mississippi River navigation system. Suffice it to say here that the system connects a substantial part of the continental United States with river barge transport. Major cities and river ports include Minneapolis-St. Paul, Chicago, St. Louis, Cincinnati, Pittsburg, Memphis and New Orleans, to name just a few.

For navigational purposes, the Mississippi River is divided into two parts: the Upper Mississippi and the Lower Mississippi. The Upper Mississippi is generally considered to be that segment of the river that lies north of Cairo, Illinois, which is located at the confluence of Mississippi and Ohio Rivers. In turn, the Lower Mississippi is that segment that lies south (or downriver) from Cairo.

There is a substantial change in elevation throughout the course of the Upper Mississippi River. Therefore, to provide for safe and effective river transportation, the U.S. Army Corps of Engineers (USACE) maintains 27 lock and dams on the Upper Mississippi River; the most northerly of which is located just north of Hastings, Minnesota (Lock No. 2) and the most southerly being at Cairo, Illinois (southern tip). USACE also maintains locks and dams on other rivers in the system, including eight on the Illinois Waterway and 21 on the Ohio River.



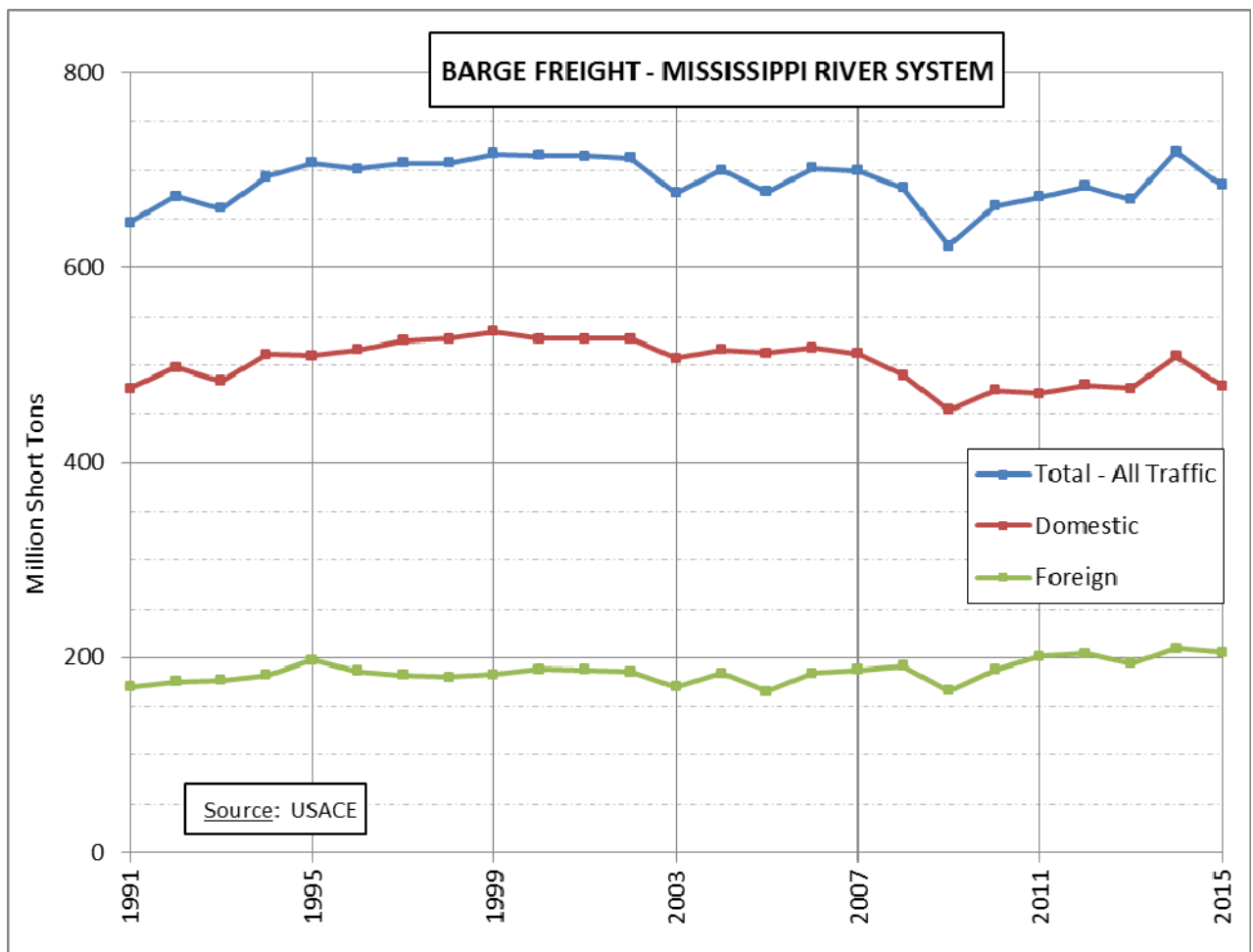
**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**



**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

Another interesting aspect of the overall river system is that the Illinois Waterway connects the Great Lakes with the Mississippi River. The Illinois Waterway is a 336-mile navigable channel that includes the Illinois River, lakes and canals. The waterway begins in Chicago, with access to Lake Michigan, and terminates at the Mississippi River, about 15 miles upstream from St. Louis, Missouri.

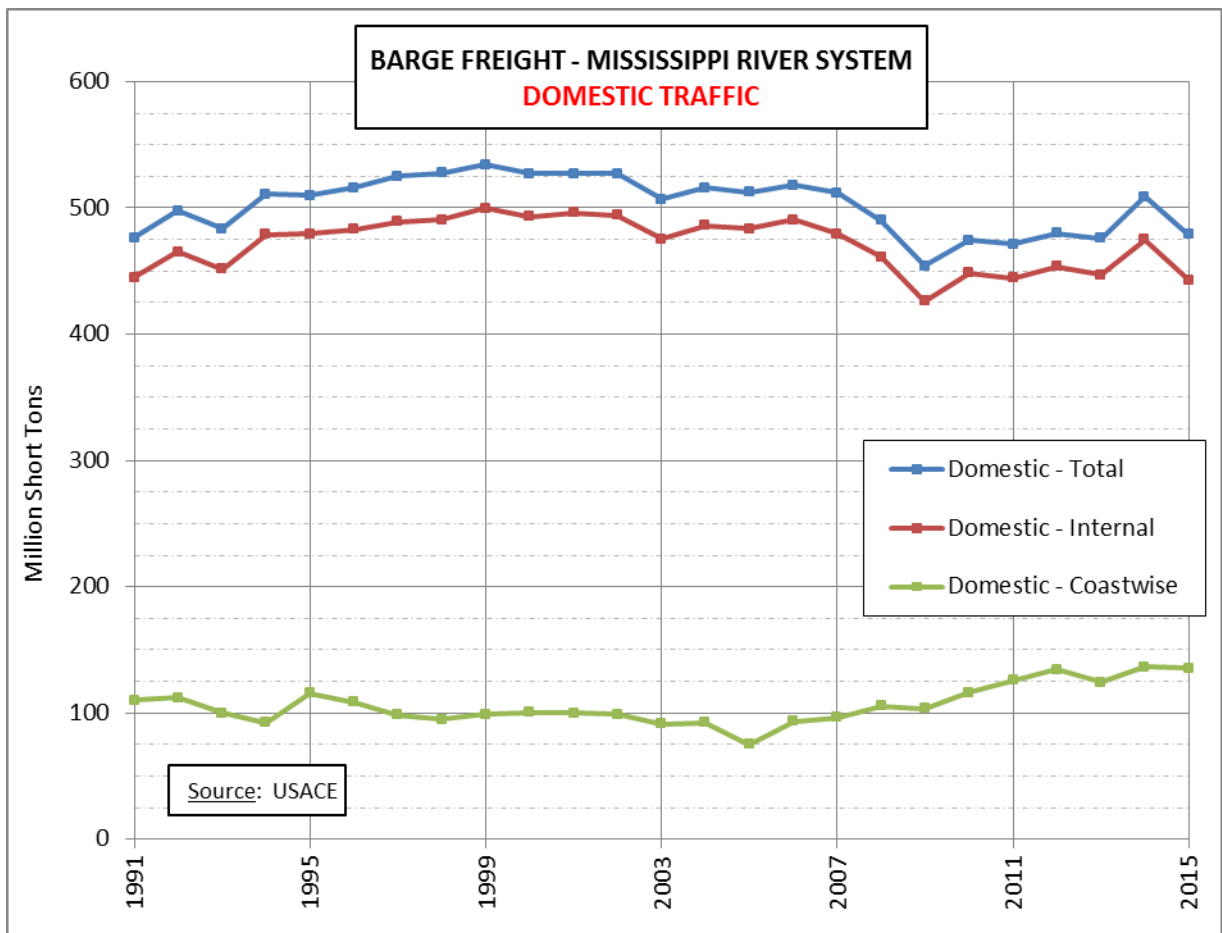
The chart below summarizes total freight movements on the Mississippi River systems over the past 25 years. The chart also provides a breakdown between domestic traffic and foreign (import/export) traffic). As the chart shows, roughly 70% of the total cargo on the river system moves between domestic origins and destinations. Conversely, about 30% of cargo involves foreign trade, including both imports and exports.



**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The previous chart shows that total annual cargo volumes on the Mississippi River system generally fluctuate between about 650 million and 715 million tons. The low during this time period occurred in 2009 at 622.1 million tons, while the high occurred in 2014 at 718.6 million tons. Total cargo volume in 2015, the most recent year reported, was 684.4 million tons. The annual average over the past 25 years is 688.3 million tons, while the average over the past 10 years is 679.7 million tons.

The following chart provides a breakdown of the river system’s domestic traffic. The USACE breaks the traffic down between internal and coastwise. The USACE defines internal traffic as “vessel movements (origin and destination) which take place solely on inland waterways.” Coastwise traffic is defined as “Domestic traffic receiving a carriage over the ocean or Gulf of Mexico.” An example of this would be barges moving down the Mississippi River, through the Port of New Orleans, and then along the east Texas coastline to a port facility in, say, Galveston.

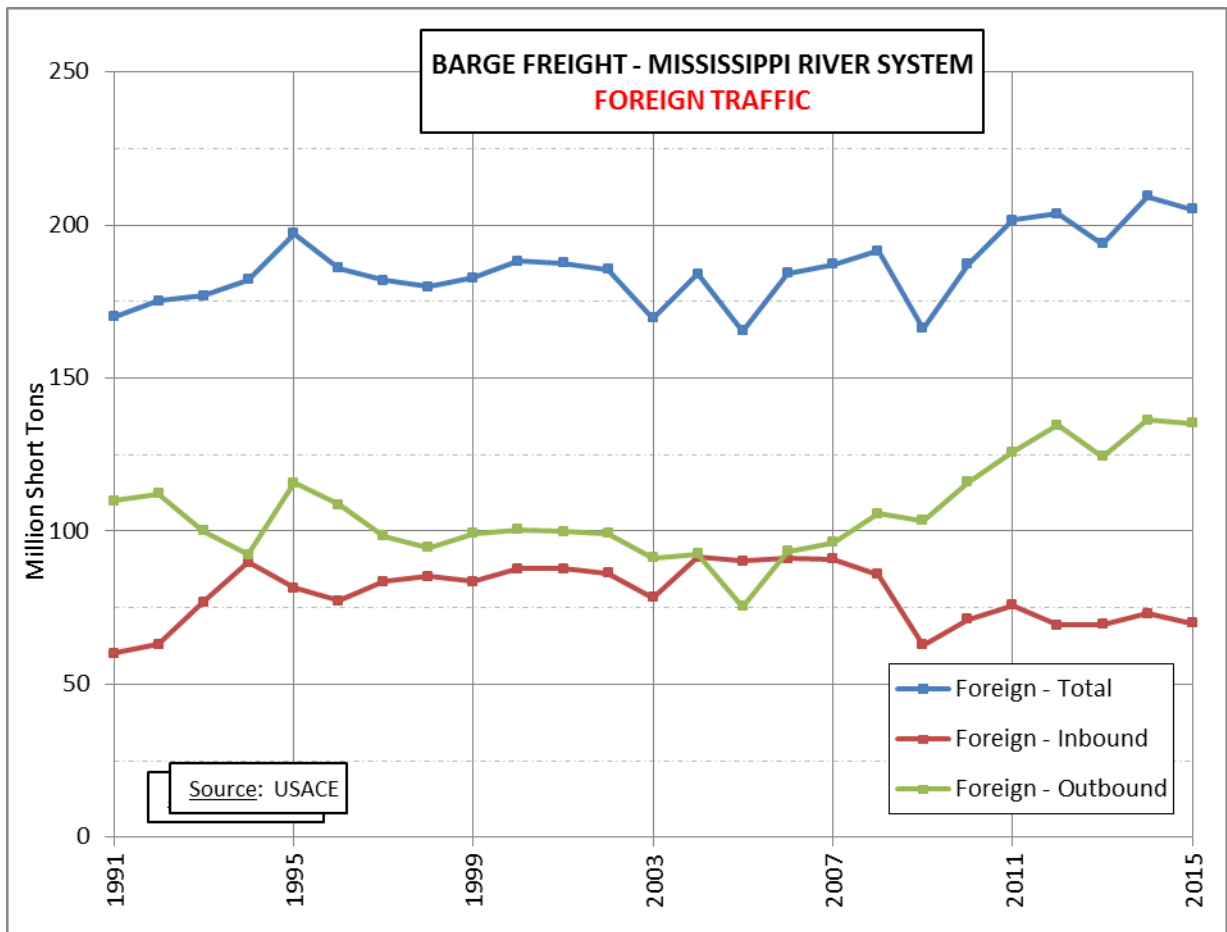




**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

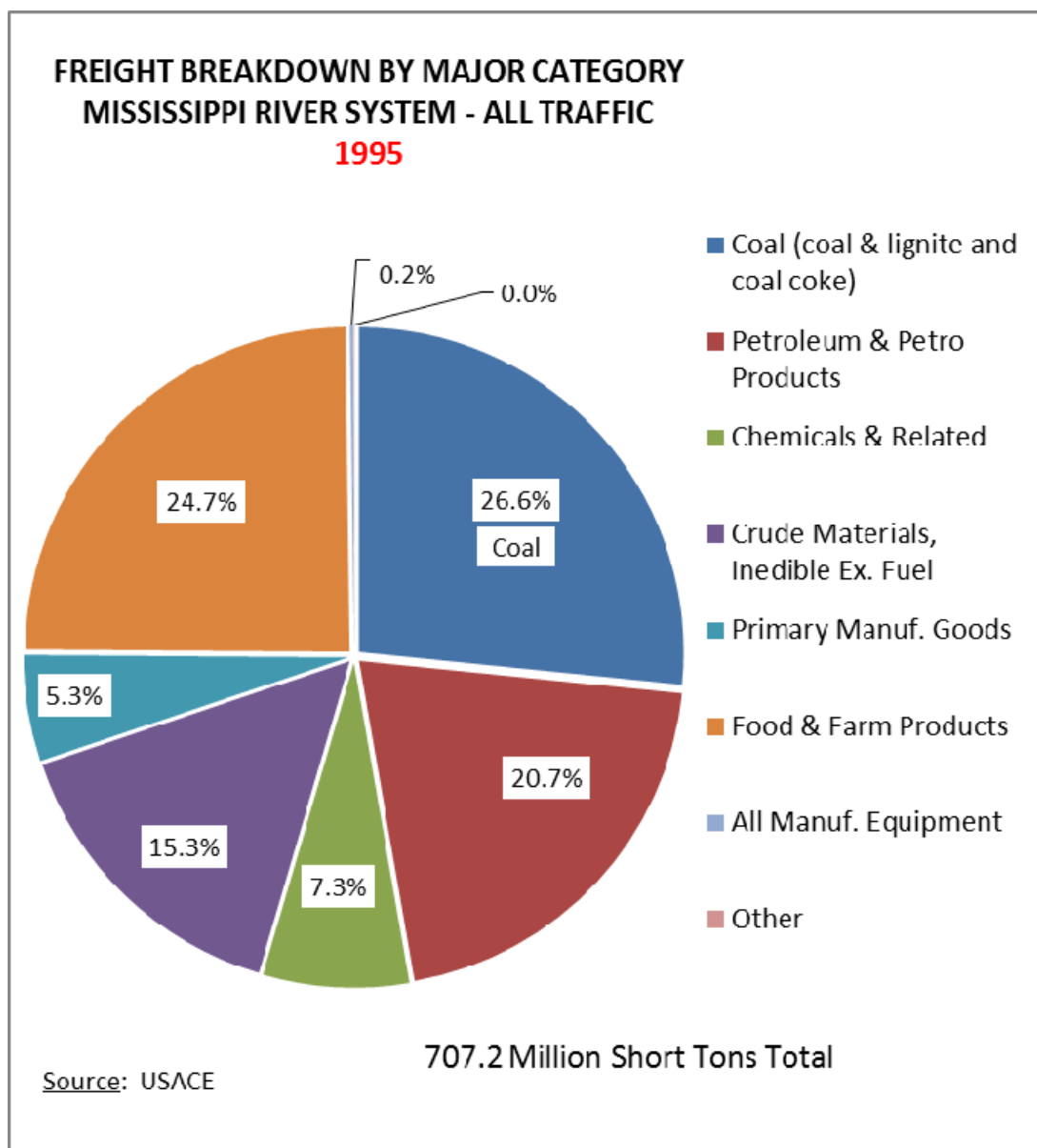
The next chart summarizes foreign traffic on the Mississippi River system over the past 25 years. Total foreign traffic has fluctuated between 165.5 million tons (2005) to 209.4 million tons (2014). Total foreign traffic was 205.3 million tons in 2015, down slightly from 2014, but still the second highest foreign volume during the 25-year period.

As the chart shows, outbound traffic (exports) is normally higher than inbound traffic (imports). This spread has widened since 2007. This has been a function of both rising outbound traffic and declining inbound traffic. In 2015, outbound foreign traffic totaled 135.3 million tons, while inbound traffic totaled 70.0 million tons.



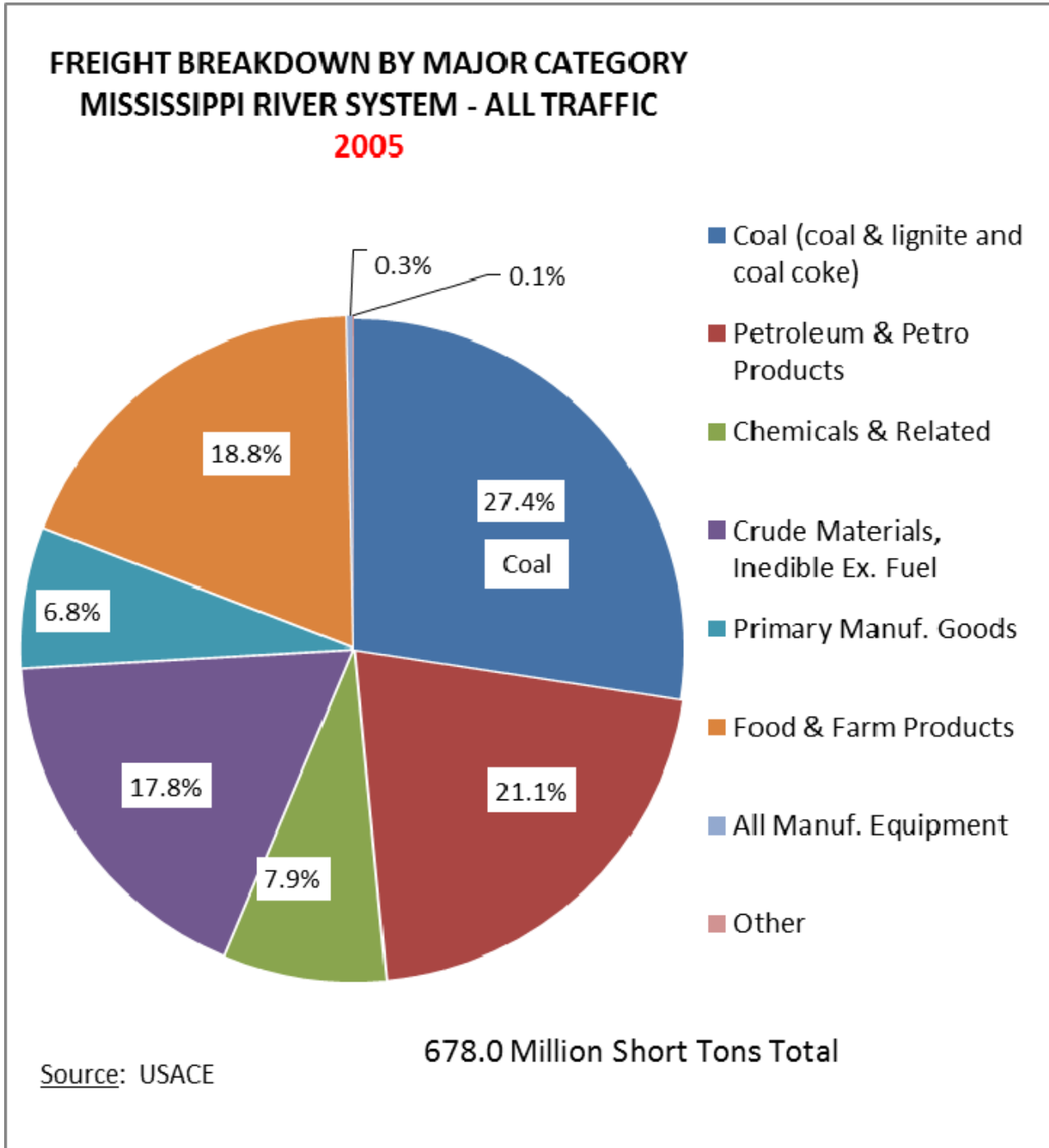
## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

Numerous types of cargo are transported on the Mississippi River system. USACE groups the various materials into major categories such as coal, petroleum & petroleum products, food & farm products, etc. The following three pie charts provide snapshots of the breakdown of total traffic by major categories. The pie charts pertain to 1995, 2005 and 2015. Some natural fluctuation occurs amongst the major categories from year to year. However, taken together, the three pie charts provide a good representation as to how freight on the Mississippi River system generally breaks down by category.

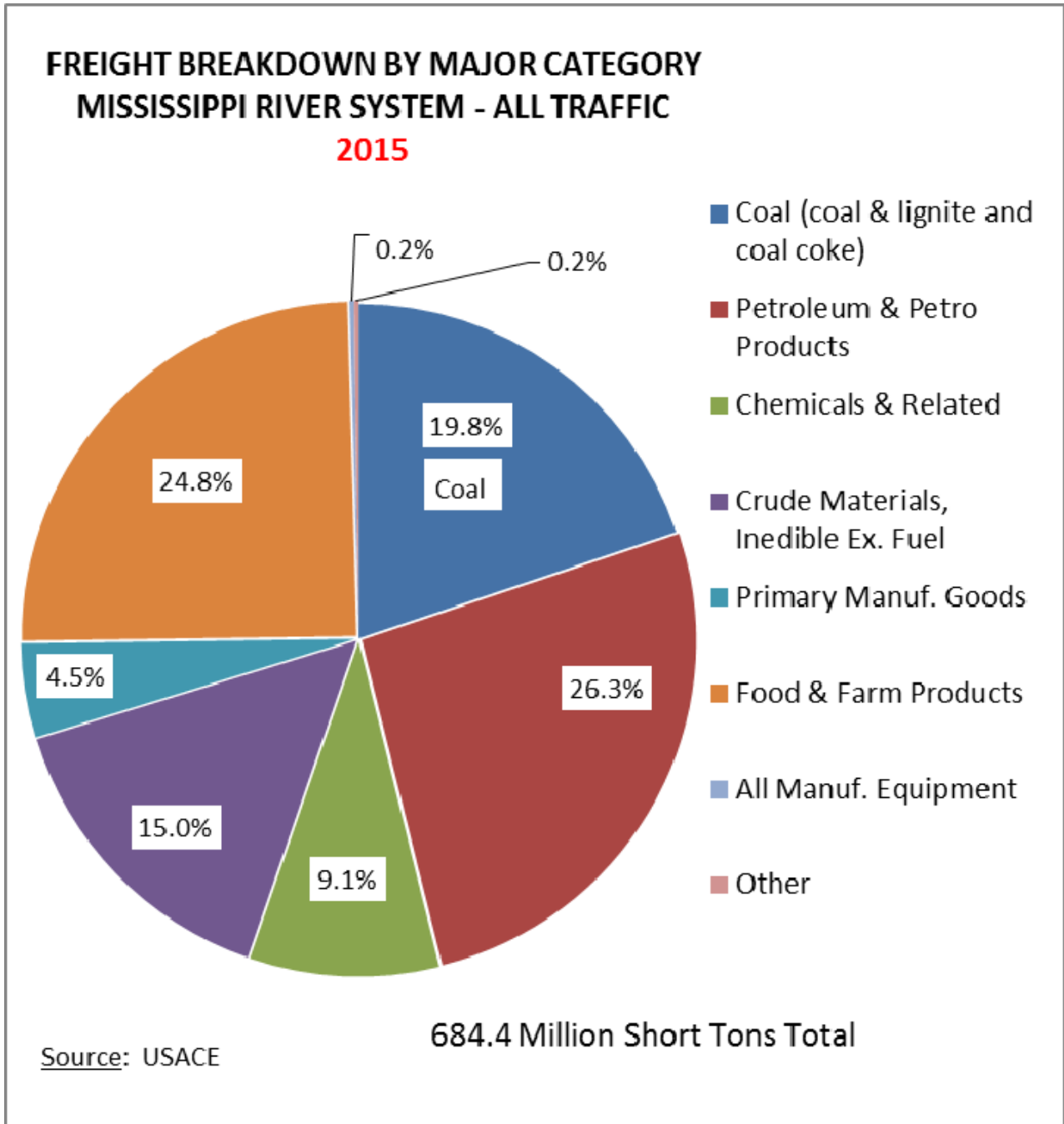




**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**



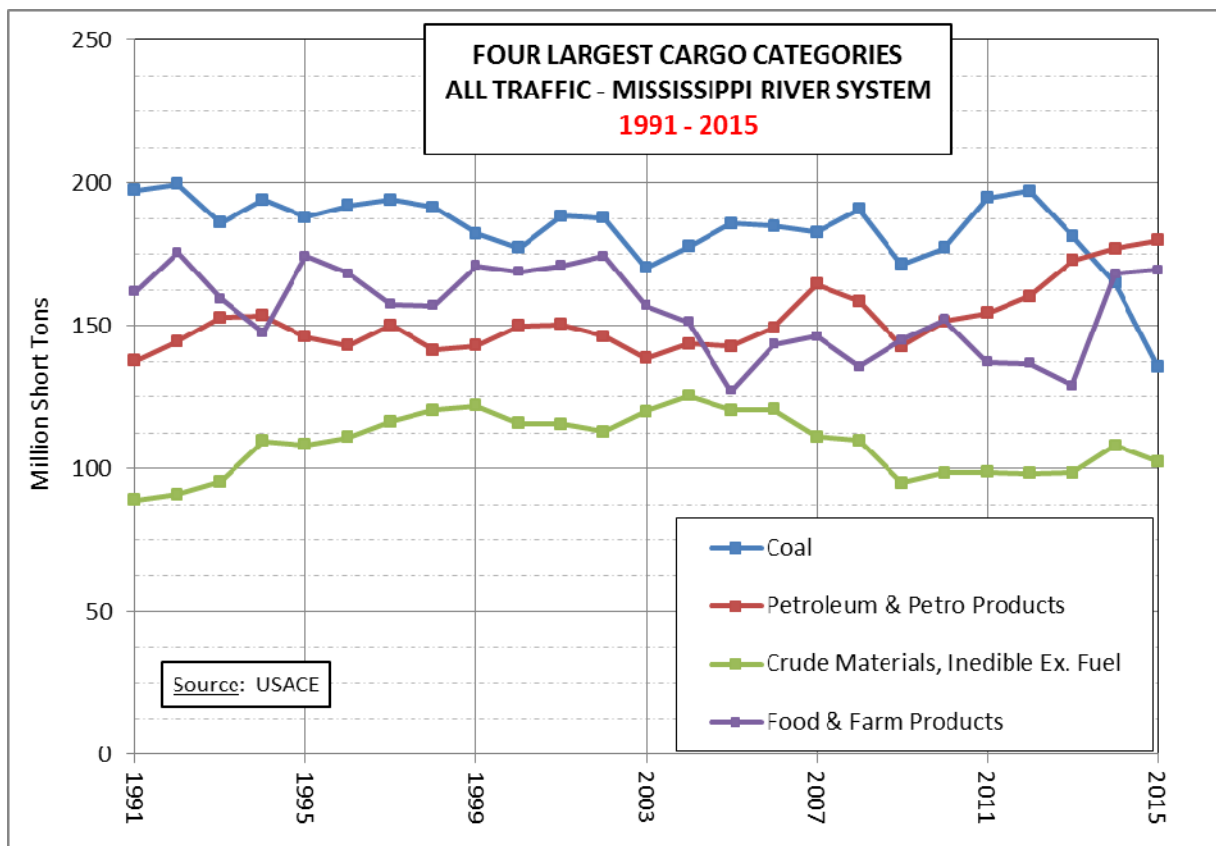
OVERVIEW OF MISSISSIPPI RIVER SYSTEM



**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The previous pie charts reveal that the four largest major categories are Coal, Petroleum & Petroleum Products, Crude Materials Inedible Except Fuel, and Food and Farm Products. Together, these four categories account for about 85% of the total traffic on the Mississippi River system.

The chart below tracks the four major categories over the past 25 years. The volumes depicted on the chart reflect total traffic (domestic and foreign).



As the above chart shows, some natural fluctuation occurs from year to year with each category. Coal reached a near peak in 2012, but declined each year thereafter, reaching a low in 2014, and then again in 2015. This is undoubtedly a reflection of the nation’s recent movement away from coal. The local NSP Black Dog electrical generating plant (Property H) is an example of this, though it ceased using eastern coal prior to 2012.



## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

Petroleum and petroleum products reached a near low in 2009, which coincided with the so-called Great Recession of that time. This category has grown steadily since 2009, reaching new highs in each of 2013, 2014 and 2015. Petroleum surpassed coal as the leading category in both 2014 and 2015.

Food & Farm Products fluctuates from year to year for a variety of reasons, including crop yields and changing patterns in grain movements. Average traffic for this category was greater during the first half of the study period (say 1991 through 2002) than it was from 2003 through 2013. However, the category bounced back during 2014 and 2015. As discussed later, although USACE has not published the 2016 results yet, the research indicates that Food & Farm Products traffic in 2016 was most likely greater than it was in 2015.

Crude Materials, Inedible Except Fuel started the study period at about 89 million tons. Then, with some fluctuation, increased to 125.5 million tons in 2004. Traffic in this category then declined somewhat and, in recent years, has settled into an average annual volume of about 100 million tons.

Again, each of the major categories includes numerous individual products. For example, the Food & Farm Products category includes various types of grain and oilseeds, vegetables, milled grain products and animal feed. The Crude Materials, Inedible Except Fuel includes forest products, various types of stone and rock, sand and gravel, iron ore and scrap, etc. The USACE provides a Commodity Classification List, which lists the various products under each major category. A copy of this list is included in the addenda to this report.

The tables on the following page provide insight as to how the various categories of products move on the Mississippi River system. The total traffic of each category is broken down between domestic internal, domestic coastwise and foreign traffic. In each case the traffic is also broken down between upbound and downbound traffic. The table pertains to 2015 traffic. While annual fluctuations occur amongst the categories, and within the categories, 2015 is generally indicative of recent years.

**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

**MISSISSIPPI RIVER SYSTEM – TRAFFIC FOR EVERY MAJOR CATEGORY - 2015**

	Domestic Internal		Domestic - Coastwise		Foreign (Including Canada)		Grand Totals	
	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound
Coal:	75,829	48,485	38	2,520	96	8,857	75,963	59,862
Petroleum:	42,795	45,419	8,314	20,451	29,145	33,806	80,254	99,676
Chemicals & Related:	29,129	10,917	1,500	1,033	14,271	5,701	44,900	17,651
Crude Materials:*	51,768	32,648	1,713	15	15,041	1,288	68,522	33,951
Primary Manuf. Goods:	17,022	5,186	0	1	8,234	509	25,256	5,696
Food & Farm Prod:	4,385	78,981	122	467	1,939	83,713	6,446	163,161
All Manuf. M&E:	204	81	3	6	779	465	986	552
Waste & Scrap:	30	0	0	3	0	0	30	3
Unknown / Other:	0	0	0	0	536	930	536	930
<b>Totals:</b>	<b>221,162</b>	<b>221,717</b>	<b>11,690</b>	<b>24,496</b>	<b>70,041</b>	<b>135,269</b>	<b>302,893</b>	<b>381,482</b>
	<b>32.3%</b>	<b>32.4%</b>	<b>1.7%</b>	<b>3.6%</b>	<b>10.2%</b>	<b>19.8%</b>	<b>44.3%</b>	<b>55.7%</b>
								<b>100.0%</b>

**TYPE OF TRAFFIC MOVEMENT FOR EVERY MAJOR CATEGORY - 2015**

	Domestic Internal		Domestic - Coastwise		Foreign (Including Canada)		Grand Totals	
	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound
Coal:	55.8%	35.7%	0.0%	1.9%	0.1%	6.5%	55.9%	44.1%
Petroleum:	23.8%	25.2%	4.6%	11.4%	16.2%	18.8%	44.6%	55.4%
Chemicals & Related:	46.6%	17.5%	2.4%	1.7%	22.8%	9.1%	71.8%	28.2%
Crude Materials:*	50.5%	31.9%	1.7%	0.0%	14.7%	1.3%	66.9%	33.1%
Primary Manuf. Goods:	55.0%	16.8%	0.0%	0.0%	26.6%	1.6%	81.6%	18.4%
Food & Farm Prod:	2.6%	46.6%	0.1%	0.3%	1.1%	49.4%	3.8%	96.2%
All Manuf. M&E:	13.3%	5.3%	0.2%	0.4%	50.7%	30.2%	64.1%	35.9%
Waste & Scrap:	90.9%	0.0%	0.0%	9.1%	0.0%	0.0%	90.9%	9.1%
Unknown / Other:	0.0%	0.0%	0.0%	0.0%	36.6%	63.4%	36.6%	63.4%
								<b>100.0%</b>

\* Crude Materials, Inedible Except Fuel

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

As the previous tables show, the river system is primarily used as a transportation network for domestic shipments, accounting for 70.0% of the 2015 traffic. Domestic internal traffic is pretty much evenly split between upbound and downbound movements. With regard to foreign traffic, nearly twice as much freight moved downbound than did upbound; suggesting the Mississippi River system is a more important export channel than import channel. Still, over 70.0 million tons of foreign goods moved upriver during 2015.

With regard to the individual categories, the previous chart provides some interesting insights which, upon reflection, stand to reason. Over 93.0% of coal shipments were domestic, including 91.5% being domestic internal. Coal moves by barge from eastern states along the Ohio River. Most of the coal is then shipped to domestic destinations, such as large coal-fired electric plants. Only 6.6% of coal traffic in 2015 involved foreign trade, with the vast majority of that being downbound (export) movements.

Domestic and foreign movements of Petroleum and Petroleum Products were 65.0% and 35.0%, respectively in 2015. Domestic internal traffic was almost evenly split between upbound and downbound movements. Interestingly, petroleum had, by far, the highest coastwise traffic. This largely represents petroleum and petroleum products moving from the Mississippi River to major ocean terminals in the Gulf of Mexico.

The reader can examine the previous tables for additional insights. However, given that the subject properties include four grain elevators, the Food & Farm Products category is summarized here. As discussed on the following pages, this major category is dominated by grain and oilseeds. Of all the categories, Food & Farm Products had the largest foreign traffic at over 85.62 million tons. Just over 50.0% of the traffic in this category involved foreign movements, the vast majority of which involved downbound (export) movements.

The tables on the following page provide a breakdown by individual products within the Food & Farm Products category. Here again, the tables pertain to traffic movements during 2015. Grain and oilseeds accounted for 86.8% of the total category, while vegetables, milled products, animal feed and other materials accounted for 13.4%.



**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

**MISSISSIPPI RIVER SYSTEM - TRAFFIC FOR FOOD & FARM PRODUCTS - 2015**

	Domestic Internal		Domestic - Coastwise		Foreign (Including Canada)		Grand Totals	
	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound
Wheat:	340	4,436	0	0	0	4,526	340	8,962
Corn:	968	29,392	0	0	0	29,208	968	58,600
Other Grain:	315	4,310	0	2	161	4,833	476	9,145
Soybeans:	1,018	28,807	0	0	27	30,503	1,045	59,310
Other Oilseeds:	102	3,849	0	0	5	4,391	107	8,240
Vegetables:	368	608	0	0	860	1,236	1,228	1,844
Grain Mill Products:	20	233	439	439	3	216	23	888
Animal Feed:	381	7,271	0	0	0	8,233	381	15,504
Other Ag. Products:	871	77	122	26	871	465	1,864	568
Totals:	4,383	78,983	122	467	1,927	83,611	6,432	163,061
	2.6%	46.6%	0.1%	0.3%	1.1%	49.3%	3.8%	96.2%
		<b>49.2%</b>		<b>0.3%</b>		<b>50.5%</b>		<b>100.0%</b>

**TYPE OF TRAFFIC MOVEMENT FOR FOOD & FARM PRODUCTS - 2015**

	Domestic Internal		Domestic - Coastwise		Foreign (Including Canada)		Grand Totals	
	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound	Upbound	Downbound
Wheat:	3.7%	47.7%	0.0%	0.0%	0.0%	48.7%	3.7%	96.3%
Corn:	1.6%	49.3%	0.0%	0.0%	0.0%	49.0%	1.6%	98.4%
Other Grain:	3.3%	44.8%	0.0%	0.0%	1.7%	50.2%	4.9%	95.1%
Soybeans:	1.7%	47.7%	0.0%	0.0%	0.0%	50.5%	1.7%	98.3%
Other Oilseeds:	1.2%	46.1%	0.0%	0.0%	0.1%	52.6%	1.3%	98.7%
Vegetables:	12.0%	19.8%	0.0%	0.0%	28.0%	40.2%	40.0%	60.0%
Grain Mill Products:	2.2%	25.6%	0.0%	48.2%	0.3%	23.7%	2.5%	97.5%
Animal Feed:	2.4%	45.8%	0.0%	0.0%	0.0%	51.8%	2.4%	97.6%
Other Ag. Products:	35.8%	3.2%	5.0%	1.1%	35.8%	19.1%	76.6%	23.4%
		<b>39.0%</b>		<b>6.1%</b>		<b>54.9%</b>		<b>100.0%</b>

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

The previous tables show that corn and soybeans are largest components of the Food & Farm Products category. In 2015, nearly 59.57 million tons of corn and 60.36 million tons of soybeans moved through the Mississippi River system. About 29.2 million and 30.5 million tons of corn and soybeans, respectively, moved downbound for export.

Corn weighs 56 pounds per bushel while soybeans weigh 60 pounds per bushel. Thus, the downbound foreign movements for 2015 translate to about 1.43 billion bushels of corn and 1.17 billion bushels of soybeans (calculations not shown). In fact, the Federal Grain Inspection Service (FGIS) of the U.S. Department of Agriculture (USDA) shows these same figures regarding corn and soybean exports from the Mississippi River. Furthermore, the Mississippi River accounted for 64.6% of total corn exports and 60.2% of total soybean exports in 2015. This stands to reason, as the Mississippi River system runs through prime corn and soybean producing areas of the nation's interior.

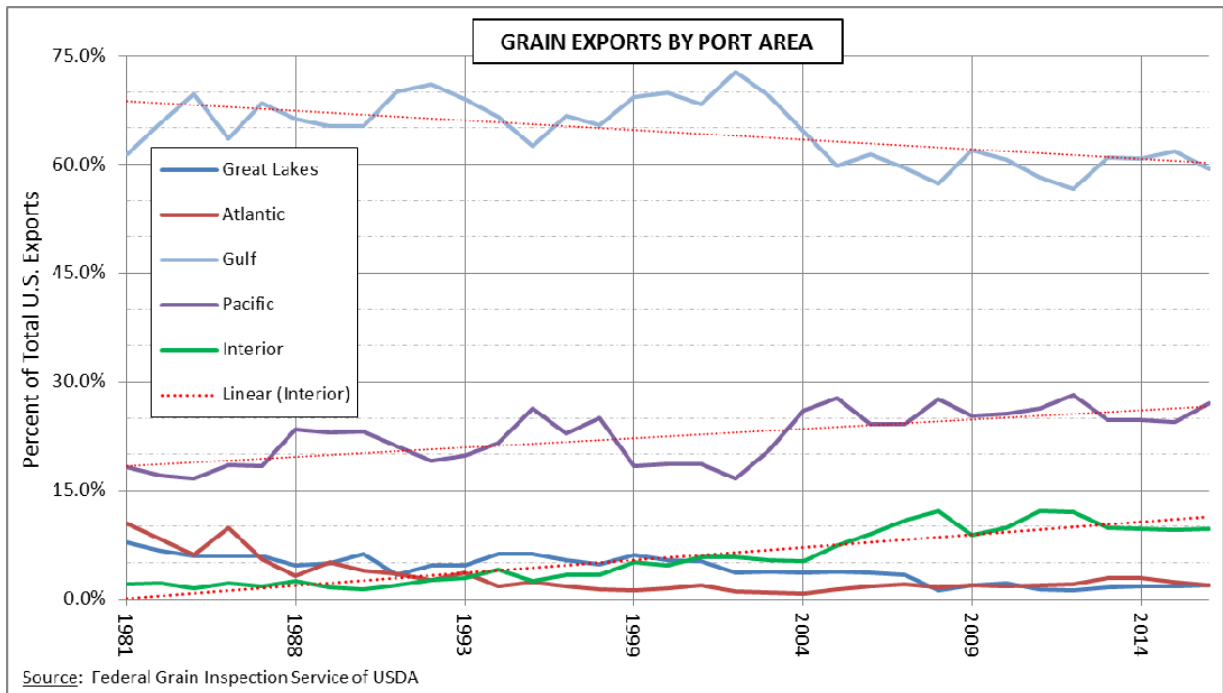
A significant amount of wheat moves on the Mississippi River system, though to a much lesser extent than corn and soybeans. In 2015, just over 9.3 million tons, or about 310.0 million bushels, of wheat were transported on the river system. This included about 152.0 million bushels of downbound foreign movements (exports). The FGIS reports that the Mississippi River accounted for about 20.3% of total U.S. wheat exports in 2015. Meanwhile, the Pacific Northwest accounted for nearly 50.0% of wheat exports and the Gulf Coast of Texas accounted for about 16.8%. Here again, this is logical when one considers where the bulk of wheat is grown in this country, and where the major export markets are.

The chart on the following page summarizes total U.S. grain exports by port area over the last 35 years. The data reflect all grain exports including corn, soybeans\* and wheat. Those three products account for the vast majority of total grain exports, generally well over 90.0%. As the chart shows, the Gulf (of Mexico) is the largest export port area, largely due to its lion's share of corn and soybeans.

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\* The FGIS classifies soybeans as grain, whereas the USACE classifies soybeans as an oilseed.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM



The data are somewhat complicated by the fact that the Gulf includes not only the Mississippi River, but the east coast of Texas and the minor ports to the east such as Mobile, Alabama. An examination of more detailed data from the FGIS indicates that the Mississippi River itself has accounted for 80% to 85% of the Gulf volume in recent years. Thus, the Mississippi River is the nation's largest grain export channel. Detailed FGIS data for 2011 through 2016 indicate that the Mississippi River system alone accounts for just under half (on average) of total grain exports.

The chart shows that a given port area's share of total grain exports fluctuates from year to year. This is largely driven by regional fluctuations in annual grain production, changes in costs amongst competing modes of transportation, and so on. Nevertheless, the chart indicates that the Gulf's share of grain exports during the most recent 10 years has fluctuated around 60.0%, whereas previously it fluctuated around 65.0% to 70.0%. Meanwhile, the Pacific and Interior have generally increased in market share.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

The increase in the Pacific's share of grain exports is due in large part to the increasing prevalence of large shuttle-loading elevators. As one example, the BNSF Railroad has a shuttle loader program where a substantially reduced freight rate is offered to grain elevators that can load a 110-car unit train in 12 hours or less. That 110-car unit train then "shuttles" from that single location to a single destination, often to the Pacific Northwest. The Union Pacific has a similar program and also has the ability to shuttle large unit trains to the Pacific.

Several shuttle loading grain elevators have been constructed over the past 15 to 20 years in response to these programs, including several in Minnesota. The unit train concept is not a new one, but the size of train that qualifies for the preferred freight rate has increased over time. A 26-car unit train was specified about 25 years ago. That was increased to 52 cars and now, depending on the rail carrier, 100 to 112 cars is typically required for the lower rate.

This is coupled with the fact that Asia has become the United States' major grain export destination. Ocean-going ships leaving the Gulf of Mexico must traverse a greater distance to get to Asian markets than ships leaving the Pacific Northwest. Thus, the cost of ocean freight from the Gulf to Asia is normally much higher than the cost from the Pacific to Asia. For example, O'Neil Commodity Consulting, as reported in the USDA's September 7, 2017 Grain Transportation Report, states that as of August 2017, ocean rates from the Gulf to Japan were \$38.25 per metric ton (\$1.04 per bushel), while rates from the Pacific Northwest to Japan were \$19.70 per metric ton (\$0.54 per bushel).

Meanwhile, the USDA's Grain Transportation report indicates a rate of \$1.53 per bushel to ship soybeans by shuttle train from the Twin Cities district to Portland, Oregon; and a rate of \$23.21 per short ton (\$0.70 per bushel) to ship soybeans by river barge from the Twin Cities district to the Gulf. Thus, if a bushel of soybeans could leave from essentially the same place near the Twin Cities, it would cost \$1.74 to ship it down the river and through the Gulf to Japan (\$0.70 for barge + \$1.04 for ocean). Conversely, it would cost \$2.07 to rail that bushel to the Pacific Northwest and then ship it to Japan (\$1.53 for rail and \$0.54 for ocean). In this case, the Gulf market has the advantage.



## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

On the other hand, the USDA reports a cost of \$1.26 per bushel for corn being shipped by shuttle train from the Twin Cities to Portland. Thus, the Gulf's current advantage for corn is not nearly so great.

It should also be noted that the pricing dynamics amongst the various modes are always changing. For example, a previous edition of the USDA's Grain Transportation Report shows a barge rate to the Gulf of \$1.38 per bushel, a shuttle train rate to Portland of \$1.66 per bushel, and the ocean spread between the Gulf and the Pacific Northwest of \$0.55 per bushel (September 2014 timeframe). In that case, the Pacific Northwest had the advantage.

It is far beyond the scope of this report to provide a detailed discussion of grain pricing and transportation pricing. Suffice it to say that a host of complex variables impact the pricing of the various modes of transportation. The supply and demand of grain, the supply and demand for transportation vessels (rail cars, barges, bulk ships) all play a role. One must also remember that export markets must also compete with domestic markets for grain (i.e. livestock feed and domestic ethanol plants). Individual farmers or country elevators must also consider the distance their grain will initially have to be trucked, whether to a river elevator or shuttle loading facility.

It is also important to note that world markets determine the price of grain. The market will not pay someone more for grain because it costs that person more to transport it to market. Rather, that person will have to accept a lower price to make his/her grain competitive with all other grain at that destination.

If port elevators in the Gulf suddenly benefit from strong export demand and lower ocean-going freight rates, then those elevators can offer a higher price for grain to river elevators upriver. In turn, if barge rates do not increase so as to completely offset the higher price at the Gulf, then those river elevators can offer a higher price to local farmers and other elevators. This in turn attracts more bushels to the river elevator. Of course a scenario can unfold where the opposite is true as well.

**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

**MISSISSIPPI RIVER SYSTEM - BREAKDOWN OF SELECTED MAJOR CATEGORIES - 2015**

	Domestic Internal		Domestic - Coastwise		Foreign (Including Canada)		Grand Totals	
	Upbound	Downbound	Downbound	Total	Upbound	Downbound	Total	Total
Crude Petroleum:	8,481	10,653	1,884	8,709	15,948	2,225	18,173	31,254
Petroleum Products:	34,314	34,766	18,567	20,056	13,197	31,580	44,777	49,000
<b>Total Petroleum:</b>	42,795	45,419	20,451	28,765	29,145	33,805	62,950	80,254
Fertilizer:	14,875	1,030	259	1,721	9,520	655	10,175	25,857
Other Chemicals:	14,253	9,889	38	774	4,750	5,046	9,796	19,041
<b>Total Chem &amp; Related:</b>	29,128	10,919	1,033	2,533	14,270	5,701	19,971	44,898
Limestone:	13,686	14,137	0	0	793	0	793	14,479
Sand & Gravel:	16,491	12,020	0	0	39	1	40	16,530
Other SSGR&S:**	2,635	3,460	0	1,319	2,196	1	2,197	6,150
Other Crude Materials:	18,956	3,031	394	15	12,013	1,286	13,299	31,363
Other Crude Materials:**	51,768	32,648	15	1,728	15,041	1,288	16,329	68,522
<b>Total</b>								<b>102,473</b>

**TYPE OF TRAFFIC MOVEMENT FOR BREAKDOWN OF SELECTED MAJOR CATEGORIES - 2015**

	Domestic Internal		Domestic - Coastwise		Foreign (Including Canada)		Grand Totals	
	Upbound	Downbound	Downbound	Total	Upbound	Downbound	Total	Total
Crude Petroleum:	18.4%	23.2%	4.1%	18.9%	34.7%	4.8%	39.5%	67.9%
Petroleum Products:	25.6%	26.0%	13.9%	15.0%	9.9%	23.6%	33.4%	36.6%
<b>Total Petroleum:</b>	23.8%	25.2%	11.4%	16.0%	16.2%	18.8%	35.0%	44.6%
Fertilizer:	53.5%	3.7%	0.9%	6.2%	34.2%	2.4%	36.6%	93.0%
Other Chemicals:	41.0%	28.5%	2.2%	2.3%	13.7%	14.5%	28.2%	54.8%
<b>Total Chem &amp; Related:</b>	46.6%	17.5%	1.7%	4.0%	22.8%	9.1%	31.9%	71.8%
Limestone:	47.8%	49.4%	0.0%	0.0%	2.8%	0.0%	2.8%	50.6%
Sand & Gravel:	57.8%	42.1%	0.0%	0.0%	0.1%	0.0%	0.1%	57.9%
Other SSGR&S:**	27.4%	36.0%	0.0%	13.7%	22.8%	0.0%	22.9%	64.0%
Other Crude Materials:	53.1%	8.5%	0.0%	1.1%	33.7%	3.6%	37.3%	87.9%
<b>Total Crude Materials:**</b>	50.5%	31.9%	0.0%	1.7%	14.7%	1.3%	15.9%	66.9%
<b>Total</b>								<b>100.0%</b>

\* Soil, Sand, Gravel, Rock & Stone

\*\* Crude Materials, Inedible Except Fuel

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

The tables on the previous page provide additional detail for a few of the major categories. Again, the data pertains to total traffic for 2015.

The tables break down the Petroleum and Petroleum Products category between crude petroleum and petroleum products. Interestingly, about two-thirds of crude petroleum moved upriver, while nearly two-thirds of petroleum products moved downriver.

The Chemicals & Related Products category includes fertilizer as a major component. Since one of the subject terminals is a fertilizer terminal (Property E), a breakdown of this category is provided. The tables show that 93.0% of fertilizer moved upbound. Such upbound shipments include both domestic and a significant level of imported foreign material. This is consistent with the operation of Property E, which receives fertilizer products into the facility.

The previous tables also provide a breakout of limestone and sand & gravel under the Crude Materials, Inedible Except Fuel category. Property D of this report is operated by Superior Minerals, which primarily receives high-calcium limestone. As the tables show, over 97% of limestone traffic involved domestic movements, and nearly 100% of sand & gravel involves domestic movements. This stands to reason, as these tend to be low-value bulk materials that would not be competitive for export markets. The tables also show that these bulk materials move both upbound and downbound in significant levels.

The Crude Materials, Inedible Except Fuel category also includes salt. However, salt volumes are not specifically listed in the 2015 USACE information. The tables show that about 35.7 million tons of "other" crude materials moved on the river in 2015. Undoubtedly, some part of this was salt. Nearly 88.0% of these other crude materials involved upbound traffic. Here again, this is consistent with the operations of Properties F and G, which receive salt into the facilities. It is understood that in the case of Property F, the salt originates in Louisiana and is barged up the coastline to the Mississippi River, and then all the way up the river to the Savage location.

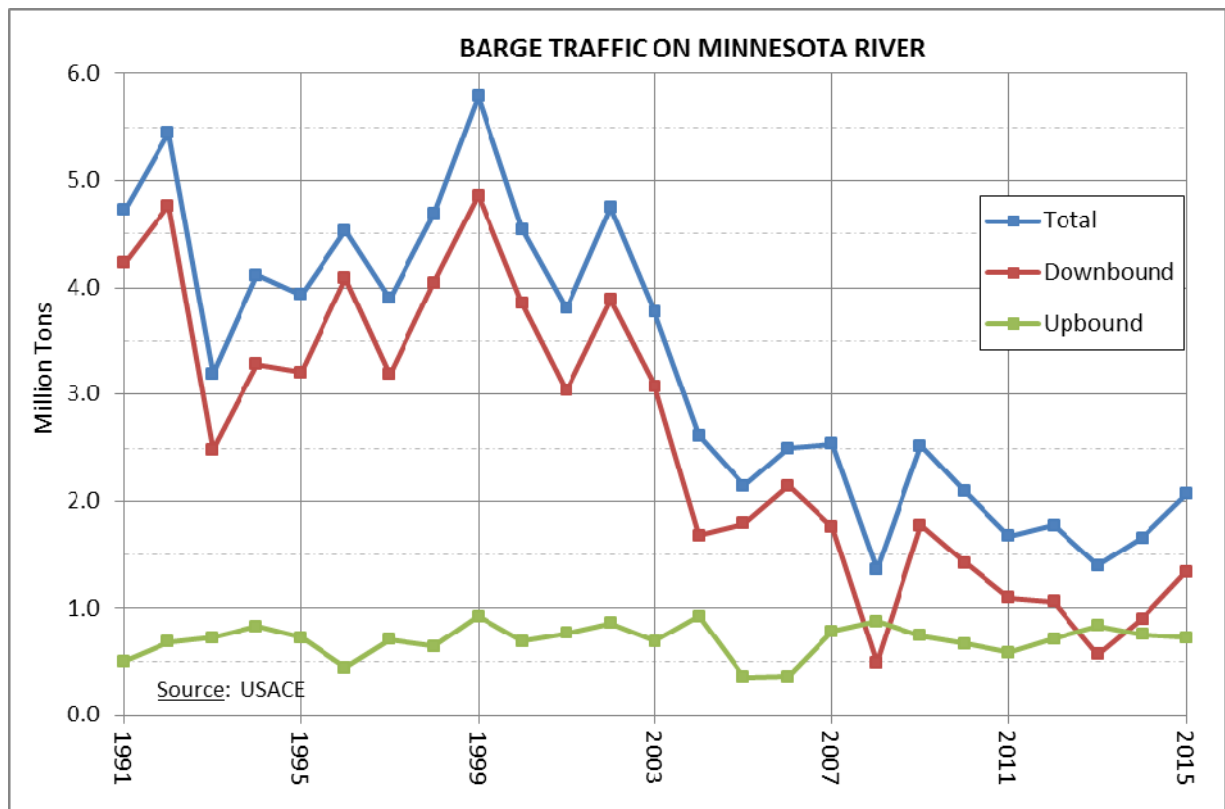
**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

The discussion now turns to the Minnesota River specifically. The navigable channel in the Minnesota River essentially extends the reach of the Mississippi River system to the cities of Burnsville and Savage. Again, the navigable channel extends 14.7 miles (river miles) upriver from the confluence of the Minnesota and Mississippi Rivers.

There are six active barge operations on the Minnesota River, which are identified as Properties A – G herein. These six operations include four grain elevators, a fertilizer terminal, two salt terminals (one is included with a grain elevator), and a property that primarily receives limestone.

The chart below summarizes total river freight traffic on the Minnesota River over the past 25 years. The chart summarizes the total traffic, and breaks down the inbound (upbound) and outbound (downbound) movements.



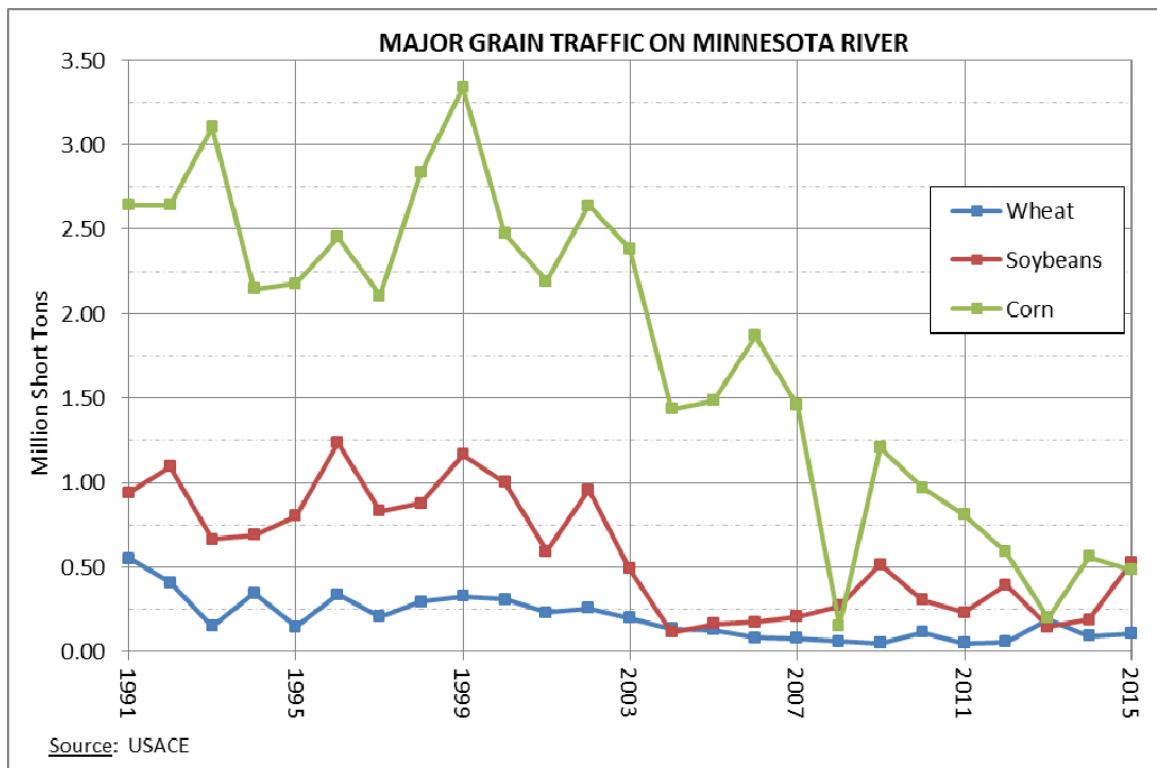
**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

With a few small exceptions, all the grain (including animal feed prep) moves downriver (outbound) from the subject area. River barges are loaded with grain at one the four grain elevators in Savage and are floated downriver, often to the Gulf of Mexico for export. The other commodities such as limestone, fertilizer and salt move upriver (inbound), again with a few small exceptions.

The previous chart shows that total traffic on the Minnesota River declined dramatically from 2000 through 2008. Total traffic then increased in 2009, and then drifted downward through 2013. Most recently, traffic increased in each of 2014 and 2015. Still, while the 2015 volume is essentially back in line with 2010, it remains well below that of the earlier era.

The chart also reveals that the decline in total traffic is entirely a function in a decline in outbound traffic. Again, grain (including oilseeds) are the primary outbound commodities. The chart below summarizes the Minnesota River traffic for corn, soybeans and wheat.





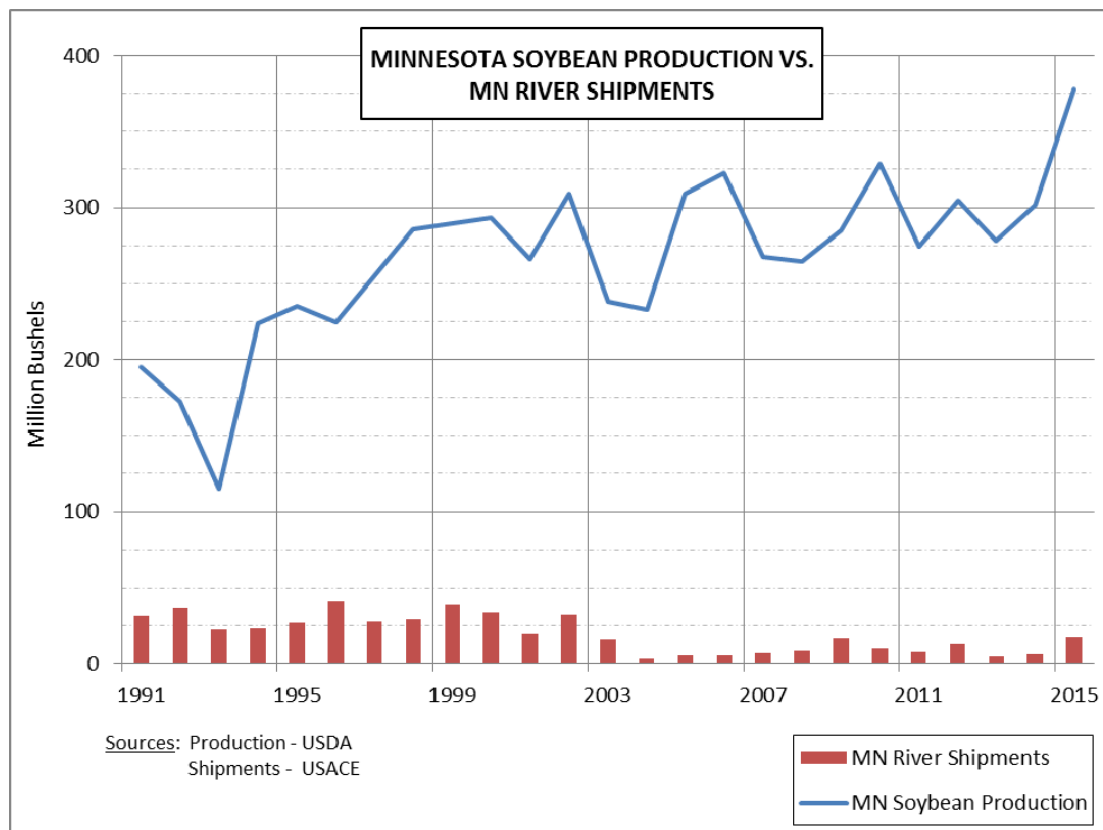
**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

The previous charts show that all three of the major grains have declined over time. Wheat shipments drifted downward, with some fluctuation, over the entire period. This is not surprising as wheat acreage in southern Minnesota has declined over the years. Wheat production in Minnesota is concentrated in the northwest part of the state. Thus, Minnesota wheat for export is best moved to the Pacific via shuttle train.

Soybean shipments on the Minnesota River also declined starting in the early 2000's. From 1991 through 2002, annual soybean shipments ranged from 593,000 tons to 1,237,000 tons, and averaged 904,417 tons (about 30.15 million bushels). From 2003 through 2015, annual soybean shipments ranged from 114,000 tons to 526,000 tons, and averaged 285,769 tons (about 9.53 million bushels). The recent high occurred in 2015 at 526,000 tons, or 17.53 million bushels.

The chart below summarizes Minnesota soybean production and also depicts shipments of soybeans on the Minnesota River.



## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

The previous chart reveals that Minnesota's soybean production increased significantly over the 25-year study period, year-to-year fluctuations notwithstanding. Thus, a loss of local soybean production is clearly not the reason why soybean shipments on the Minnesota River declined.

According to various annual editions of the Soya & Oilseed Bluebook, as published by Soyatech, LLC, there were seven soybean crushing plants in Minnesota in 1998, and seven crushing plants in 2014. However, three of the plants in 1998 were located in Minneapolis and Minnetonka and are understood to be small plants. Those three plants were no longer on the list in 2014, but were replaced by very large plants in Fairmont, Brewster and Hope. Thus, part of the decline in soybean traffic on the Minnesota River might be explained by higher levels of in-state processing.

According to the USDA's Economic Research Service, China has become the United States' largest export customer for soybeans. In fact, China accounted for 56.7% of U.S. soybean exports in 2015, and 62.2% in 2016. If other countries such as Japan, Indonesia, Vietnam, etc. are included, then the east Asian market accounts for 80.6% of U.S. soybean exports in 2015, and 84.3% in 2016.

As shown on Page 18, the Pacific port area's share of U.S. grain exports has increased over the past 15 years, largely the result of the rising importance of Asian markets. This growth is aided by the increasing prevalence of shuttle-train loading elevators that can rapidly load large unit trains and shuttle them to a single destination, oftentimes to export elevators in the Pacific Northwest.

Another important point, that relates specifically to the subject area, is that grain barges leaving from the Minnesota River must pass through 27 lock and dams as they navigate the length of the Upper Mississippi River. Thus, any grain moving from the Minnesota River to the export elevators at the Gulf of Mexico must move through all 27 lock and dams. This is the case for the four subject elevators on the Minnesota River as well as the two elevators along the Mississippi River in St. Paul.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

Moving downriver, the next river elevator is located in Red Wing, Minnesota. This elevator is situated south of two of the locks, and is therefore able to avoid those locks when shipping grain downriver. Continuing downriver, the next river elevators are located in Winona, Minnesota, and are situated south of five of the locks. Obviously this trend continues as one moves further to the south along the Upper Mississippi River.

Much has been written about the functionality of the lock and dams on the Mississippi River. Suffice it to say here that most of the locks have exceeded their originally anticipated useful lives. Furthermore, the locks are not large enough to accommodate a full, modern barge tow (often 10 or more barges lashed together) in a single pass. Thus, the time consuming and dangerous task of disassembling and reassembling tows must be completed at each of the locks. This serves to significantly increase the time it takes to move grain downriver.

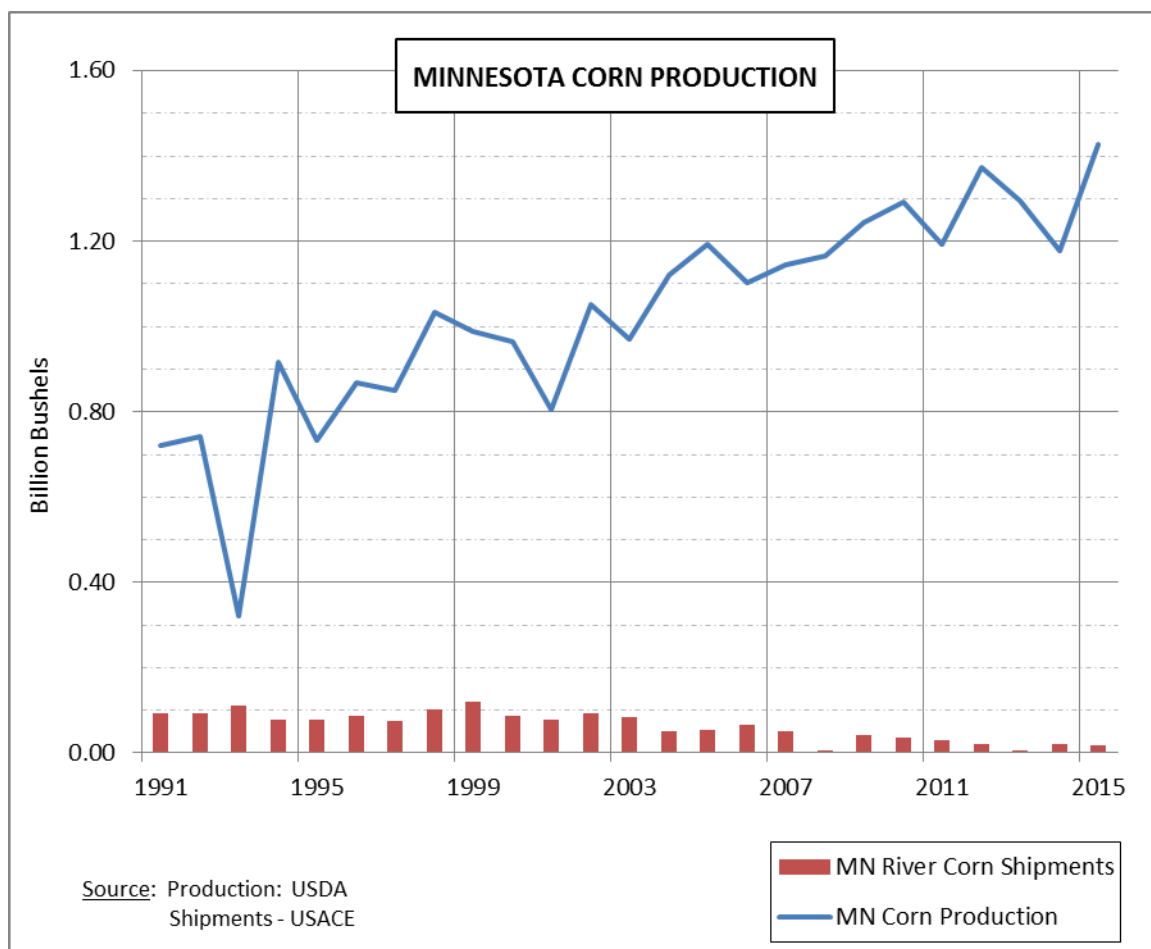
It should be noted that transit times do not necessarily increase in direct relationship with the number locks and dams that must be negotiated. The individual locks tend become busier as one moves south. For example, the USACE reports that about 11.0 million tons of cargo pass through Lock & Dam No. 2 (near Hastings, MN) annually. Meanwhile, on average, about 15.0 million tons move through Lock & Dam No. 7 (near La Crosse, WI) each year, and about 22.0 million tons move through Lock & Dam No. 10 (in Guttenberg, IA). Nevertheless, all else being equal, every lock that can be avoided is considered a positive.

Another point to consider is that the further north one moves, the shorter the barge season is. While this has been the case throughout the history of the navigable river system, it seems to have become more pertinent in recent times as new export markets and other transportation options emerge.

The chart on the following page summarizes Minnesota corn production and also depicts shipments of corn on the Minnesota River. Given the large volume of corn that was previously shipped, the loss of corn volume has had by far the greatest impact on total barge traffic on the Minnesota River.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River



Many of the same issues previously discussed are applicable to the decline in corn shipments as well. The chart above demonstrates that Minnesota's average corn production has increased dramatically over the 25-year period. Thus, a loss of local corn production is clearly not the cause of lower corn shipments on the Minnesota River.

The rapid increase in the state's ethanol production during the early- to mid-2000's does explain part of the decline. According to the Minnesota Department of Agriculture (MDA), just under 81.5 million bushels of corn were used to manufacture ethanol in Minnesota in 2000. That figure steadily rose to 451.0 million bushels by 2010. There are currently 21 ethanol plants operating in Minnesota. Many of these plants are located within the natural trade areas of the elevators on the Minnesota River.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

As with wheat and soybeans, shuttle trains destined for the Pacific Northwest have no doubt impacted transportation patterns for Minnesota-produced corn moving to export. The USDA reports that during 2015 and 2016 that Japan (2<sup>nd</sup>), South Korea (3<sup>rd</sup>) and Taiwan (6<sup>th</sup>) were among the top 10 importers of U.S. corn. Together, these three countries accounted for just over one-third of total U.S. corn exports during both 2015 and 2016.

Some of the corn destined for Asian markets moves down the Mississippi River system and then through the Panama Canal. However, shuttle loaders to the Pacific directly compete for this Asian-bound corn, often successfully. The competitiveness of shuttle loaders to the Pacific Northwest likely increases as the origin point moves farther north. In other words, Asian-bound corn originating from southern Illinois or eastern Missouri is less likely to move to the Pacific Northwest than say corn originating from central or western Minnesota.

The USDA data also show that during 2015 and 2016 Mexico (1<sup>st</sup>), Guatemala (10<sup>th</sup>) and three South American countries are among the top 10 importers of U.S. corn. Together, these five countries accounted for well over 40% of total U.S. corn exports during both 2015 and 2016. The Mississippi River system should be very competitive for this corn, as well as any corn destined for Europe.

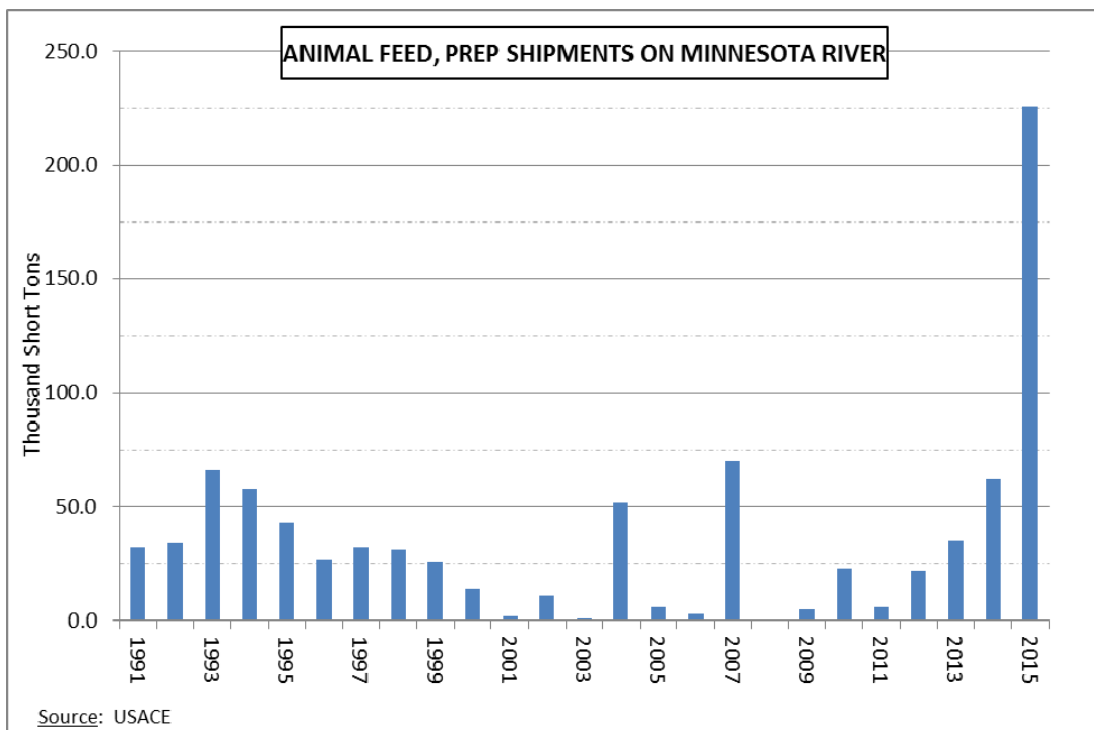
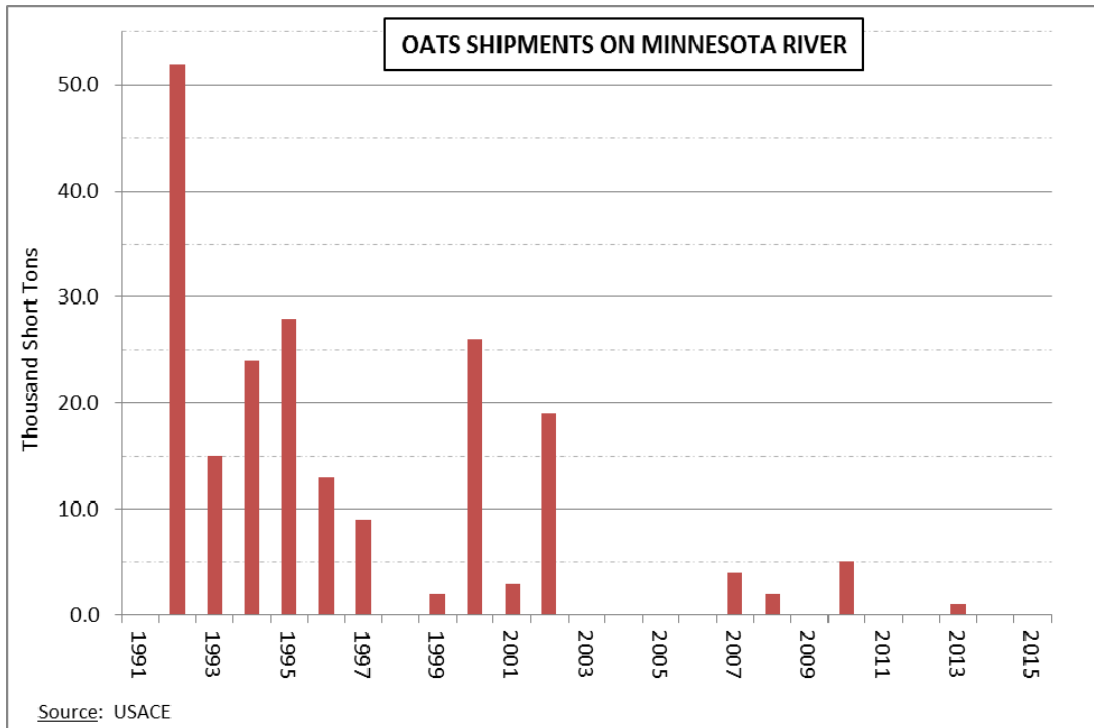
Nevertheless, rail transportation of U.S. goods into Mexico has risen over the years. The BNSF now advertises five gateways into Mexico, including Brownsville, Laredo and Eagle Pass, Texas. As shown on Page 18, the share of U.S. grain exports moving through Interior port channels has increased significantly over the past 25 years. In fact, the Interior accounted for, on average, 3.4% of total U.S. grain exports from 1991 through 2000, 8.0% from 2001 through 2010, and 10.5% from 2011 through 2016.

A discussion with a staff member of the Minnesota Corn Growers Association also indicates that more Minnesota-produced corn is likely moving to large livestock feeding operations in the southern United States, particularly areas like Texas.



**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

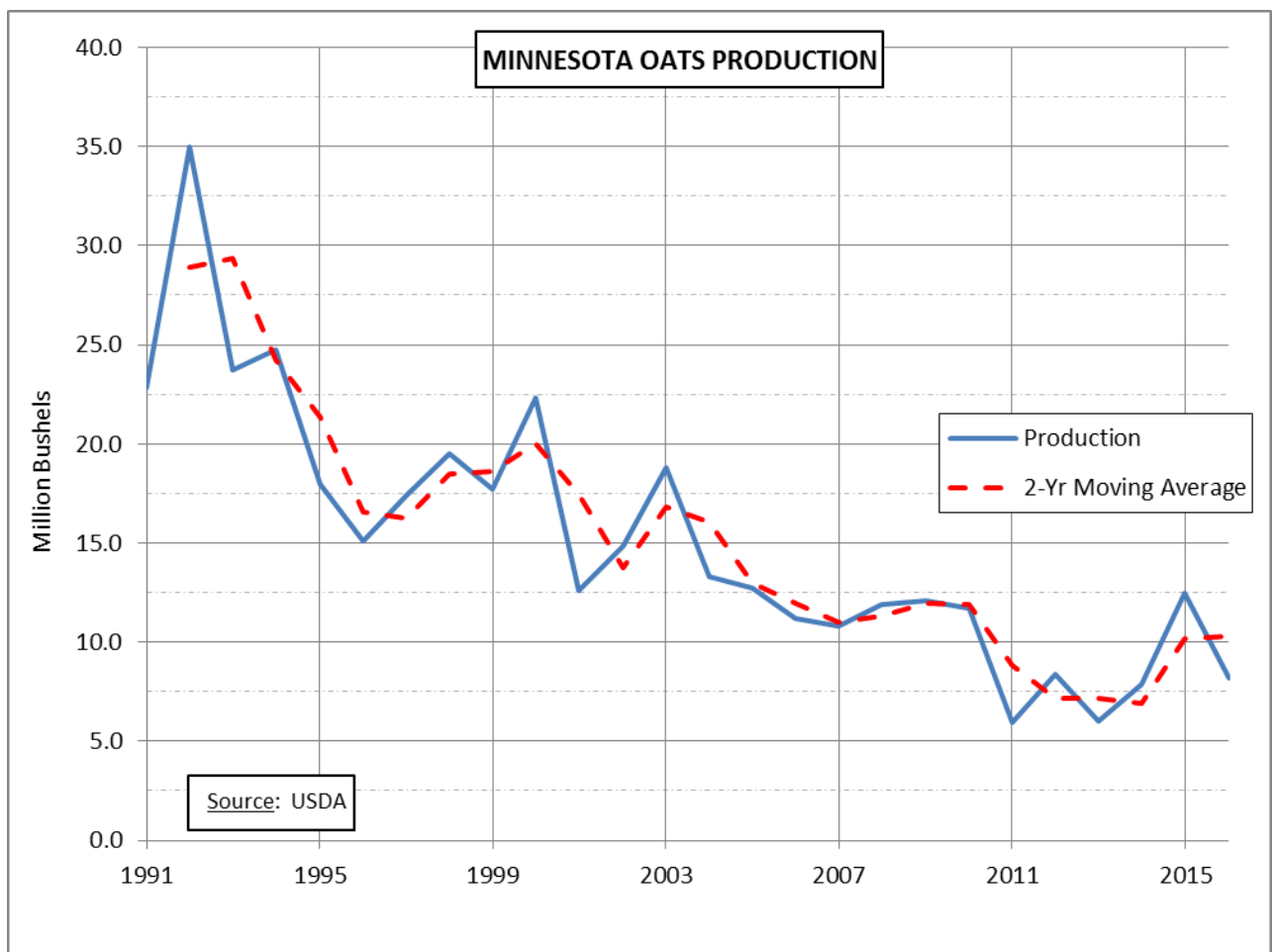


## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

The charts on the previous page summarize outbound shipments of oats and animal feed and prep. As the first chart shows, oats shipments are sporadic and, when they do occur, relatively small compared to corn, soybeans and wheat. Considerably more oats moved downriver during the 1990's and early 2000's than have moved since 2002. In fact, from 2003 through 2015 a combined total of 12,000 tons of oats were shipped from the Minnesota River, an average of less than 1,000 tons per year.

Oats production in Minnesota has been steadily declining for many years. The chart below illustrates the decline over the past 25 years.



North American oats production has largely shifted to Canada, as traditional oats-growing areas in the U.S. have transitioned to other, more profitable, cash crops.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

According to Sosland's 2017 Grain & Milling Directory, there are 12 oat mills operating in the U.S. Some of these mills are known to be quite small. The largest oat mills are located in Fridley, MN; Cedar Rapids and St. Ansgar, IA; South Sioux City, NE; and Eugene, OR. All of these mills appear better served by rail from Canada or the remaining oats producing areas of the United States.

Nevertheless, some opportunities are likely to continue from time to time for outbound shipments of oats on the river. Such shipments would most likely involve feed-grade oats that are not suitable for milling. However, as the chart on Page 30 shows, such shipments are likely to be sporadic and small.

It is notable that all of the elevators on the Minnesota River are designated by the Chicago Board of Trade (CBOT) as *regular for delivery* for oats<sup>†</sup>. In a nutshell, this means that when futures oats contracts expire, and physical delivery of oats must occur, such delivery must take place at a designated regular for delivery elevator. Thus, it seems reasonable that more oats move through the Minnesota River elevators than are reflected by the outbound river shipments. Such oats would likely be delivered by rail and shipped by rail<sup>‡</sup>.

The second chart on Page 30 summarizes outbound animal feed, prep shipments from the Minnesota River. Such products include distiller's grains, soy meal, etc.

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<sup>†</sup> The elevators on the Minnesota River (Properties A, B, C and F) are also designated by the Minneapolis Grain Exchange (MGEX) as regular for delivery for spring wheat.

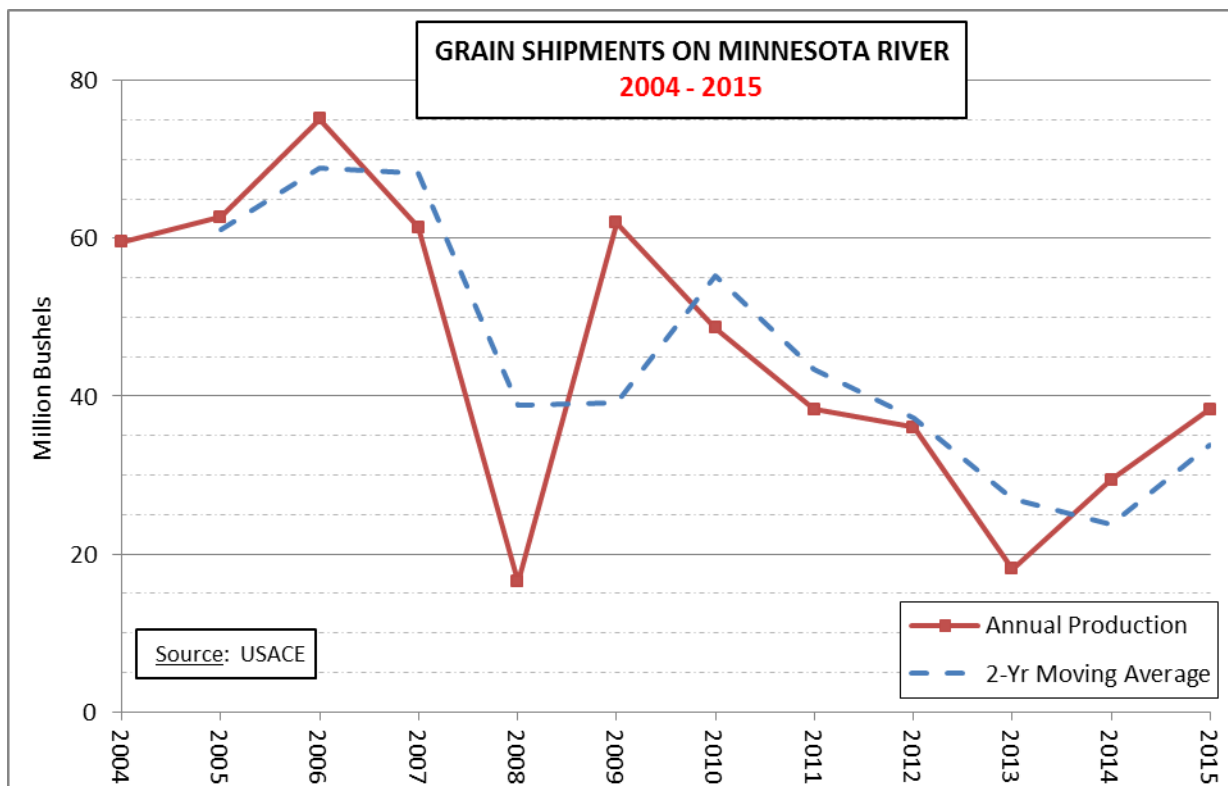
<sup>‡</sup> It is also likely some amount of other grains (including corn, soybeans and wheat) are shipped from the subject elevators by rail and, possibly, by truck.

**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

Before moving on to a discussion of inbound cargoes, some thoughts on outbound grain shipments are in order. The previous discussion, beginning with the chart on Page 23, details the significant decline in grain shipments over the past 25 years. Again, grain shipments fluctuate considerably from year to year, but the data suggest a general downward trend beginning in the early 2000’s.

It is useful to examine the most recent history to help determine how grain shipments might proceed in the years to come. The chart below summarizes the combined shipments of wheat, soybeans and corn from 2004 through 2015.



## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

The previous chart shows that grain shipments can vary widely from year to year. Over the 12-year period from 2004 through 2015 shipments ranged from a high of nearly 75.18 million bushels (2006) to a low of about 16.43 million bushels (2008). Given the high level of year-to-year variability, a two-year moving average is added to the chart. It appears 2008 was somewhat of an anomaly for that point in time. Total shipments during the year before (2007) and the year after (2009) were nearly the same.

The data reveal that grain shipments did continue to generally decline from 2004 through 2015. Annual shipments during the first six years (2004 – 2009) ranged from 16.43 million to 75.18 million bushels, and averaged about 56.21 million bushels. During the latter six years (2010 – 2015) annual shipments ranged from 18.10 million to 48.67 million bushels, and averaged about 34.80 million bushels.

Going forward, there are three possible outcomes to consider. First, grain shipments from the Minnesota River might continue to decline. Second, grain shipments will stabilize at the level of the most recent six years, averaging around 35.0 million bushels per year. Third, grain shipments from the Minnesota River will begin to trend upward.

One point to consider is that Minnesota's ethanol industry matured several years ago. Ethanol production in the state is not expected to increase significantly in the years to come. Thus, the loss of market share of corn to local ethanol production should be fully reflected in the recent statistics.

In addition, several large shuttle loading elevators have come on line in Minnesota over the past several years. The prevailing consensus seems to be that few economically viable opportunities remain in the state for developing additional shuttle elevators. A list of the state's shuttle loading elevators, as included in MAAO's § Grain Elevator Cost Schedule, tends to bear this out. The schedule, most recently revised in May of 2012, lists 44 elevators in the state that meet the railroads' definition of a shuttle loader facility.

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§ Minnesota Association of Assessing Officers



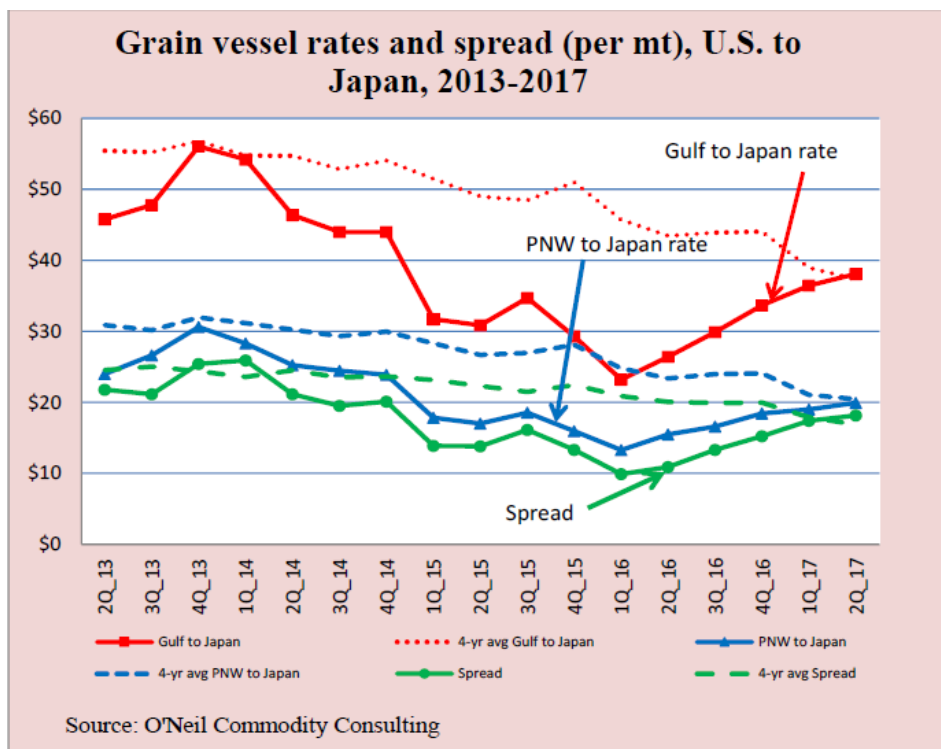
**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

The author here is aware of at least three more shuttle elevators that have come on line since 2012. Thus, much of the impact of shuttle loading elevators should be reflected in the most recent statistics.

Most recently, grain shipments from the Minnesota River increased in each of 2014 and 2015. Given normal annual fluctuations, this may or may not signal a trend. While USACE has not yet released statistics for 2016, discussions with local river operators suggest that another uptick likely occurred in 2016. The USDA’s Export by Region and Port Area report (WA\_GR152) tends to bear this out. According to the USDA’s report, about 69.45 million metric tons of grain, destined for export, moved from the Mississippi River at the Gulf in 2016, which was about 11.7% ahead of 2015.

The Mississippi River has become increasingly competitive in the most recent two to three years for a couple of reasons. First, freight rates for bulk ocean shipping were below average during much of 2014 through 2016. The chart below is taken directly from the USDA’s July 27, 2017 Grain Transportation Report.



## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

As the previous chart shows, bulk ocean rates have been well below the four-year average for the better part of three years. Most importantly, this caused the spread between the Gulf and the Pacific Northwest (PNW) to narrow, causing Asian-bound grain shipped from the Gulf to become more competitive. The research indicates that the decline in ocean rates is a result of excess bulk shipping capacity.

The chart shows that ocean shipping rates rose during 2016, but remained well below the preceding four-year average. Shipping rates were back to the four-year average by the second quarter of 2017. Nevertheless, the Gulf to PNW continues to be below the four-year average. Subsequent editions of the Grain Transportation Report indicate that ocean shipping rates increased somewhat after the start of the third quarter, but have most recently declined again.

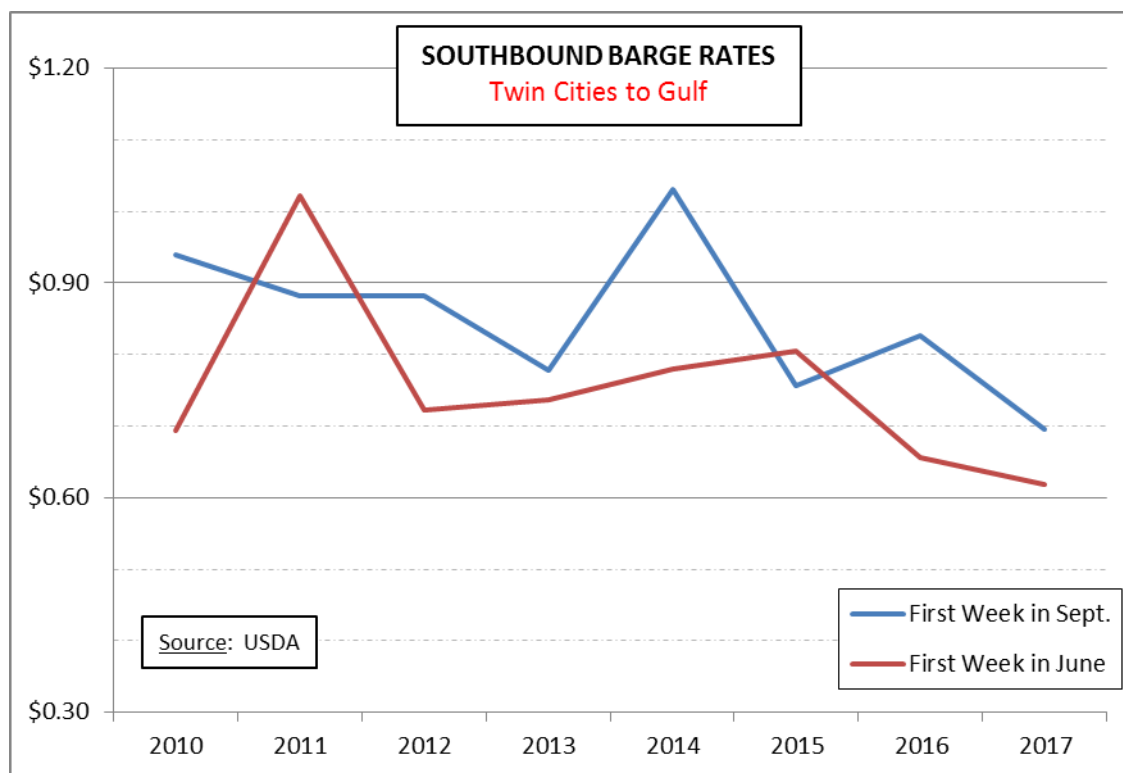
No doubt ocean rates will continue to fluctuate from year to year and, for that matter, week to week. Suffice it to say here that the Mississippi River system has benefited recently from a more competitive spread between the Gulf and the PNW. While opinions on the matter are mixed, there is some potential that the Gulf's position will further strengthen with the recent completion of the new channel of the Panama Canal.

The research also reveals that barge rates have generally declined over the past two years. Barge rates naturally vary throughout the year. Thus, rates must be analyzed as of the same time of year, over multiple years. The USDA publishes barge tariff rates from various segments of the river system to the Gulf of Mexico. The author checked the tariff rates for the first week in June and September from 2010 through 2017. The results are plotted on the chart on the following page.

Barge rates vary significantly, depending on supply & demand, weather conditions, grain carryovers, anticipated harvest volumes, and so on. Nevertheless, the chart indicates lower rates over the past year or so. In the case of the first week in June, the rates reported for 2016 and 2017 both established new lows during the eight-year period. In the case of the first week in September, the rates reported for 2015 and 2017 established new lows, with an intermittent uptick in 2016.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

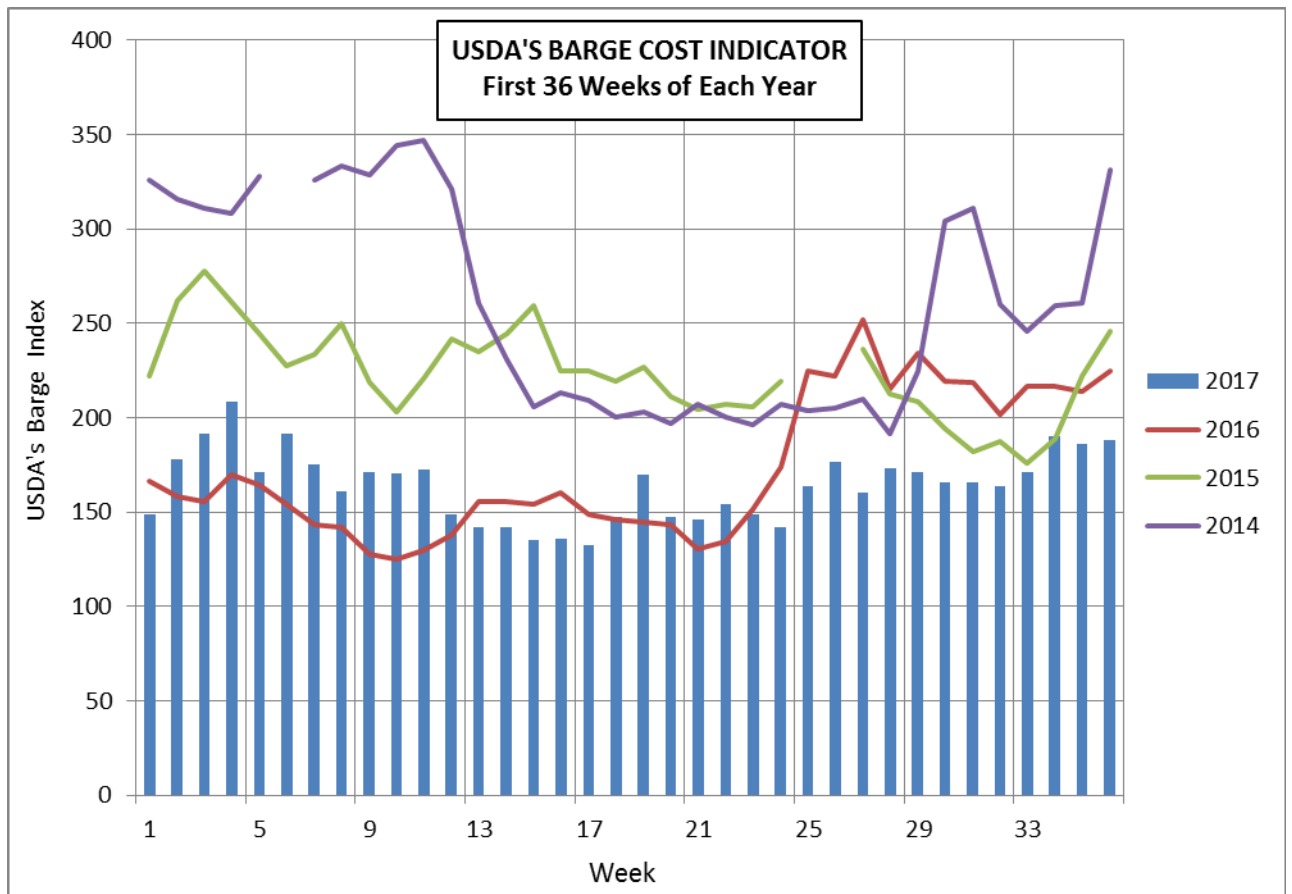


The USDA also maintains a transportation cost index, which includes an index for barge costs. As of the writing of this report, the index is up to date through the first 36 weeks of 2017. Thus, the chart on the following page summarizes the USDA's barge cost index for the first 36 weeks of each year from 2014 through 2017. The chart clearly shows that barge rates have declined over the past one to two years.

The weekly index scores for 2017 are all below those of 2014 and 2015, except for the 34<sup>th</sup> week, where 2015 and 2017 are essentially tied. Otherwise, barge rates through 2017 have been well below those of 2014 and 2015. The chart also shows that barge rates during 2016 were generally lower than those of 2015 and, with the exception of four weeks, all of 2014. Barge rates started 2017 somewhat above the corresponding rates of 2016 but have since fallen well below the 2016 rates.

## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River



The research reveals that the lower barge rates are a result of excess barge capacity on the Mississippi River system. This excess capacity has developed largely as a result of declining coal shipments which, until very recently, was the number one commodity shipped on the river system in terms of tonnage. Given the nation's ongoing movement away from coal, this situation is expected to continue. Thus, while nothing is certain, generally lower barge rates may be the norm for some time to come.

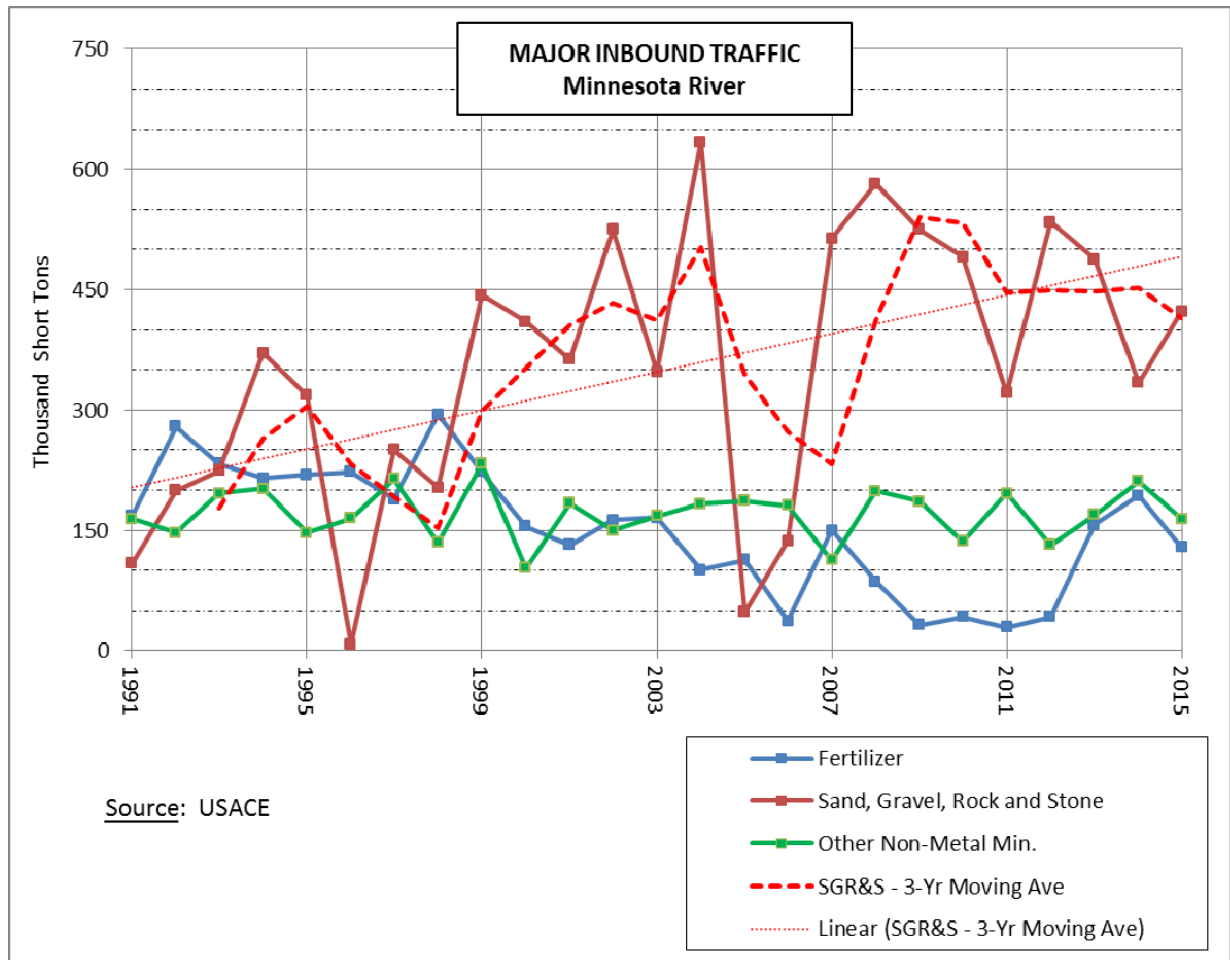
All of the research tends to suggest that, going forward, continued declines in grain shipments from the Minnesota River are unlikely. A reasonable conclusion seems to be that grain shipments will stabilize at levels consistent with the most recently reported years, say around 35.0 million bushels annually. A good case can also be made that grain shipments are likely to increase somewhat. It is unlikely that grain shipments will

**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

return to levels seen in the 1990's and early 2000's. However, an increase back to an average of about 1.5 million tons (about 51 million bushels) seems plausible.

The chart below summarizes the three major inbound commodities.





## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

The three major inbound categories are Sand, Gravel, Rock & Stone (SGR&S), Fertilizer and Other Non-Metal Materials. A call to the Waterborne Statistics office of the USACE reveals that, due to confidentiality reasons, salt is categorized as Other Non-Metal Materials. It is not clear if salt comprises 100% of the Other Non-Metal Materials category, but it is understood that it (salt) represents most, if not all, of that category.

The chart on the previous page shows that inbound salt shipments fluctuate from year to year, but the overall trend has been fairly flat. Salt is received into the Cargill East facility (Property F) and the US Salt terminal (Property G). Over the 25-year period, inbound shipments ranged from 113,000 tons (2007) to 233,000 tons (1999) and averaged 170,600 tons.

Inbound fertilizer shipments also fluctuate from year to year. The previous chart shows that fertilizer tonnage generally declined from about 1998 to 2006, then remained flat over the next four years. Starting in 2012, fertilizer tonnage has trended upward; back to the levels of 10 to 15 years ago, but not quite back to the levels of the 1990's. It is understood that all of the inbound fertilizer shipments are received at the Mosaic facility (Property E). The on-site manager reports that the fertilizer originates in Florida. The fertilizer can be received by rail or barge. Movement by barge is reportedly the most economical, but during the winter months it must be brought by rail.

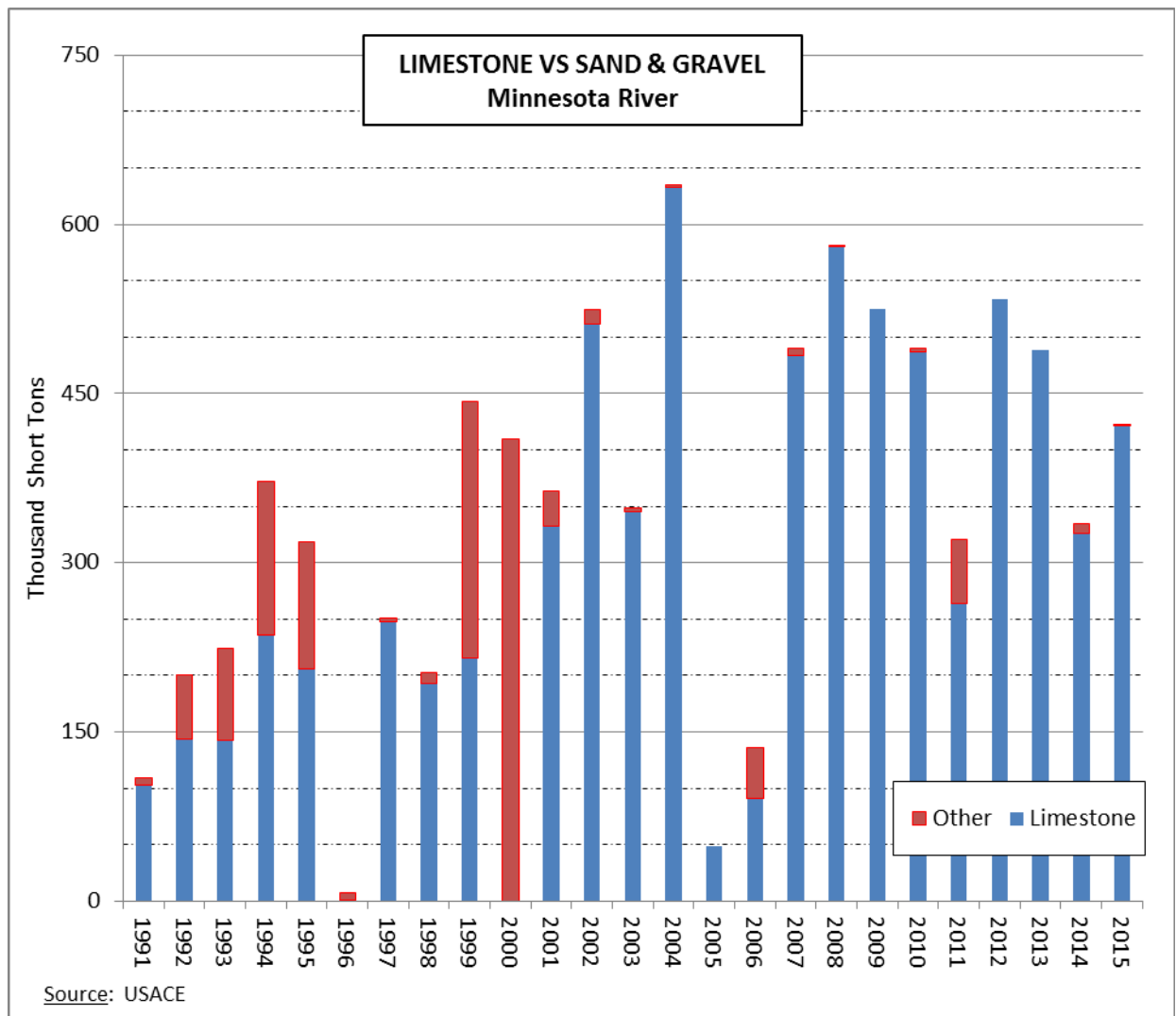
The SGR&S category fluctuates greatly from year to year. This category largely consists of calcium-rich limestone shipments received into Property D (Superior Minerals). The author was able to interview the president of Superior Minerals and make an on-site visit to that property.

The operation of Property D is discussed in greater detail in the following section of this report. Suffice it to say here that the limestone is stockpiled on site, causing steep year to year fluctuations. Thus, a three-year moving average for the SGR&S category is added, along with a linear trendline to the three year moving average. Based on this methodology, it is evident that shipments SGR&S (primarily limestone) have increased significantly over time.

**OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

The Minnesota River

The chart below summarizes the SGR&S category between limestone and all other subcomponents. Sand & Gravel largely constitutes the majority of that volume depicted as “other”. As the chart shows, over the most recent 15 years (2001 through 2015), limestone has accounted for the vast majority of the inbound SGR&S shipments. In fact, during that 15-year timeframe, limestone accounted for over 97% of the SGR&S tonnage. It is understood that all of limestone tonnage is attributable to the Property D operation.



## OVERVIEW OF MISSISSIPPI RIVER SYSTEM

### The Minnesota River

Aside from the three major inbound cargoes, a variety of other inbound products are received at the Minnesota River facilities. The table below summarizes these other products. To assist the reader, those tonnage figures other than zero are highlighted in red font. As the chart shows, the incidence of these other inbound products has declined over the years. It is not known precisely which properties receive these other products. However, any of the six properties with active barge docks could theoretically receive some or all of them.

<b>MINOR INBOUND TRAFFIC - MINNESOTA RIVER</b>										
Year	Slag	Cement & Concrete	Primary Iron & Steel Prod.	Machinery	Textile Products	Coal	Petro Products	Magn or Alum. Ore	Molasses	Starches, Gluten, Glue
1991	0	0	12,000	0	0	0	0	0	17,000	0
1992	0	0	13,000	0	0	0	17,000	0	19,000	0
1993	0	2,000	12,000	0	0	5,000	10,000	0	20,000	0
1994	2,000	0	17,000	0	0	3,000	0	2,000	23,000	0
1995	0	0	16,000	0	0		0	0	25,000	0
1996	6,000	0	23,000	0	0	0		0	27,000	0
1997	27,000	0	19,000	0	1,000	0	0	0	0	0
1998	6,000	0	0	0	0	0	0	0	0	0
1999	16,000	9,000	2,000	0	0	17,000	0	0	0	0
2000	11,000	5,000	5,000	0	0	7,000	0	0	0	0
2001	23,000	59,000	0	4,000	0	0	0	0	0	0
2002	0	2,000	0	0	0	0	0	0	0	0
2003	0	2,000	0	0	1,000	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	1,000	0	0	0	0	0
2006	0	0	2,000	0	1,000	0	0	0	0	0
2007	0	0	0	0	0	0	5,000	0	0	0
2008	0	0	0	0	0	3,000	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0
2010	0	0	2,000	0	0	0	0	0	0	0
2011	0	1,000	0	0	0	6,000	0	9,000	0	0
2012	0	8,000	0	0	0	0	0	0	0	0
2013	0	20,000	0	0	0	0	0	0	0	0
2014	0	17,000	0	0	0	0	0	0	0	2,000
2015	0	9,000	0	0	0	0	0	0	0	0

Source: USACE

## **OVERVIEW OF MISSISSIPPI RIVER SYSTEM**

### The Minnesota River

It is also noted that other minor products will move outbound from time to time. For example, Mr. Lee Nelson of Upper River Services reports that some years ago, large tanks that were manufactured in Scott County were moved to one of the active barge docks and shipped out by barge.

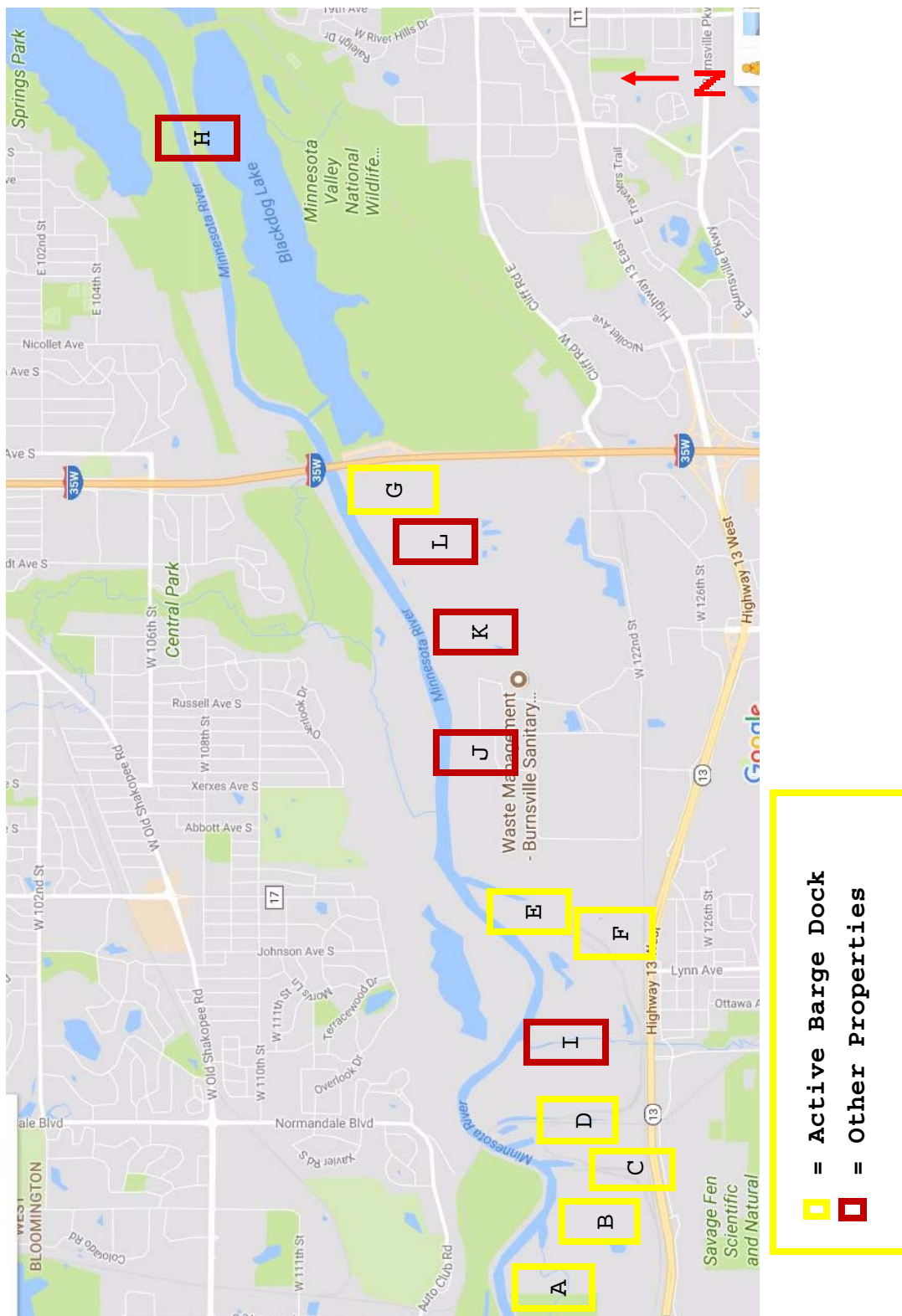
A spreadsheet that provides a detailed summary of all inbound and outbound shipments on the Minnesota River, from 2010 through 2015, is included in the addenda of this report. The figures on the spreadsheet are taken from the USACE data.

## **SUBJECT PROPERTIES**

The next step is to identify and describe those properties which benefit, or may benefit, from the Lower Minnesota River Watershed District's maintenance of the nine-foot river channel. The map on the following page identifies these properties as Properties A through L. Properties A – G are those properties with active river barge operations.

The discussion begins with those six properties with active river barge operations. Each of these properties is identified and discussed on the following pages. An aerial photo of each property is included. These aerial photos are taken from the GIS systems of each property's respective county (Scott or Dakota). The author has taken the liberty of outlining the boarder of each of the properties. In some cases, the individual properties are comprised of more than one adjoining tax parcel.

**SUBJECT PROPERTIES**



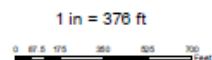


**SUBJECT PROPERTIES**

**Scott County**



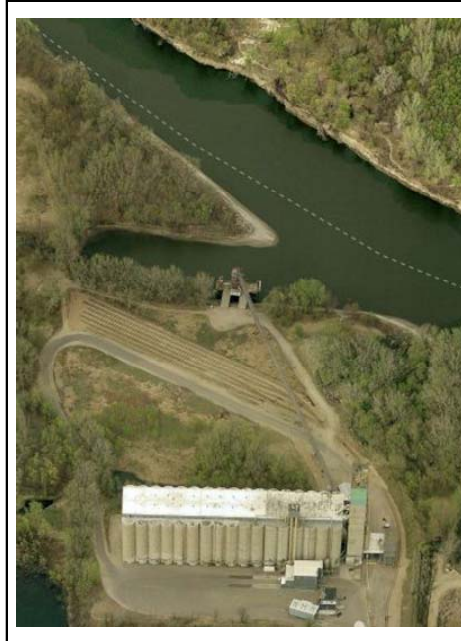
This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information, and data located in various city, county, and state offices, and other sources affecting the area shown, and is to be used for reference purposes only. Scott County is not responsible for any inaccuracies herein contained. If discrepancies are found, please contact the Scott County Surveyors Office.





**SUBJECT PROPERTIES****PROPERTY A**

Identity: Cargill West Elevator  
 Owner: Cargill, Inc.  
 Street Address: 12100 Dakota Avenue  
 Savage, MN  
 County: Scott  
 PID No.(s): 26-908018-0  
 26-908020-0  
 River Mile: 14.8  
 Barge Dock: Yes  
 Commodities:  
     Shipped: Grain  
     Received: N/A



Zoning: I-2 (Ports of Savage Industrial District)

2030 Land Use Plan: Industrial

Rail Service: Yes  
     Carrier: Union Pacific  
     Siding Capacity: 110 Cars

Parcel Size: 32.19 Acres

River Frontage: 1,435 Lineal Feet (approx)

Storage Capacity: 5,432,000 Bushels

Assessor's Market Value - January 2, 2017:

    Land: \$ 915,000  
     Improvements: \$7,060,000  
 Total Assessed Value: \$7,975,000

Comments: This property consists of two adjoining tax parcels. The property is improved with a grain elevator. The elevator has slipform concrete construction. According to the manager, the elevator primarily handles corn, soybeans and wheat. Corn and soybeans are largely received by truck, while wheat is received primarily by rail. Grain is shipped primarily by river barge.

**SUBJECT PROPERTIES**

**Scott County**



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Date: 8/18/2017

1 in = 376 ft  
0 67.5 135 202.5 270 337.5 405 472.5 540 607.5 675

**SUBJECT PROPERTIES****PROPERTY B**

Identity: Cenex Harvest States Elevator

Owner: CHS, Inc.

Street Address: 6200 W. Highway 13  
Savage, MN

County: Scott

PID No.(s): 26-909025-0

River Mile: 14.7

Barge Dock: Yes

Commodities:

Shipped: Grain

Received: N/A



Zoning: I-2 (Ports of Savage Industrial District)

2030 Land Use Plan: Industrial

Rail Service: Yes

Carrier: Union Pacific

Siding Capacity: 110 Cars (See Comment)

Parcel Size: 50.64 Acres

River Frontage: 1,097 Lineal Feet (approx.)

Storage Capacity: 1,325,000 Bushels

Assessor's Market Value - January 2, 2017:

Land: \$ 1,815,000

Improvements: \$ 1,950,000

Total Assessed Value: \$ 3,765,000

Comments: This property consists of a single tax parcel. The property is improved with a grain elevator with 560,000 bushels of slipform concrete construction. A 765,000-bu. steel bin was recently added. The MN Grain & Feed Assoc. directory lists the property as having a 100-car rail siding. The Company's website reports the elevator has the ability to load 110-car shuttle trains.



**SUBJECT PROPERTIES**

**Scott County**



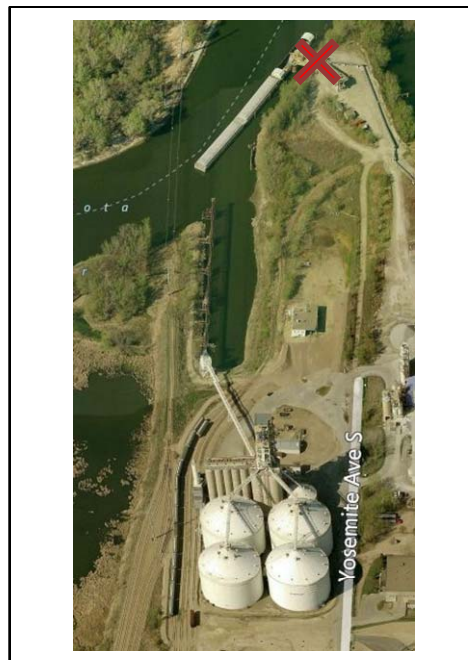
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 Date: 8/18/2017

1 in = 378 ft  


**SUBJECT PROPERTIES****PROPERTY C**

Identity: Riverland Ag Elevator  
 Owner: River Land Ag Corp.  
 Street Address: 12100 Yosemite Avenue  
 Savage, MN  
 County: Scott  
 PID No.(s): 26-050002-1  
 26-050003-1  
 River Mile: 14.6  
 Barge Dock: Yes  
 Commodities:  
     Shipped: Grain  
     Received: N/A



Zoning: I-2 (Ports of Savage Industrial District)  
 2030 Land Use Plan: Industrial  
 Rail Service: Yes  
     Carrier: Union Pacific  
     Siding Capacity: 75 Cars - per MN Grain & Feed Association Directory  
 Parcel Size: 18.09 Acres  
 River Frontage: 360 Lineal Feet (approx.)  
 Storage Capacity: 9,276,000 Bushels

## Assessor's Market Value - January 2, 2017

Land: \$ 4,115,000  
 Improvements: \$ 7,825,000  
 Total Assessed Value: \$ 11,940,000

Comments: This property consists of two adjoining tax parcels. The property is improved with a grain elevator. The elevator has both slipform concrete and steel bin construction. The MN Grain & Feed Association lists the operator of this facility as Consolidated Grain & Barge (CGB). However, the president of Riverland states that it (Riverland) still operates it. Interestingly, CGB lists this property on its website as one of its locations.







**SUBJECT PROPERTIES****PROPERTY D**

Identity: Superior Minerals

Owner(s): Superior Minerals Co.  
Acell, LLC

Street Address: 12051 Yosemite Ave S  
Savage, MN

County: Scott

PID No.(s): 26-067003-1 Superior Minerals  
26-067004-1 Superior Minerals  
26-067003-0 Acell  
26-067002-0 Acell  
26-067001-0 Acell

River Mile: 14.4

Barge Dock: Yes

Zoning: I-2 (Ports of Savage Industrial District)

2030 Land Use Plan: Industrial

Commodities:  
Shipped: N/A  
Received: Aggregates - calcium-rich limestone

Rail Service: Yes  
Carrier: Union Pacific  
Siding Capacity: 28 Cars

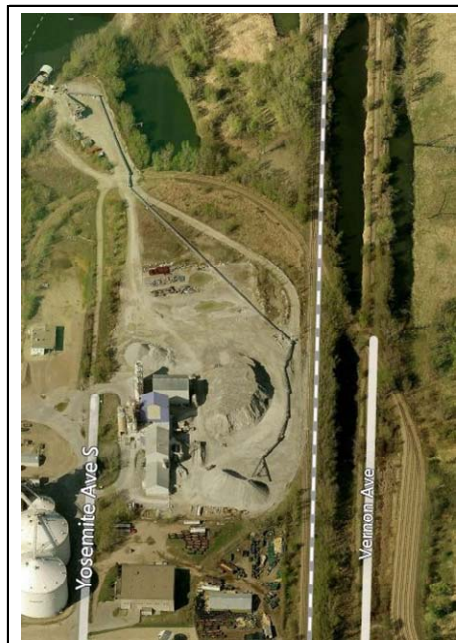
Parcel Size: 32.58 Acres

River Frontage: 1,325 Lineal Feet (approx.)

Storage Capacity: See Comment

Assessor's Market Value - January 2, 2017  
Land: \$2,575,000  
Building: \$1,260,000  
Total Assessed Value: \$3,835,000

Comments: Superior Minerals operates the property, and leases four of the tax parcels from Acell. The improvements are primarily located on Superior-owned parcels, while the barge dock is located on an Acell-owned parcel. Superior brings in calcium-rich limestone by barge, which originates in Davenport, IA and is mined from a sister-company's quarry. This facility reportedly handles approximately 500,000 tons per year.




**SUBJECT PROPERTIES**

**Scott County**



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Date: 8/18/2017

1 in = 376 ft  


**SUBJECT PROPERTIES****PROPERTY E**

Identity: Mosaic Crop Nutrition

Owner: GNS III (US), LLC

Street Address: 12120 Lynn Avenue South  
Savage, MN

County: Scott

PID No.(s): 26-375002-0

River Mile: 13.0

Barge Dock: Yes

Commodities:  
Shipped: N/A  
Received: Fertilizer and Salt

Zoning: I-2 (Ports of Savage Industrial District)

2030 Land Use Plan: Industrial

Rail Service: Yes  
Carrier: Union Pacific  
Siding Capacity: 28 Cars

Parcel Size: 21.16 Acres

River Frontage: 881 Lineal Feet (approx.)

Storage Capacity: 65,000 Tons

Assessor's Market Value - January 2, 2017

Land:	\$ 1,500,000
Building:	\$ 2,500,000
Total Assessed Value:	\$ 4,000,000

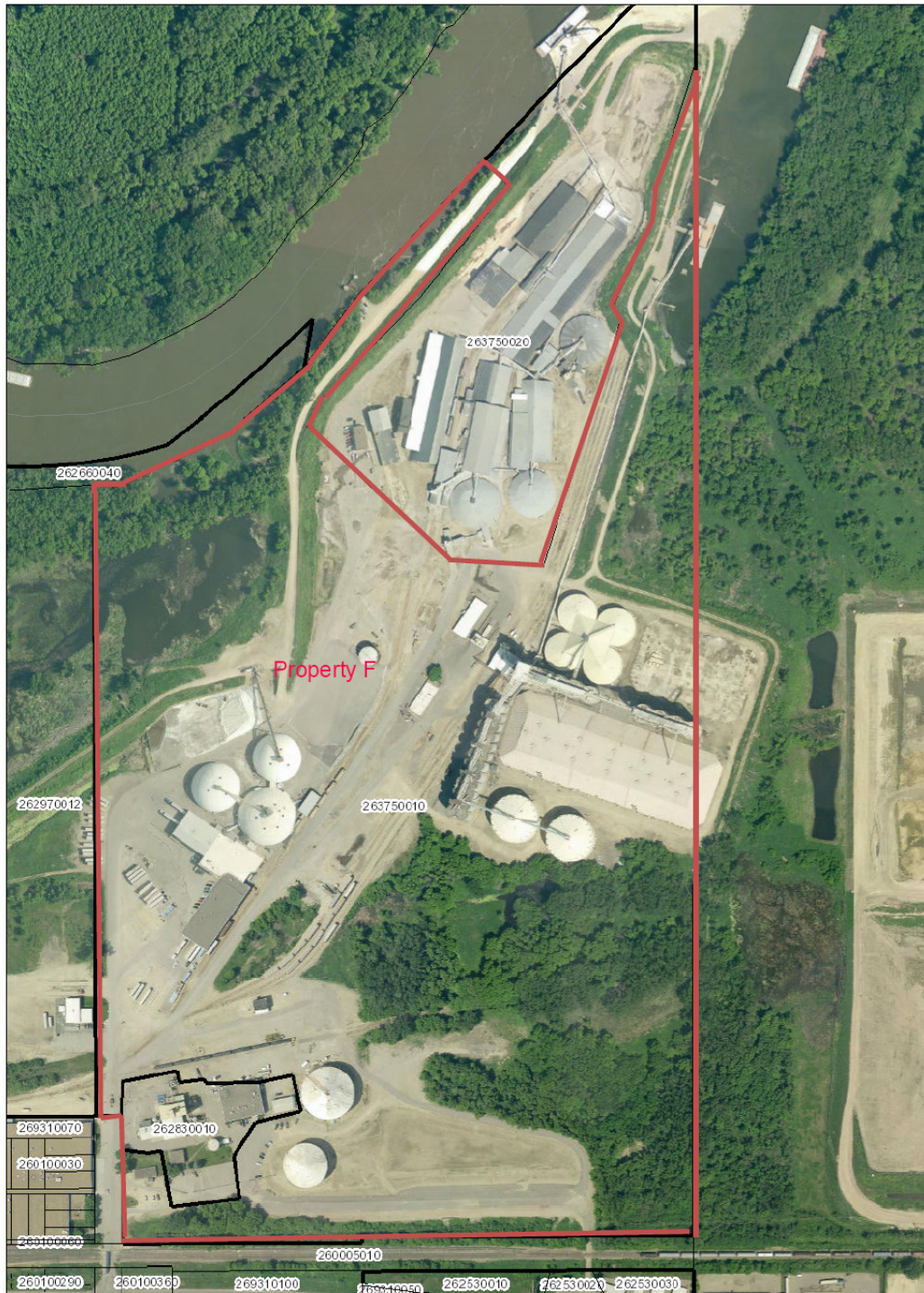


Comments: This property consists of a single tax parcel, which is improved with a fertilizer plant / terminal. The property is operated by Mosaic, which is understood to be a related entity to the property fee owner, GNS III (US), LLC. As background, Mosaic is a spinoff of Cargill. The plant manager reports that they handle fertilizer product year-around. The plant has a 65,000 ton capacity, but they handle about 400,000 tons per year. Fertilizer products are received by river barge when the river is open, and by rail during the winter months. They also unload river barges of salt for Cargill.

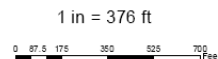


**SUBJECT PROPERTIES**

Scott County



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**SUBJECT PROPERTIES**

Property F - Dakota Co





**SUBJECT PROPERTIES**

**PROPERTY F**

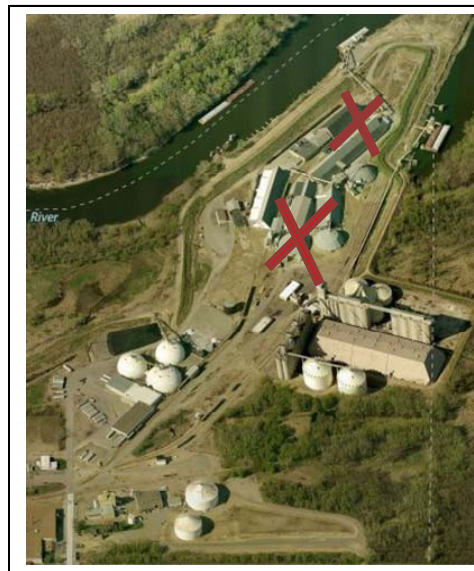
Identity: Cargill East Elevator

Owner: Cargill, Inc.

Street Address: 12115 Lynn Ave S  
Savage, MN

County: Scott & Dakota

PID No.(s):	26-375001-0	Scott
	26-283001-0	Scott
	02-03210-30-020	Dakota
	02-02910-50-030	Dakota
	02-03210-45-020	Dakota
	02-03210-63-020	Dakota



River Mile: 12.9

Barge Dock: Yes

Commodities:

Shipped: Corn  
Received: Salt - via Property E

Zoning: Scott County Parcels: I-2 (Ports of Savage Industrial District)  
Dakota County Parcels: I-2 (General Industry)

2030 Land Use Plan Scott County Parcels: Industrial  
Dakota County Parcels: MRQ (Minnesota River Quadrant)

Rail Service: Yes  
Carrier: Union Pacific  
Siding Capacity: 54 Cars

Parcel Size: 100.29 Acres

River Frontage: 1,515 Lineal Feet (approx.)

Storage Capacity: 11,083,000 Bushels - Grain  
Unknown - Salt

Assessor's Market Value - January 2, 2017

Land:	\$ 4,089,600
Building:	\$ 10,980,000
<b>Total Assessed Value:</b>	<b>\$ 15,069,600</b>



**SUBJECT PROPERTIES****PROPERTY F - (Continued)**

Comments: As the aerial photos on Pages 55 and 56 depict, this property includes two tax parcels in Scott County and four tax parcels in Dakota County. The Scott County parcels are located in the city of Savage, and the Dakota County parcels are located in the city of Burnsville.

The improvements consist of a grain elevator and a salt terminal. Grain (primarily corn) is shipped via river barge from the facility, and salt is received into the facility by river barge. As noted, salt is unloaded at Mosaic's dock at Property E. The salt is then transferred to storage structures on Property F.

The vast majority of the improvements are located on the Scott County parcels. The barge loading station is situated in Scott County. However, most of the barge slip is situated in Dakota County. Grain (primarily corn) is loaded onto barges from this dock/slip.

The grain elevator includes a slipform concrete elevator (with headhouse), slipform concrete annexes, and steel bins.

The property includes several salt service structures. The capacity of these structures are unknown.

Grain is received by truck and primarily shipped by river barge.

Salt is received by river barge and is primarily shipped by truck.

**SUBJECT PROPERTIES**

**DAKOTA COUNTY**



**SUBJECT PROPERTIES**

**PROPERTY G**

Identity: U.S. Salt, Inc.  
 Owner: Port Marilyn, LLC  
 Street Address: 1020 Black Dog Road  
 Burnsville, MN  
 County: Dakota  
 PID No.(s): 02-02800-01-013  
 02-02800-01-012  
 River Mile: 11.1  
 Barge Dock: Yes



Commodities:  
 Shipped: N/A  
 Received: Salt, Light Weight Aggregate, Cotton Seed

Zoning: I2 GW (General Industry, Gateway)

2030 Land Use Plan: MRQ (Minnesota River Quadrant)

Rail Service: No

Parcel Size: 6.10 Acres

River Frontage: 2,112 Lineal Feet (approx.)

Storage Capacity: Unknown

Assessor's Market Value - January 2, 2017

Land: \$375,100  
 Building: \$167,400  
 Total Assessed Value: \$542,500

Comments: This property consists of two adjoining tax parcels. One of the tax parcels is an elongated strip of land, running to the west of the improvements and along the shoreline of the river. According to Mr. Lee Nelson of Upper River Services, that parcel allows barges to be fleeted.

MnDot's directory lists the commodities handled at this facility as salt, light weight aggregate and cotton seed.

## SUBJECT PROPERTIES

### Discussion & Commentary

As summarized on the previous pages, the subject properties include four grain elevators, a fertilizer terminal/plant, and a salt terminal. One of the grain elevators (Property F) also receives salt.

The storage capacities of the four grain elevators are summarized as follows:

### Grain Storage Capacity

	<u>Bushels</u>
Property A:	5,432,000
Property B:	1,325,000
Property C:	9,276,000
Property F:	<u>11,083,000</u>
Total Storage:	27,116,000

As discussed, outbound grain shipments from the Minnesota River averaged about 34.80 million bushels from 2010 through 2015. Grain shipments in 2015 were about 38.3 million bushels, and preliminary indications suggest the 2016 was higher than 2015. Thus, average grain shipments from the Minnesota River will exceed the combined storage capacity of the four subject elevators.

Given the recent and ongoing transportation pricing, it is also plausible that river shipments will increase somewhat in the coming years. The on-site manager of Properties A and F reports that all grain is now being shipped out via river barge because “the river is cheaper.” Thus, going forward, one might expect outbound grain shipments via river barge to be 1.5 to 2.0 times the combined storage capacity.

Property D includes tax parcels that are owned by either Superior Minerals Company or Acell, LLC. Superior Minerals operates the property, and leases the Acell-owned parcels from Acell for an undisclosed rental rate. Superior Minerals receives calcium-rich limestone onto the site. The limestone is mined from a quarry near Davenport, Iowa by Superior’s sister company Linwood Mining & Minerals Corporation.

## **SUBJECT PROPERTIES**

### Discussion & Commentary

According to Mr. Jonathan Wilmshurst, president of both Superior Minerals and Linwood Mining & Minerals Corp., this calcium-rich limestone is not naturally present in Minnesota and, therefore, must be brought in from elsewhere. This particular limestone is used in the manufacture of roofing shingles and livestock feed. One of Superior's major customers is Certain Teed, which has a large shingle factory in nearby Shakopee.

Mr. Wilmshurst reports that all of the limestone is brought in by barge. The limestone is then stockpiled on site to await processing. The process largely consists of crushing the limestone into a power, and then drying it. All of the finished product is reportedly shipped out by truck.

Mr. Wilmshurst stated that they do "about a half million tons a year." This is generally consistent with the USACE data which indicates a yearly average of 420,000 tons from 2010 through 2015. Property D (including the Acell parcels) is large enough to stockpile large quantities of limestone on site. Thus, inbound shipments of limestone vary substantially from year to year.

Mr. Wilmshurst also reports that there are two primary sources of direct competition in Minnesota for this type of limestone product. The first is a quarry near Fort Dodge, Iowa. Evidently, finished product is trucked or railed from this quarry to feed markets that include southern Minnesota. The second source of competition comes from mines in the Upper Peninsula of Michigan. This limestone is reportedly loaded onto maritime vessels on the Great Lakes and shipped into Duluth.

Property E is a fertilizer plant and terminal, operated by Mosaic. According to the on-site warehouse manager, Ms. Lisa Brickey, much of the fertilizer product, including all phosphate, originates in Florida. Interestingly, during the on-site visit a barge of potash was being unloaded. The potash reportedly originated in Canada, and was railed to St. Paul on the Canadian Pacific Rail Railway (CP). Once in St. Paul, the potash was loaded onto river barges and moved upriver to Property E in Savage. This was reportedly cheaper than switching the rail cars from the CP system to the Union Pacific, which serves Property E.

## **SUBJECT PROPERTIES**

### Discussion & Commentary

The Property E facility reportedly handles about 400,000 tons per year, and product is shipped from the site on a year-round basis. On the other hand, the on-site storage capacity is reported at 65,000 tons. This means that no more than about a two-month supply can be stockpiled on site at any given time. Thus, material must continue to be brought in during the winter months when the river is closed to barge traffic.

Ms. Brickey reports that about one-half of the fertilizer product comes in by barge and the other half by rail. This would suggest yearly inbound barge shipments of about 200,000 tons. However, the USACE data indicate that inbound barge shipments from 2010 through 2015 ranged from 29,000 tons (2011) to 193,000 tons (2014), and averaged just under 99,000 tons. Inbound barge shipments have picked up significantly during the most recently reported three years (2013 – 2015), ranging from 129,000 to 193,000 tons, and averaging about 160,000 tons.

Property E includes a 28-car rail siding on the Union Pacific. Approximately 80% of the fertilizer is shipped from the site by truck, and the other 20% is shipped by rail. Again, at least 50% of the incoming material is received by rail.

Finally, Ms. Brickey reports that there is typically a substantial cost savings when receiving fertilizer by barge as opposed to rail. This savings can reportedly range from \$0.00 (zero) at times, to as high as \$60.00 per ton. If one assumes an average savings on the mid to low end of the range, say \$20.00 per ton, and applies that to the recent yearly average of 160,000 tons, then an annual freight savings of \$3.20 million is attributable to the Minnesota River.

Finally, Mosaic receives salt by river barge on behalf of Cargill. The salt is received at the barge dock on Property E and transferred to salt warehouses on Property F (Cargill East). The fee for receiving the salt was not disclosed. There is also a salt warehouse on Property E that is leased to Cargill for an undisclosed sum. Finally, a new warehouse was being constructed on Property E during the on-site visit of July 13, 2017.

## SUBJECT PROPERTIES

### Discussion & Commentary

Property G is operated by U.S. Salt, Inc. Repeated attempts to contact a representative of U.S. Salt were unsuccessful. The property was observed from the adjacent public right-of-way. It appears the on-site operation primarily consists of receiving salt (road salt) by barge and shipping it by truck. According to an educational pamphlet prepared by the National Park Service, salt shipped to Minnesota by river barge originates in Louisiana.

Property G is clearly visible from the southbound lanes of I-35W. Over the years, the author has observed river barges being unloaded many times at this property. The property does not have a rail siding. Thus, all salt is evidently shipped locally by truck.

Property F (Cargill East) also has a salt operation. As noted, Mosaic receives salt at Property E on behalf of Cargill, and transfers it to salt warehouses on Property F. An on-site visit was made to Property F on September 12, 2017. The plant manager, Mr. Ruben Chong, was present during the visit. However, Mr. Chong is in charge of the grain operations and was unable to provide details of the salt operation.

As discussed in the previous section, the USACE reports that about 170,000 tons of Other Non-Metal Materials is received inbound on the Minnesota River each year. This is presumably all, or nearly all, salt.

### Properties Without Active Barge Docks

The discussion now shifts to those properties that do not have active docks, but could potentially have a barge dock at some point in the future. Five such properties are identified (Properties H through L).

Aerial photos of these five properties are included on the following pages. Once again, the aerial photos are taken from the GIS system of each property's respective county. The author has taken the liberty of outlining the boundaries of the properties. The five properties are briefly discussed after the aerial photos.

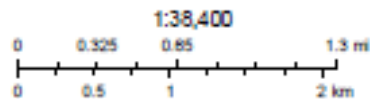


**SUBJECT PROPERTIES**

Dakota County, MN



September 13, 2017



Property information

Disclaimer: Map and parcel data are believed to be accurate, but accuracy is not guaranteed. This is not a legal document and should not be substituted for a title search, appraisal, survey, or for zoning verification.

**SUBJECT PROPERTIES**

# Scott County



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Date: 9/13/2017

1 in = 752 ft  
0 135 270 540 810 1,080 Feet

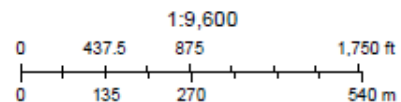


**SUBJECT PROPERTIES**

Dakota County, MN



September 13, 2017



Property information

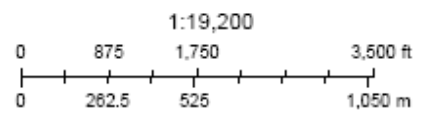
Disclaimer: Map and parcel data are believed to be accurate, but accuracy is not guaranteed. This is not a legal document and should not be substituted for a title search, appraisal, survey, or for zoning verification.

**SUBJECT PROPERTIES**

Dakota County, MN



September 17, 2017



Property information

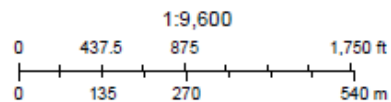


**SUBJECT PROPERTIES**

**Dakota County, MN**



September 13, 2017



Property Information

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## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property H: This property is located in Dakota County and in the city of Burnsville. The property is owned by Northern States Power (NSP) and is improved with the Black Dog electrical plant. The property is situated along the south side of the Minnesota River, and extends the full distance between I-35W and State Highway 77, roughly 3.40 miles of river front. Property H is comprised of three adjoining tax parcels that total 1,393.68 acres according to Dakota County.

The Dakota County assessor estimates the market value of Property H as follows.

Land:	\$ 9,945,200
Buildings:	<u>\$68,773,904</u>
Total:	\$78,719,104 (three tax parcels combined)

The Black Dog electrical plant was originally fired by coal. Coal from the east was received by river barge. As such, Property H had an active river dock for receiving coal. Mr. Lee Nelson of Upper River Services also reports that barges were routinely fleeted along the shoreline of Property H.

During the 1980's, the owner (NSP) switched to coal from the western United States, which was reportedly a cleaner burning coal than the coal from the east. The western coal was shipped to the plant by rail and, thereafter, very little coal was brought in by river barge. The table on page 42 shows that during the 25-year period from 1991 through 2015, a total of 41,000 tons of coal were moved inbound on the Minnesota River. This represents an average of 1,640 tons per year, which essentially equates one barge. The last coal barge shipments were received in 2011, with 6,000 tons being received that year. It is likely that during this timeframe, small amounts of eastern coal continued to be barged to the Black Dog plant on an as-needed basis.

Most recently, NSP converted the Black Dog electrical plant to natural gas. An article in the April 13, 2015 edition of the Minneapolis Star Tribune reported that the last coal

## **SUBJECT PROPERTIES**

### Properties Without Active Barge Docks

Property H (cont.): train was received at the plant on Wednesday (April 8, 2015). It is understood that the barge dock has been inactive since the last coal shipments of 2011.

An investigation was made to determine whether or not the former coal dock on Property H could be reactivated for another commodity. To begin, the City of Burnsville zones the property CD (Conservancy). The City guides the property as OS (Open Space) under its 2030 Future Land Use Plan. These zoning and land use designations are not congruent with the current electrical generating plant use. However, much of the 1,393.68 acres is natural woodlands. Sizeable bodies of water (Black Dog Lake and Nicols Lake) are also included within the property's boundaries.

The internal roadway that leads to the Black Dog plant is tightly controlled and secured. Thus, access to the river dock would be difficult for another user. Furthermore, a paved bike/walking path has been developed in close proximity to the river. Thus, operating the dock in a safe manner would also be difficult.

This property was discussed with Ms. Jenni Faulkner, the Burnsville Community Development Director, and Ms. Deb Garross, a City Planner. During the conversation it was reported that part of the overall plan for the NSP property is to remove the former coal dock. Furthermore, very recent aerial photos available to the Planning Department indicate that the dock has been razed and removed from the shoreline. In other words, as of the writing of this report, the barge dock on Property H no longer exists.

It was also reported that NSP was removing the moorings along the river that were previously used for fleeting barges. Mr. Lee Nelson of Upper River services reports that barges have not been fleeting along the Property H shoreline for many years, but did not comment on the actual removal of the moorings.

It is evident that the current owner does not intend to resume fleeting along its shoreline. However, another owner might wish to do so.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property H (cont.): In any event, if fleeting were to resume along Property H, then the moorings would have to be re-established. It is also possible that new permits would have to be re-applied for. Such fleeting permits fall under the jurisdictions of the USACE, the U.S. Coast Guard, among others.

To conclude, it is highly doubtful that active river barge operations will ever resume on Property H. It is also questionable whether barge fleeting will resume at some point in the future, or whether such fleeting *can* resume.

Property I: This property is located in Scott County and in the city of Savage. The property consists of a single tax parcel that is 207.48 acres (per Scott County). The property is owned by Cargill, Inc., and has approximately 1,570 lineal feet of frontage along the Minnesota River. There is a 14.0-acre exception in the middle of Property I, which is owned by Starboard Media Foundation, Inc.

It is understood that Property I has been owned by Cargill for many years. The property is vacant. The Scott County assessor estimates the market value of the land at \$1,015,000, or \$4,892.04 per acre. The City of Savage zones the property I-2 (Ports of Savage Industrial District). The City guides the property for Industrial under its 2030 Land Use Plan.

Given the size, zoning and land use guiding of this property, it appears it could be developed with an industrial operation that could potentially benefit from river barge access. However, the Scott County GIS system indicates that much of this property is encumbered with wetlands. Credit River also runs through the property, flowing into the Minnesota River. It also noted that Properties E and F, which abut Property I to the east, are protected by a levee. No such levee protects Property I.

It is evident that the Property I's topography is a limiting factor to development. Thus, it is not clear whether industrial development would be feasible on the property. In all likelihood, a significant amount of wetland would have to be mitigated.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property I (cont.): It is also possible that a levee would be needed to protect the property from flooding, if an industrial development were pursued. That would alter the floodplain which, in all likelihood, would involve a lengthy and expensive approval and permitting process.

Again, Property I has roughly 1,570 lineal feet of frontage along the Minnesota River. Thus, there may be potential to fleet barges along the shoreline. The author has viewed all of the available aerial photos on the Scott County GIS, as well as aerial photos on Bing Maps, Google Maps and MapQuest. Barges were observed being fleeted along other properties in several of the photos, but not along Property I. This in and of itself does not mean that barges cannot be fleeted along the property. On the other hand, the available aerial imagery does not substantiate that barge fleeting *is* allowed.

Property J: This property is located in Dakota County and in the city of Burnsville. The property is owned by Burnsville Sanitary Landfill, Inc. and is operated by Waste Management as a sanitary landfill.

Property J is comprised of two adjoining tax parcels. According to Dakota County, the two tax parcels have a combined area of 354.06 acres. The Dakota County assessor estimates the market value of Property J as follows.

Land:	\$5,315,900
Buildings:	<u>\$ 685,700</u>
Total:	\$6,001,600 (two tax parcels combined)

Municipal waste (garbage) is hauled to this landfill by truck. The property does not have rail service. Likewise, the property does not have a barge dock. The research of the USACE data indicates that some municipal waste is transported by river barge on the Mississippi River system. However, barge movements of this type of material are very small. For example, in 2015, USACE reports that 3,000 tons of “waste and scrap” moved coastwise, and 20,000 tons moved internally throughout the entire river system.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property J (cont.): The research also suggests that shipments of municipal waste generally emanate from areas that lack sufficient local landfill capacity. It is understood that this is not the case with the local Twin Cities market.

Property J has operated for many years without the need for river barge service. Considering all, it is doubtful that barge service will be needed to support the landfill operation at any point in the future. Ms. Faulkner, of the City of Burnsville, opines that the landfill will likely remain active for at least 10 more years.

As noted, Property J is comprised of two adjacent tax parcels. The dashed line on the aerial photo on Page 67 denotes the common boundary between the two parcels. The two parcels were previously a single tax parcel. However, that parcel was platted in April of 2007, with the resulting plat called the BSLI Addition. The larger parcel is 309.67 acres and is now known as Lot 1, Block 1, BSLI Addition. It is this larger parcel that the actual landfill operation is situated on. The smaller parcel is 44.39 acres in size, and is now known as Outlot A, BSLI Addition.

The City of Burnsville zones this property as CRD (Commercial Recreational District). The City guides Property J as MRQ (Minnesota River Quadrant) under its 2030 Future Land Use Plan.

According to the City of Burnsville's 2030 Comprehensive Plan Update, amended June 15, 2015:

*"The land filling activity is anticipated to continue through 2024 and this activity is recognized as an interim use with the 18-hole championship golf course and recreational open space as the permanent or long term planned use for the site."*



## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property J (cont.): With regard to the smaller parcel (Outlot A), the 2030 Comprehensive Plan, as amended June 15, 2015, states the following.

*“The BSLI Addition plat included a 44 acre outlot containing land adjacent to the Minnesota River that has been given to the city. Of this, 31.9 acres is intended to be within a conservation easement as approved by the US Army Corp of Engineers Permit. The PUD also provides a trail around the perimeter of the landfill. Once the landfill is closed the public will have access to the future parks and trail system and right-of-way for future road connections.”*

The above text indicates that the smaller outlot parcel had already been transferred to the City of Burnsville at the time the Comprehensive Plan was being amended (June of 2015). However, Dakota County reports that the parcel is still owned by Burnsville Sanitary Landfill, Inc. Ms. Faulkner also reports that the City does not own the parcel.

In any event, the zoning, guided land use, and the text of the City’s Comprehensive Plan, all indicate that Property J is slated for a recreational type use, once the landfill operations cease. Thus, the potential for an industrial type use that involves river barge operations is considered to be highly unlikely.

It may be possible that some type of recreational boating use could be developed along the riverfront of Outlot A. This could range from a simple boat launch with a parking lot, to something more complex, such as a marina. The latter would likely require some type of protected cove to be developed, to shelter moored boats from the river currents and the continued barge traffic moving to and from the Savage facilities (Properties A – F). Ms. Faulkner and Ms. Garross report that they have seen no plans for a marina along any of the Burnsville properties.

Considering all, there may be some potential for a recreational type of river use along Property J. However, such a use at this time is speculative and, in any case, would be unlikely to come to fruition for several more years.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property J (cont.): Finally, a review of the available aerial photos clearly indicates that Property J has fleeting rights along its shoreline. Barges are shown parked along the bank of Property J, including the 2016 aerial found on Dakota County's GIS system.

As Property J is currently platted, this benefit accrues to the 44.39-acre parcel known as Outlot A of the BSLI Addition (PID No.: 02-15275-00-010) and has a current assessed value of \$186,500 (land only). Based on the measuring device found on the Dakota County GIS system, this parcel has approximately 2,900 lineal feet for river frontage.

Property K: This property is owned by Kraemer Mining & Materials, Inc. The property involves the Kraemer ownership situated north of Cliff Road, south of the Minnesota River and to the west of I-35W. In all there are 21 adjoining tax parcels which total 559.30 acres, along with approximately 3.50 acres of a 22<sup>nd</sup> tax parcel, bringing the total land area to roughly 563 acres.

Property K is operated as a rock quarry. According to Kraemer's website, the quarry produces "high quality dolomitic limestone used in concrete, asphalt, road-base and landscape applications." The website also reports that the "quarry was opened by the company in 1959."

The property is zoned by the City of Burnsville as I2 (General Industry). The eastern part of the property is zoned I2-GW which denotes that the property is within the City's Gateway District. The Gateway District is an overlay to the underlying I2 zoning. Regarding the GW overlay, the City's 2030 Comprehensive Plan states the following.

*"The classification applies to lands located north of Highway 13 and along both sides of Interstate 35W which is the northern gateway entrance to the city. The purpose of the GW is to reflect there is a steadfast and ongoing commitment to the transformation from intense land altering industrial activity to future land uses and activities that thrive in sustainable relationships with restored natural resources systems."*

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property K (cont.): The present use as a limestone quarry begs the question: could that use benefit from river barge access to the Minnesota River? As previously discussed, such quarried material represent a major cargo on the river system. In fact, a short distance up the river, Property D (Superior Minerals) receives limestone from inbound river barges. Again, Superior Minerals receives a calcium rich limestone that is quarried in the Davenport, Iowa area.

One point to consider is that the Kraemer quarry has operated for nearly 60 years without the need for river barge. Furthermore, limestone from the Kraemer quarry would be shipped outbound rather than inbound. The question becomes: are there distant markets for the limestone from Property K which would best be reached by river barge? The property's history tends to suggest no, but that might be a function of the current owner's specific business operation.

The question may be a mute one. The City's 2030 Comprehensive Plan states at one point that the quarry "*...is anticipated to remain open through 2018.*" Elsewhere in the Comprehensive Plan it states, "*...it is anticipated that the limestone resource will be exhausted within the 2030 planning period.*"

The author did not attempt to raise this issue with Kraemer Mining & Materials, Inc. It is assumed the City staff and its outside consultants were properly informed when drafting the 2030 Comprehensive Plan (as amended on June 15, 2015). As such, the document suggests Property K is now in the late stage of its state life as a mine. Thus, it seems unlikely that at this late stage, any owner/operator would seek to start outbound barging operations at the property.

Another alternative would be to commence inbound barging operations. Once the property's internal limestone supply is exhausted, the larger operation of transporting limestone to local markets could be extended by bringing such limestone in by barge. Or, for that matter, it might be feasible to bring in other material, including other types of rock and stone.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property K (cont.): Bringing in regular sand and gravel seems unlikely to be feasible, give the significant aggregate mining that is present in nearby Rosemont and Empire Township, both in Dakota County. Nevertheless, Property K would have good access to sand and gravel from mines on Grey Cloud Island, which is located along the Mississippi River north of Hastings. Barges loaded at Grey Cloud Island could be sent to the Minnesota River without having to negotiate a single lock and dam.

The City guides Property J as MRQ (Minnesota River Quadrant) under its 2030 Future Land Use Plan. The plan states that some of the objectives of the MRQ are as follows.

*“create a new 340-acre freshwater lake (following closure of the Kraemer Quarry estimated by 2018).”*

And:

*“Redevelop areas adjacent to I-35W with hotels, offices, residential units, and class A office in signature iconic buildings with recreational opportunities focusing on the riverfront, trails and lake.”*

Ms. Faulkner states that river barge operations on Property K, or Properties J and L for that matter, are not consistent with the City’s planning vision. On the other hand, Ms. Faulkner did indicate that the owner could potentially exercise its rights under the I2 zoning and pursue such a use. Thus, there likely remains some potential for a river barge use in the future. Nevertheless, such a use would run counter to the City’s planning objectives and would likely face extra scrutiny and resistance.

To conclude, a future river barge operation at Property K may be possible. However, given the property’s long history without barge operations, coupled with the City’s planned use of the property, the potential for such future barge operation seems unlikely.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property K (cont.): As with Property J, it may be possible that some type of recreational boating use could be developed along the riverfront of Property K. Again, this could range from a simple boat launch with a parking lot, to something more complex, such as a marina.

An examination of the available aerial photos indicates that fleeting has occurred along Property K's riverfront in the past. The most recent aerial in which moored barges are visible is from 2002. Mr. Lee Nelson, of Upper River Services, reports that barge fleeting does not occur along Property K at present, but has in the past.

Thus, it is plausible that fleeting could resume at some point in the future, if sought by the owner and a river barge operator. Such fleeting rights most directly accrue to the three tax parcels that have frontage along the river. These parcels are identified as Parcel ID Numbers 02-02910-86-010; 02-02910-76-010 and 02-02800-51-011. Together, these three tax parcels have 83.41 acres of land area, about 3,900 lineal feet of river frontage, and a combined current assessed value of \$236,200 (land only).

Property L: This property consists of eight adjoining tax parcels, which are owned by three different entities. The parcels are listed as follows.

<u>Parcel Identification Number</u>	<u>Owner</u>	<u>Size</u>	<u>River Frontage</u>
02 - 156000 - 02 - 020	Quarry Property, LLC	39.49 Acres	Yes - 820± LF
02 - 156000 - 00 - 030	Freeway Transfer, Inc.	10.63 Acres	Yes - 225± LF
02 - 156000 - 00 - 020	R B McGowan Co., Inc.	11.53 Acres	No
02 - 156000 - 00 - 010	R B McGowan Co., Inc.	4.67 Acres	No
02 - 156000 - 02 - 010	R B McGowan Co., Inc.	93.69 Acres	No
02 - 156000 - 00 - 060	Freeway Transfer, Inc.	9.10 Acres	No
02 - 156000 - 01 - 010	Freeway Transfer, Inc.	12.02 Acres	No
02 - 156000 - 00 - 040	Freeway Transfer, Inc.	6.76 Acres	Yes - 220± LF - At I-35W Bridge
		<u>187.89 Acres</u>	



## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property L (cont.): It is understood that the three ownership entities are closely related. Ms. Faulkner reports that Mr. Mike McGown is the City's point of contact for all three ownerships. As such, the eight tax parcels are analyzed as one larger property.

The property is often referred to as the former Freeway Landfill. The City's 2030 Comprehensive Plan Update states that the property is on the Minnesota Pollution Control Agency's (MPCA) list of superfund sites. The plan, as amended in June of 2015, states *"In recent years both the MPCA and city have worked with the landowner to complete closure of the superfund site."* Ms. Faulkner opines that closure of the superfund status is likely one to two years away.

At one point, an amphitheater was planned for Property L. In fact, the eight tax parcels comprise a subdivision plat known as Burnsville Amphitheater. The plat was recorded at the Dakota County Recorder's Office on November 7, 1990. It is understood that the plan to develop an amphitheater was supported by the City, but did not come to fruition because of the property's environmental problems.

The combined property has two segments of riverfront. The first is approximately 1,045 lineal feet along the west end of the property. This area is suitable for river barge fleeting, and could have potential for a river barge or recreational river use.

The second segment is about 220 lineal feet, and is located at the east end of the property. This segment abuts the I-35W right-of-way, putting it in immediate proximity to the I-35W bridge. It cannot be determined what type of river access would be allowed in such close proximity to the bridge without submitting some type of plan to the appropriate governing bodies for review. In the case of river barges, those governing bodies include the USACE and the U.S. Coast Guard.

It is also doubtful that a recreational marina would be situated in such close proximity to a major bridge. It is noted that the boat launch and parking lot abuts the east side of the I-35W right-of-way on the north side of the river. However, this boat launch is located

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property L (cont.): on the downstream side of the bridge, whereas Property L is located upstream from the bridge. Boats being launched and retrieved downstream are far less likely to conflict with the bridge.

Given the above, any river use on Property L would, in all likelihood, be situated on the western riverfront segment. Again, this segment is approximately 1,045 LF in length.

Property L is zoned I2-GW (General Industry – Gateway). The City guides Property L, under its 2030 Future Land Use Plan, as MRQ (Minnesota River Quadrant) with a Gateway Overlay.

The City's vision for the property under the MRQ land use guiding is for commercial and recreational uses. As with Property K, the owner of Property L could potentially exercise its rights under the I2 zoning and pursue an industrial use. Thus, there likely remains some potential for a river barge use in the future. However, here again, such a use would run counter to the City's planning objectives and would likely face extra scrutiny and resistance.

As with Properties J and K, it may be possible that some type of recreational boating use could be developed along the riverfront of Property L. Again, this could range from a simple boat launch with a parking lot, to something more complex, such as a marina.

Property L's environmental condition could complicate one's ability to locate a river use along the riverfront, whether it be an industrial river use or a recreational river use. According to the City's 2030 Comprehensive Plan Update:

*"In 2006 a concept was identified by the Minnesota Pollution Control Agency which would relocate the landfill from the site adjacent to I-35W to the west part of the McGowan Property (Amphitheater 1<sup>st</sup> Addition). The idea is to consolidate the garbage into a lined landfill on the western portion of the site and fills (sic) the area adjacent to I-35W with appropriate soils to open the area for development."*

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

Property L (cont.): It is the western part of Property L that has the suitable river frontage for river use (industrial or recreational). Thus, the MPCA's concept plan to mediate the property's environmental problems would likely conflict with a plan to develop a river use along the western part of the property.

According to Mr. Lee Nelson, of Upper River Services, barge fleeting does not occur at the present time along Property L, but has occurred in the past. Thus, it is plausible that fleeting could resume at some point in the future, if sought by the owner and a river barge operator.

Such fleeting rights most directly accrue to the two tax parcels with river frontage at the west end of the property. Dakota County identifies these two tax parcels as PID Nos. 02-156000-02-020 and 02-156000-00-030. Together, these two tax parcels have 50.12 acres of land area, about 1,045 lineal feet of river frontage, and a combined current assessed value of \$210,500 (land only).

### Bloomington Property

The City of Bloomington owns numerous parcels along the north side of the Minnesota River. It is understood that those parcels to the west of I-35W are best suited for fleeting rights. Mr. Nelson also reports that no fleeting has occurred east of I-35W for many years.

Bloomington's ownership includes 24 tax parcels that have river frontage and are located to the west of I-35W. Of these, 21 parcels are located from I-35W to a point about 14.7 miles upriver. I-35W is situated at about river mile 11.0. Thus, the river frontage associated with the 21 tax parcels is about 3.70 miles, or about 19,536 lineal feet.

The Bloomington parcels are natural lands. Public road access to the parcels is very limited. Therefore, these parcels are not well suited for either an industrial or recreational river development.

## SUBJECT PROPERTIES

### Properties Without Active Barge Docks

The City of Bloomington (lessor) and Upper River Services, LLC (tenant) entered into a lease agreement on December 19, 2016. The lease pertains to 4,200 lineal feet of riverfront, which the tenant will use to fleet barges.

The lease establishes an annual lease rate of "... 2/3 of the fee being charged by the St. Paul Port Authority, but shall never be less than the current annual rental of \$37,800.00." Thus, the minimum annual lease rate equates to \$9.00 per lineal foot of leased shoreline. The term of the lease is 10 years.

The 4,200 LF of river frontage includes a 2,000 LF segment known as the Credit River Fleet, and a 2,200 LF segment known as the Port Cargill Load Fleet. The Credit River Fleet is located directly across the river from Property I. The Port Cargill Load Fleet is located directly across the river from Property E.

The two segments are roughly identified in Exhibit A of the lease. Based on this exhibit, and an examination of the aerial photos on the Hennepin County GIS system, it appears the lease involves river frontage along the following six tax parcels.

<u>Hennepin County PID</u>	<u>Acres</u>	<u>Segment</u>
31-027-24-21-0001	11.18	Credit River Fleet
31-027-24-12-0003	8.62	Credit River Fleet
31-027-24-12-0002	5.99	Credit River Fleet
31-027-24-11-0001	14.72	Port Cargill Load Fleet
30-027-24-44-0001	13.96	Port Cargill Load Fleet
29-027-24-33-0001	20.71	Port Cargill Load Fleet (minor portion)
Total Land Area:	<u>75.18</u>	

The parcels are all exempt from property taxes. As such, there are no assessed values.

It is not known whether any other segments of the Bloomington ownership could be leased for barge fleetings. It is understood that not all segments of the river are suitable for fleetings, depending on factors such as river currents, obstructions and bends in the river. Segments to be used for barge fleetings must be approved by the USACE and the U.S. Coast Guard.

## VALUE CONTRIBUTION ANALYSIS

### Introduction

Given the forgoing discussion, it is evident the nine-foot, navigable river channel provides a substantial benefit to Properties A through G. These seven properties have active river barge operations. Without river navigation, the utility of Properties A through G would be substantially impacted.

Property H is owned by Northern States Power (NSP) and is located along the south side of the Minnesota River and to the east of I-35W. As discussed, NSP has removed its former coal barge dock. It is also understood that NSP is removing the moorings that were once used to fleet barges. According to City planning officials, the plan is now to have NSP's riverfront revert to its natural state. A walking/bike path now runs in close proximity to the river line.

It may be possible that a river use will be developed along Property H at some point in the future. However, such an outcome appears highly unlikely at the present time. Likewise, the potential for future barge fleetings also appears unlikely. Therefore, any attempt to isolate a benefit in market value to this property, as a result of the navigable river channel, would be speculative and difficult at best. Thus, no further analysis is made with regard to Property H.

Property I is a large tract of industrially zoned land, located in Savage. However, the Scott County GIS system indicates that much of this property is encumbered with wetland. Thus, developing an industrial river use on the property would likely prove challenging. Cargill has owned the property for many years and, to the best of author's knowledge, has made no serious attempt to develop the property.

Likewise, the available aerial photos provide no evidence of past barge fleetings along Property I. Barge fleetings does occur across the river on Bloomington-owned parcels. Given the bend in the river at this point, barge fleetings along Property I may not be permissible, though this is not known for certain. This matter would have to be explored by all relevant governing bodies including the USACE and the U.S. Coast Guard. Considering all, no further analysis is made with regard to Property I.



## VALUE CONTRIBUTION ANALYSIS

### Introduction

Properties J through L are all located in Burnsville. None of these properties have an active river barge. It is also understood that these properties have no history of river barge operations. As discussed, Property J is zoned CRD (Commercial Recreational District). Thus, a rezoning would be needed to develop an industrial river barge facility on that property. Given the City's land use planning for this area, such a rezoning is considered highly unlikely.

Properties K and L are zoned I2 (General Industry). Thus, there is some potential to develop these properties with industrial river barge facilities. However, such a use would run counter to the City's long-range land use planning for the area.

Property K has operated as a limestone quarry for many years. The author is unaware of any effort on the part of the owner (Kraemer) to establish a river barge use in conjunction with the mining operation. The City's 2030 Comprehensive Plan Update indicates that Property K is in the late stage of its life as a quarry. Thus, developing a river barge use to support the quarry operation is considered unlikely.

Property L has significant environmental concerns, and is listed as a superfund site with the MPCA. Part of the MPCA's plan to remediate the property includes relocating the property's landfill (the Freeway Landfill) to the westernmost part of the property. Unfortunately, it is this part of the property that is otherwise best suited for a river use.

Considering all, while some potential does exist to develop an industrial river barge use on Properties K and L, it is considered unlikely. Thus, attributing a value benefit to these properties for potential industrial river barge development is considered speculative.

Properties J, K and L have some potential for development of a recreational river use, including a marina. Such a use would be in keeping with the City of Burnsville's land use planning. As discussed, the development of a marina on any of these three properties would likely entail the construction of an inland bay in order to protect docked boats from the river currents, as well as barge traffic moving to and from Savage.

## VALUE CONTRIBUTION ANALYSIS

### Introduction

It is not known whether constructing such an inlet would be financially feasible or not. Ms. Faulkner, of the City of Burnsville, reports that she is unaware of any plans to develop a marina, though this does not necessarily mean that no such plans exist.

To conclude the point, Properties J, K and L have some potential for a recreational river development. Given the current status of these properties, such a development would be unlikely to occur for at least three to five years, if at all. The research indicates that isolating any potential value benefit for this potential is difficult at best. Full appraisals of these properties would have to be performed to determine to what extent the properties benefit, if at all.

Therefore, the analysis pertaining to Properties J, K and L is confined to the benefit associated with each property's potential barge fleeting rights<sup>\*\*</sup>. As discussed, each of these properties has a history of barge fleeting.

The Bloomington property is publicly owned and is therefore exempt from property tax. As noted, no assessed values are available for these tax parcels. However, the right to fleet river barges along these parcels clearly enhances the value of the parcels. Furthermore, the right to fleet river barges is a function of the nine-foot, navigable river channel. Without the navigable river channel, barges would be unable to traverse this stretch of the river.

Given the above, the analysis focuses on the value benefit to those properties with active river barge operations (Properties A through G). The value benefit derived from barge fleeting rights is estimated for Properties J, K, L and the Bloomington-owned parcels.

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<sup>\*\*</sup> If, at some point in the future, a recreational river use is developed on one of these three properties, then at that point the property in question would clearly benefit from the navigable river channel, and the analysis should be revisited at that time.

## VALUE CONTRIBUTION ANALYSIS

### Properties A - G

The navigable river channel is what enables Properties A – G to access the larger river transportation system, thereby permitting these properties to ship and/or receive their respective cargoes by river barge. Very high quantities of cargo can be transported by barge in a single movement. The river system competes with other forms of transportation. However, in some cases it provides the most economical means of transporting goods between two points (i.e. two markets).

Again, very large quantities of cargo can be moved by river barge. With a nine-foot draft, a single barge can transport about 1,650 tons of freight. Most often, multiple barges are then lashed together to form a tow. Tows of 10 to 15 barges are common on the Upper Mississippi River system, which translates to 16,500 to 24,750 tons of freight moving in a single pass. To put this in perspective, it would take 660 semi-trucks or 165 rail cars (with hopper bottoms) to move the same amount of grain as a 12-barge tow.

Recent Capital Investment Activity: The research reveals a number of private-sector capital investments have been made in recent years for river barge facilities. These include a number of river grain elevators. Louis Dreyfus completed river elevators at Rosedale, Mississippi and West Memphis, Arkansas in 2014 and 2016, respectively. River Gulf Grain completed a new river elevator at Bettendorf, Iowa in 2010.

In January of 2015, CHS and Northern Partners Cooperative announced they had formed a joint venture to construct a grain barge loading facility at Peru, Illinois. Additionally, CHS announced that it would build a 47,000 ton fertilizer terminal at the Peru location. The new grain/fertilizer facility has river barge access along the Illinois River, which in turn flows to the Mississippi River.

In October of 2016, Consolidated Grain & Barge announced it planned to make a \$31.0 million investment to expand its soybean processing plant at Port of Indiana – Mount Vernon. The facility is located along the Ohio River and has river barge access. The company reports it can receive and/or ship soybeans by barge and it can ship soymeal (a byproduct of the process) by barge. Approximately 60% of the facility's volume is reportedly shipped by barge.

## VALUE CONTRIBUTION ANALYSIS

### Properties A - G

Missouri River Case Study: The research also uncovered an interesting study pertaining to the Missouri River. The Missouri River has a history of undependable river barge service, largely due to low water conditions. As a result, cargo volumes by barge are typically quite low. Some shippers deal with this problem by *light loading* the barges, thereby allowing the barges to operate with a shallower draft. The downside is that lower volumes of cargo are transported.

A research report titled Low-Flow Water Study for the Missouri River was reviewed. This study was prepared by Transystems and the Missouri Department of Transportation, and is dated August 2008. The following quotes are taken from this study.

*Cost is the biggest competitive advantage for barge over rail and truck modes. Bulk cargoes (grain and fertilizers) are seasonal and are moved during the Missouri River's open months. Barge operators and shippers adapt to low-flow conditions by light loading barges and still remaining (sic) competitive on a cost per ton basis with other modes. (Page 12)*

*Bulk cargoes will continue to be transported on the river because of the cost advantages and because of the prevalence of destination ports along the Mississippi River for these cargo types. (Page 12)*

*Shippers suggest that barges are more economical than rail providing that they can be loaded to at least 7.5-foot draft level. (Page 12)*

*Barge is normally considered to be more reliable than rail if the river itself is dependable. Given that respondents indicate that the cost per ton of rail is roughly 15 percent to 30 percent higher than barge cost per ton from points on the Missouri River to the Gulf, shippers would return to barge service if they are convinced that the Missouri River can provide reliable service. (Page 15)*

The above serves to underscore the fact that barge shipping is more economical than other modes of transportation, provided a sufficiently deep channel is maintained and the river service is dependable. The study indicates that a draft depth of at least 7.50 feet results in barge transport being more competitive than other modes of transportation for certain bulk commodities.

## VALUE CONTRIBUTION ANALYSIS

### Properties A - G

Subject Grain Elevators: The Minnesota River provides the subject grain elevators (Properties A, B, C and F) with access to export markets through the Gulf of Mexico. If not for the river, this grain would not move to the Gulf. The distance is too far to economically move grain by truck.

Theoretically grain could move to the Gulf by rail. The Union Pacific's system reaches New Orleans. However, pricing between Savage and New Orleans is not readily available. A customer service representative informed the author that a train moving grain from Savage to New Orleans would be 10 days in transit, and was unable to quote a price if one were to pursue such an option.

The research suggests that it might be possible to move grain to the Gulf by rail, but it would most likely be uncompetitive to do so. This is consistent with the author's long understanding of the local grain market. A previous discussion with a staff member at the Minnesota Grain & Feed Association indicates that Minnesota's rail position to the Gulf is uncompetitive for grain, but would be more competitive with better direct access to the Canadian National. In any event, it is understood that moving grain from Savage to the Gulf by rail is not competitive with the river.

The question becomes, how would the subject grain elevators operate if they did not have access to the Minnesota River? To answer this question, the grain industry in Minneapolis provides a good analogy. The author has significant experience appraising grain elevators in Minneapolis. A narrative of the Minneapolis grain industry is included in Exhibit 1 of the Addenda of this report.

As discussed in the narrative in Exhibit 1, commercial elevators in Minneapolis are not in position to attract significant quantities of corn and soybeans, the state's two largest crops. The same would be true of the subject elevators, if not for their ability to access the export market at the Gulf via the river system.

## VALUE CONTRIBUTION ANALYSIS

### Properties A - G

Some potential exists to handle small grains, particularly spring wheat, barley and oats. However, the subject elevators would be competing directly with the remaining elevators in Minneapolis for those grains, as well as a commercial elevator in Shakopee. They would also compete for barley with Rahr Malting's on-site grain storage in Shakopee, and for oats with General Mills on-site capacity in Fridley.

Narrative descriptions of five grain elevator sales are included in Exhibit 2 of the Addenda to this report. Sales 1 and 2 involve grain elevators in Minneapolis. Sale 3 is of a grain elevator in Shakopee, which is located along the Minnesota River, but does not have river barge access. Sale 4 is the sale of an elevator in Wahpeton, North Dakota. This sale is included as it involves an elevator without river access and faces stiff competition for grain, making it generally analogous to the Minneapolis market. Finally, Sale 5 involves a previous sale of Property C of this study.

An adjustment grid is included on the following page. Sales 1 through 4 are adjusted to Sale 5 in order to isolate the difference associated with river barge access. The market conditions adjustment is based on a 2.0% annual growth rate per year. Adjustments for age/condition are based on the author's observations of each elevator. Minor adjustments are also made for differences in rail capacity. None of the elevators involved in the sales meet the rail carrier's definition of a shuttle loading facility. A modest downward adjustment is also applied to Sale 4 to reflect the fact that this elevator has a grain cleaning line.

After adjustments, Sales 1 through 4 range in unit price from \$0.58 to \$0.93 per bushel, and average \$0.78 per bushel. This compares to a unit price of \$1.24 per bushel for Sale 5. Thus, the sales suggest that river barge access benefits value by 33.3% to 113.8%. The adjusted average of Sales 1 through 4 suggests a value benefit of about 59%.



**VALUE CONTRIBUTION ANALYSIS**Properties A - G

<b>IMPROVED SALES - ADJUSTMENT GRID</b>					
Comp No.	1	2	3	4	5
Identity / Location	Malt One 2901 5th Street NE Minneapolis, MN	Elevator M 3333 - 41st Street E. Minneapolis, MN	Shakopee Terminal 3251 E. Hwy 101 Shakopee, MN	Former Froedert Malt 7455 - 181R Ave. SE Wahpeton, ND	<b>Property C</b> <b>12100 Yosemite Ave S</b> <b>Savage, MN</b>
Date of Sale:	January-07	November-08	January-07	August-13	<b>January-08</b>
Sale Price:	\$1,750,000	\$440,000	\$750,000	\$1,387,500	<b>\$11,500,000</b>
Storage Capacity:	2,280,246	1,300,000	1,120,000	1,283,000	<b>9,276,000</b>
Price per Bushel of Storage:	\$0.77	\$0.34	\$0.67	\$1.08	<b>\$1.24</b>
<b>ADJUSTMENTS</b>					
Property Rights:	1.00	1.00	1.00	1.00	<b>1.00</b>
Conditions of Sale:	1.00	1.00	1.00	1.00	<b>1.00</b>
Market Conditions:	1.02	0.98	1.02	0.91	<b>1.00</b>
Sub-Total:	\$0.78	\$0.33	\$0.68	\$0.98	<b>\$1.24</b>
Age/Condition:	10%	50%	0%	-10%	<b>0%</b>
Rail:	5%	25%	5%	10%	<b>0%</b>
Other:	0%	0%	0%	-5%	<b>0%</b>
Net Physical Adjustments:	15%	75%	5%	-5%	<b>0%</b>
Adjusted Price per Bushel:	\$0.90	\$0.58	\$0.72	\$0.93	<b>\$1.24</b>
Average Adjusted Price:	<b>\$0.78</b> <b>(Sales 1 - 4)</b>				
	<b>Note: Sales 1 - 4 are adjusted to Sale 5.</b>				

Sales 1 and 3 provide the best representations of what the subject elevators would be without river barge access. These two sales have adjusted unit prices of \$0.90 and \$0.72 per bushel, respectively, and a midpoint of \$0.81 per bushel. Using the midpoint of these two sales, a value benefit of 53.1% is indicated for river access ( $1 - (\$1.24 \div \$0.81)$ ). Conversely, these data suggest that about 34.7% of the value associated with the subject elevators is attributable to their river access  $(\$1.24 - \$0.81) \div \$1.24$ .

## VALUE CONTRIBUTION ANALYSIS

### Properties A - G

Of the four sales, Sale 3 is considered the most pertinent. This sale has an unadjusted price of \$0.67 per bushel, and an adjusted price of \$0.72 per bushel. Thus, this sale alone, when compared to Sale 5, suggests a value benefit of 72.2% ( $1 - (\$1.24 \div \$0.72)$ ). Conversely, these data suggest that about 41.9% of the value associated with the subject elevators is attributable to their river access ( $(\$1.24 - \$0.72) \div \$1.24$ ).

Considering all, the sales data indicate a value benefit of about 67.0% for river barge access. Conversely, this can be stated that about 40.0% of the subject elevators' values are attributable to river barge access ( $1 - (1 \div 1.67)$ ).

The above estimate of value benefit is likely conservative. If the subject elevators did not have river barge access, then they would add over 27.1 million bushels of storage capacity to the local non-river market. This would effectively double the Twin Cities' non-river elevator capacity. The result would be excess capacity, and further elevator closings would likely ensue. Nevertheless, for purposes of this study, an estimated value benefit of 67% is considered reasonable.

Other Properties with Barge Access: Properties D, E and G use river transport to receive other commodities. Property F uses the river to receive salt, in addition to its use of the river to ship grain. A search was made to find sales of other terminal facilities that would isolate the benefit of river access for these properties. The available sales do not isolate the benefit in a manner as straightforward as the grain elevator sales.

As previously noted, the warehouse manager of Mosaic Crop Nutrition (Property E) reports there is typically a significant freight cost savings when receiving fertilizer by river barge as opposed to rail. This savings reportedly ranges from \$0.00 at times to as high as \$60.00 per ton. Again, USACE reports that inbound fertilizer shipments from 2013 through 2015 averaged about 160,000 tons.

## VALUE CONTRIBUTION ANALYSIS

### Properties A - G

If one assumes an average savings on the mid to low end of the range, say \$20.00 per ton, and applies that to the recent yearly average, then an annual freight savings of \$3.20 million is attributable to the Minnesota River (\$20.00 x 160,000 tons). If the annual freight savings is capitalized at 15.0%, a value enhancement of \$21.33 million is indicated. This is considerably higher than the property's assessed value of \$4.0 million. Part of the value enhancement is attributable to Property E's machinery and equipment and other assets. Nevertheless, it is clear that river barge access substantially benefits the value of the property, including the real property, associated with Property E.

With regard to Property D, discussions with the president of Superior Minerals indicates that it is not economically viable to transport high calcium limestone to the property by another mode of transportation. Meanwhile, Property G does not have rail access. The research indicates that trucking salt to that property would not be economically feasible.

Considering all, the 67% value benefit estimated for the subject grain elevators is considered a reasonable estimate for the other subject properties with active barge operations as well.

Again, the subject properties have not been appraised. Rather, the current assessed values are used to calculate the potential benefit of river channel. The table below summarizes the total assessed value for each of Properties A through G. The total assessed values are then multiplied by 40.0% as a means of estimating benefit.

	Owner	Total Assessed Value	Benefit Percentage	Indicated Benefit
Property A:	Cargill, Inc.	\$ 7,975,000	x 40.0%	= \$ 3,190,000
Property B:	CHS Inc.	\$ 3,765,000	x 40.0%	= \$ 1,506,000
Property C:	Riverland Ag Corp.	\$ 11,940,000	x 40.0%	= \$ 4,776,000
Property D:	Superior Minerals & Acell, LLC	\$ 3,835,000	x 40.0%	= \$ 1,534,000
Property E:	GNS III (US), LLC	\$ 4,000,000	x 40.0%	= \$ 1,600,000
Property F:	Cargill, Inc.	\$ 15,069,600	x 40.0%	= \$ 6,027,840
Property G:	Port Marilyn, LLC	\$ 542,500	x 40.0%	= \$ 217,000

## VALUE CONTRIBUTION ANALYSIS

### Properties with Fleeting Benefits Only

As discussed, the remaining analysis of this study applies to those properties with known fleeting rights. Those properties include Properties J, K and L. The benefit analysis for each of these three properties is included on the following page.

The rental rate of the recently negotiated lease between the City of Bloomington and Upper River services provides the basis for the analysis. That rental rate was \$9.00 per lineal foot of river frontage. The full \$9.00 per lineal foot is applied to the river frontage of Property J. An examination of the available aerial photos shows barges being moored along the entire river frontage of Property J. The photos also show two and three rows deep of barges being moored.

It is not known for certain whether or not the entire river frontages of Properties K and L are available for fleeting. Historic aerial photos show barges moored along part of Property K's frontage. Mr. Nelson advises that some fleeting occurred along the frontage of Property L, but did not specify how much. Therefore, a rental rate of \$6.00 per lineal foot is applied to these two properties to recognize that some of their respective river frontages may not be available for barge fleeting.

The annual rent is then capitalized into a benefit value using an 8.0% overall capitalization rate. The indicated benefit is then divided by the assessed value of the properties in order to express the benefit as a percentage of value (assessed value).

In each case, two calculations are made. First, the estimated benefit is divided by the combined assessed values of only those tax parcels that physically front the river. In the case of Properties J and K, the estimated benefit of fleeting actually exceeds the assessed value of the river tax parcels only. This suggests that the Dakota County assessor has not considered the fleeting rights when determining the assessed values of those parcels.

This is not surprising as assessing offices use mass appraisal techniques to estimate values. Therefore, the estimated benefit is divided by the combined assessed land values of all of the tax parcels within a subject property. Under this scenario, the estimated fleeting benefits form a tight range of 5.05% to 6.14% of the total land assessments.

**VALUE CONTRIBUTION ANALYSIS**

<b><u>Benefit Analysis for Properties with Fleeting Rights Only</u></b>				
	<u>Owner</u>	<u>Total Assessed Value</u>	<u>Benefit Analysis</u>	
Property J:	Burnsville Sanitary Landfill, Inc.			
	<b>Parcel 02-15275-00-010 Only:</b>	\$ 189,600	River Front:	2,900
			Rental Rate: x	\$ 9.00
			Annual Rent:	\$ 26,100
			Capitalization Rate: ÷	8.00%
			Indicated Benefit:	\$ 326,250
			Percent of Assessed Value:	172.07%
Property J:	Burnsville Sanitary Landfill, Inc.			
	<b>Both Tax Parcels - Land Value Assessment:</b>	\$ 5,315,900	Indicated Benefit:	326,250
			Percent of Assessed Value:	6.14%
Property K:	Kraemer Mining & Minerals, Inc.			
	<b>Three Parcels with River Frontage Only:</b>	\$ 236,200	River Front:	3,900
			Rental Rate: x	\$ 6.00
			Annual Rent:	\$ 23,400
			Capitalization Rate: ÷	8.00%
			Indicated Benefit:	\$ 292,500
			Percent of Assessed Value:	123.84%
Property K:	Kraemer Mining & Minerals, Inc.			
	<b>All Tax Parcels - Land Value Assessment:</b>	\$ 5,645,200	Indicated Benefit:	292,500
			Percent of Assessed Value:	5.18%
Property L:	McGown and Related Entities			
	<b>Two Parcels with River Frontage Only:</b>	\$ 210,500	River Front:	1,045
			Rental Rate: x	\$ 6.00
			Annual Rent:	\$ 6,270
			Capitalization Rate: ÷	8.00%
			Indicated Benefit:	\$ 78,375
			Percent of Assessed Value:	37.23%
Property L:	McGown and Related Entities			
	<b>All Tax Parcels - Land Value Assessment:</b>	\$ 1,551,000	Indicated Benefit:	78,375
			Percent of Assessed Value:	5.05%

## VALUE CONTRIBUTION ANALYSIS

### Properties with Fleeting Benefits Only

In addition to Properties J, K and L, a number of the parcels owned by the City of Bloomington also enjoy fleeting rights. As discussed, Bloomington owns 21 tax parcels that are located between I-35W and the 14.7-mile (river mile) point. It is not known how much of Bloomington's ownership has fleeting rights. But it is known that at least 4,200 lineal feet (LF) of the City's ownership does have fleeting rights. Again, the tax parcels that align with this 4,200 LF are summarized as follows.

### Bloomington-Owned Properties

<u>Hennepin County PID</u>	<u>Acres</u>	<u>Segment</u>
31-027-24-21-0001	11.18	Credit River Fleet
31-027-24-12-0003	8.62	Credit River Fleet
31-027-24-12-0002	5.99	Credit River Fleet
31-027-24-11-0001	14.72	Port Cargill Load Fleet
30-027-24-44-0001	13.96	Port Cargill Load Fleet
29-027-24-33-0001	<u>20.71</u>	Port Cargill Load Fleet (minor portion)
Total Land Area:	<u>75.18</u>	

Again, the annual rent for barge fleeting along the Bloomington properties is \$37,800. This amount is divided by an 8.0% capitalization rate, resulting in a benefit value of \$472,500. The Bloomington-owned parcels are tax exempt. Therefore, assessed values are not available. However, the estimated benefit associated with fleeting rights equates to \$6,285 per acre of the nine tax parcels listed above.



## SUMMARY OF BENEFIT VALUE CONCLUSIONS

The conclusions of benefit are summarized as follows.

Property A:	\$3,190,000 – 40.0% of Assessed Value
Property B:	\$1,506,000 – 40.0% of Assessed Value
Property C:	\$4,776,000 – 40.0% of Assessed Value
Property D:	\$1,534,000 – 40.0% of Assessed Value
Property E:	\$1,600,000 – 40.0% of Assessed Value
Property F:	\$6,027,840 – 40.0% of Assessed Value
Property G:	\$ 217,000 – 40.0% of Assessed Value

Property H: None Estimated

Property I: None Estimated

Property J: \$ 326,250 – Fleeting Rights Only

Property K: \$ 292,500 – Fleeting Rights Only

Property L: \$ 78,375 – Fleeting Rights Only

Bloomington

City-Owned: \$ 472,500 – Fleeting Rights Only

The above estimates pertain to the benefit derived from the on-going maintenance of the nine-foot deep by 100-foot wide river channel. Once again, none of the subject properties were appraised as part of the study.

**ADDENDA**

**EXHIBIT 1**

Narrative of Minneapolis Grain Industry

Pages (100-110)

## MINNEAPOLIS GRAIN INDUSTRY

Minneapolis served as a major terminal grain market for many years. In fact, Minneapolis, together with St. Paul, was the nation's largest terminal grain market for many years. Minneapolis established itself as the nation's dominant terminal grain center by the early part of the 20<sup>th</sup> century, and retained that distinction throughout the first half of the century and beyond. Other major terminal centers in the U.S. included Chicago, Illinois; Duluth, Minnesota; Buffalo, New York; and Kansas City, Missouri.

The table below summarizes the number of grain elevators and grain storage capacities at the major terminal centers as of January 1, 1922. It is noted that Minneapolis includes St. Paul and Duluth includes Superior, Wisconsin.

### Terminal Grain Centers – January of 1922

<u>Terminal Center</u>	<u>No. of Elevators</u>	<u>Bushels of Storage Capacity</u>
Minneapolis, MN	65	55,195,000
Chicago, IL	63	51,020,000
Duluth, MN	28	36,325,000
Buffalo, NY	28	30,950,000
Kansas City, MO	41	27,080,000

Source: The Millers Almanack and Year Book 1922

The dominance of large, urban terminal markets continued throughout the first half of the 20<sup>th</sup> Century, and Minneapolis' position as the largest center continued to strengthen. The table below summarizes the number of grain elevators and grain storage capacities at the major terminal centers as of January 1, 1955.

### Terminal Grain Centers – January of 1955

<u>Terminal Center</u>	<u>No. of Elevators</u>	<u>Bushels of Storage Capacity</u>
Minneapolis, MN	69	115,881,500
Chicago, IL	35	46,560,000
Duluth, MN	10	61,775,000
Buffalo, NY	32	53,735,100
Kansas City, MO	39	72,702,000

Source: The Northwestern Miller Almanack 1955

## MINNEAPOLIS GRAIN INDUSTRY

Minneapolis, as well as the other markets listed on the previous tables, became a terminal market due to its proximity to crop production, transportation linkage and a high concentration of local grain processing. Such grain processing included flour milling, barley malting, oat processing and, for a time, flax processing (used in linseed oil processing for paint manufacturing).

Minneapolis was long known as the *flour milling capital of the world*, being the home of major milling companies such as Pillsbury and General Mills. Minneapolis also grew into a major linseed (flax) processing center. In fact, agribusiness giant Archer Daniels Midland (ADM) cites its “modest origins as a Minneapolis linseed oil manufacturer” as part of its company history.

The prominence and importance of major urban terminal markets began to decline significantly during the latter half of the 20<sup>th</sup> century. The reasons for this are many, and beyond the scope of this discussion. Suffice to say here, the major contributing factors include a) geographical shifts in production of certain small grains, b) changing transportation patterns, c) geographical shifts in grain processing activities, and d) the increasing importance of on-the-farm storage.

Today, there are five operating elevators in the city of Minneapolis, and two in St. Paul. These eight elevators have a combined capacity of 16,680,000 bushels, about 14.4% of the total in 1955. The two grain elevators in St. Paul are river elevators with access to the Mississippi River.

Other urban terminal markets have suffered a similar fate. One grain elevator remains in operation in the city of Chicago. That elevator has 11,283,000 bushels of upright capacity, and maritime access on the Great Lakes and river barge access to the Illinois Waterway. A second elevator in the greater Chicago market is located in nearby Burns Harbor, Indiana. That elevator has 7,768,000 bushels of storage capacity and also has maritime access to the Great Lakes and river barge access to the Illinois Waterway. These are the remnants of the Chicago grain market. It is doubtful that either would be in operation without maritime and river access.

## MINNEAPOLIS GRAIN INDUSTRY

The following table summarizes the grain elevator count and capacity in the Minneapolis terminal market at various points in time.

### Minneapolis Terminal Market (Includes St. Paul)

<u>Year</u>	<u>No. of Elevators</u>	<u>Bushels of Storage Capacity</u>
1922	65	55,195,000
1955	69	115,881,500
1985	26	78,833,000
1999	13	39,293,000
2017*	7	16,680,000

Sources: Millers Almanack and Year Book, The Northwestern Miller, Minnesota Grain and Feed Association

As the table shows, operating capacity has declined sharply and steadily since the middle of the 20<sup>th</sup> century. It is notable that no new grain elevators have been constructed in the city of Minneapolis for at least 60 years and likely 70 years. Thus, those elevators which remain tend to be older and representative of a much earlier era.

Today little remains of the grain processing industry in Minneapolis. As late as 1955, there were seven flour mills operating in Minneapolis and St. Paul, with a combined operating capacity of 68,800 hundredweights (cwts) per day. Today, two flour mills remain in operation in Minneapolis and none remain in St. Paul. These two flour mills have a combined operating capacity of 19,000 cwts per day, about 28% of the 1955 total. These are very old mills.

Other local grain processing includes a large barley malting facility in Shakopee and a large oat mill in Fridley. The Shakopee malt plant is operated by Rahr Malting and the oat plant is operated by General Mills.

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\* The 2017 total includes two river elevators in St. Paul that have a combined capacity of 3,170,000 bushels.



## MINNEAPOLIS GRAIN INDUSTRY

Minneapolis is now considered to be out of the natural market flow for most grain. For example, Minnesota's corn production is concentrated in the southern and western parts of the state. Moving corn to Minneapolis is essentially moving it in the opposite direction of its destination markets.

The map on the following page helps to illustrate this point. The map is taken from the U.S. Department of Agriculture (USDA) and provides a color coding of where corn production is concentrated in the state. The USDA also denotes the location of the state's ethanol plants with red dots. As the map shows, most of the corn grown in Minnesota would pass by at least one ethanol plant on the way to Minneapolis.

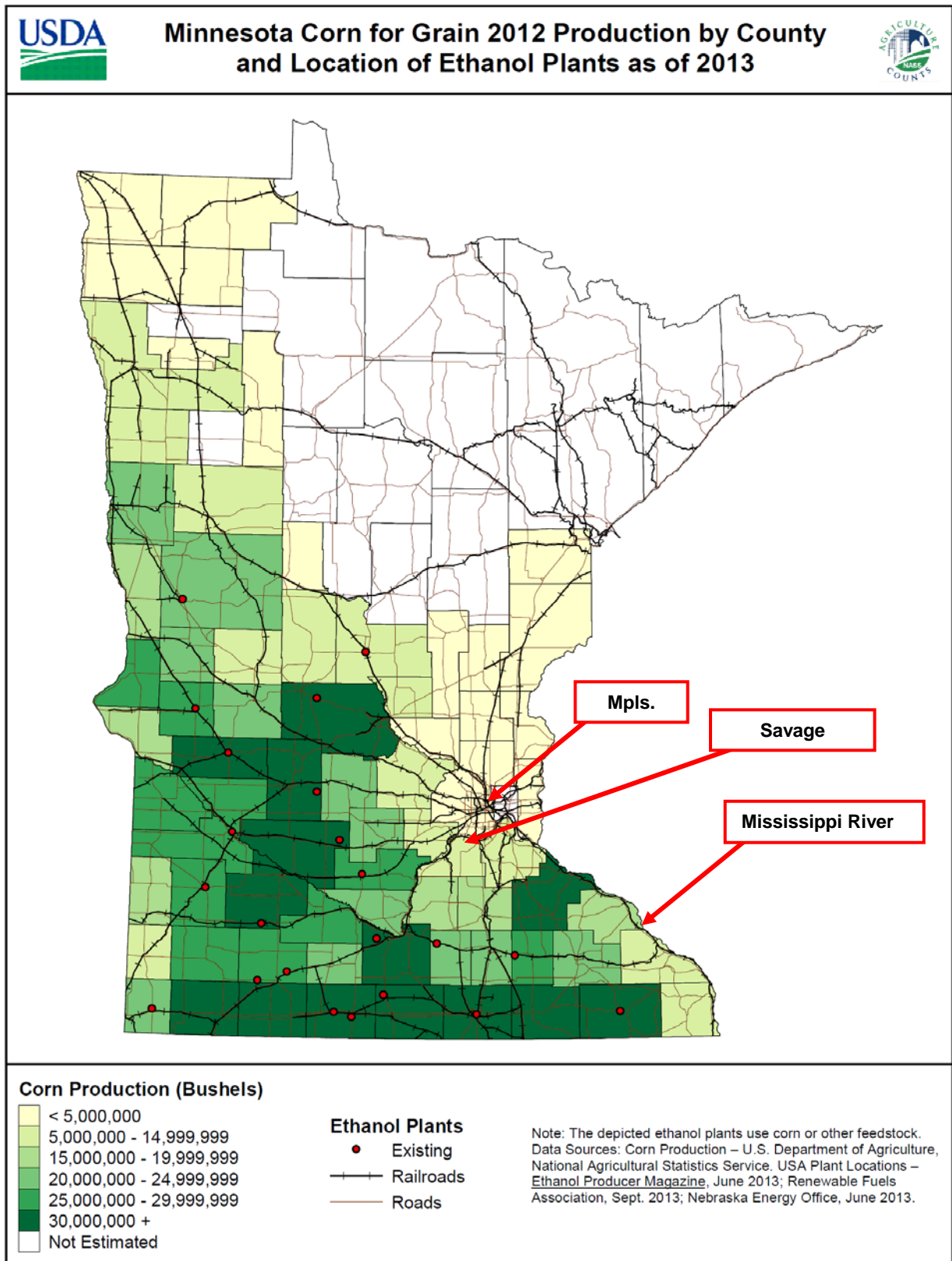
Much of the state's livestock industry is also concentrated in the southern and western parts of the state. Dairy and turkey production is also concentrated in the central part of the state. Thus, the Minneapolis are not well positioned to handle corn moving in the state's livestock feed channels.

The USDA does not depict the various shuttle loader elevators in the state. Such elevators have the ability to load the rail carrier's preferred unit train size within a specified period of time. Elevators that can meet the given rail carrier's specified criteria for train size and loading speed receive a reduced freight rate, giving them a substantial competitive advantage.

The BNSF Railway is considered the largest rail provider in the state of Minnesota, as it relates to grain transport. The BNSF specifies a 110-car unit train be loaded in 12 hours. Numerous shuttle loading facilities on the BNSF have been constructed throughout the prime corn producing regions of Minnesota in recent years. These shuttle trains move corn to the export elevators in the Pacific Northwest.

Shuttle loaders on the UP and CP (Canadian Pacific) lines are also present in the prime growing corn areas of the state. Here again, shuttle trains on these two lines generally move corn to the Pacific or, in some cases, large livestock feeding operations in the south and southwestern parts of the country.

### MINNEAPOLIS GRAIN INDUSTRY



## MINNEAPOLIS GRAIN INDUSTRY

To conclude the point, Minneapolis grain elevators are not in good position to attract corn. The same would be true for all of the elevators in the Twin Cities area, it not for the river system which provides a connection to the export market at the Gulf of Mexico. It is the author's long observation that the vast majority of corn moving into the Twin Cities is destined for the four elevators in Savage and/or the two river elevators in St. Paul.

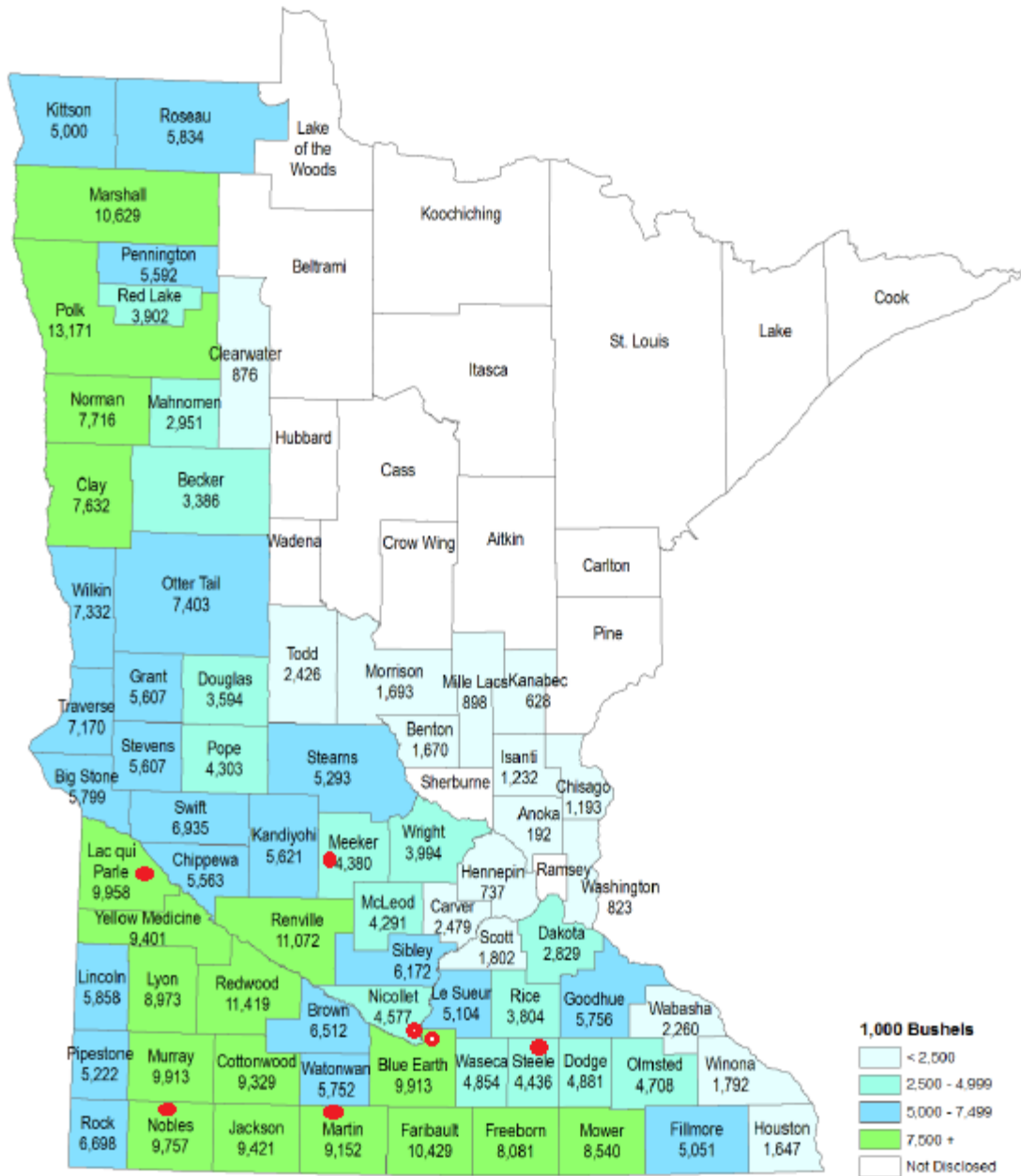
While the above has been the case for many years, recent developments have further solidified the matter. A new large shuttle loading facility in Randolph, Minnesota was completed in 2014. This elevator is located in southeastern Dakota County. Likewise, shuttle loader elevators in St. Joseph (Stearns County) and Hope (Steele County) have been completed in recent years. These elevators now compete for grain that Twin Cities elevators without river access may have had some small chance to compete for previously.

The same situation holds true for soybeans. With some variation, the state's soybean crop is largely concentrated in the same areas as the corn crop. Soybeans tend to follow similar distributions channels as corn. No soybean processing plants of any significance are located in Minneapolis or, for that matter, in reasonably close proximity to Minneapolis.

The map on the following page is taken from the USDA and depicts the state's soybean production at the county level. The author has taken the liberty of denoting the approximate locations of the state's soybean processing plants with red dots. As the map suggests, much of the state's soybean crop is located in closer proximity to a crushing plant than to an elevator in the Twin Cities. This, coupled with the numerous shuttle loading elevators in southern and western Minnesota, as well as river terminals in Red Wing and Winona, reveals why it makes little sense to bring soybeans into Minneapolis. The same would hold true of all Twin Cities based elevators if not for river access.

# Soybean Production – Minnesota: 2016

State Total: 393,750,000 Bushels



Provided by USDA, National Agricultural Statistics Service, Upper Midwest Region  
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## MINNEAPOLIS GRAIN INDUSTRY

The remaining Minneapolis grain trade is focused on small grains, primarily spring wheat, barley and oats. It is these three grains that also comprise the remnants of the Minneapolis-area grain processing industry.

Spring wheat typically accounts for about 25% to 30% of the total U.S. wheat crop. Total U.S. production of spring wheat (including durum) was about 681.5 million bushels in 2015. This compares to about 13.65 billion bushels of corn, 3.98 billion bushels of soybeans and 2.05 billion bushels of all types of wheat.

North Dakota is the nation's largest producer of spring wheat, followed by Montana, South Dakota, Minnesota, and Idaho. North Dakota itself accounts for about half the nation's total spring wheat production. North Dakota and Montana combined account for about two-thirds of the national total. Spring wheat produced in Minnesota is generally grown in the northwestern part of the state.

Minneapolis remains in position to attract spring wheat by rail. The wheat is brought in from the northwest (i.e. North Dakota and Montana) and can be shipped to local flour mills, or mills to the east. Again, there are two flour mills remaining in Minneapolis. There are also large mills located at New Prague and Hastings. Other Minnesota flour mills are located in Mankato, Lake City, Winona and Rush City.

Sourcing spring wheat into Minneapolis has become more competitive in recent years. Several shuttle loading facilities have been constructed in North Dakota, Montana and northwestern Minnesota during the past decade. This provides spring wheat easier access to export channels in the Pacific Northwest. Nevertheless, some opportunity remains to merchandise spring wheat through Minneapolis elevators.

Operating elevators in Minneapolis are listed as *spring wheat regular elevators* on the Minneapolis Grain Exchange (MGEX), as are the elevators in Savage and St. Paul. So-called regular elevators can be used to take physical possession of wheat, should it be necessary to satisfy one's obligations under a spring wheat futures contract. However, discussions with local grain industry participants, including an official with the MGEX, reveal that such physical possession rarely occurs.

## MINNEAPOLIS GRAIN INDUSTRY

The next crop to consider is barley. The barley malting industry has historically been a key component of the Minneapolis grain market. Minnesota itself produces relatively little of barley each year.

Total U.S. production of barley was about 199.9 million bushels in 2016. Barley production throughout the entire U.S. has steadily declined in recent decades. During the 1980s, annual U.S. barley production averaged about 487 million bushels. During the most recent decade U.S. barley production ranged from about 154.8 million bushels (2011) to 226.6 million bushels (2008).

During the most recent five years (2012 – 2016), U.S. barley production fluctuated in a reasonably tight range from 181.5 million bushels to 219.0 million bushels, and averaged about 206.3 million bushels. This is about 43% of the annual average in the 1980's and about 54% of the annual average in the 1990s. The top three barley producing states in recent years are North Dakota, Idaho and Montana. These three states accounted for over three-quarters of the national crop.

Over the past several decades U.S. barley production has been shifting to the northwest. As a consequence, the North American malting industry has also been shifting to the northwest. At one time, Wisconsin and Minnesota tended to dominate the malting industry. However, the industry now considers Idaho and Montana to be the most advantageous area from which to malt barley.

In recent times, major malting plants have been shut down in Milwaukee and Jefferson, Wisconsin; and Red Wing and Cannon Falls, Minnesota. Cargill also closed a major plant in Sheboygan, Wisconsin. However, after Cargill failed to sell the plant for either a continuing or an alternate use, they reopened it on a much reduced scale, to service specialty accounts.

On the other hand, the country's two most recent greenfield developments occurred in Idaho and Montana. Anheuser-Busch also made a major expansion at their existing plant in Idaho. Cargill also made a major expansion at their Spiritwood, ND malt plant, in conjunction with shutting down their plants in Jefferson and Sheboygan, WI.



## MINNEAPOLIS GRAIN INDUSTRY

Nevertheless, some large malting operations remain in the Upper Midwest. Most significant to the Minneapolis market is the Rahr Malting operation in nearby Shakopee, Minnesota. The Rahr plant is generally considered among the largest malt plants in the United States. Other large malt plants in the general area include a Malteurop plant in Winona, MN and an Anheuser-Busch plant in Manitowoc, WI.

The Winona and Manitowoc plants are located to the east and/or south of the Minneapolis area, making them potential markets for Minneapolis elevators. In addition, Rahr Malting is expanding its production capacity at Shakopee. Furthermore, Briess Malting recently restarted an old plant at Manitowoc, WI. These developments are largely driven by the ongoing surge in popularity of craft beers.

Rahr's expansion at Shakopee and Briess' restarting of the old Manitowoc plant should serve to strengthen the opportunities of Minneapolis elevators to merchandise barley. However, this is offset by the fact that Anheuser-Busch has reduced the amount of barley it stores at commercial elevators. For many years, Busch stored large amounts of barley at numerous commercial elevators around the country, including elevators in Minneapolis. However, since Busch was acquired by InBev, a Belgian brewer, in 2008, that storage program has been significantly curtailed.

To conclude the point, some opportunity remains for Minneapolis elevators to merchandise barley. These include malt plants at Shakopee, Winona and Manitowoc.

The next grain to consider is oats. Total U.S. production of oats was about 64.77 million bushels in 2016. Only a portion of this total is suitable for human consumption. The rest is generally used for animal feed. Over the years, oat production throughout the entire U.S. has declined sharply. Today, the vast majority of oats processed in North America are produced in Canada. Thus, most of the oats arriving into the Minneapolis market, and elsewhere, are imported from Canada.

The U.S. oat milling industry is comprised of few facilities. According to Sosland's *Grain and Milling Annual*, there are only 11 oat mills operating in the U.S., some of which are quite small. The largest U.S. oat mill is owned and operated by Quaker Oats at their

## MINNEAPOLIS GRAIN INDUSTRY

cereal plant in Cedar Rapids, Iowa. The Quaker Oats plant has over 9.2 million bushels of on-site grain storage capacity and is served by the Union Pacific railroad.

One of the country's largest oat milling operations is owned by General Mills and is located in the Minneapolis area (Fridley). The Fridley oat mill has good rail access and an attached elevator with about 5.0 million bushels of storage capacity. General Mills also operates three of the remaining five commercial elevators in Minneapolis.

The most recently constructed oat mills in the U.S. were at St. Ansgar, Iowa; South Sioux City, Nebraska; and Eugene, Oregon. All three of these mills were constructed in the late 1980s, roughly 30+ years ago. Since the late 1980s the North American oat milling capacity has been steadily shifting to Canada, nearer the source of oats. Essentially, all new oat mill developments in the past 20 years have occurred in Canada.

Observations of the North American oat milling industry suggest that the Minneapolis elevators are best suited to support the local oat milling operations of General Mills. In addition, the Minneapolis elevators are in reasonably good position to ship oats to the large oat processing plants in Iowa (Cedar Rapids and St. Ansgar). Both of the Iowa oat mills have rail access and significant on-site grain storage.

### Summary & Conclusion

Minneapolis was at one time the nation's largest grain terminal center. Like other urban terminal markets, Minneapolis has long ceased to be a dominant factor in the U.S. grain trade. Commercial elevators in the city are no longer in position to attract substantial quantities of either of the state's two largest crops (corn and soybeans). Nevertheless, limited opportunities remain for merchandising small grains, particularly spring wheat, barley and oats.

**EXHIBIT 2**

Grain Elevator Sales

Pages (112-121)

**GRAIN ELEVATOR SALES****Improved Sale 1**

Identity: Malt One Elevator

Location: 2901 - 5<sup>th</sup> Street NE  
Minneapolis, MN

Legal Description: PID No.: 11-029-24-21-0017

Date of Sale: January 2007

Buyer: Whitebox Commodities Holding Corp  
Seller: ConAgra Foods Food Ingredients Co., Inc.

Grain Storage: Upright Concrete: 2,280,246 Bu. (federally licensed)

Year Built / Age: Built in phases: 1926/28 through 1940. Weighted average age is estimated at about 75 years.

Construction: Upright concrete, slip-form type construction. The storage capacity consists of numerous silos and interstices.

**GRAIN ELEVATOR SALES****Improved Sale 1**

Land Area: 322,064 SF, or 7.39 acres

Rail: Yes – Canadian Pacific (CP) - 55-car rail siding

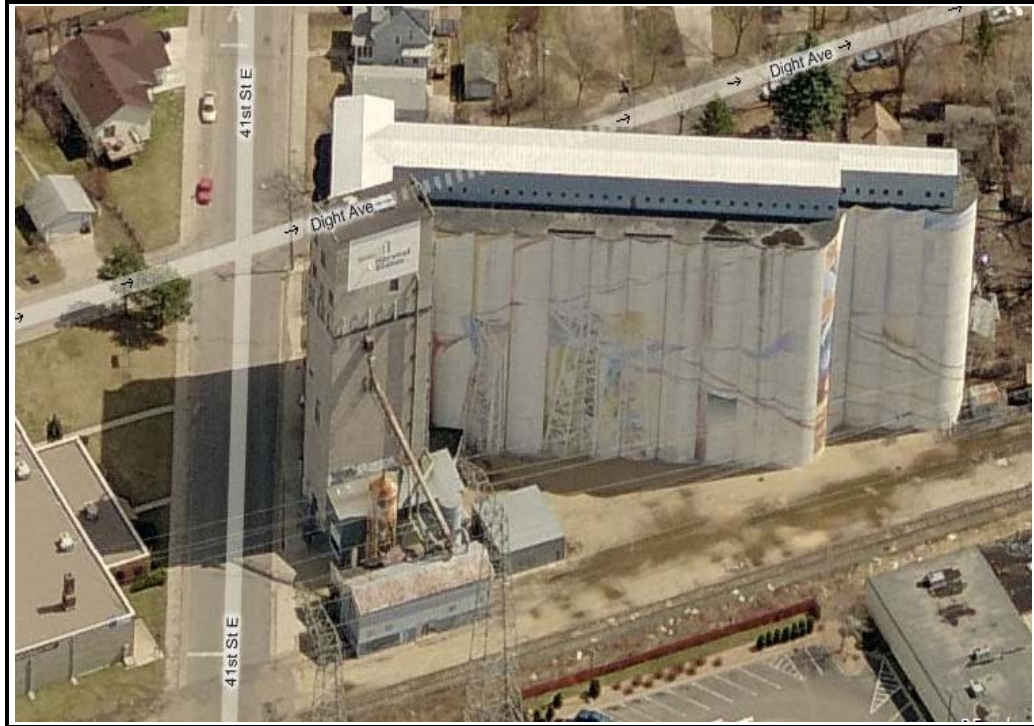
Sale Price: \$1,750,000

Unit Price: \$0.77 per bushel

Remarks: This is the sale of the Malt One Elevator in Minneapolis. This sale occurred prior to the addition of the three steel storage bins.

This elevator has a barley cleaning and sizing line. Overall, this elevator is superior to the subject in terms of age, condition, handling speeds and rail capacity.

The elevator is listed as *regular* for spring wheat on the MGEX and for oats on the CBOT.

**GRAIN ELEVATOR SALES****Improved Sale 2**

Identity: Elevator M

Location: 3333 - 41<sup>st</sup> Street East  
Minneapolis, MN

Legal Description: PID No.: 07-028-23-23-0069

Date of Sale: December 2007

Buyer: J & F Acquisitions  
Seller: Cenex Harvest States, Inc. (CHS)

Grain Storage: Upright Concrete: 1,300,000 Bu. (federally licensed)

Year Built / Age: Built in phases: About 1923 through 1933. Weighted average age is estimated at about 80 years.

Construction: Upright concrete, slip-form type construction. The storage capacity consists of numerous silos and interstices. The elevator includes a concrete headhouse.

**GRAIN ELEVATOR SALES**Improved Sale 2

Land Area: 33,731 SF, or 0.77 Acres

Rail: Yes – The Grain & Milling Annual directory reports that this elevator is served by the BNSF, UP and CP. The BNSF reports a small 7-car siding.

Sale Price: \$440,000

Unit Price: \$0.34 per bushel

Remarks: This sale was confirmed with both the buyer and the seller. The buyer of this elevator purchased the property for redevelopment of the site into residential condo units. Prior to the closing, the buyer had to find new financing because of the decline in the local condo market. At that point he began inquiring of the seller about the property's grain storage capacity and operational characteristics.

The seller, CHS, reported that they had last used the elevator to store grain in about 2001 or 2002. At that time they were storing barley for Anheuser-Busch. To the best of their knowledge, the elevator was operational, and the property remained federally licensed for grain storage at the time of sale.

The seller also reports that the property was actively marketed for sale. A party that was interested in using the elevator for grain storage made an offer of \$400,000.

This sale has been included because of the competitive bid for continued use as an elevator. The elevator was not listed as regular with any grain exchange at the time of sale.

Since the time of this sale, the elevator reportedly deteriorated to the point where it can no longer be restarted as an elevator. It has recently been repurchased for a nominal amount, and strictly as a speculative investment.



**GRAIN ELEVATOR SALES****Improved Sale 3**

Identity: Shakopee Terminal

Location: 3251 East Highway 101  
Shakopee, MN

Legal Description: PID Nos.: 27-904002-0; 27-904007-0; 27-904008-0  
27-933002-0 ; 27-933003-0

Date of Sale: January 2007

Buyer: Whitebox Commodities Holding Corp.  
Seller: ConAgra Foods Food Ingredients Co., Inc.

Grain Storage: Upright Concrete: 1,120,000 Bu. (federally licensed)

Year Built / Age: A review of historical aerial photos indicates that this elevator was constructed sometime after 1957, but before 1964. Thus, the elevator was between 43 and 49 years of age at the date of sale. The average age is estimated at 47 years.

Construction: Upright concrete, slip-form type construction. Includes numerous silos and interstices and a concrete headhouse.

**GRAIN ELEVATOR SALES**Improved Sale 3

Land Area: 61.91 Acres (per Scott County)

Rail: Yes – Union Pacific – 60± Cars

Sale Price: \$750,000

Unit Price: \$0.67 per bushel

Remarks: This transaction involves the same parties as were involved in Improved Sale 1. The property is located along the Minnesota River. An analysis of the aerial photo indicates the property has about 2,335 lineal feet of river frontage. However, the property does not have barge access, as the river is not navigable to this location.

*The Grain & Milling Annual* directory reports a load-out speed of 20,000 bushels per hour.

The elevator is listed as *regular* for spring wheat on the MGEX and for oats on the CBOT.

**GRAIN ELEVATOR SALES****Improved Sale 4**

Identity: Former Froedert Malt Elevator

Location: 7455 - 181R Avenue SE  
Wahpeton, ND

Legal Description: PID No.: 16-0000-03051.000

Date of Sale: August 2013

Buyer: Minn-Kota Ag  
Seller: Riverland Ag Corp (Whitebox)

Grain Storage: Upright Concrete: 1,283,000 Bu. (state licensed)

Year Built / Age: 1977 – 36 years old at date of sale.

Construction: Upright concrete, slip-form type construction. Includes numerous silos and interstices and a concrete headhouse.

**GRAIN ELEVATOR SALES**Improved Sale 4

Land Area: 51.52 Acres (per Richland County)

Rail: Yes – the BNSF Grain Elevator Directory reports a 34-car rail siding.

Sale Price: \$1,387,500

Unit Price: \$1.08 per bushel

Remarks: This transaction has been confirmed with the seller.

The buyer is a grain and agricultural service company, headquartered in Breckinridge, Minnesota.

This property sold from Cenex Harvest States to Whitebox Commodities Holding Corp. in November of 2007 for \$1,400,000. This is very similar to the recent sale price of \$1,387,500.

The elevator was originally constructed to handle barley for Froedert Malt Company. The elevator is in good physical condition; at 36 years old. The buyer purchased this elevator to store small grains such as barley, wheat and oats. The elevator includes a grain cleaning line.

This elevator is located in a good crop production region. Major crops in the region include corn, soybeans and wheat. The Wahpeton area has seen stronger corn production over the past decade. However, this elevator is somewhat analogous to the Twin Cities elevators in that it faces strong competition for corn and other grain.

Major grain processing facilities in the local area include a large high-fructose corn syrup plant in Wahpeton and a large ethanol plant in Hankinson. A large malt plant is also located in Moorhead, MN and the nation's largest wheat flour mill is located in Grand Forks, ND.

The elevator is not listed as regular with any grain exchange.

**GRAIN ELEVATOR SALES****Improved Sale 5**

Type of Grain Elevator: Minnesota/Mississippi River Terminal

Location: 12100 Yosemite Avenue South  
Savage, Minnesota

Buyer: Whitebox Riverport Savage, LLC  
Seller: Bunge North America, Inc.

Date of Sale: January, 2008

Physical Data: 9,276,000 bushels capacity. All upright.  
Primarily slipform concrete with four large steel tanks.

Load-out Speed: 40,000 bph

**GRAIN ELEVATOR SALES**Improved Sale 5

Age: Estimated at 30 years (weighted)

Rail: 75 Cars – Union Pacific

Grain Cleaning: No

Condition: Average

Purchase Price: \$11,500,000

Unit Price: \$1.24 per Bushel

Comments: This is the sale of Property C.

As previously noted, Whitebox was acquired in 2010 by Ceres Global Ag Corp. through an entity known as Riverland Ag. That transaction involved a going business enterprise and included 11 other facilities throughout North America. As such, the 2010 transfer is not suitable as a comparable.

This elevator is regular for oats delivery on the CBOT, and regular for wheat delivery on the Minneapolis Grain Exchange (MGEX).

**Activity Subsequent to Sale**

Ceres Global publically announced in April of 2014 that it had reached an agreement to sell Property C to Consolidated Grain & Barge Company for \$17.8 million. Ceres was to lease back 3.5 million bushels of storage capacity for a term of six years.

Then in June of 2014 the two parties announced they had mutually agreed to terminate the purchase agreement. The author previously interviewed a member of Ceres' local management team. This individual confirmed the agreed upon price, but was reluctant to state exactly why the agreement was terminated. The discussion tended to suggest that in fact it was a mutual agreement. Interestingly, the Minnesota Grain & Feed Association's 2015 directory now lists Consolidated as the operator of the facility.

The agreed upon sale price of \$17.8 million was nearly 55% above the 2008 sale price of \$11.50 million, and equated to \$1.92 per bushel.

**EXHIBIT 3**

U.S. Army Corps of Engineers  
Commodity Classification List

Pages (123-124)



## COMMODITY CLASSIFICATION LIST

## Commodity Classification List

<u>Major Grouping</u>	<u>Minor Grouping</u>	<u>Pub Group</u>	<u>Pub Name</u>	<u>Major Grouping</u>	<u>Minor Grouping</u>	<u>Pub Group</u>	<u>Pub Name</u>
00	Units						
		0200	Vehicles			3282	Pigments & Paints
		0300	Passengers			3283	Coloring Mat. NEC
10	Coal					3284	Medicines
		1100	Coal & Lignite			3285	Perfumes & Cleansers
		1200	Coal Coke			3286	Plastics
20	Petroleum & Petroleum Products					3291	Pesticides
	21 Crude Petroleum					3292	Starches,Gluten,Glue
		2100	Crude Petroleum			3293	Explosives
	22-29 Petroleum Products					3297	Chemical Additives
		2211	Gasoline			3298	Wood & Resin Chem.
		2221	Kerosene			3299	Chem. Products NEC
		2330	Distillate Fuel Oil				
		2340	Residual Fuel Oil			40	Crude Materials, Inedible Except Fuels
		2350	Lube Oil & Greases			41	Forest Products, Wood and Chips
		2410	Petro. Jelly & Waxes			4110	Rubber & Gums
		2429	Naphtha & Solvents			4150	Fuel Wood
		2430	Asphalt, Tar & Pitch			4161	Wood Chips
		2540	Petroleum Coke			4170	Wood in the Rough
		2640	Hydrocarbon & Petrol Gases,, Liquefied and Gaseous			4189	Lumber
		2990	Petro. Products NEC			4190	Forest Products NEC
						42	Pulp and Waste Paper
						4225	Pulp & Waste Paper
						43	Soil, Sand, Gravel, Rock and Stone
						4310	Building Stone
						4322	Limestone
						4323	Gypsum
						4327	Phosphate Rock
						4331	Sand & Gravel
						4333	Dredged Material
						4335	Waterway Improv. Mat
						4338	Soil & Fill Dirt
						44	Iron Ore and Scrap
						4410	Iron Ore
						4420	Iron & Steel Scrap
						45	Marine Shells
						4515	Marine Shells
						46	Non-Ferrous Ores and Scrap
						4630	Copper Ore
						4650	Aluminum Ore
						4670	Manganese Ore
						4680	Non-Ferrous Scrap
						4690	Non-Ferrous Ores NEC
						47	Sulphur, Clay and Salt
						4741	Sulphur, (Dry)
						4782	Clay & Refrac. Mat.
						4783	Salt
						48	Slag
						4860	Slag
						49	Other Non-Metal. Min.
						4900	Non-Metal. Min. NEC
30	Chemicals and Related Products						
	31 Fertilizers						
		3110	Nitrogenous Fert.				
		3120	Phosphatic Fert.				
		3130	Potassic Fert.				
		3190	Fert. & Mixes NEC				
	32 Other Chemicals and Related Products						
		3211	Acyclic Hydrocarbons				
		3212	Benzene & Toluene				
		3219	Other Hydrocarbons				
		3220	Alcohols				
		3230	Carboxylic Acids				
		3240	Nitrogen Func. Comp.				
		3250	Organo-Inorganic Comp.				
		3260	Organic Comp. NEC				
		3271	Sulphur (Liquid)				
		3272	Sulphuric Acid				
		3273	Ammonia				
		3274	Sodium Hydroxide				
		3275	Inorg. Elem.,Oxides, & Halogen Salts				
		3276	Metallic Salts				
		3279	Inorganic Chem. NEC				
		3281	Radioactive Material				

## COMMODITY CLASSIFICATION LIST

## Commodity Classification List (continued)

<u>Major Grouping</u>		<u>Major Grouping</u>	
<u>Minor Grouping</u>		<u>Minor Grouping</u>	
	<u>Pub Group Pub Name</u>		<u>Pub Group Pub Name</u>
50	Primary Manufactured Goods	6822	Dairy Products
51	Paper Products	6835	Fish, Prepared
	5110 Newsprint	6838	Tallow, Animal Oils
	5120 Paper & Paperboard	6839	Animals & Prod. NEC
	5190 Paper Products NEC	6856	Bananas & Plantains
52	Lime, Cement and Glass	6857	Fruit & Nuts NEC
	5210 Lime	6858	Fruit Juices
	5220 Cement & Concrete	6861	Sugar
	5240 Glass & Glass Prod.	6865	Molasses
	5290 Misc. Mineral Prod.	6871	Coffee
53	Primary Iron and Steel Products	6872	Cocoa Beans
	5312 Pig Iron	6885	Alcoholic Beverages
	5315 Ferro Alloys	6887	Groceries
	5320 I&S Primary Forms	6888	Water & Ice
	5330 I&S Plates & Sheets	6889	Food Products NEC
	5360 I&S Bars & Shapes	6891	Tobacco & Products
	5370 I&S Pipe & Tube	6893	Cotton
	5390 Primary I&S NEC	6894	Natural Fibers NEC
54	Primary Non-Ferrous Metal Products	6899	Farm Products NEC
	5421 Copper		
	5422 Aluminum	70	All Manufactured Equipment, Machinery and Products
	5429 Smelted Prod. NEC	7110	Machinery (Not Elec)
	5480 Fab. Metal Products	7120	Electrical Machinery
55	Primary Wood Products; Veneer	7210	Vehicles & Parts
	5540 Primary Wood Prod.	7220	Aircraft & Parts
60	Food and Farm Products	7230	Ships & Boats
61	Fish	7300	Ordnance & Access.
	6134 Fish (Not Shellfish)	7400	Manufac. Wood Prod.
	6136 Shellfish	7500	Textile Products
62-64	Grain	7600	Rubber & Plastic Pr.
	6241 Wheat	7800	Empty Containers
	6344 Corn	7900	Manufac. Prod. NEC
	6442 Rice		
	6443 Barley & Rye	80	Waste and Scrap NEC
	6445 Oats	8900	Waste and Scrap NEC
	6447 Sorghum Grains		
65	Oilseeds	90	Unknown or Not Elsewhere Classified
	6521 Peanuts	99	Unknown or Not Elsewhere Clsfd
	6522 Soybeans	9900	Unknown or NEC
	6534 Flaxseed		
	6590 Oilseeds NEC		
66	Vegetable Products		
	6653 Vegetable Oils		
	6654 Vegetables & Prod.		
67	Processed Grain and Animal Feed		
	6746 Wheat Flour		
	6747 Grain Mill Products		
	6781 Hay & Fodder		
	6782 Animal Feed, Prep.		
68	Other Agricultural Products		
	6811 Meat, Fresh, Frozen		
	6817 Meat, Prepared		

**EXHIBIT 4**

Detailed Summary of Minnesota River Barge Freight

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<b>FREIGHT TRAFFIC - MINNESOTA RIVER</b>						
	2010	2011	2012	2013	2014	2015
<b>Overview - All Commodities and Products:</b>						
Coal (coal & Lignite & coal coke):	0	7,000	0	0	0	0
Fertilizer:	42,000	29,000	42,000	157,000	193,000	129,000
Other Chemicals & Related Products:	0	0	0	0	2,000	0
Soil, Sand, Gravel, Rock:	490,000	321,000	534,000	488,000	334,000	423,000
Other Non-Metal Minerals (Salt):	136,000	196,000	132,000	169,000	211,000	164,000
Non-Ferrous Ores & Scrap:	0	9,000	0	0	0	0
Primary Manufactured Goods:	2,000	1,000	8,000	20,000	17,000	9,000
Total Food & Farm Products:	1,420,000	1,098,000	1,060,000	565,000	903,000	1,341,000
Manufactured Products:	0	18,000	0	0	0	0
<b>Total All Categories:</b>	<b>2,090,000</b>	<b>1,679,000</b>	<b>1,776,000</b>	<b>1,399,000</b>	<b>1,660,000</b>	<b>2,066,000</b>
Total Inbound:	666,000	581,000	716,000	835,000	755,000	728,000
Total Outbound:	1,424,000	1,098,000	1,060,000	565,000	904,000	1,338,000
<b>Total Inbound and Outbound:</b>	<b>2,090,000</b>	<b>1,679,000</b>	<b>1,776,000</b>	<b>1,400,000</b>	<b>1,659,000</b>	<b>2,066,000</b>
<b>Detail - Soil, Sand, Gravel, Rock &amp; Stone:</b>						
Limestone:	487,000	264,000	534,000	488,000	326,000	421,000
Sand & Gravel and Other:	3,000	57,000	0	0	8,000	2,000
Total Soils, Sand, Gravel & Rock:	490,000	321,000	534,000	488,000	334,000	423,000
<b>Detail - Food &amp; Farm Products:</b>						
Wheat:	115,000	50,000	57,000	187,000	91,000	106,000
Corn:	970,000	811,000	589,000	198,000	562,000	483,000
Oats:	5,000	0	0	1,000	0	0
Soybeans:	306,000	230,000	393,000	144,000	189,000	526,000
Oilseeds Nec:	2,000	0	0	0	0	0
Animal Feed, Prep:	23,000	6,000	22,000	35,000	62,000	226,000
Total Food & Farm Products:	1,421,000	1,097,000	1,061,000	565,000	904,000	1,341,000
<p><b>Comments:</b> All Food &amp; Farm Products (grain and feed) shipments were outbound during the six-year period except 3,000 tons of animal feed prep moved inbound.</p> <p>All limestone and sand &amp; gravel shipments were inbound during the six-year period.</p> <p>All of the fertilizer shipments were inbound, except for 1,000 tons in 2010 were outbound.</p> <p>Coal related shipments of 7,000 tons in 2011 were upbound.</p> <p>Primary Manufactured Goods included ferrous alloys in 2010 (outbound); and cement &amp; concrete in 2011 through 2014 (inbound).</p> <p>Non-ferrous ores and scrap shipments in 2011 were aluminum ore (upbound). Other Chemicals and Related Products shipments in 2014 are identified as "starches, gluten, glue" (downbound).</p>						

**APPRAISER QUALIFICATIONS**

(Pages 128-129)

## QUALIFICATIONS OF

CLAY M. DODD

### PROFESSIONAL AFFILIATIONS

**MAI Member, Appraisal Institute**

**ASA Member (Machinery & Equipment), American Society of Appraisers**

Licensed Real Estate Appraiser - State of Minnesota Certified General Real Property, ID No. 20019812

Licensed Real Estate Appraiser – State of Iowa, Certified General Real Property, ID No. CG02782

### BUSINESS EXPERIENCE

Patchin Messner Dodd & Brumm, Principal, 2001 to Present

Patchin Messner Appraisals, Inc., Associate Appraiser, 1995 to 2000

Peter J. Patchin & Associates, Inc., Associate Appraiser, September 1992 to 1994

U.S. Postal Service, Real Estate Specialist, January, 1991 to August 1992

Kuefler Group Realtors, Sales Associate, June 1989 to December 1990

U.S. Army, Non-Commissioned Officer, April 1983 - February 1987

Broad Construction Background Working Independently and for Various Firms

### EDUCATIONAL BACKGROUND

Bachelor of Science Degree, St. Cloud State University

Majored in Industrial Technology with an emphasis in Building Construction

Minored in Finance with an emphasis in Commercial Real Estate

Graduated Summa Cum Laude, 1990

Significant graduate-level coursework completed - University of Minnesota, Carlson School of Business, MBA Program

### SPECIALIZED REAL ESTATE TRAINING

**Real Estate Appraisal Principles** (110), Appraisal Institute, Minneapolis, MN, 1991

**Basic Valuation Procedures** (120), Appraisal Institute, Minneapolis, MN, 1991

**Standards of Professional Practice**, Part A (410) & Part B (420), Appraisal Institute, Mpls., MN, 1993

**Basic Income Capitalization** (310), Appraisal Institute, Minneapolis, MN, 1997

**Advanced Income Capitalization** (510), Appraisal Institute, Minneapolis, MN, 1992

**Advanced Applications** (550), Appraisal Institute Minneapolis, MN, 1994

**Report Writing & Valuation Analysis** (540), Appraisal Institute, Minneapolis, MN, 1997

**Real Estate Brokers Course**, Pro-Source, Minneapolis, MN, 1991

Numerous Seminars and Workshops

### MACHINERY AND TECHNICAL ASSET

**Introduction to Machinery and Equipment Valuation** (ME201), American Society of Appraisers, 2007

### APPRAISAL EDUCATION

**Machinery and Equipment Valuation Methodology** (ME202), American Society of Appraisers, 2007

**Machinery and Equipment Valuation – Advanced Topics and Case Studies** (ME203), American Society of Appraisers, 2008

**Machinery and Equipment Valuation – Advanced Topics and Report Writing** (ME204), American Society of Appraisers, 2010

## QUALIFICATIONS OF

CLAY M. DODD (CONTINUED)

### APPRAISAL EXPERIENCE

Preparation of appraisals for financing, litigation, tax appeal, condemnation, acquisition and disposal, and purchase price allocation. Properties appraised include heavy manufacturing & processing plants, grain terminals, flour mills, feed mills, ethanol plants, malt plants, oat mills, various other grain processing plants, food processing plants, meat processing plants, office buildings, retail, corporate headquarters, development land, and agricultural land. Other appraisal experience includes the valuation of closely held corporations. Extensive appraisal review experience.

Qualified as an Expert Witness in Minnesota State Tax Court, Iowa Property Assessment Appeal Board, District Court, and Commissioners Hearings in Hennepin, Dakota, Kandiyohi, Ramsey, Scott, Stearns and Washington Counties.

### RELATED EXPERIENCE

Contributing author to the Appraising Industrial Properties textbook; published by the Appraisal Institute, 2005 (Chapter Authored: "Appraising Grain Elevators")

Northstar Chapter of the Appraisal Institute; Board Member – 2001 to 2007; Treasurer – 2003; Secretary – 2004, Vice President – 2005, President – 2006

Appraisal Institute: Member of National Project Team on Valuation For Financial Reporting (VFR)

Local Board of Appeal & Equalization - Bloomington, MN; Member 2006 to Present

### APPRAISAL CLIENTS INCLUDE INCLUDE

Allianz Global Risks US Insurance	Hennepin County
Anchor Bank	Huemoeller Bates & Gontarek
Anthony Ostlund & Baer	John Hancock Financial Services
BB&T	Katz, Manka, Teplinsky, Due & Sobol, Ltd.
Baird Holm	Kennedy & Graven
Bank of America	KPMG, LLC
Barilla	Lend Lease Agri-Business
Bassford Remele	Metlife Ag Investments
Bay State Milling Company	Miller Milling
Bremer Bank	Milner Milling
Briggs & Morgan	Minnehaha Creek Watershed District
Browns Creek Watershed District	Precision Soya
Cargill	Premier Banks
Cenex Harvest States	Rabobank Nederland
CliftonLarsonAllen	Rider Bennett Egan & Arundel
Commerce Bank	Rinke Noonan
ConAgra	Sauk Rapids HRA
Dorsey & Whitney	St. Cloud HRA
Faegre & Benson	Shakopee Public Utility Commission
Farm Credit Services	The Mennel Milling Company
Fredrickson & Byron	The Trust for Public Land
GE Capital Public Finance	Wells Fargo Bank
Grannis & Hauge	

Other: Numerous Cities, Counties and other governmental bodies