Two Rivers Economic Development District Transportation Study

2013

expressely produced for

Two Rivers Regional Council

for the

Two Rivers Economic Development District

Quincy, IL

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Introduction:

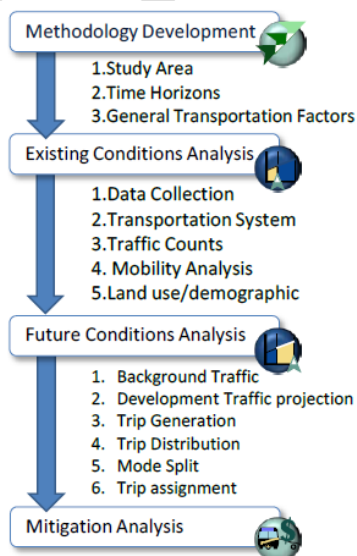### Why is an impact study needed?

- Provide public agencies with a mechanism for managing transportation impacts of land development within the context of metropolitan transportation planning, local government comprehensive planning, and concurrency
- Provide applicants with recommendations for effective site transportation planning
- Provide public agencies with a method for analyzing the effects of development on transportation
- Establish a framework for the negotiation of mitigation measures for the impacts created by development
- Ensure that a state facility impacted by the proposed development is operating at an acceptable level of service
- Promote multimodal transportation systems where appropriate

This section provides technical guidance for reviewing transportation impact studies.
The objectives of an impact study and its review are the following:

- To have an open and honest dialogue with all parties
- To have a realistic study and review of the possible impacts of the new development
- Provide a multimodal perspective in handling the expected impacts
- To make decisions based on the transportation services, and the relationship with land use
- To have a fair assessment of the impacts and the need for improvements
- To achieve a safe and efficient transportation system adjacent to the development site

Basic Transportation Analysis

Methodology Development
1. Study Area
2. Time Horizons
3. General Transportation Factors

Existing Conditions Analysis
1. Data Collection
2. Transportation System
3. Traffic Counts
4. Mobility Analysis
5. Land use/demographic

Future Conditions Analysis
1. Background Traffic
2. Development Traffic projection
3. Trip Generation
4. Trip Distribution
5. Mode Split
6. Trip assignment

Mitigation Analysis

Public Transportation for the Study Area

The State of Illinois is divided into eleven Human Transportation Planning Regions. The TREDD region lies in region number 4. Every region is mandated to have a transportation plan. The Human Service Transportation Plan Coordinators (HSTPC) (temporarily under Diana Fiegl) are responsible for developing the HSTP service plan and for facilitating the process for implementing those plans. The HSTP planning and implementation process includes:

- A review of existing resources within the region
- Identification of the transportation needs of persons with disabilities, older adults and the disabled
- Strategies for meeting those needs
- Prioritization of existing and planned services
- Identification of projects to be included in the Regional Plan of Projects (RPOP). These projects are then submitted to the State Oversight Committee, which in turns recommends projects for inclusion in the State Plan of Projects.

The Western Illinois Regional Council is the HSTPC agency that coordinates the TREDD region's HSTP. These include the following services:

Public Transportation Providers
- Illinois River Valley Public Transit

Human Service Transportation Providers

- Brown County Senior Citizens
- Capitol Retirement Village
- Cass County Council on Aging
- Cass County Mental Health Association
- Central Illinois Economic Development Corp.
- Iglesia del Nazareno Libertad
- Prairie Council on Aging
- Schuyler County Meals
- Seniors Schuyler County Mental Health Association, Inc.

Western Illinois Regional Council HSTPC
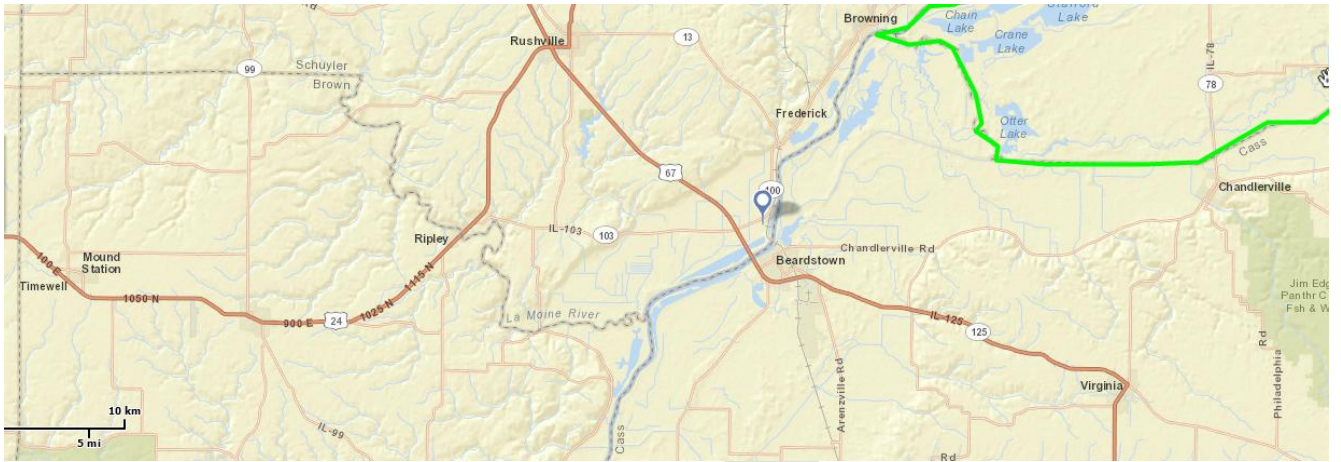
Freight service

Two rail lines serve the majority of the area, Burlington Northern Santa Fe and Norfolk Southern. BNSF carries freight and passenger trains from San Francisco to Chicago. The Norfolk Southern connects to 22 states east of the TREDD region. The two bring a very competitive source of transportation to businesses within the region. A good working relationship has been developed with the business and economic development departments of both companies. A third rail line, Gateway Western, serves the far southern part of the region.

Passenger service

In 2006 Amtrak added a second daily run to Chicago from Quincy, though Macomb and Galesburg. Due to a collaboration of the Area Highway Committee, the tourism bureaus along the route, the Department of Commerce and Economic Opportunity and regional committees for economic development. There are two trains daily to and from Chicago.

Private Transportation

Bee-Line Express offers one way and round trip rates to most destinations in the TREDD region at Premium rates.

Waterways

Two major assets that enhance the region are the Illinois River and the Mississippi River. They have been the major mode of transportation for grain for many years. However, the lock system is nearly 75 years old, and was designed to handle barges only one-half the size of present day vessels. The lock system is also in poor repair due to under-funding by the federal government. Major employers in the TREDD located on each river are dependent on the lock system and the river to move product both in and out. The members of the TREDD have been heavily involved in working for better maintenance and upgrading of the waterway infrastructure on both rivers. Organizations the TREDD has collaborated with are Waterways Council, Inc. (formerly MARC 2000), the Upper Mississippi Illinois and Missouri Rivers Association (UMIMRA) and the U.S. Army Corp of Engineers.

Trip Generation, Mode Split and Trip Assignment

Due to cost constraints and lack of available technology, trip generation and its associated modeling is estimated based on predicted transport of products, traffic counts, freight and cargo container movement and cost-benefit factors. The REMI model has been suggested as over 6,000 factors are used to model Small Area Forecasting and Economic Development Models. This system can be used if a wide scale plan for intermodal transfer is developed and should be completed only under the supervision of a highly qualified transportation professional.

Report I

Illinois River Intermodal Transporation Impact Study for Schuyler County

Schuyler County Study for Intermodal Port along the Illinois River at Beardstown

Methodology

Study area:

Schuyler County is a very sparsely populated rural area in central western area approximately 250 miles Southwest of Chicago and approximately 48 miles northwest of the City of Quincy, the largest city within over a mile radius on the farthest western region of Central Western Illinois. The main products are agricultural products like corn and soybeans but across the Illinois River is a very substantial pork processing plant, Cargill, in and around the City of Beardstown.

Proposed Site location of the facility

Schuyler

Adams

Brown

Cass

Pike

Scott
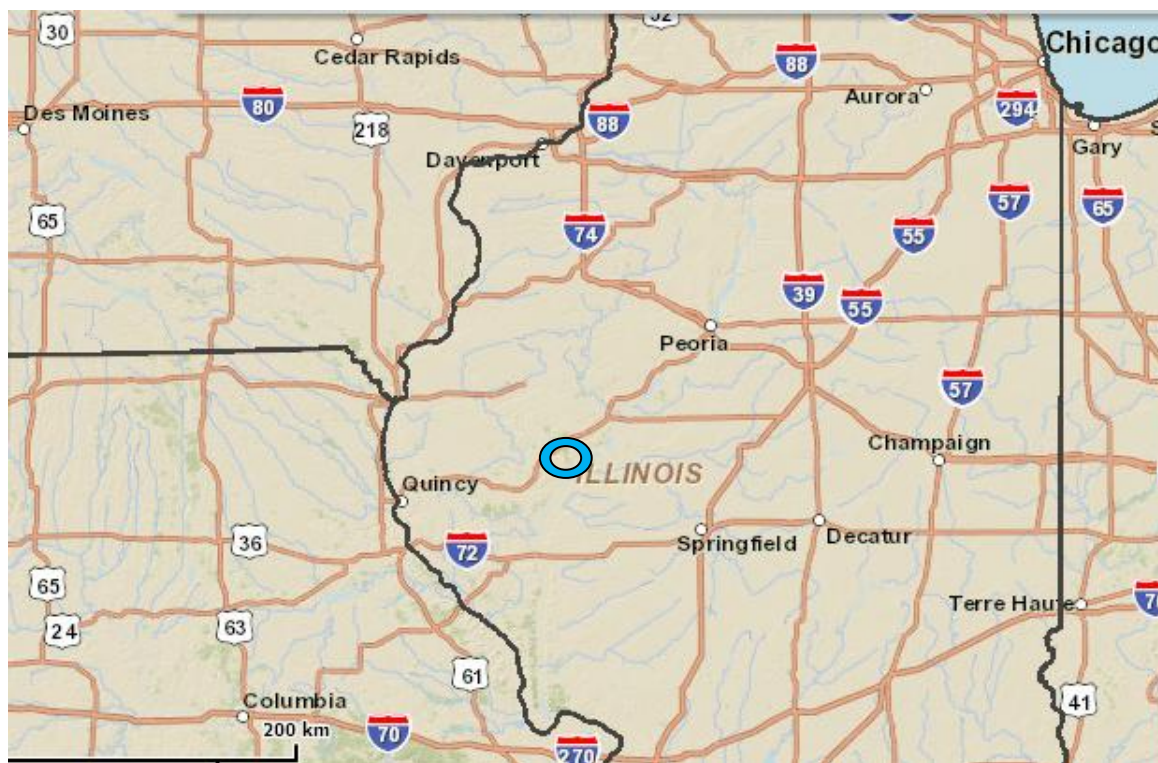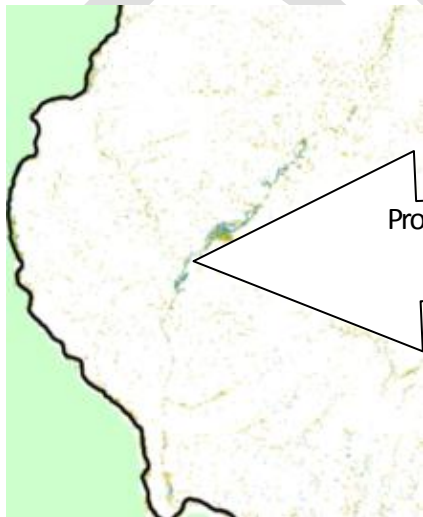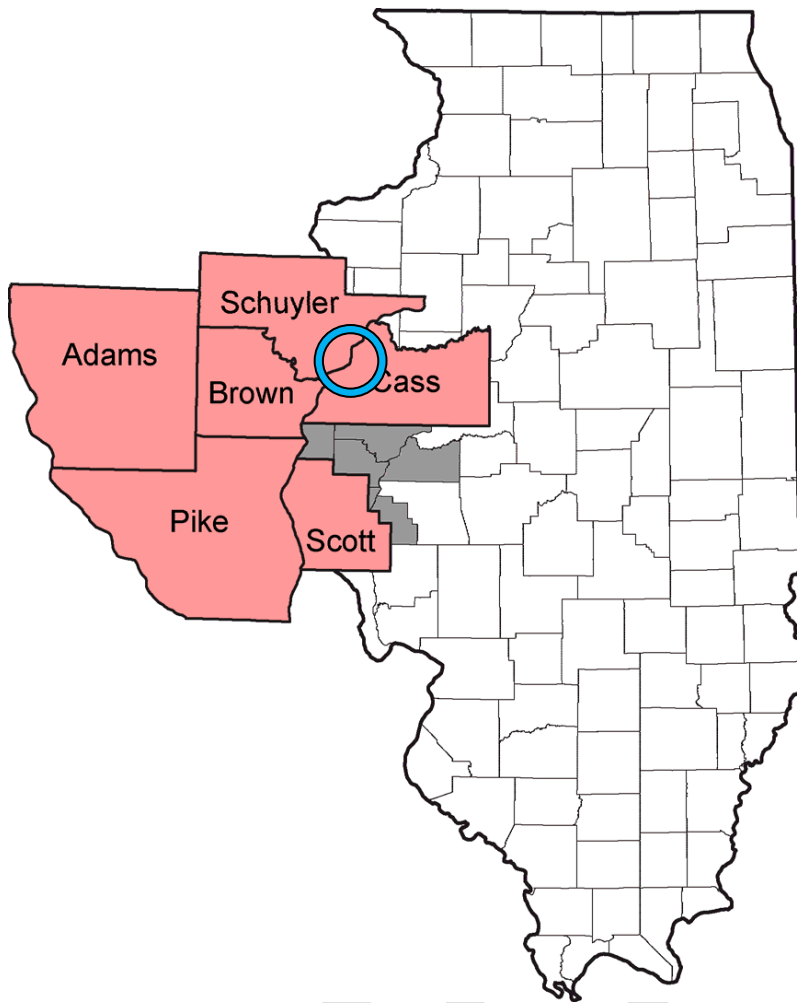
Proposed Site location along Illinois River

Legal Description Study Area

The proposed study area is in Schuyler County on the Illinois River of the USGS Beardstown Quadrangle map:

SW ¼, NW 1/4, Sec 20, T1N, R1E

SW ¼, NW ¼, Sec 20, T1N, R1E

SE ¼, SE ¼, SEC 30, T1N, R1E

SE ¼, SW ¼ SEC 30, T1N, R1E

Proposed site of an intermodal port in Schuyler County, Il
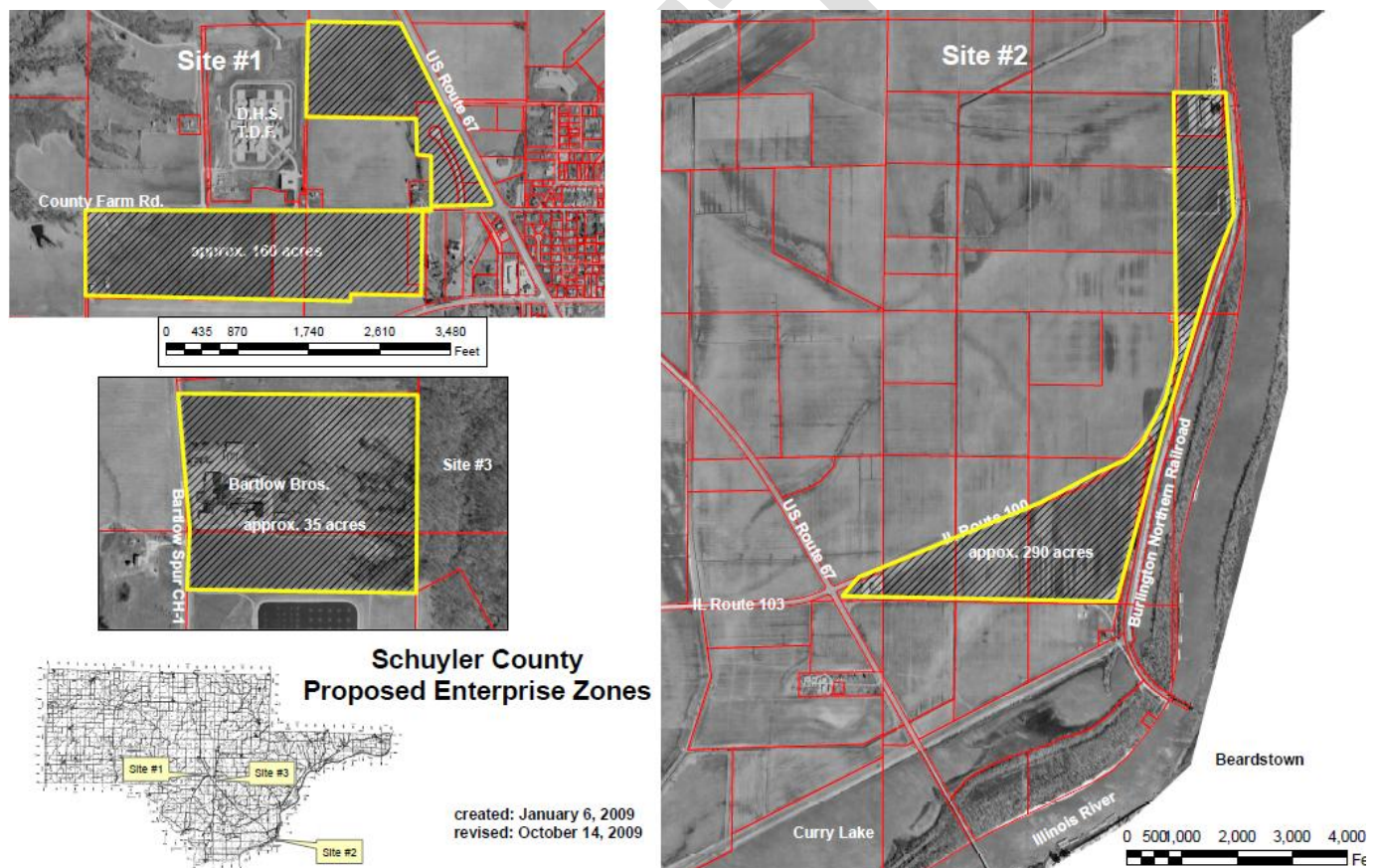
General Transportation Factors

The Region has been plagued with barge issues and moving grain from barges via the Cass County side on the Illinois River. There is a limited amount of available space left of the Cass County side, a very prominent floodwall to contend with and a heavily wooded wetland area that is prone to flooding. An intermodal port on the Schuyler County side would alleviate congestion from Cargill and Cass County operations,

reduce traffic flow across the US 67, reduce concentrated emissions, alleviate worries of flood control, provide an expansive parcel of land to allow trucks and freight to remove a large portion of grain from the Illinois River currently restricted to only one side of the river and would be publicly owned and maintained. In addition, the necessary port would create at least 120 primary & tertiary sector jobs.

Time Horizons

The study to be addressed could take up to 6-8 months to complete starting in July of 2012 and then funding, planning and engineering could take 3-5 years after that. It is estimated the final project could be finished as soon as 2017.

Issues to be investigated:

1. Are Cass and Schuyler counties both willing to enter into an intergovernmental agreement for usage and operating costs?
2. How will additional freight impact the rail lines? Will the rail lines want to enact user fees?
3. How will necessary ¼ to ½ mile spurs be implemented on the Schuyler County side given the limited amount of physical space from the available inside the levees?

Existing Conditions

There has been significant interest between Schuyler and Cass counties for a publicly operated intermodal transportation center on the Illinois River east of US 67 and north of Il 100 on the Schuyler County side of the Illinois River. The proposed river barge port is the target area, the north-south section (the elongated region would make precedents over the other sections. The total area of river barge port is approximately 307.2 acres or 13,381,632 square feet. The southern border on the East-West section is an old concrete state road slab that can adequately and quickly accommodate heavy trucks. This accounts for its odd appearance and shape.

Historical Background of the zone

Frederick in the 1850's & 1860's was booming. Plenty of steamers cruised the waters for the purposes of meat processing, agricultural goods for 3 counties was shipped out of Frederick with a population of about 1,000 people at the time. Around the time of the Civil War, the railroad was built allowing for greater commerce around Frederick and increased tourism for the Frederick mansion. Over time, the population of the region has decreased albeit agricultural and meat processing industries have remained steady. If transportation amenities were improved, the area could potentially experience increased commerce and higher traffic volumes on the Illinois River and nearby State and Federal Highways.

Interjurisdictional Agreement

Coordination of Schuyler/Cass counties would have to be readily coordinated in this context. Cass County could potentially utilize the BNSF area near the roundhouse with the actual intermodal transfer area to be located on the Schuyler County side. As of the 2012 legislative update concerning enterprise zones, only 5 will be created in the Illinois through 2017. The Mid America Port Authority also has issued priority for a foreign trade zone and intermodal port along the Mississippi River and thus takes priority over the Intermodal port in Schuyler County.

The Mid-America Port Commission was created as an economic development initiative involving Illinois, Iowa, and Missouri. An additional level was established when the State of Illinois created the Mid-America Intermodal Port Authority District as a separate economic development entity that coordinates with the Commission with the same purpose. The commission was established as a regional economic development to capture the benefits associated with proximity to the Mississippi River. The Port Authority is located on the Mississippi River immediately south of Quincy, Illinois. Phase One consists of 50 acres. Further development could be accommodated on neighboring parcels in additional phases. See Mid America Port Authority Appendix I, which follows the study at the end of this document.

USGS map of proposed area

ESRI Community Analyst, 2012
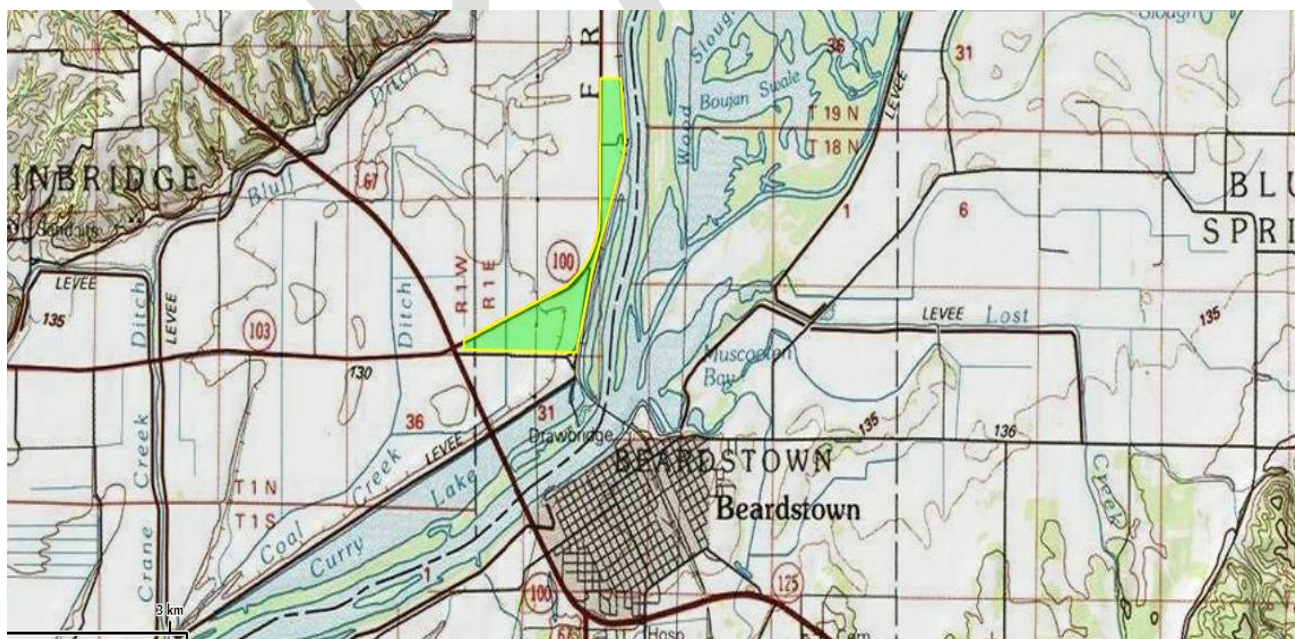
Shaded relief map of the proposed zone
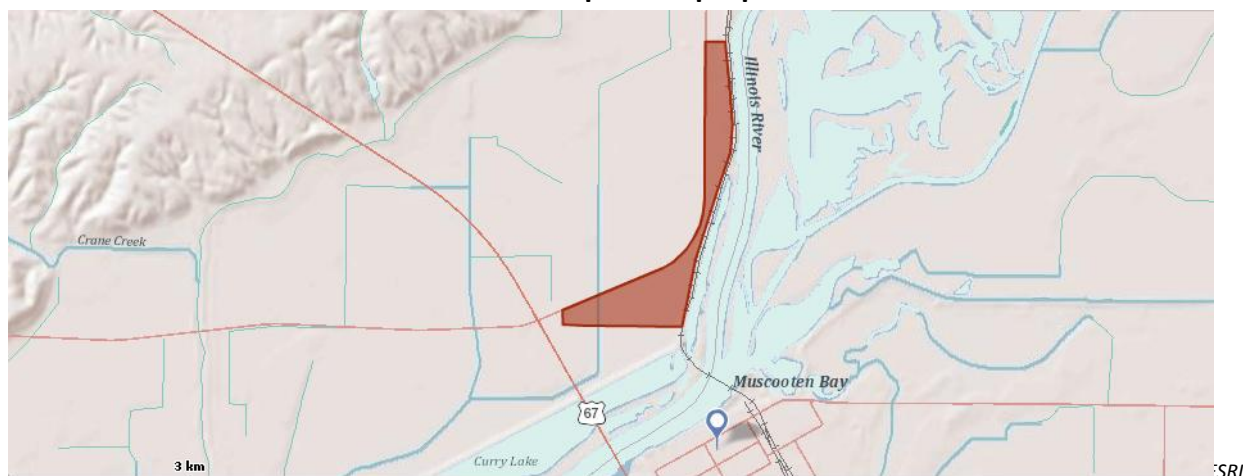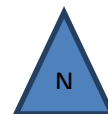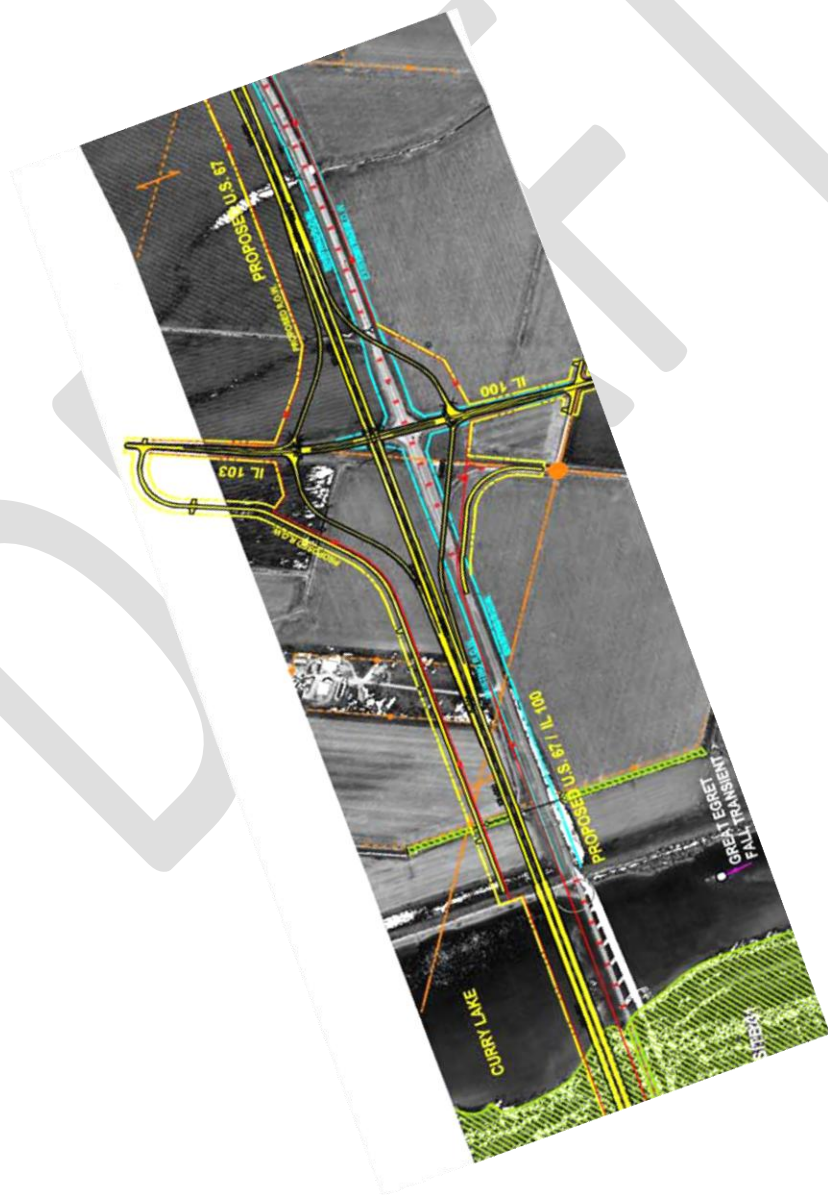
IDOT proposed diamond interchange at US 67 and Il 103, Il 100; courtesy Schuyler County Highway Department

View of proposed site looking North, South, West and East respectively.

Looking west from ADM site

Looking east from the south end of the ADM site

View looking west Across Illinois River from Cargill site.

Southern end looking west from Cass County

View from Southern end looking north on Cass County side, see next map

Above image shows the approximate location on this map the photo was taken from. Note the highlighted green area to the left and above which marks the proposed port location.

Grain Elevator, rail to barge

Liquid Elevator, barge to rail

Unknown Elevator, truck to rail

Proposed Barge Port and Access areas

Environmental Constraints

According to the United States Geological Survey, despite the current recognition of wetland benefits, many potentially conflicting interests still exist, such as that between the interests of landowners and the general public and between developers and conservationists. Delayed recognition of wetland benefits and disagreement on how to protect them has led to discrepancies in local, State, and Federal guidelines. Discrepancies in Federal programs points to programs that encourage conversion of wetlands and those that discourage conversion of wetlands. Conflicting interests are the source of much controversy in current wetland protection policy. Although attempts are being made to reconcile some of these differences, many policies will have to be modified to achieve consistency. Federal and state funding is often unavailable for the removal of wetland and wetland habitats. Some state programs offer wetland mitigation banks.

Floodplain potential

Describing floods in terms of a "return period" (e.g. 100-year) has been used for decades to convey the rareness of major flooding events. However, describing the intensity of heavy rainstorms in a similar manner has not been as routine but provides an

equally good perspective of extreme precipitation events. In order to compute the return period of a flood, pre-existing flood frequency statistics and a measure of the flood (i.e. peak discharge) need to be available at a specific location along a river or stream. Unlike flood frequency statistics, which are only available at gauged locations along rivers and streams, rainfall frequency statistics are available at any location in the United States.

The frequency and magnitude of rainfall is critically important to engineers, hydrologists and others involved in designing hydrologic structures, such as storm sewers, retention ponds, dams and levees. To meet this need, NOAA's National Weather Service Hydrometeorological Design Studies Center (HDSC) has been responsible for creating and publishing rainfall frequency atlases (e.g. 100-year 24-hour rainfall depth) for the United States since 1953. In 2003, the HDSC began updating the rainfall/precipitation frequency values for regions of the country as part of a series of atlases known as **NOAA Atlas 14**. NOAA Atlas 14 not only provides updated information but also establishes clearer terminology.

The use of the term "return period" has been criticized for leading to confusion in the minds of decision makers and the public. "Return period" is sometimes misinterpreted as implying that the associated magnitude of a rain event is only exceeded at regular intervals. In other words, it is misunderstood that a 100-year event should only occur every 100 years. (1) Therefore to clarify the meaning, NOAA Atlas 14 uses the term "average recurrence interval" or ARI to describe frequency. The ARI, which is in units of years, is defined as the average, or expected, period of time between the extreme preponderance of a given rainfall amount over a given duration and location. For example, suppose five inches of rain in 24 hours at a particular location is equivalent to an ARI of 100 years. This means five inches of rain in 24 hours is expected to occur, on average, every 100 years at this location, standard interpreted definition of the 100 year flood.(*) Since the ARI is an average, a similar or even larger, rainfall amount could occur again this year, next year or any other year. The ARI can be also be approximated as a probability or percent chance of occurring in any given year. For example, a 100-year ARI could also be expressed as having a 1 in 100 chance or a 1 percent chance of occurring in any given year. Table 1 converts the different terminologies.

Although rainfall frequency estimates have been available since the 1950s, they have been largely overlooked as a means of translating actual rainfall observations into an ARI and instead used primarily for the design of infrastructure. This translation has been hampered by the generalized, hard-copy maps of rainfall frequency estimates buried in government documents. Before an ARI can be computed for a given rainfall depth and duration, a tedious interpolation of known rainfall frequency estimates needs to be drawn from the rainfall frequency maps. This is changing since rainfall frequency estimates from NOAA Atlas 14 are available online and from Geographic Information System (GIS) compatible files such as the Illinois Geospatial Clearinghouse. Access to

reliable rainfall measurements at locations of interest is perhaps another reason that has delayed more frequent calculations of ARIs associated with rainfall amounts.

However, given today's radar-adjusted rainfall products and the amount of rain gauge networks, observed rainfall amounts are no longer lacking in most parts of the United States. Real-time rainfall maps and observations are available from a number of on-line sources, including CoCoRaHS, Meteorological Assimilation Data Ingest System (MADIS), and the NWS.

1. earthzine.org
* professor Gene Jaworski, Eastern Michigan University, Department of Geography and Geology, 2008

Given the government-issued rainfall frequency atlases and observed rainfall, climatologists and hydrometeorologists have computed the ARI of major rainstorms for purposes of insurance claims, media requests and post-storm reports.

EZ2 floodplain
The proposed barge port is located in a 500 year floodplain, which is bounded by an elevated railroad berm, 15-20 feet tall, along the eastern border of the floodplain and acts a levee at the North-South reach against the Illinois River. Beyond the rail line to the north, there is public river access close to the riverfront along the levee which acts as a buffer zone between a wooded wetland area that is highly riparian and swampy and the BNSF railroad berm that acts as a second levee, thus protecting adjacent farmland from excessive flooding, although the land itself has an apparent seasonal high water table: at the surface to 1 foot below the surface.

Soil Composition
The soil classification for the proposed zone falls under USGS 8070A: Beaucoup silty clay loam, with 0 to 2 percent slopes and occasionally flooded.

Setting
Landform: Flood plains

Map Unit Composition
Beaucoup and similar soils: 100 percent

Soils of Minor Extent
Similar soils:
• Soils that have less clay in the surface layer
• Soils that have more clay in the surface layer and subsoil
• Soils that have less clay in the surface layer and have a dark surface soil more than 24 inches thick

Properties and Qualities of the Beaucoup Soil
- Parent material: Alluvium
- Drainage class: Poorly drained

- Slowest permeability within a depth of 40 inches: Moderately slow
- Permeability below a depth of 60 inches: Moderately slow
- Depth to restrictive feature: More than 80 inches
- Available water capacity: About 11.3 inches to a depth of 60 inches
- Content of organic matter in the surface layer: 5.0 to 6.0 percent
- Shrink-swell potential: Moderate
- Apparent seasonal high water table: At the surface to 1 foot below the surface
- Ponding depth: 0.0 to 0.5 foot
- Frequency and most likely period of flooding: Occasional, November to June
- Potential for frost action: High

(2) Dave Schneider, Schulyer County Highway Department, Dec 2012

- Hazard of corrosion: High for steel and low for concrete
- Surface runoff class: Negligible
- Susceptibility to water erosion: Low
- Susceptibility to wind erosion: Low

Interpretive Groups

- Land capability classification: 2w
- Prime farmland status: Prime farmland where drained
- Hydric soil status: Hydric (3)

Ecological Compliance Assessment

This project was submitted for information only. It is not a consultation under Part 1075.
IDNR Project #: 1307347
The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location: Smooth Softshell Turtle (Apalone mutica)(4)

Satellite Image of wetland area near proposed Enterprise Zone

A native Smoothshell Turtle
wildlifedepartment.com/wildlifemgmt/turtles

Public Access near proposed area, 15-20 foot levee.

The levee and erosional control system,
along access road along the Illinois River near Frederick.

(3) soildatamart.nrcs.usda.gov/Manuscripts/IL169/0/Schuyler_IL.pdf
(4) geoserver.dnr.illinois.gov/ecocat/

The wooded wetland area between the levee & rail berm.

The access road atop the levee near Frederick.

Brownfield Property

In the middle of the proposed barge port sits an salvage yard that accepts used oil. The dimensions of the yard are approximately 792 feet along the track and about 355 feet perpendicular to the track. This will be cause for imminent environmental mitigation. Near the ADM site along the very northern border of the proposed port site the BNSF berm extends 750 feet to the drainage ditch along IL route 100.

Satellite Image of salvage yard/brownfield site

Rail Traffic

Traffic counts are comparatively low on the Schuyler county side (west) accounting for only half that of US 67 on the Cass County side (east) and only 1/3 of that along Il 100 and Il 103 on the Schuyler County side. Compared with much higher numbers on the Cass County side, particularly near the Cargill Meat Processing Plant industrial area, the county roads are far less travelled.

The new Route 67 bridge has had an Environmental Impact Statement completed in May, 2002 with a Statement of No Significant Impact (FONSI) and an underpass for State Route 103/100 with a diamond interchange, in lieu of clover leaf interchange, being planned. A new 4 lane, truss bridge is being planned to replace the old span and should be completed by 2014. It will be tall enough for even the largest of freighters to pass beneath.

Agricultural products and livestock shipments will have minimal impact for railway transport since the land use for spurs is not readily available on the Schuyler County side of the BNSF line. Spur lines are more readily available for development south and east of Beardstown. It is in this area that a single rail track bridge accommodates all rail traffic at BNSF mile marker location "117.35." The track crosses the river, bends to the right heading northbound, and splits to two tracks at 40 degrees 01' 48.96" **N**, 90 degrees 26' 12.66" **W**.

Rail Crossings

There are two overpass BNSF rail crossings both in Frederick, one north of the proposed zone at the intersection of IL route 100 at the BNSF crossing, the other is nearby and enters a wooded wetland area at 2530 E Main St and 68N IL 100. Both are 14' 0". There is also one at the entrance to Schmoldt Park in Beardstown at Sangamon Street with a bridge clearance of 8'6." To the immediate south of the BNSF track bordering the Illinois River is a 15 foot levee system with a wooded wetland that acts as a buffer between the track berm and the built levee.

There is also one additional grade level rail crossing at 850 N Rining lane 3.3 miles west of the proposed port site. The intermodal center should not pose any safety threats or congestion at this crossing due to its physical distance from the proposed site.

BNSF single rail crossing bridge crossing, Beardstown   BNSF 8'6" rail overpass into Schmoldt Park, Beardstown

Map of the Rail Crossings at Beardstown side near proposed Intermodal zone with spurs.

Current Spur Availability

Near the intersection of Bay St. and 8th street in Beardstown, there exists an old Roundhouse that is not in operation. There is a primary operational rail spur not less than 3,575 feet in length.

Alongside the spur sits a usable secondary spur that is not less than 1,975 feet. This spur is unusable in other areas. Trains still use these tracks for transfer of products and for maintenance of rail purposes. The right of way for these two spurs is not less than 150 feet and not more than 400 feet. BNSF maintains these tracks. A large overpass sits to the south with the rails passing beneath Il 125. These tracks are used exclusively for freight. A portion of Schmoldt park comes within 62.5 feet of the track, but a fence and railroad track berm separate the park from the BNSF tracks. Public input would be desired if the increased freight were proposed to be too heavy near this park. Additional railroad traffic would require automated gates for protection of automobile and pedestrian traffic. Currently, the rail traffic is rather light by comparison and an estimated 12 trains per day pass through the single track area. The crossings are not gate automated at the time of this writing.

If Schuyler County is willing to invest the capital to build new spurs, there is at least a half mile clearance from the tip of the ADM site on the northern edge of the site to the salvage yard to the site which provide ample room to build, however at a cost of about 1-2 million dollars for a ¼ mile spur to plan and build but not including property rights and acquisition. The northern end varies in width from 500 feet wide at the northern tip of the salvage site, widening to 1000 feet moving north and narrowing at the southern end of the ADM site to 750 feet. The length north to south is between 3,200 and 3,280 feet. The total area north of the salvage yard is approximately 2,062,500 feet or roughly 47 acres.

At the southern end of the proposed site there exists a larger parcel of area, about 290 acres, which may better serve the spatial and land use needs of the intermodal facility, with direct access to wetland for surface runoff mitigation and lower berm elevations that are crucial for the needed spurs.

Traffic Counts
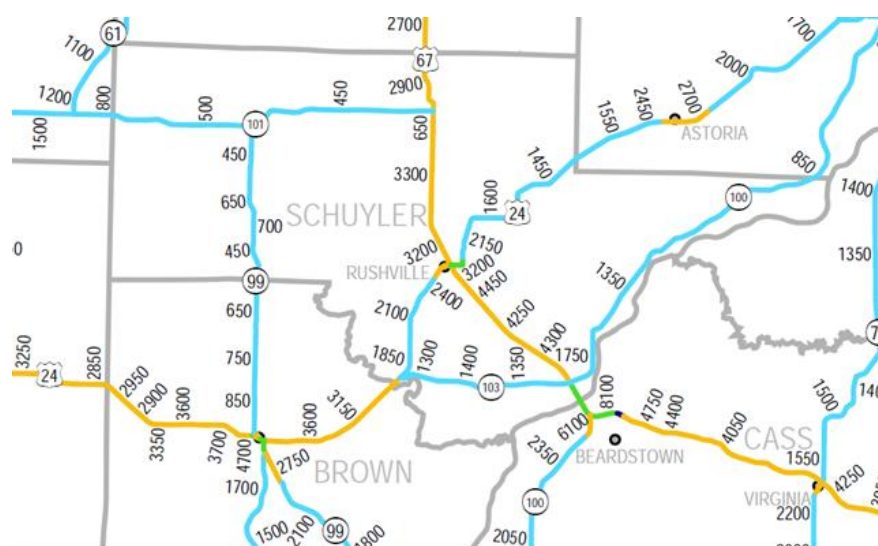
(1750+1350)/2=1,550 Average daily traffic Count along Il route 100. Average daily traffic (ADT) counts peak on the Beardstown side at 8,100 but shrink to 4,300 north of Il 100 and Il 103 to the west. The average daily traffic for US 67 would be about 6,200 cars and trucks.

Traffic Counts, IDOT 2011

Local Industry

There are four operating hog confinements in Schuyler County: 1 in Littleton, 1 in Oakland Township, 2 in Brooklyn. There is also 1 planned in Huntsville. One local mine operates in McDonough County, the North Grindstone Mine, that produced 195,000 tons of coal in 2010 and as many as 310 Schuyler County residents are employed at the mine. (5) An additional mine application has been submitted but has been held up due to EPA concerns. A NPDES has application has been submitted but denied. (dnrgis.state.il.us/website/MineLRD_Apps/p410Volum1.pdf)*

The land use surrounding the area consists mainly of animal husbandry and cropland. These businesses use pesticides, fertilizers, gasoline and diesel which are detrimental to the environment and the groundwater quality. Animal husbandry operations produce nitrates, phosphorus and other metals to the area when it is sprayed into the ground as fertilizer. The hog farm currently utilizes the manure for farm applications within the permit area.

Effects range from hydrogen sulfide and ammonia release, release of liquefied gas into water bodies, odor generated from hog waste, and disease causing pathogens that are generated from swine manure that is detrimental to human health.*

(5) dnr.state.il.us/mines/

* Grindstone Application p.410Vol1, page III-36

Output from the proposed mine

Thought the permit application parts don't specifically indicate how much material will be extracted from the proposed mine, The McDonough County mine produced an estimated 195,000 tons in 2010. This number will be used as a reference in the recommendations section of the study.

A Regional Economic Summary

Major Employers

Company Name	City/Town	Year Established	# of Employees	Type of Business
Manufacturing				
Two Rivers FS, Inc	Rushville	1986	70	Feed-Manufacturers
Oil Filter Recyclers, Inc.	Astoria	2002	75	Oil Recovery
Health Care				
Culbertson Memorial Hospital	Rushville	1984	180	Hospital
Snyder's Vaughn-Haven, Inc.	Rushville	1984	70	Long Term Care Facility
Other				
GM Sipes Construction, Inc.	Rushville	1993	250	General Contractors
Schuyler-Industry CUSD #5	Rushville	1987	115	Schools
Two Rivers FS, Inc.	Rushville	1990	100	Farm Service

Twelve Minute Drive Time
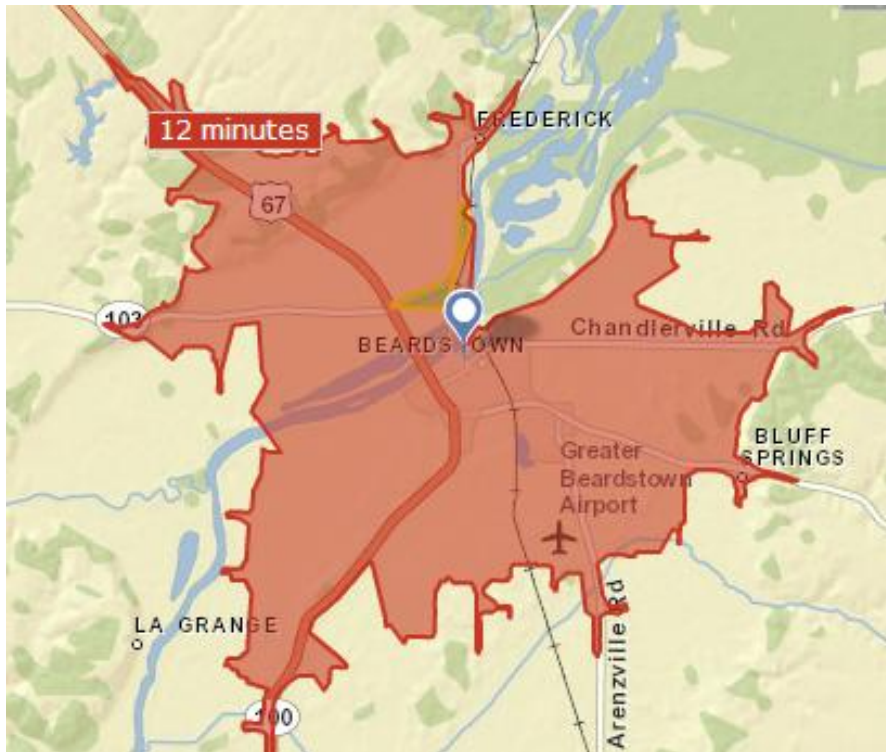
30 Minute Drive Time
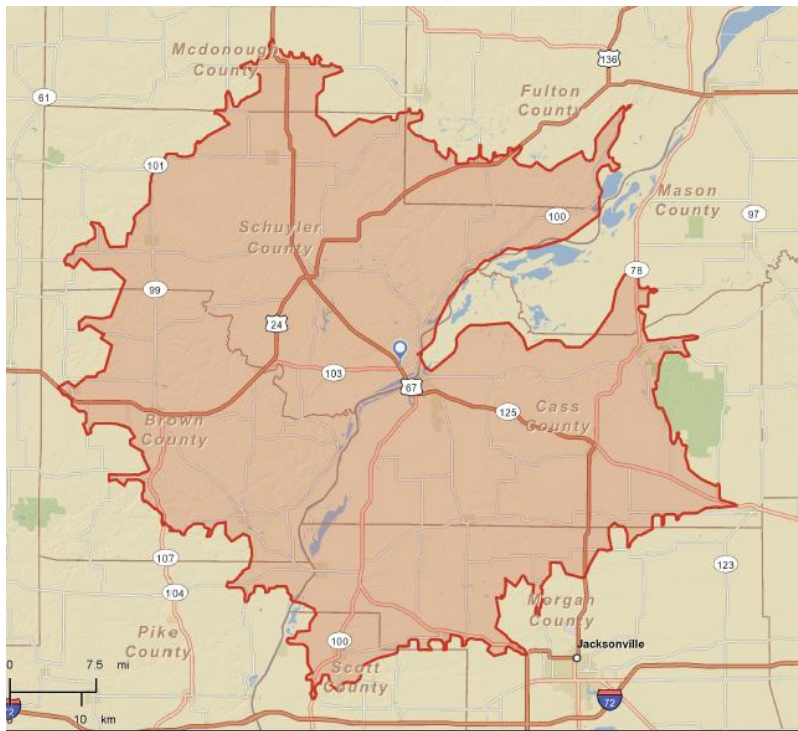
Executive Summary Report

cargill
Beardstown, IL
Drive Time: 12 minutes

income
Latitude: 40.01549
Longitude: -90.43295

	0 - 12 minutes
Population	
1990 Population	6,899
2000 Population	7,257
2010 Population	7,224
2015 Population	7,089
1990-2000 Annual Rate	0.51%
2000-2010 Annual Rate	-0.04%
2010-2015 Annual Rate	-0.38%
2010 Male Population	50.0%
2010 Female Population	50.0%
2010 Median Age	37.2

In the identified area, the current year population is 7,224. In 2000, the Census count in the area was 7,257. The rate of change since 2000 was -0.04 percent annually. The five-year projection for the population in the area is 7,089, representing a change of -0.38 percent annually from 2010 to 2015. Currently, the population is 50.0 percent male and 50.0 percent female.

Population by Employment

Currently, 88.5 percent of the civilian labor force in the indentified area is employed and 11.5 percent are unemployed. In comparison, 89.2 percent of the U.S. civilian labor force is employed, and 10.8 percent are unemployed. In five years the rate of employment in the area will be 90.5 percent of the civilian labor force, and unemployment will be 9.5 percent. The percentage of the U.S. civilian labor force that will be employed in five years is 91.2 percent, and 8.8 percent will be unemployed. In 2000, 62.6 percent of the population aged 16 years or older in the area participated in the labor force, and 0.2 percent were in the Armed Forces.

In the current year, the occupational distribution of the employed population is:

42.5 percent in white collar jobs (compared to 61.6 percent of the U.S. employment)

20.4 percent in service jobs (compared to 17.3 percent of U.S. employment)

37.1 percent in blue collar jobs (compared to 21.1 percent of U.S. employment)

In 2000, 70.0 percent of the area population drove alone to work, and 3.4 percent worked at home. The average travel time to work in 2000 was 19.8 minutes in the area, compared to the U.S average of 25.5 minutes.

Population by Education

In the current year, the educational attainment of the population aged 25 years or older in the area was distributed as follows:

18.4 percent had not earned a high school diploma (14.8 percent in the U.S)

45.4 percent were high school graduates only (29.6 percent in the U.S.)

4.8 percent had completed an Associate degree (7.7 percent in the U.S.)

8.9 percent had a Bachelor's degree (17.7 percent in the U.S.)

2.7 percent had earned a Master's/Professional/Doctorate Degree (10.4 percent in the U.S.)

Per Capita Income

1990 Per Capita Income	$10,425
2000 Per Capita Income	$14,509
2010 Per Capita Income	$17,640
2015 Per Capita Income	$19,664
1990-2000 Annual Rate	3.36%
2000-2010 Annual Rate	1.93%
2010-2015 Annual Rate	2.20%

Households

1990 Households	2,671
2000 Households	2,758
2010 Total Households	2,735
2015 Total Households	2,682
1990-2000 Annual Rate	0.32%
2000-2010 Annual Rate	-0.08%
2010-2015 Annual Rate	-0.39%
2010 Average Household Size	2.60

The household count in this area has changed from 2,758 in 2000 to 2,735 in the current year, a change of -0.08 percent annually. The five-year projection of households is 2,682, a change of -0.39 percent annually from the current year total. Average household size is currently 2.60, compared to 2.59 in the year 2000. The number of families in the current year is 1,824 in the specified area.

Data Note: Income is expressed in current dollars
Source: U.S. Bureau and Census, 2000 Census of Population and Housing, Esri forecast for 2010 and 2015. Esri converted 1990 Census data into 2000 geography.

0 - 12 minutes

Households by Income

Current median household income is $39,202 in the area, compared to $54,442 for all U.S. households. Median household income is projected to be $44,554 in five years. In 2000, median household income was $30,904, compared to $22,855 in 1990.

Current average household income is $45,761 in this area, compared to $70,173 for all U.S households. Average household income is projected to be $51,016 in five years. In 2000, average household income was $36,645, compared to $26,250 in 1990.

Current per capita income is $17,640 in the area, compared to the U.S. per capita income of $26,739. The per capita income is projected to be $19,664 in five years. In 2000, the per capita income was $14,509, compared to $10,425 in 1990.

Median Household Income

1990 Median Household Income	$22,855
2000 Median Household Income	$30,904
2010 Median Household Income	$39,202
2015 Median Household Income	$44,554
1990-2000 Annual Rate	3.06%
2000-2010 Annual Rate	2.35%
2010-2015 Annual Rate	2.59%

Average Household Income	
1990 Average Household Income	$26,250
2000 Average Household Income	$36,645
2010 Average Household Income	$45,761
2015 Average Household Income	$51,016
1990-2000 Annual Rate	3.39%
2000-2010 Annual Rate	2.19%
2010-2015 Annual Rate	2.20%
2010 Housing	
1990 Total Housing Units	2,894
2000 Total Housing Units	2,953
2010 Total Housing Units	3,058
2015 Total Housing Units	3,078
1990 Owner Occupied Housing Units	2,013
1990 Renter Occupied Housing Units	658
1990 Vacant Housing Units	235
2000 Owner Occupied Housing Units	1,984
2000 Renter Occupied Housing Units	774
2000 Vacant Housing Units	207
2010 Owner Occupied Housing Units	1,953
2010 Renter Occupied Housing Units	782
2010 Vacant Housing Units	323
2015 Owner Occupied Housing Units	1,904
2015 Renter Occupied Housing Units	778
2015 Vacant Housing Units	396

Currently, 63.9 percent of the 3,058 housing units in the area are owner occupied; 25.6 percent, renter occupied; and 10.6 are vacant. In 2000, there were 2,953 housing units - 66.9 percent owner occupied, 26.1. percent renter occupied, and 7.0 percent vacant. The rate of change in housing units since 2000 is 0.34 percent. Median home value in the area is $66,158, compared to a median home value of $157,913 for the U.S. In five years, median value is projected to change by 2.72 percent annually to $75,665. From 2000 to the current year, median home value change by 3.48 percent annually.

Unemployment Rates in the Local Communities

Brown County Unemployment

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Brown	2.7	3.3	3.5	3.3	4.1	3.7	3.6	3.4	2.6	3.6	3.9	5.0	4.0
Illinois	4.3	4.2	5.2	6.5	6.4	6.1	5.9	3.4	4.8	5.4	9.4	10.6	8.6
USA	4.3	4.3	4.4	5.9	6.0	5.6	5.2	4.7	4.5	4.9	9.4	9.6	9.0

Brown County Unemployment
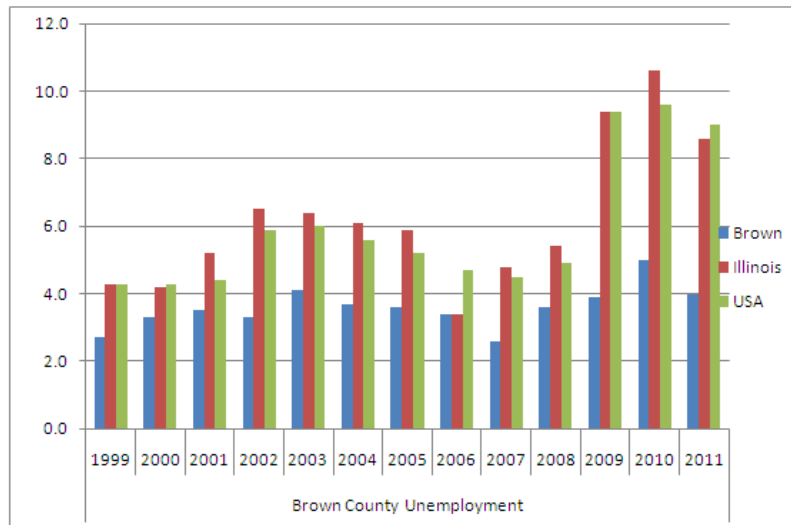
Cass County Unemployment

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Cass	4.4	4.4	4.5	4.7	4.9	4.9	4.6	4.5	4.2	4.6	5.9	7.7	6.8
Illinois	4.3	4.2	5.2	6.5	6.4	6.1	5.9	3.4	4.8	5.4	9.4	10.6	8.6
USA	4.3	4.3	4.4	5.9	6.0	5.6	5.2	4.7	4.5	4.9	9.4	9.6	9.0
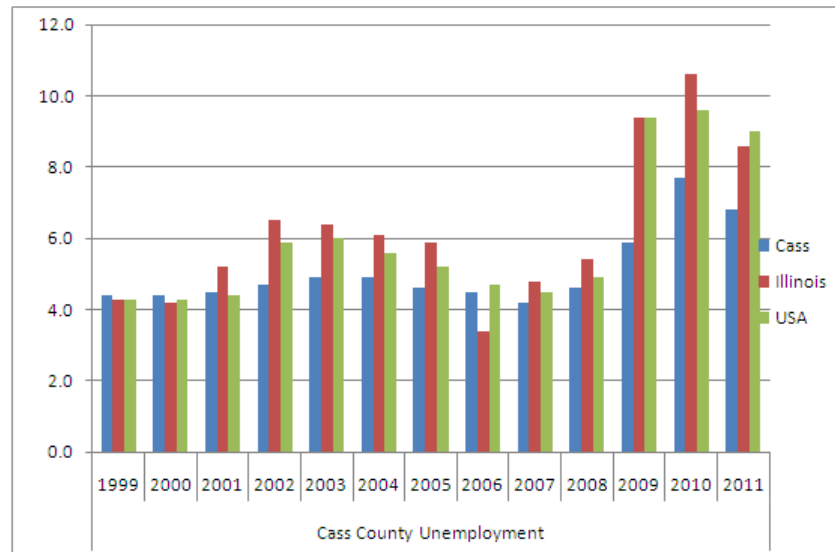
Cass County Unemployment

Schuyler County Unemployment

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Schuyler	3.8	4.8	4.5	5.9	4.3	4.6	5.0	4.2	4.2	4.3	5.6	7.2	6.2
Illinois	4.3	4.2	5.2	6.5	6.4	6.1	5.9	3.4	4.8	5.4	9.4	10.6	8.6
USA	4.3	4.3	4.4	5.9	6.0	5.6	5.2	4.7	4.5	4.9	9.4	9.6	9.0

Schuyler County Unemployment
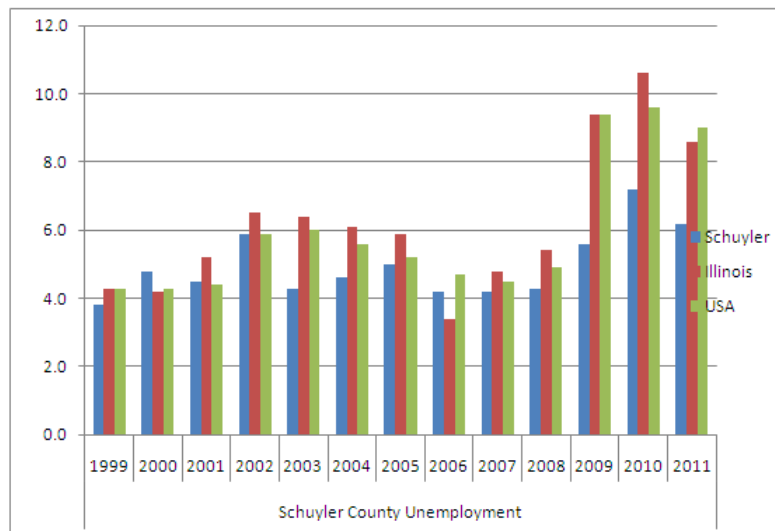
Although the unemployment rates inched upward from 2000 until 2003 in four of the six counties, Adams and Pike Counties unemployment rates dropped from 2009-20011. Overall, all six counties have shown an increase in unemployment since 2007.

	2007	2008	% change	2009	2010	2011	% change	2007-2011 % change
Adams	3.6	3.9	+ 8.3%	6.9	7.5	6.0	-13%	66%
Brown	2.6	3.6	+38%	3.9	5.0	4.0	+2.6%	54%
Cass	4.2	4.6	+9.5%	5.9	7.7	6.8	+9%	61.9%
Pike	4.4	5.2	+18%	7.2	9.0	7.1	-1.4%	61.3%
Schuyler	4.2	4.3	+2%	5.6	7.2	6.2	+10.7%	47.6%
Scott	5.7	5.2	-8.7%	7.1	9.4	8.3	+16.9%	45.6%

US Bureau of Labor and Statistics, Local Area Unemployment Statistics,
lmi.ides.state.il.us/pdfs/countymap.pdf, April 2011

These rates tend to be better than their state and national counterparts, especially in Brown and Adams Counties respectively. Taking into accounts these labor force trends there would appear to be some consequences for economic development:

Without a growing youth population in the District there will be fewer labor market entrants coming from that source which might lead to a decline in labor force availability.

- Coupling the youth trend with the aging of the existing workforce, the workforce may begin to see a period of decline of total participants if new entrants do not come from relocation to the district.
- This trend would lead to a tighter labor market potentially driving up wages and making it more difficult for new or existing businesses to find employees.
- Economic development may need to focus less on recruiting businesses in general and more on recruiting families and on recruiting companies with higher wage jobs. Earning (by place of work) for persons employed in each of the District counties present a mixed picture.
- Agriculture and tourism play the most important components of the regional economy and cannot be outsourced. Adams County alone brought in $83 million in revenue in 2010 and sustained 230 jobs while Pike County brought in $21 million in revenue and sustained 100 jobs.

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LOCAL EMPLOYMENT DYNAMICS BY INDUSTRY, 2010 LOCAL EMPLOYMENT DYNAMICS DATA

Legend:
- Accomodations & food Services
- Agriculture, Forestry, Fishing, Hunting
- Arts, Entertainment & Recreation
- Construction
- Education Services
- Finance/Insurance
- Health Care, Social Assistance
- Information Technology
- Management of Companies/ Enterprises
- Manufacturing
- Mining
- Other Services
- Professional/Technical Services
- Public Administration
- Real estate/leasing
- Retail Trade
- Transportation/ Warehousing
- Utilities
- Waste Management Administration
- Wholesale Trade

LEHD, 2010 Illinois Department of Employment Security

	TREDD Local Employment Household Dynamics by Industry 3Q 2010 LEHD, Illinois Department of Employment Security						
	TREDD	Adams	Brown	Cass	Pike	Schuyler	Scott
Accommodations & food Services	3,009	2,307	50	171	341	111	29
Agriculture, Forestry, Fishing, Hunting	428	114	9	56	195	32	22
Arts, Entertainment & Recreation	385	364	0	0	21	0	0

Construction	1,600	1,043	152	100	171	80	54
Education Services	3,509	2,258	218	524	509	0	0
Finance/Insurance	2,315	1,713	51	226	251	63	11
Health Care, Social Assistance	7,136	5,833	174	445	518	158	8
Information Technology	795	627	6	101	47	14	0
Management of Companies/ Enterprises	97	97	0	0	0	0	0
Manufacturing	7,853	4,934	16	2,620	75	123	85
Mining	304	0	0	0	0	304	0
Other Services	1,284	1,059	29	75	62	59	0
Professional/Technical Services	975	739	29	108	79	20	0
Public Administration	2,588	1,501	293	228	271	135	160
Real estate/leasing	535	510	0	0	21	4	0
Retail Trade	6,181	4,698	87	508	664	137	87
Transportation/ Warehousing	1,908	852	557	286	196	17	0
Utilities	190	117	0	54	19	0	0
Waste Management Administration	1,340	1,173	31	61	53	22	0
Wholesale Trade	3,837	1,907	1,367	177	259	127	0
Total TREDD employment:	46,269					1406	

Job categories classified as OTHER include:

1. Automotive (Other Services)	2. HVAC (x2) (Construction)	3. Pharmacy (Retail Trade)
4. Automotive repair (Other Services)	5. Insurance (Finance or Insurance)	6. Police/Law Enforcement (x2) (Public Administration)
7. Body Shop (Other Services)	8. Investigations (Administrative & Support)	9. Printing (Other Services)
10. Child Care (x2) (Health Care and Social Assistance)	11. Landscaping (x2) (Administrative & Support)	12. Public safety (Public Administration)
13. Collection Agency (Administrative & Support)	14. Law Office (Professional, Scientific or Technical Services)	15. Recycling (Administrative & Support)
16. Contract office equipment (Other Services)	17. Legal (Professional, Scientific or Technical Services)	18. Church/Religious organization (x5) (Other Services)
19. Convenience store/ gas (Retail Trade)	20. Levee & Drainage District (Public Administration)	21. Restaurant (x3) (Accommodation and Food Services)
22. Electrical (Construction)	23. Library (x3) (Information)	24. Scrap metal recycling (Administrative & Support)
25. Fire department (x2) (Public Administration)	26. Machine job shop and steel sales (Manufacturing)	27. Screen printing/embroidery (Manufacturing)
28. Fraternal club (Other Services)	29. Municipality (Public Administration)	30. Semi repair and towing (Other Services)
31. Free clothes, household and food to needy (Health Care and Social Assistance)	32. Museum (Arts, Entertainment & Recreation)	33. Shelter (Health Care and Social Assistance)
34. Health/fitness/dance/nutrition (Arts, Entertainment & Recreation)	35. Not for Profit Fraternal Benefit Society (Other Services)	36. Used auto parts (Retail Trade)
37. Home Health Care - Companions & Homemakers (Health Care and Social Assistance)	38. Oil Pipeline Transportation (Transportation and Warehousing)	39. Youth Center (Health Care and Social Assistance)

2011 TREDD Dot Foods Cluster Study

Location Quotients

Location Quotients (LQs) are ratios that allow an area's distribution of employment by industry to be compared to a reference or base area's distribution. The reference area is usually the U.S., but it can also be a state or a metropolitan area. The reference or base industry is usually the all-industry total. The discussion below assumes the defaults are used. LQs also allow areas to be easily compared to each other.

If an LQ is equal to 1, then the industry has the same share of its area employment as it does in the reference area. An LQ greater than 1 indicates an industry with a greater share of the local area employment than is the case in the reference area. For example (assuming the U.S. as the reference area), Las Vegas will have an LQ greater than 1 in the Leisure and Hospitality industry because this industry makes up a larger share of the Las Vegas employment total than it does for the country as a whole.

LQs are calculated by first, dividing local industry employment by the all industry total of local employment. Second, reference area industry employment is divided by the all industry total for the reference area. Finally, the local ratio is divided by the reference area ratio. *US Bureau of Labor Statistics*

Location Quotients are mathematically defined by the following formula:

$$LQ = \frac{e_i/e}{E_i/E}$$

Where:

ei=local employment in industry I   e=total local employment
Ei= reference area employment in industry I   E=Total reference area employment

Industry Clusters Location Quotient data by County	Adams	Brown	Cass	Pike	Schuyler	Scott
Base Industry: Total of all industries in US	1	1	1	1	1	1
Natural Resources & Mining	0.65	ND	0.85	4.46	**16.62**	ND
Construction	0.77	1.15	0.63	1.09	2.1	3.5
Manufacturing	1.6	ND	**4.23**	0.28	0.68	ND
Trade, Transportation & Utilities	1.14	3.26	0.94	1.58	0.86	1.54
Information	0.78	ND	0.66	0.76	0.4	ND
Financial Activities	1.08	0.34	0.61	1.19	0.69	1.14
Professional & Business Services	0.41	0.12	0.2	0.25	0.22	0.23
Education & Health Services	1.21	0.56	0.69	1.05	0.67	0.17
Leisure & Hospitality	0.78	0.16	0.37	1.05	0.73	0.87
Other Services	1.10	ND	0.34	0.45	0.88	0.5
Unclassified	0.15	NC	0.92	NC	0.92	ND

Calculated from Bureau of Labor Statistics, 2011

Earnings Growth Rate

Region	Earnings Growth Rate 1999-2009	Earnings Growth Rate 2008-2009
Adams	3.9%	-3.4%
Brown	5%	-0.5%
Cass	3.6%	-1.3%
Pike	3%	-2.3%
Schuyler	4.9%	-6.4%
Scott	5.2%	-4.7%
Illinois	3%	-5.4%
USA	3.7%	-4.0%

Bureau of Labor Statistics 2010 data

Four Counties in the TREDD district are above the national average in earnings growth rate for the decade between1999-2009, and all but Pike County are above the state average. Pike County is tied with the State average. The labor force growth rates and the earnings growth rates in those counties may point to the impact of a small group of significant employers in those counties that are positively impacting those factors. These would include the state correctional facility and DOT Foods in Brown, Excel Meats in Cass County and Culbertson Hospital in Schuyler counties.

TREDD Employment Changes 2005-2010

Sector	Employment, 2005	Employment, 2010	Employment Change	Percent Growth, 2005 - 2010
Trade, Transportation, and Utilities	12,331	12,553	222	1.8
Education and Health Services	10,048	9,963	-85	-0.8
Manufacturing	8,011	7,262	-749	-9.3
Leisure and Hospitality	3,846	3,507	-339	-8.8
Financial Activities	2,682	2,643	-39	-1.5
Professional and Business Services	2,280	2,622	342	15.0
Public Administration	2,368	2,494	126	5.3
Construction	2,191	1,992	-199	-9.1
Other Services	1,614	1,390	-224	-13.9
Natural Resources and Mining	744	897	153	20.6
Information	985	765	-220	-22.3
	47,100	46,088	-1,012	

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Shift-Share Results for Your Schuyler and Cass Counties

In economics there is a technique called shift-share analysis. Its purpose is to take the change in employment for an area and decompose it into the three sources that caused the change. Here is a shift-share analysis for your area.

1. The National Growth Component
The first source of change is the growth or contraction in the United States economy. During the time period 1995 to 2010, the nation's employment grew by 10.7 percent (i.e, America's employment in 1995 and 2010 was 115.4 million and 127.8 million, respectively. The growth rate is therefore (127.8 - 115.4) / 115.4) * 100 = 10.7 percent.)

This growth rate is listed in Shift Share Analysis Table, as the national growth component. The effect of the national growth component is felt most acutely during the peaks and valleys of the business cycle, i.e. during recessions and boom times. Local businesses are very aware of how the general business climate affects them.

As reported in this table, this area's biggest employer, the Manufacturing sector, had the highest national growth component. The 10.7 percent national growth component led to this sector's employment growing by 257 jobs (i.e., 10.7 percent times the sector's base employment, 2,390, equals 257 jobs). Overall, the national growth component was responsible for a total of 687 jobs in this 2 county area.

An understandable goal of some local leaders is to make their economy more 'recession proof'.   Economies with more employment in government, military and education will experience less fluctuation because those sectors are not directly related to the business cycle.   Also, economic sectors that are experiencing more growth will provide larger employment gains to a local economy.

2. The Industrial Mix Component
Insight into these growing sectors is provided by the second aspect that shift-share analysis considers: the industrial mix component.   This component is found by calculating the percent growth rate for an economic sector at the national level and subtracting from it the national growth component.   Thus, the industrial mix component measures how well an industry has grown, net of effects from the business cycle.

The table lists these components for each sector.   The highest industrial mix component was 25.4 percent in the Education and Health Services sector, and it was responsible for 252 jobs (i.e., 25.4 percent times this sector's base employment, 992, equals 252 jobs).   If this area's employment were concentrated in these sectors with higher industrial mix components, then the area could expect more employment growth.   After adding up across all eleven sectors, it appears that the industrial mix component was responsible for decreasing your area's employment by -787 jobs.   Thus, the area has a concentration of employment in industries that are decreasing nation-wide, in terms of employment.   The majority of these jobs can be attributed to decreases in the Other Services sector.

Shift-share analysis does not explain why an economic sector has slower or faster growth.   Rather, the local development official must use knowledge about the business conditions facing particular industries to understand this.   For example, in some rural counties the manufacturing sector was once dominated by apparel and textile firms.   The availability of low-priced imported clothing in the 1990's has meant that many apparel firms have gone out of business.   Many counties therefore have a negative industrial mix component for manufacturing.

3. The Competitive Share
The third and final component of shift-share analysis is called the competitive share.   It is the remaining employment change that is left over after accounting for the national and industrial mix components.   If a sector's competitive share is positive, then the sector has a local advantage in promoting employment growth.

For example, the Manufacturing sector employment grew by 2.1 percent (from Employment Changes Table).   Of this 2.1 percent, 10.7 percent was due to the national growth component and -44.1 percent was due to the industrial mix (from Shift Share Table).   This leaves a remainder of 35.5 percent that is attributable to the local

conditions facing this economic sector. For the Manufacturing sector, the competitive share translated into 848 jobs (i.e., 35.5 percent times the base employment level of 2,390 equals 848 jobs).

The top three sectors in competitive share were Manufacturing, Natural Resources and Mining, and the Trade, Transportation, and Utilities sector. Across all sectors, the competitive share component totals to 685 jobs. This indicates that your area is competitive in securing additional employment.

A positive competitive share component would indicate that your area has a productive advantage. This advantage could be due to local firms having superior technology, management, or market access, or the local labor force having higher productivity and/or lower wages. A negative competitive share component could be caused by local shortcomings in all these areas.

By examining the competitive share components for each industry, the development official can easily identify which local industries have a positive competitive share component. This also indicates which industries have competitive advantages over other counties and regions. Local officials can then devise strategies to improve local conditions faced by particular industries selected for focus. These strategies may include specialized training programs for workers and management, improved access to input and product markets through transportation and telecommunications, or arranged financial alternatives for new machinery and equipment.

Shift Share Analysis 1995-2010

Sector	National Growth Component, Percent	National Growth Component, Jobs	Industrial Mix Component, Percent	Industrial Mix Component, Jobs	Competitive Share Component, Percent	Competitive Share Component, Jobs
Manufacturing	10.7	257	-44.1	-1,054	35.5	848
Natural Resources and Mining	10.7	18	-5.8	-10	107.9	186
Trade, Transportation, and Utilities	10.7	134	-6.6	-83	11.7	146
Construction	10.7	29	-5.2	-14	11.0	29
Financial Activities	10.7	28	-0.8	-2	0.5	1
Public Administration	10.7	45	4.3	18	-8.1	-34
Professional and Business Services	10.7	29	19.0	52	-56.0	-153
Leisure and Hospitality	10.7	40	14.4	54	-42.9	-161
Education and Health Services	10.7	107	25.4	252	-17.9	-177
Information	10.7	.	-15.8	.	.	.
Other Services	10.7	.	5.4	.	.	.
		687		-787		685

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Shift Share Analysis for TREDD district, 2005-2010

Sector	National Growth Component, Percent	National Growth Component, Jobs	Industrial Mix Component, Percent	Industrial Mix Component, Jobs	Competitive Share Component, Percent	Competitive Share Component, Jobs
Trade, Transportation, and Utilities	-2.7	-329	-2.2	-275	6.7	826
Manufacturing	-2.7	-214	-16.3	-1,307	9.6	771
Professional and Business Services	-2.7	-61	1.6	37	16.0	366
Construction	-2.7	-58	-21.3	-467	14.9	326
Financial Activities	-2.7	-71	-5.1	-138	6.4	171
Natural Resources and Mining	-2.7	-20	6.9	52	16.3	121
Public Administration	-2.7	-63	8.2	194	-0.2	-5
Information	-2.7	-26	-8.3	-82	-11.4	-112
Other Services	-2.7	-43	3.3	53	-14.5	-234
Leisure and Hospitality	-2.7	-103	4.9	189	-11.1	-425
Education and Health Services	-2.7	-268	11.8	1,190	-10.0	-1,007
		-1,256		-554		798

http://www.georgiastats.uga.edu/sshare1.html

Current employment statistics

Industry by employment	Adams	Brown	Cass	Pike	Schuyler	Scott
Natural Resources and mining	114	9	56	195	336	22
Construction	1043	152	100	171	80	54
Manufacturing	4934	16	2620	75	123	85
Trade, Transportation, Utilities	5550	644	794	860	154	87
Information	627	6	101	47	14	0
Financial Activities	1713	51	226	251	63	11
Professional & Business Services	739	29	108	79	20	0
Educational & Health Services	2258	218	524	509	0	0
Leisure & Hospitality	364	2307	211	362	111	29
Other	1059	29	75	62	59	0

Bureau of Labor Statistics 2010 data

As above a few of the tables will be used to measure the targeted number of jobs to be retained as well as created. To start with, the following formula will be used.

X= desired level of employment in each sector per county
LQ(x)= E, where E is the number of employees currently working in the field.

Solving for X we get

X= E/LQ

X-E = the targeted number of jobs produced. So, for example, If the location quotient in the field is .68 in a given industry and there are 805 jobs in that sector, then .69x= 805.

Dividing 805 by .68 yields 1183.83, rounding up to 1184, the ideal job count.

Finally, subtract 1184-805=379, the number of jobs that need to be created in that field.

The following table reiterates those already employed. Those jobs shall be retained.

Ideal employment levels by sector based on employment figures & location quotients

Base Industry by employment	Adams	Brown	Cass	Pike	Schuyler	Scott
Natural Resources and mining	176	ND	66	-	-	ND
Construction	1355	-	159	-	-	-
Manufacturing	-	ND	-	267	180	ND
Trade, Transportation and utilities	-	-	844	-	179	-
Information	803	ND	153	63	35	ND

Financial Activities	-	86	371	-	92	-
Professional & Business Services	1,802	242	540	316	91	5
Education and Health Services	-	390	760	-	1	1
Leisure and Hospitality	467	14,418	571	-	152	34
Other Services	-	ND	221	138	127	2
Unclassified						

The dashed areas indicate excessive employment in that field per county

Using the last part of the example, the number of jobs for each industry is then calculated:

Jobs to be created per field	Adams	Brown	Cass	Pike	Schuyler	Scott
Natural Resources and Mining	62	-	10	--	-	ND
Construction	312	-	59	-	-	-
Manufacturing	-			192	63	
Trade, Transportation and Utilities	-	-	50	-	25	-
Information	176	-	52	26	21	0
Financial Activities	-	35	145	-	29	-
Professional & Business Services	1063	213	432	237	71	5
Education & Health Services	-	172	236	-	1	1
Leisure & Hospitality	103	12,111	360	-	41	5
Other Services	-	ND	146	76	68	2
Total	**1716**	**12531**	**1490**	**531**	**319**	**13**

The number is 4,489 if the leisure and hospitality value for Brown County is left out. This number seems very high. From this table, however, most of the numbers seem quite excessive although certainly it is clear that the manufacturing, leisure and hospitality, and information sectors are areas that need growth. This number may also be skewed by the fact that DOT Foods is the largest employer in the area and draws workers from a at least a 33 mile radius. (Driving distance to Quincy)

Manufacturing from the previous 2005-2010 loss was 749 but from this table only 255 of those jobs would need to be replaced. Likewise, Leisure and Hospitality lost 339 jobs from 2005-2009 but now require 509 jobs to be filled. Information services lost 220 jobs but from the above table 275 jobs need to be replaced. That's 1039 jobs, exceeding the net loss from the table on page 115 by 27 jobs and improving the unemployment rate by over 2 full percentage points, bringing the region to under 5 percent. In addition, the "Other" category is still deficit 292 jobs as of 2012. These can range from all types of tertiary sector employment categories.

Schuyler County's expansive growth in the Natural Resources and Mining Category with a location quotient of over 15 means that the county would need to export 15 times the amount of the material it tends to consume independently. In other words, most of that material is being shipped off to other counties and other parts of the country and beyond. With a total expansion of jobs needed of about 319, virtually none of those are in the natural resources and mining category. What this means is that if there were a way to export such goods in terms of an intermodal facility or other facility more efficiently and at less cost (barge and rail) the number of tertiary sector jobs could and most likely would grow.

Cass and Schuyler Counties Employment Data
Cass and Schuyler Counties Total Employment, 1995-2010

http://www.georgiastats.uga.edu/sasweb/cgi-bin/broker
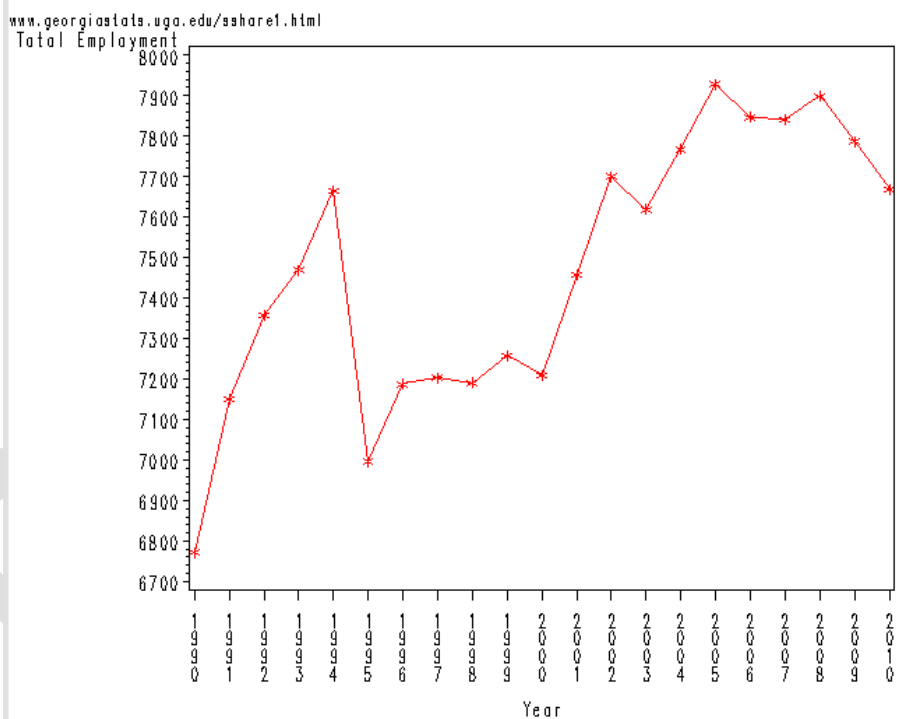
Employment Changes 1995-2010

Table 1: Employment Changes in Your Area, 1995 to 2010.

Sector	Employment, 1995	Employment, 2010	Employment Change	Percent Growth, 1995 - 2010
Manufacturing	2,390	2,441	51	2.1
Trade, Transportation, and Utilities	1,250	1,448	198	15.8
Education and Health Services	992	1,173	181	18.2
Public Administration	419	448	29	6.9
Natural Resources and Mining	172	366	194	112.8
Construction	266	310	44	16.5
Leisure and Hospitality	376	309	-67	-17.8
Financial Activities	259	286	27	10.4
Professional and Business Services	274	202	-72	-26.3
Information	.	102	.	.
Other Services	.	58	.	.
	6,398	7,143	585	

http://www.georgiastats.uga.edu/sasweb/cgi-bin/broker

Distribution of 2010 Employment for Your Area

Sector	Employment, 2010
Construction	310
Education and Health Services	1,173
Financial Activities	286
Information	102
Leisure and Hospitality	309
Manufacturing	2,441
Natural Resources and Mining	366
Other Services	58
Professional and Business Servic	202
Public Administration	448
Trade, Transportation, and Utili	1,448

http://www.georgiastats.uga.edu/sshare1.htm

Future for Valued Added Commodities in the TREDD Region

A More Realistic Measurement
A more likely goal to strive for would include creation of the following cluster areas as they pertain to growing job sectors as well as using existing regional resources:

Areas to Watch and Measure

Job Growth Area	Job growth goal	Reason
Leisure & Hospitality	509	A category from which agritourism & tourism fall into
Manufacturing	255	from which Intermodal jobs involving agriculture & mining products can result
Information	275	Because, as studies have shown, this is a growing sector of the economy around the country, especially the TREDD region
Other/Service jobs	292	because tertiary sector job categories like child care and home health care are in high demand in the TREDD region
Total	**1331**	**A much closer number to pre-recessionary losses**

Comprehensive Economic Development Strategy, Two Rivers Economic Development District, Two Rivers Regional Council, Quincy, IL, 2012, p.128

According to the EDA CEDS document drafted and released for public review in the summer of 2012 by Two Rivers Regional Council, cluster groups should be formed to watch changing statistics over the course of the next 5 years using data from Census, BEA, BLS, IDES and LEHD data. If these potential growth areas were not created, then existing clusters could be morphed into these new ones. Nevertheless, these areas of growth should be ones to enhance and develop or capitalize upon.

Other areas of concern were the agriculture, a mainstay of this region since the War of 1812 and before, as well as infrastructure and developing alternative energy sources. The latter two may or may either come by way of increased tax revenues or ensuring that the cost-benefit ratio is met. At this time, there is considerable debate as to the benefit of saving energy versus the cost of doing business. An additional factor is that there are new industries moving into Schuyler County and the location quotient for mining products is enormous given the population size of Schuyler County. These are resources that can utilized which would mean shipping commodities upstream to Peoria and further upward to Chicago for the purposes of interstate commerce.

Agriculture
Agriculture can be further developed by realizing that the existing commodities of corn and soybeans can be out performed by investing in other commodities at the local level. Trucking commodities of any kind is expensive. David Camphouse, Coordinator of Local Food Programs at John Wood Community College, and Mike Roegge of the Western Illinois Sustainable Agricultural Society agree. They argue that a small level of conversion to specialty crops like tree fruits, berries, spearmint, mushrooms and fresh

vegetables to a level equal to that of ¼ of 1 percent (an area equal to that of 27 million farmland acres) would result in 50 percent of the growing needs for the State of Illinois.

Other excellent research resources include:

- Illinois.virtuallmi.com/
- econdata.net/
- onthemap.ces.census.gov/
- knowyourregion.org
- communityanalyst.esri.com/
- lehd.did.census.gov/led
- hud.gov/offices/cpd/systems/census/il/#lowmod
- doleta.gov

Illinois River Cargo Container Traffic

The Illinois River passes through to the west and South of Schuyler County west of Beardstown. The river is the second most traveled waterway in the State of Illinois and is a direct connector to the Mississippi river at Alton, Il about 20 miles up the river from St. Louis, MO. The river also is controlled by a series of locks and dams along the way. Most notably the Lagrange System which is just to the south of Beardstown. Most type of containers and barges are sent up and down the river, mainly coal and grain products followed by livestock by-products.

This section will focus on the amount of freight and container traffic during peak seasons for the main commodities that are shipped along the waterway to other parts of the state or for export.

LaGrange Lock
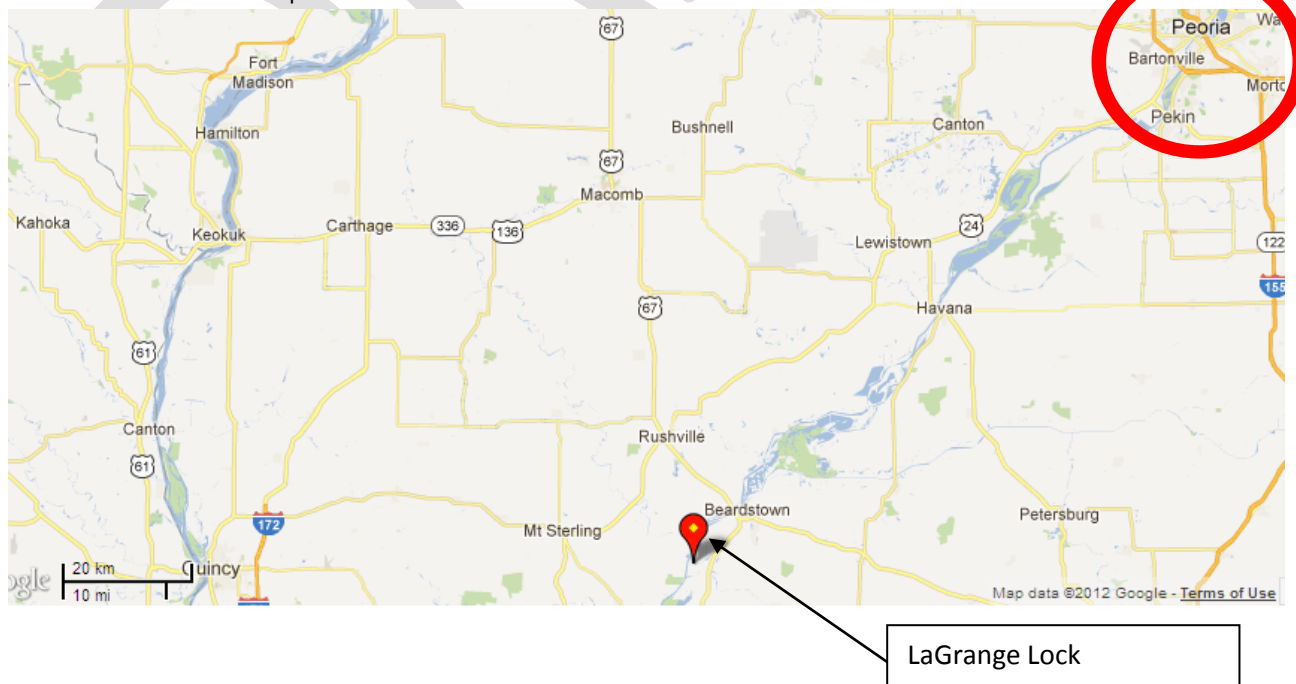
Weather patterns

The upper Mississippi River all the way to the Great Lakes area experienced a variety of extreme weather conditions in 2011, beginning with record snowfalls at the start of February down to a remarkably dry agricultural season. The levels of precipitation are shown in the following chart.

Adams County Precipitation 2011

Month	Average Precipitation	Spring/Summer 2011 Precipitation
April	3.7"	4.11"
May	5.1"	4.7"
June	4.6"	11.5"
July	4.3"	0.98"
August	3.8"	0.25"

Source: http://www.usa.com/adams-county-il-weather.htm;
http://www.isws.illinois.edu/data/climatedb/data.asp

Although the nearest city to River barge port is Beardstown, the closest major weather stations to Beardstown are in Jacksonville, Macomb and Quincy (Adams County) respectively. Other stations are located in Keokuk, IA Pittsfield, Kirksville, MO.
The precipitation from February 1-2 of 2011 averaged 21 inches of snow in the Schuyler County area. The days that followed were some of the coldest on record according to Weather-Warehouse.com. This period is important because the tonnage of coal shipped up and down the Illinois River was very high during the winter of 2011. In the same fashion, the days that preceded one of the driest periods in Illinois' agricultural history were the days prior to July of 2011. For these reasons, an examination took place of how much barge traffic occurred during the two extremes: February of 2011 and June-July of 2011. These periods are also being examined for purposes of agriculture and livestock shipments along the river.

:::

ILLINOIS RIVER TOP TEN MOST TRANSPORTED COMMODITIES, April 2012 Data

The following data was compiled for average daily traffic for both directions on the Illinois River for the week of Sunday, April 15 through Friday, April 20, 2012:
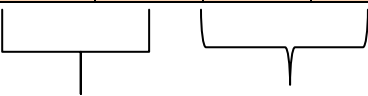
Date	Lock	Direction	Coal tonnage (10)	Steel (53)	(23)	(24)	(31)	(32)	(52)	(36) Corn	(65) Soyb	(67) Feed
Sun, April 15	P	D	16,700	1600	0	0	0	8,000	1600	38300	14400	0
Sun, April 15	P	U	0	0	0	0	0	0	0	0	0	0
Mon, Apri 16	P	D	0	0	0	7000	0	9,000	0	0	0	0
Mon, Apr 16	P	U	12,600	3100	0	0	12600	1,500	0	0	1600	0
Tues, Apr 17	P	D	6,400	0	6000	0	0	0	0	12700	3100	0
Tues, Apr 17	P	U	1,600	22400	0	8000	14937	0	3200	0	0	0
Wed, Apr 18	P	D	11,800	1600	1600	0	0	0	0	6300	4600	0
Wed, Apr 18	P	U	9,600	0	6950	0	14300	5,560	0	0	0	0

Date	Lock	Direction										
Thur, Apr 19	P	D	0	0	0	0	0	5,600	0	0	0	0
Thurs, Apr 19	P	U	0	0	1600	0	0	7,700	12400	0	0	0
Fri, Apr 20	P	D	17,400	0	0	13200	0	17500	0	7600	1500	0
Fri, Apr 20	P	U	0	0	0	0	9,600	0	0	0	0	0
Totals			76100	28700	16150	28200	51437	54860	17200	64900	25200	0

P=Peoria Lock
L=LaGrange Lock
U= Upstream, D=Downstream

Petroleum Products   Chemicals   Cement

Date	Lock	Direction	Coal tonnage (10)	Steel (53)	(23)	(24)	(31)	(32)	(52)	(36) Corn	(65) Soyb	(67) Feed
Sun, April 15	L	D	0	0	0	0	0	14400	0	7700	3000	7700
Sun, April 15	L	U	3,000	23900	0	1600	27537	1500	0	0	1600	0
Mon, April 16	L	D	17,100	0	0	0	0	8000	1600	25500	11200	4500
Mon, Apr 16	L	U	1,600	1600	6950	6400	0	5560	3200	0	0	0
Tues, Apr 17	L	D	0	0	0	7000	0	9000	0	19200	4800	0
Tues, Apr 17	L	U	0	0	0	0	14300	0	0	0	0	0
Wed, Apr 18	L	D	6400	0	6000	0	0	3000	0	12700	3100	0
Wed, Apr 18	L	U	0	0	1600	0	0	7700	12400	0	0	0
Thur, Apr 19	L	D	11800	1600	1600	0	0	0	0	17400	11000	0
Thurs, Apr 19	L	U	0	0	0	0	9600	0	0	0	0	0
Fri, Apr 20	L	D	0	0	0	6800	0	5600	0	0	0	0
Fri, Apr 20	L	U	0	25600	0	0	0	3200	0	4800	0	0
Totals			39900	52700	16150	21800	51437	57960	17200	87300	34700	12200

Army corps of engineers data, New Orleans

COMMODITY CODES

Code	Description
01	Empty Barges
10	Coal, Lignite & Coal Coke
20	Petroleum & Petroleum Products
21	Crude Petroleum
22	Gasoline, Jet Fuel, Kerosene
23	Distillate, Residual, & Other Fuel Oils; Lubricating Oils And Greases
24	Petroleum Pitches, Coke Asphalt, Naptha And Solvents
30	Chemicals & Related Products

31	Fertilizer-Nitrogenous, Potassic, Phosphatic & Others
32	Organic Industrial Chemicals (Crude Products) From Coal, Tar, Petroleum, & Natural Gas, Dyes, Organic Pigment Dyeing & Tanning Materials, Alcohols, Benzene; Inorganic Industrial Chemicals (Sodium Hydroxide); Radioactive & Associated Materials; Drug; Soap, Detergent, Cleaning Preparations, Paints, Gum and Wood Chemicals; Synthetics (Plastic Materials, Synthetic Rubber, Synthetic Fiber), Liquid Sulfer
40	Crude Materials, Inedible, Except Fuels
41	Forest Products, Lumber, Logs, Woodchips
42	Pulp, Waste Products
43	Sand, Gravel, Stone & Crushed Rock; Limestone Flux & Calcareous Stone
44	Iron Ore; Iron Steel Waster & Scrap
45	Marine Shells, Unmanufactured
46	Non-Ferrous Metallic Ores (Incl. Alumina); Non-Ferrous Metallic Waste And Scrap
47	Dry Sulphur, Liquid And Dry; Clay; Salt
48	Slag
50	Primary Manufactured Goods
51	Paper & Allied Products
52	Building Cement & Concrete; Lime; Glass
53	Primary Iron & Steel Products (Including Ingots, Tube, Pipe, Bars, Rods, Plates, Sheets And Shapes)
54	Primary Non-Ferrous Metal Products; Also, Fabricated Metal Products (Near-Final Form--Any Type Of Metal)
55	Primary Wood Products; Veneer, Plywood
60	Food & Farm Products
61	Fresh Fish & Other Marine Products
62	Wheat
63	Corn
64	Rye, Barley, Rice, Sorghum & Oats
65	Oilseeds-Soybean, Flaxseed, And Others
66	Vegetable Products

67	Animal Feed, Grain Mill Products, Flour And Other Processed Grains
68	Other Agricultural Products (Including Food And Kindred Products)
70	All Manufactured Equipment And Machinery (Including Ordnance And Accessories, Machinery, Electrical Machinery Transportation Equipment, Instruments, Photographic And Optical Goods, Watches And Clocks, And Miscellaneous Products Of Manufacturing)
80	Waste Material; Garbage, Landfill, Sewage Sludge, & Waste Water
91	Multi-commodities shipped in Containers
92	Multi-commodities shipped on Pallets
99	Commodity Is "Unknown" Or Cannot Be Located On This List

Peoria Tonnage February 2012

Commodity Code	Description	Total Tons (in Thousands)
80	Waste Material, Garbage, Landfill, Sewage Sludge and Waste Water	1.60
70	All Manufactured Equipment and Machinery	12.56
60	Food and Farm Products	861.10
50	Primary Manufactured Goods	108.40
40	Crude Materials, Inedible, except Fuels	186.60
30	Chemicals and Related Products	216.60
20	Petroleum and Petroleum Products	248.05
10	Coal, Lignite And Coke	208.60
Total Tons:		**1,843.51**

LaGrange Tonnage February 2012

Commodity Code	Description	Total Tons (in Thousands)
80	Waste Material, Garbage, Landfill, Sewage Sludge and Waste Water	3.20

70	All Manufactured Equipment and Machinery	10.60
60	Food and Farm Products	1,234.10
50	Primary Manufactured Goods	146.70
40	Crude Materials, Inedible, except Fuels	221.45
30	Chemicals and Related Products	296.93
20	Petroleum and Petroleum Products	283.82
10	Coal, Lignite And Coke	77.20
Total Tons:		**2,274.00**

Peoria Tonnage May 2012

Commodity Code ▲	Description	Total Tons (in Thousands)
90	Others, NEC	3.60
80	Waste Material, Garbage, Landfill, Sewage Sludge and Waste Water	3.20
70	All Manufactured Equipment and Machinery	2.80
60	Food and Farm Products	476.50
50	Primary Manufactured Goods	278.20
40	Crude Materials, Inedible, except Fuels	258.10
30	Chemicals and Related Products	368.27
20	Petroleum and Petroleum Products	440.00
10	Coal, Lignite And Coke	208.70
Total Tons:		**2,039.37**

LaGrange Tonnage May 2012

Commodity Code ▲	Description	Total Tons (in Thousands)
90	Others, NEC	11.60

80	Waste Material, Garbage, Landfill, Sewage Sludge and Waste Water	3.20
70	All Manufactured Equipment and Machinery	4.11
60	Food and Farm Products	650.03
50	Primary Manufactured Goods	283.40
40	Crude Materials, Inedible, except Fuels	234.60
30	Chemicals and Related Products	401.15
20	Petroleum and Petroleum Products	492.94
10	Coal, Lignite And Coke	85.60
Total Tons:		**2,166.63**

All data here and in the next few pages was gathered from http://corpslocks.usace.army.mil/lpwb/f?p=121:1:3350347811123602::NO

As predicted, and even in the spring, corn and coal movement dwarf the amount of all other commodities in tonnage. Since tonnage of steel and coal have a much higher mass, it is necessary to also consider the number of containers that pass through as well. Using the sample data, it was necessary to investigate the number of containers for each commodity that pass through out as well as the number of empty containers and number of total containers.

Number of containers that pass by Peoria and Lagrange for each commodity

Date	Lock	Direction	Coal	Empty	Corn	Soybeans	Organic material	Ore	Steel	Fertilizer	Total Containers
4.15	P	D	11	10	24	9	3	2	1	0	65
4.15	P	U	0	6	0	0	0	0	0	0	6
4.16	P	D	0	1	0	0	3	0	0	0	7
4.16	P	U	8	8	0	1	1	0	2	4	27
4.17	P	D	4	6	8	2	0	0	0	0	24
4.17	P	U	1	10	0	0	0	0	14	5	36
4.18	P	D	8	21	4	3	0	0	1	0	41
4.18	P	U	6	17	0	0	3	0	0	5	36
4.19	P	D	0	6	0	0	2	0	0	0	11
4.19	P	U	0	29	0	0	5	1	0	0	46
4.20	P	D	11	11	5	1	9	1	0	0	43
4.20	P	U	0	4	0	0	0	0	0	3	7
4.15	L	D	0	4	5	2	5	0	0	0	21
4.15	L	U	2	24	0	1	1	0	15	9	56
4.16	L	D	11	4	16	7	3	3	0	0	53
4.16	L	U	1	12	0	0	3	0	1	0	27
4.17	L	D	0	1	12	3	3	0	0	0	21

4.17	L	U	0	19	0	0	0	0	0	5	24
4.18	L	D	4	15	8	2	2	0	0	0	35
4.18	L	U	0	26	0	0	5	1	0	0	43
4.19	L	D	8	6	12	8	0	0	1	0	39
4.19	L	U	0	4	0	0	0	0	0	3	7
4.20	L	D	0	5	0	0	2	0	0	0	12
4.20	L	U	0	9	3	0	2	0	16	0	33
			75	258	97	39	52	8	52	34	720

P=Peoria, L=Lagrange

Container Summary by Day of the Week, Number of Containers

The data in the chart below indicates that Sunday and Wednesday are the busiest days, with Sunday container traffic at 148 total containers, 44 of them empty. Wednesday is one of the busiest days as well with 155 total containers and 79 empty. The chart below shows the container traffic represented by pie charts. The indicators are clear that of the total lock movement, nearly half of the sum of containers are empty.

Container Summary by day of the week

Peoria Lock

- Container Summary by Commodity Empty
- Container Summary by Commodity Coal
- Container Summary by Commodity Corn
- Container Summary by Commodity Organic
- Container Summary by Commodity Steel
- Container Summary by Commodity Soybeans
- Container Summary by Commodity Fertilizer

Lagrange Lock

- Container Summary by Commodity Empty
- Container Summary by Commodity Coal
- Container Summary by Commodity Corn
- Container Summary by Commodity Organic
- Container Summary by Commodity Steel
- Container Summary by Commodity Soybeans
- Container Summary by Commodity Fertilizer

To get a clearer picture of which commodities flow through the most by Beardstown, the lock traffic traveling upstream from Peoria was eliminated as was the lock traffic flowing downstream from Lagrange. This yields the total number of barges by commodity by week between the locks moving in either direction. As expected, the number of crop containers for the season moving upstream is comparatively small. The number of empty containers moving up from Lagrange is nearly half the total containers. 39% of the total containers are empty.

	Empty	Coal	Corn	Organic	Steel	Soybeans	Fertilizer	Total Containers
Total Barge Container Summary by Commodity April 15-April 20								
Peoria Lock Down	55	34	41	17	2	15	0	191
Lagrange Lock Up	94	3	3	11	32	1	17	190

About 80 containers travel up and down the river daily

Total Barge Container Summary by Commodity April 15-April 20
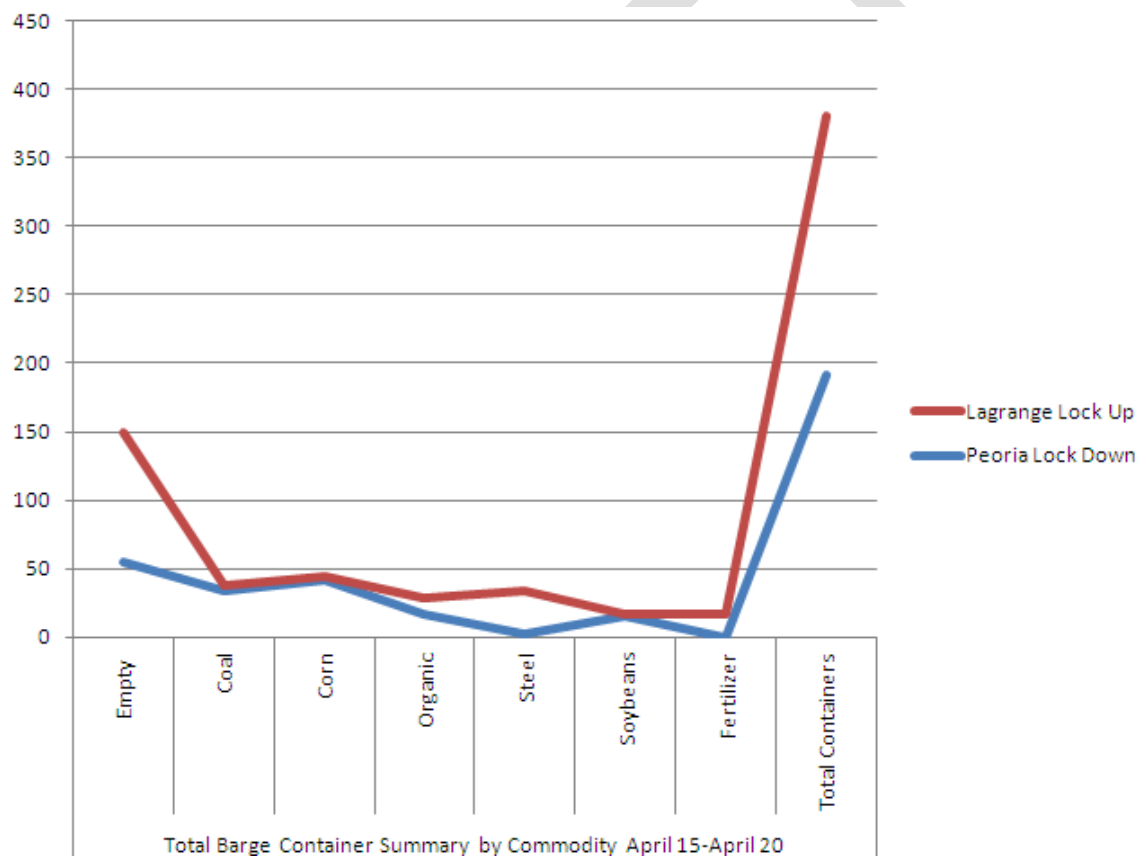
Barge Loadout

The operation defining the loading of equipment for a certain purpose of movement of equipment from one port to another is called loadout. The barge loadout of the Illinois River represents a time of economic prosperity in Illinois and throughout the country at the end of the twentieth century. Global export output was competitive with imports at the time and manufacturing in the US was comparatively voluminous. As a result, the

River's loadout was comparatively high. While recent data containing River loadout is not available, the following tables suggest the available capacities of the river during very prosperous years for the US economy.

1999 Barge Loadout Illinois River Capacities

Courtesy *iastate.edu/outreach/agriculture*

				Total Capacity, bushels:	32,727,000
				Cargill Capacity, bushels:	8,890,000
				Cargill Share:	27.16

Name	Barge Loadout Capacity per Day (shared)	City	ST	Storage, Bushels	% of Total
Archer Daniels Midland					
ARCHER DANIELS MIDLAND CO	100,000.00 BU	FREDERICK	IL	2,757,000	
ARCHER DANIELS MIDLAND CO	150,000.00 BU	CREVE COEUR	IL	1,401,000	
ARCHER DANIELS MIDLAND	150,000.00 BU	PEORIA	IL	1,931,000	
ARCHER DANIELS MIDLAND	500,000.00 BU	HAVANA	IL	1,271,000	
ARCHER DANIELS MIDLAND	250,000.00 BU	OTTAWA	IL	1,095,000	
ARCHER DANIELS MIDLAND	310,000.00 BU	MORRIS	IL	822,000	
ARCHER DANIELS MIDLAND	150,000.00 BU	PEKIN	IL	743,000	
ARCHER DANIELS MIDLAND	645,000.00 BU	HENRY	IL	552,000	
ARCHER DANIELS MIDLAND	645,000.00 BU	HENNEPIN	IL	500,000	
ARCHER DANIELS MIDLAND	340,000.00 BU	NAPLES	IL	310,000	
ARCHER DANIELS MIDLAND	645,000.00 BU	LACON	IL	199,000	
ARCHER DANIELS MIDLAND	645,000.00 BU	CHILLICOTHE	IL	172,000	
ARCHER DANIELS MIDLAND	200,000.00 BU	SPRING VALLEY	IL	109,000	
ARCHER DANIELS MIDLAND	200,000.00 BU	LA SALLE	IL	80,000	
			Sum:	**11,942,000**	36.49
Cargill Incorporated					
CARGILL INCORPORATED	100,000.00 BU	FLORENCE	IL	1,887,000	
CARGILL INCORPORATED	250,000.00 BU	SPRING VALLEY	IL	1,431,000	
CARGILL INCORPORATED	100,000.00 BU	MEREDOSIA	IL	961,000	
CARGILL INCORPORATED	100,000.00 BU	OTTAWA	IL	879,000	
CARGILL INCORPORATED	100,000.00 BU	LOCKPORT	IL	575,000	
CARGILL INCORPORATED	100,000.00 BU	HAVANNA	IL	575,000	
CARGILL INCORPORATED	100,000.00 BU	MORRIS	IL	304,000	
			Sum:	**6,612,000**	20.20
Consolidated Grain &					
CONSOLIDATED GRAIN & BARGE	120,000.00 BU	NAPLES	IL	8,096,000	
CONSOLIDATED GRAIN & BARGE	450,000.00 BU	HENNEPIN	IL	1,257,000	
CONSOLIDATED GRAIN & BARGE	450,000.00 BU	UTICA	IL	1,005,000	
Consolidated Grain and Barge	50,000.00 BU	Peru	IL	0	
			Sum:	**10,358,000**	31.65
Continental Grain					
CONTINENTAL GRAIN CO.	300,000.00 BU	HENNEPIN	IL	110,000	
CONTINENTAL GRAIN COMPANY	300,000.00 BU	SENECA	IL	869,000	
CONTINENTAL GRAIN COMPANY	50,000.00 BU	HAVANA	IL	451,000	
CONTINENTAL GRAIN	300,000.00 BU	LOCKPORT	IL	212,000	

COMPANY					
CONTINENTAL GRAIN COMPANY	50,000.00 BU	LACON	IL	210,000	
CONTINENTAL GRAIN COMPANY	50,000.00 BU	BEARDSTOWN	IL	199,000	
CONTINENTAL GRAIN COMPANY	300,000.00 BU	MORRIS	IL	125,000	
CONTINENTAL GRAIN COMPANY	300,000.00 BU	SPRING VALLEY	IL	102,000	
Farmer's Elevator Company	50,000.00 BU	Seneca	IL	0	
			Sum:	**2,278,000**	6.96
Other					
JERSEY COUNTY GRAIN COMPANY	100,000.00 BU	HARDIN	IL	805,000	
SOURS GRAIN COMPANY	300,000.00 BU	PEKIN	IL	732,000	
			Sum:	**1,537,000**	4.7

Rail Freight Traffic

The geographical paths of the BNSF railroad surrounding Beardstown

The BNSF railroad tracks from Beardstown heads north to Vermont, Table grove, Bushnell, Prairie City, Avon, Abingdon, Bushnell splits westward to Davidson and northward to Galesburg where it encounters multiple interchanges and heads northeast onto Chicago. To the south, it heads to Jacksonville, where it separates to the east toward Berlin and to the southeast toward Shipman and Godfrey, a heavy industrial town on the Mississippi River just outside St. Louis. To the southwest the railroad leads to Manchester and to Louisiana and beyond.

In Schuyler County along the BNSF railway, two trains arrive every four hours to cargo elevators along the waterfront. Train inventories were examined and documented in December of 2012.

On December 1, 2012 exactly two trains on two separate tracks from opposite directions moved onto a levee to load waiting container vessels.

The following table lists the numbers of cars of commodity that were loaded, 12.1.2012

Commodity	Westbound Train at 11:04AM	Eastbound train at 11:15am
Oil /petroleum/Black CTX	104	0
Coal	0	88
Freight	1	44
Livestock	0	0
Agric equipment	0	0

Spurs

Again, the very northern edge and near southern edge of the proposed Enterprise Zone can accommodate several hundred feet of right of way for spur traffic and temporary waiting and storage. This land use is currently agricultural. The land use is separated from IL state highway to the small town of Frederick, about 3,000 feet to the north. From

a cost perspective, and preceding documentation, however, spurs may be confined to the Cass County/Beardstown side. However, with no direct highway access from the rail spurs to to US 67 with the exception of creating heavy trucking through the city of Beardstown, trucks will create environmental and safety issues for oncoming cars and pedestrians. The acquisition of the property from BNSF for public use will also be very costly as the BNSF railyard will need to be relocated.

Waybill Report

A "waybill" is an official document created by rail carriers from shipping instructions provided by the shipper. A waybill shows the origin and destination stations, car name and number, consignor and consignee, routing, description and weight of the commodity, cost of transport as well as other details about the shipment. A waybill can include one or more cars and a train can include one or more waybills.

The Carload Waybill Sample is a stratified sample (i.e. classified by sub-categories) of select waybills submitted to the Surface Transportation Board (STB) by those rail carriers which terminate at least 4,500 revenue carloads per year. The sampling methodology is based exclusively on the number of carloads in the shipment. The sample is stratified in that each class of trains – characterized by the number of carloads contained in each train set – is sampled at a different rate. For shipments of 101 or more carloads, rail carriers must submit every other waybill for a given year, thereby generating a sample of 50 percent. As the number of carloads in a shipment decreases, rail carriers must submit a lower percentage of waybills. For instance, for shipments of 1 or 2 carloads, rail carriers must submit one out of every 40 waybills, thereby generating a sample of 2.5 percent of the population.(6)

BNSF data

The following table lists the BNSF railway carload data from July 1, 2011 through the third quarter of 2011:

(6) eia.gov/coal/transportationrates/pdf/waybill.pdf

```
1                        INTERSTATE COMMERCE COMMISSION              FORM QCS                    PAGE    1
                         REPORT OF FREIGHT COMMODITY STATISTICS                                  10/24/2011
                         MILES OF ROAD OPERATED IN FREIGHT SERVICE 32,266
FULL NAME OF RESPONDENT - THE BURLINGTON NORTHERN   SANTA FE RAILWAY CO    QUARTERLY  REPORT:(2011-07-01 TO 2011-09-30)
```

| | REV FRGHT ORIGINATING ON RESPONDENTS LINE | | | | REV FRGHT RECD FROM CONNECTING CARRIERS | | | | TOTAL REVENUE FREIGHT CARRIED | | GROSS FREIGHT |
| | TERMINATING ON LINE | | DELIVERED TO CONNECTIONS | | TERMINATING ON LINE | | DELIVERED TO CONNECTIONS | | | | |
CODE	NO. OF CARS COL B	NO. OF TONS COL C	NO. OF CARS COL D	NO. OF TONS COL E	NO. OF CARS COL F	NO. OF TONS COL G	NO. OF CARS COL H	NO. OF TONS COL I	NO.OF CARS COL J	NO. OF TONS COL K	REVENUE DOLLARS COL L
			2	167					2	167	6,412
'2	1	22							1	22	1,609
'20	1	22							1	22	1,609
'203	1	22							1	22	1,609
'2038	1	22							1	22	1,609
01	164,552	12,654,562	23,565	2,469,410	3,217	306,674	1,513	154,420	192,847	15,585,066	603,922,408
011	153,023	12,262,447	22,890	2,411,750	3,049	293,476	1,490	152,283	180,452	15,119,956	570,957,400
0112	334	7,258	4	85					338	7,343	396,285
01129	334	7,258	4	85					338	7,343	396,285
0113	139,919	11,228,938	19,309	2,051,791	2,712	269,186	583	61,001	162,523	13,610,916	499,974,232
01131	4,685	359,754	962	92,636	755	78,325	4	381	6,406	531,096	15,138,516
01132	40,709	4,060,473	7,575	826,018	254	28,182	439	46,989	48,977	4,961,662	185,002,659
01133	1,164	97,455	52	4,200	405	34,761	43	3,888	1,664	140,304	3,893,491
01134	49	1,075							49	1,075	53,169
01135	29	2,592	46	4,550	3	304			78	7,446	240,012
01136	846	92,935	257	26,878					1,103	119,813	2,840,228
01137	51,098	5,494,484	10,355	1,091,413	1,235	126,476	97	9,743	62,785	6,722,116	241,000,886
01139	41,339	1,120,170	62	6,096	60	1,138			41,461	1,127,404	51,805,272
0114	10,389	941,253	3,177	325,876	295	21,614	894	90,087	14,755	1,378,830	63,773,479
01141	994	90,997	101	7,369	120	10,153	53	4,024	1,268	112,543	6,027,662
01142	25	1,964	16	1,511	16	1,408			57	4,883	193,045
01143	4	300	27	2,329	47	4,593			78	7,222	190,317
01144	8,957	811,752	2,325	247,227	90	3,961	761	79,982	12,133	1,142,922	51,606,180
01149	409	36,240	708	67,440	22	1,499	80	6,081	1,219	111,260	5,756,275
0115	2,147	76,645	366	33,097	2	192	13	1,195	2,528	111,129	6,024,750
01151	47	3,781	108	8,726					155	12,507	1,038,145
01152	1	21	70	6,988					71	7,009	302,887
01159	2,099	72,843	188	17,383	2	192	13	1,195	2,302	91,613	4,683,718
0119	234	8,353	34	901	40	2,484			308	11,738	788,654
01194	9	261							9	261	27,631
01195	225	8,092	34	901	38	2,442			297	11,435	758,988
01198					2	42			2	42	2,035
012	1,570	34,809	39	809	33	753			1,642	36,371	3,187,224
0121	788	17,604							788	17,604	1,635,945
01211	59	1,310							59	1,310	117,258
01212	207	4,386							207	4,386	426,590
01214	300	6,683							300	6,683	615,249
01219	222	5,225							222	5,225	476,847
0122	742	16,394	36	742					778	17,136	1,439,325
01221	369	8,080	34	698					403	8,778	653,734
01224	167	3,667							167	3,667	347,558
01225	12	276							12	276	24,752
01226	11	250							11	250	23,376
01227	27	621	2	44					29	665	54,942
01228	35	805							35	805	72,011
01229	121	2,695							121	2,695	262,952

stb.dot.gov/econdata.nsf/27dead93525f6773852578aa004bc24d/af5e05d0718588f28525795a0000133b/$FILE/BNSF%20QCS%20Q3%202011.pdf

Average Truck Specs:

Legal weight: 80,000 pounds, fully loaded
Dimensions: 70-80 feet long, height: 13'6"
Turning radius: 55 ft
Axles: 5, wheels, typically 18

Barge, Rail and Truck Capacities, Illinois River, 1,750 tons of Cargo	
Barge	1
Rail	16
Truck	70

27, 500 barrels of liquid	
Barge	1
Rail	46
Truck	144

Dnr.state.il.us; National Waterways Foundation, "Waterways: Working for America"

Typical barge tows

Barge Tow	Rail cars	Trucks
5 *	75	300
10	150	600
15 (max)	225	900

Example: 1 typical four barge tow along the Illinois River = 54 rail cars = 263 tractor trailers. Simply put, if the average of 80 containers that travel between the two locks that flank Schuyler County and Beardstown (Peoria and Lagrange locks), all stopped at the Schuyler County intermodal port that would equate to:

- **1080 rail cars, about 10 trains daily ** and**
- **5,250 large tractor trailers, or 219/hour ***

Example 2: If two 4- barge tows docked per day at the Intermodal Port are both unloaded and loaded half on trucks and half on rail, a total of 480 tractor trailers day would have to be accommodated to move in and out of the facility assuming most of those would occur during the day, or about one truck every three minutes if the distribution were equally spread. By the same distribution, this is only 120 rail cars which can be moved on a single train per day.

Grindstone LLC coal Mining application

A an application has been filed by Grindstone Management LLC of Springfield to develop a strip mine in Littleton Township, Schuyler County along Sugar Creek road on the western edge of Oakland Township to extract Bituminous Coal. The legal description of the location is NW1/4, SW1/4, S1/2 SW1/4 of Sec 7 T3N, R1W and all of the eastern half of Sec 18, T3N, R1W except all of the southern part of the area south of Littleton Access ROW. The mine will call for 772.9 acres for the use of surface coal mining, diversion ditches, sediment ponds, material yard space, temporary coal storage area and temporary office facilities. The coal will be shipped to North Grindstone Mine in Industry Illinois to be washed. The plans call for the removal of part of Sugar Creek Road on the western portion of Oakland Township. This will mean US 67 will be the main means of transporting coal by truck to an intermodal facility for export, most likely and cost effectively by train and barge. Rerouting Sugar Creek Road instead of closing it altogether will tremendously lessen the impact of coal transport through town by allowing US 67 to be the main truck route for coal, affectively bypassing the shipments to the very western edge of the city and sparing most city residents the adverse effects of increased truck traffic. The application can be found at dnrgis.state.il.us/website/MineLRD_Apps/p410Volum1.pdf

*Considered the Illinois River maximum tow capacity between Lagrange and Peoria according to the Schuyler County Highway Department
** Wednesday daily estimates are currently 12 trains/day
***The most extreme case if no other intermodal port were to exist between Peoria and LaGrange

Truck transportation is used to move coal to a transloader for placement onto a water or rail carrier, or for direct shipment to the customer. Trucks have the advantage of routing flexibility as well as small capital requirements, but coal can be economically moved for a maximum of about 100 miles one-way, due to the high cost of moving a rather low-value product in small batches.

Coal-carrying vehicles are usually end dump trucks with a load capacity of about 25 to 50 tons, depending on road conditions and safety regulations. In recent years, efforts have been made toward increasing the efficiency and capacity of coal carrying vehicles. But while these improvements have enhanced the ability of trucks to compete with railroads for short hauls, they have not significantly increased the maximum radius enough to make truck shipments are economical.(7)

On page 23 of this study, recall that a mine in McDonough County had produced 195,000 tons of coal in 2010. Using that amount as an average in Schuyler County pertaining to the Grindstone Management LLC proposed mine, and the fact that the work year is 260 days long, the Grindstone mine will extract 750 tons per day or at least 15-30 truckloads of coal per day or 2-4 per truckloads per hour depending on the number of work hours per day. This data does not indicate a very busy intermodal port if coal output alone were considered and most of this coal will be exported based on location quotient data.

Grindstone Management has been cited for numerous EPA violations according to several news sources and the local public has expressed concerns that these patterns will be repeated in Schuyler County. In addition, an NPDES permit has not yet been issued to the corporation. Waters sources can be polluted and discharge can be expensive to cleanup and very harmful to the health of fish, wildlife and people.

National Pipeline Service Petroleum and Service Maps

The National Pipeline Service (USDOT) offers the maps that delineate the locations of petroleum and hazardous substance pipes that are located in most counties in the United States. This system is used to assist planners, developers, geographers, geologists, archaeologists and other state and federal officials a tool to locate important pipelines for a given area. A section of Schuyler County was recognized as bearing a layer of natural gas deep within the crust of the earth and it is very near to constructed pipelines.

The NPMS Public Map Viewer enables the user to view National Pipeline Mapping System (NPMS) data one county at a time. NPMS data consists of gas transmission pipelines and hazardous liquid trunklines. It does not contain gathering or distribution pipelines, such as lines which deliver gas to a customer's home. Therefore, not all

pipelines in an area will be visible in the Public Map Viewer. NPMS data is for reference purposes only. It should never be used as a substitute for contacting a one-call center prior to excavation activities. Property owners should always be advised to call 811 before any digging occurs. (NPMS)

(7)bookrags.com/research/coal-transportation-and-storage-of-mee-01/

The National Pipeline Mapping System map, below, delineates the locations of two significant pipelines in Schuyler County. One natural gas pipeline runs along US 67 west of Rushville and is colored in purple on the map. The other is a crude oil pipeline which runs along US 24 south of Rushville and is colored in red. There is currently one operating oil well pumping oil and 4 which are dormant. They are listed in the following table:

| Rec	API	Status	Formation	Location*	Company Name	Farm Name	Depth
1	121690038600	OIL		13-3N-2W	Hites, C. E.	Miller	656
2	121690014900	DAP	302HONG	13-3N-2W	Roan John T	Miller #1	628
3	121690019900	DAP	259SLRN	18-3N-1W	Peradi, Clifford	Irwin #1	646
4	121692103700	DAP	202TRNN	12-3N-2W	Texas American Oil	Meadowlark Farm	948
5	121692109500	DAP	259SLRN	12-3N-2W	Texas American Oil	Meadowlark Farm	652
6	121692155600	DAP	203SCLS	13-3N-2W	Midland Minerals	Ayrshire MM #13	874

*Township-Range-Section

Source: p410V1, page: III-37

Schuyler County Pipeline Locations

Source: npms.phmsa.dot.gov/PublicViewer/composite.jsf
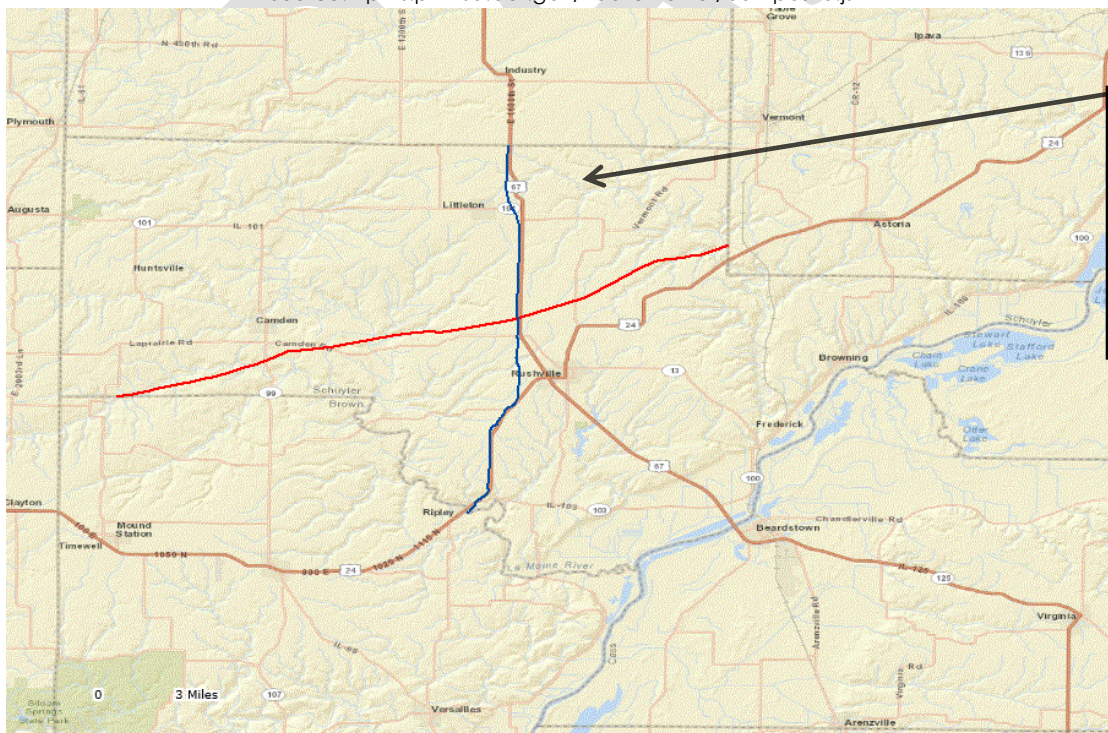
Location of Grindstone Management's proposed, 772.9 acre Littleton Mine
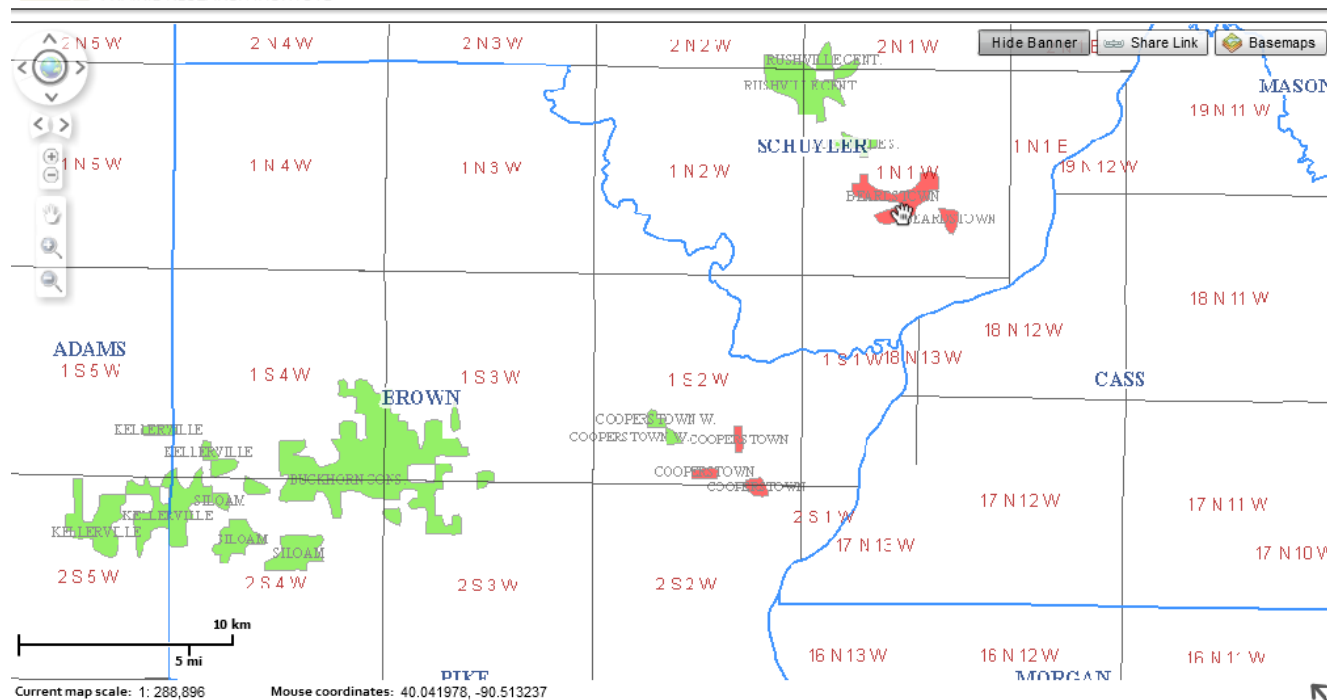
USGS oil and gas locations in the study area
Red indicates gas fields, green indicates oil fields
The epicenter of the gas field is about 40.045566 Lat, -90.512465 Long
Source: moulin.isgs.uiuc.edu/ILOIL/webapp/ILOIL.html
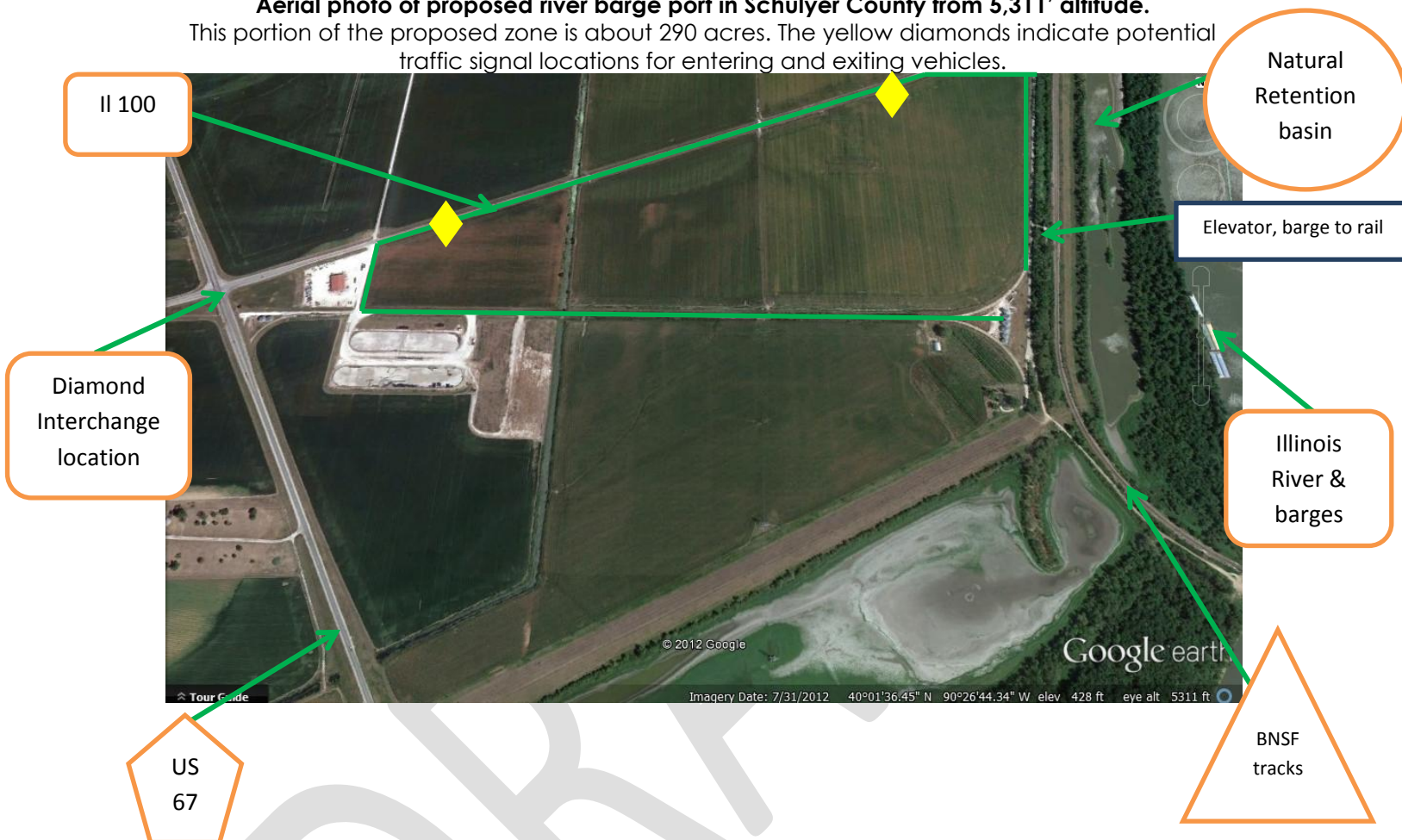
Latitude and Longitude of a Point

Epicenter of a gas field in Schuyler County
Less than 6.5 miles from the port site

Aerial photo of proposed river barge port in Schulyer County from 5,311' altitude.
This portion of the proposed zone is about 290 acres. The yellow diamonds indicate potential traffic signal locations for entering and exiting vehicles.

Il 100

Natural Retention basin

Elevator, barge to rail

Diamond Interchange location

Illinois River & barges

US 67

BNSF tracks

Imagery Date: 7/31/2012   40°01'36.45" N   90°26'44.34" W   elev 428 ft   eye alt 5311 ft

© 2012 Google

Google earth

SUMMARY:

The economic output potential of both Schuyler and Cass County are very high as measured in the location quotient and shift-share analysis data. The greatest movement of goods will be in the coal, petroleum, steel, agriculture and agricultural products. Unemployment is still comparatively high in both Cass and Schuyler Counties but lower than the national average by comparison to Dec 2012 data. There is also a pool of natural gas that is currently untapped in Schuyler County. The large amount of spatial area and lack of significant topographic features do not pose an obstacle to developing a center of proposed caliber. An intermodal facility could be readily developed in the proposed zone however; Illinois policy may inhibit that possibility. A possible foreign trade zone may be in the better interests of both counties because they release taxable restrictions on commodities rather than on the individual company profits as the Mid America Port Authority has suggested.

- The spatial requirements for trucks will be the greatest concern at the northern end of the proposed zone because its levee to road distance is 750 feet and the truck turning radius requires at least 55 feet. The accessibility to US 67 and other nearby highways is also with least compromise for truckers to the area immediately southern edge of the zone. Truck servicing operations like fuel and convenience store amenities, truck wash, rest area facilities and parking could be constructed on either end depending on the design and engineering of the facility. That land on the north end could be restricted to truck exiting and parking, for example. Given the IDOT traffic counts, truck traffic congestion should not be a major concern for US 100 near the proposed zone. With a planned truss bridge for US 67, the Federal will be able to handle considerably more traffic than it currently does.

Given the size of the proposed site, about 1.125 million square feet, the proposed zone could hold potentially as many as 40-50 trucks at one time given the square footage of the land and proximity to the Illinois River. This is the best and most viable site. In addition, due to the winding nature of the Illinois River, most barge tows are limited to four or fewer barges at a time due to the draft capability of the barges themselves.(5)

Wetland and stormwater runoff will pose additional costs as pervious surfaces do not hold the weight of trucks well. Stormwater systems can be developed to the over flow at the Market Street area retention basin, an area not in the proposed EZ2 zone, or be stored on site before being released into the river. A rainwater storage area should be able to accommodate 3 inches of rainwater per occurrence. Earlier in this study, it was documented that the average precipitation for May and June, the wettest months of the year, will produce 9.7 inches in a 61 day period. This equates to a mean daily rainfall of .159 inches per day.

For example, a truck lot for parking and loading area built to accommodate 50 trucks of a size roughly 700 feet by 1,000 feet, would need a retention basin, or a forebay, of 175,000 cubic feet or 1,309,000 gallons. That would equate to a bowl-shaped pond measuring roughly 12 feet deep in the center and 236 feet in diameter to be safe. Such a basin already exists that easily measures 9 times that size just east of the BNSF line and west of the Illinois River.

The dimensions are approximately 5,200 feet long, 150 feet wide and with a varying depth of 0-4 feet, or 1,560,000 cubic feet.

This would act as a retention basin with further environmental evaluation. Typically, storm water catch basins are placed at a ratio of about 1 for every 40,000 square feet of 8" pervious paved parking surface.

Rail spurs will be necessary to operate such a facility but due to floodplain issues and the cost to build on the Schuyler County side with the height of such systems, in terms of

connectivity, will not like become cost effective and the cost to benefit ratio may prohibit the construction of such systems.

An intergovernmental agreement to operate jointly with both counties will be one cost effective measure to keep these systems viable, safe and keep environmental contamination to a minimum. The current BNSF rail yard is currently the best area for spur use for trains both spatially and considering infrastructure availability. BNSF would have to relocate its Beardstown operations in another area south of the Il 125 highway overpass in Beardstown or share the site. However, the neighborhoods would suffer increase truck exhaust and noise pollution. In addition, there is no direct highway access through the City of Beardstown that would allow truck traffic to pass easily without major and costly intersection additions and improvements. The cost would remain comparatively low on the Schuyler County side if the port authority would utilize the state and federal highway systems from the Schuyler County side directly with the addition of rail spurs along the Illinois River.

A series of traffic lights and crosswalks will be needed at least two locations flanking the EZ Zone 2 along IL 100. According to City of Quincy Planning Director Chuck Bevelheimer, these systems can cost up to 80,000 dollars in most cases.

Grade level crossings. The biggest threat to safety and traffic flow will be to the Beardstown side with its three grade level crossings and the increase in congestion, noise and air pollution. Regardless of whether or not the BNSF yard is developed, increased intermodal traffic will result in increased rail traffic and therefore, increased truck traffic causing stoppage and idling trucks.

A March 2003 study by the Foundation for Intermodal Research and Education (FIRE) showed that converting a Port of New York to Pittsburgh move from truck to train (300 or more miles) would result in a net public benefit of about $53 per truck for a 363 mile trip, or 15 cents per mile. While no similar studies have been done for an inland waterway system, at least this much saving should be expected if movement were converted from truck to barge, indicating that the use of Congestion Mitigation and Air Quality Improvement (CMAQ) Program money would be justified for this purpose if at all available.

Asset Management Inventory (AMI) for roads:
Federal Aid Road Condition Survey

Each year between the months of May and September, a rating team should investigate the federal-aid eligible roads in each county in the TREDD. This team should be comprised of an IDOT representative, a representative from the county highway departments and a representative from TREDD. This survey creates a database of pavement condition ratings for use by IDOT. Developed by the University of Wisconsin-

Madison, Michigan and Wisconsin DOT's are already using the PASER system, described below.

Three data items are collected: surface type, number of lanes, and the PASER surface rating to be used in the State's assessment of federal-aid paved roads throughout the TREDD. A yearly report is prepared (AMI), which summarizes the road ratings. PASER (**PA**vement **S**urface **E**valuation and **R**ating) is a rating system from 1 to 10 based on three categories:

- Road Conditions are **"Good"** (ratings of 8-10) needing only routine maintenance.
- Road Conditions are **"Fair"** (ratings of 5-7) needing capital preventive maintenance.
- Road Conditions are **"Poor"** (ratings of 1-4) needing structural improvements

Other considerations

From the data gathered it was found that somewhere between 2-4 truckloads/ day of new coal would be delivered to the intermodal site. Considerations of grain, coal and other types of commodities will need to be addressed with the following considerations:

- **How much will fuel rates increase with the implementation of an intermodal facility?**
  To control fuel costs, refueling for the intermodal facility trucks should be held exclusively by the Mid America Port Authority. This will reduce unnecessary traffic and control unnecessary land use of the site.

- **What are the construction costs to build and intermodal facility?**
  Studies of the intermodal facilities without upgrades to rail, traffic and traffic control light will range between 7-11 million dollars with additional costs for rail spurs, land acquisition and design engineering.

- **Factor in the travel demand calculator**
  See modeling below-

- **How much product will be moved?**
  This is the most difficult question to answer because the answer is not uniform for all commodities. Translate coal and grain output to train transport and determine how many rail cars this equates to. Of the 75 containers that the Illinois River passes along Schuyler County on a daily average the 2-4 truckloads predicted from a daily coal output (200 daily tons) and from the chart on page 57, it would take 15 days to load a single container with coal from the Littleton Mine if the mine output were equal to that of the McDonough County mine. Two days to fill a single rail car. Grain may be the single biggest contributor.

Corn and Soybeans may be the single biggest export commodity to the Intermodal facility and for export out from the region. Combined weekly totals averaged 90,100 tons in April of 2012 on the Illinois River, or roughly 15,000 tons per day. Recall that the BNSF line carries an average of two trains every four hours but in some parts of Illinois the lines can carry up to four trains an hour. From p. 57 charts, 3 daily 5-container

tows equates to 225 rail cars, roughly two additional trains in the 4 hour time frame, though that number could be doubled. That is a total shipment of 900 trucks full of grain or 38 trucks per hour, almost two per minute: **21,600 tons of combined corn and soybeans trucked in per day for export minus coal and petroleum** which are minimal to either freight or container. IL 100 could easily handle the increases in terms of weight but this will also have a major impact on the new bridge for US 67, most of the traffic coming from within 100 miles of towns in the TREDD region to export along the river.

- **What are the costs incurred to build ¼ mile rail spurs?**

According to IOWA DOT, the cost varies depending on site conditions, track use and the connecting railroad. A rule of thumb for the cost of a rail spur is $100 per lineal foot (not including right of way, grading, engineering or switches.) So a single ¼ mile spur would cost $132,000. A single track freight line with a few locomotives and simple signalling, running across a flat, geologically sound, sparsely populated landscape in a developing country might be built for as little as US$ 2 million per kilometre (0.62 miles) including electrical and mechanical equipment. (8) A rural township in Vermont invested $2.6 million per quarter mile for a raised spur in 2012.

- **What speeds will the trains move for optimum logistics?**

In the United States, maximum speed is subject to specific rules. The maximum speed of a train on curved track for a given cant deficiency or unbalanced superelevation is determined by the following formula:

$$V_{max} = \sqrt{\frac{E_a + E_u}{0.0007d}}$$ where E_a is the height in inches that the outside rail is "superelevated" above the inside rail on a curve, E_u is the unbalanced superelevation or cant deficiency in inches and d is the degree of curvature in degrees per 100 feet (30 m). V_{max} is in miles per hour.(9)Most of the BNSF freight trains move at 40-45 miles per hour as observed in December 2012.

- **What speed limits and design standards will be planned near the facility and close to the diamond interchange?**

Speed limits in commercial traffic areas vary depending on several factors. Due to the nature of traffic volumes needed to make the intermodal facility commercially robust, it is important to understand that the road is being shared by trucks from other industries with no ties to the facility as well as cars, busses, motorcycles and agricultural equipment. Adding hundreds of vehicles to the roadway each day will greatly modify the intensity of traffic volumes on Il 100 alongside the proposed zone. Truck drivers moving into the zone will seek additional facilities like refueling, truck washing and rest areas so some parking will be needed. Truckers needing to back up will cause a slowdown in transfer of product and thus a slowdown in commerce and logistical operations so this dilemma will need to be avoided as much as possible.

(8) railway-technical.com/finance.shtml
(9) Marquis, Brian. "Cant Deficiency, Curve Speeds and Tilt": highspeed-rail.org/Documents/305%20PRIIA%20Tilt%20presentation.pdf

Therefore, the flow of truck traffic should have a specific entrance as well as a specific exit.

Since US 24 and US 67 both lie to the immediate west of the area and Interstate 72 is accessed from the south, a great majority of trucks will be delivering product along Il 100 eastbound so the first driveway should be a controlled entrance with a right hand turn lane/deceleration lane. Several hundred feet to the east, there a second driveway should be built for exiting vehicles. The speeds in these areas should be slowed to no more than 40 miles/hour for the safety of passing vehicular traffic. The exiting driveway should be controlled with traffic signals of at least 1.5 minutes in duration mainly to allow the flow of traffic to leave the facility in the westbound direction. The entrance signal can should be timed less restrictively since most traffic will be entering from the west to make the right hand turn.

A possible entrance location. Trucks travelling eastbound should turn prior to and west of the location where trucks will exit. here

- **How much parking should be planned for the site?**

900 trucks a day equates to about 3 trucks entering about every 5 minutes. Each driver will stop and rest for up to 30 minutes to 2 hours or 75 minutes on average. This indicates a mean parking time rotation for drivers on average would be 45 trucks. There will need to be parking space for up to 45 trucks at a time on average but more for peak hours say double or even triple. The peak traffic hours will be around the noon hour with additional spikes from 7-9 am and again from 4-6pm. From accepted probability and statistical methods, the bulk of traffic will be 2

standard deviations left or right of the highest probability or about 50 percent higher than the mean. This puts the peak required parking spaces at about 78 during maximum output capacity during peak hours. The width of parking spaces can max at 13 feet or 1014 the total width for angled parking outside the transfer areas. Half of this can be placed south of the brownfield and the other half to the north end. Prudent planning should be taken not to overdevelop the site prematurely but rather in stages.

Regional Economic Models, Inc (REMI) GRP for TREDD region

According to REMI area forecasting models, the areas inward migration will peak sometime around 2016 and then drop significantly. Home investment will see an increase through 2025 which may not impact the immediate vicinity significantly. Automotive demand will grow only marginally along with tractor and trailer parts and accessories. Energy costs will see only modest increases through 2025 keeping with inflation. Employment will also see marginal increases for rural farming areas throughout the state.(10)

Finally, REMI Associate Economist Adam Fulton devised the following table to illustrate the savings in cost of fuel and time expenditures by one mile of travel per one way trip. The excel spreadsheet is available for any numeric value. The following table was modeled for Main Street in Mt. Sterling at NW Cross Street.

Why performance measures in transportation		
Vehicles per day	4,400	US 24 at NW Cross
Miles reduced in miles traveled one-way	1.0	
Life span	20	
Vehicle miles saved per day (roundtrip)	8,800	
Vehicle miles saved per month	264,000	
Vehicle miles saved per year	3,168,000	
Vehicle miles saved over a life span	63,360,000	
Average Speed	45.0	
Time saved over one year		
Hours saved	70,400	
Days saved	2,933	
Years saved	8.0	
Time saved over a life span		
Hours saved	1,408,000	
Days saved	58,667	
Years saved	160.7	
Savings		
Average MPG	23.7	
Average Price of Gasoline	$3.50	
Gallons saved and Gas Savings per day	371	$1,300
Gallons saved and Gas Savings per month	11,139	$38,987
Gallons saved and Gas Savings per year	133,671	$467,848
Gallons saved and Gas Savings over a life span	2,673,418	$9,356,962

(10)Adam Fulton, Associate Economist, REMI seminar, Chicago, Illinois, February 7, 2013

Please See Appendix II for a summary of the Illinois Plan involving freight movement.