HANSON

Port Market Analysis & Master Plan Report

Havana Regional Port District

November 3, 2023

ENGINEERING / PLANNING / ALLIED SERVICES

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Executive Summary

The Havana Regional Port District (HRPD) has successfully operated the landlocked Havana Regional Airport for the past 35+ years. The HRPD does not currently own any riverfront assets, but several privately-owned river terminals currently operate along the Havana riverfront and facilitate barge access to/from the Illinois River. The HRPD is considering expansion of existing freight facilities or development of new freight facilities to accommodate projected increases in freight volumes and facilitate economic growth in the region. To support this effort, Hanson Professional Services Inc. (Hanson) was selected by the HRPD to conduct a market analysis and develop a master plan.

The primary objectives of this Port Market Analysis & Master Plan project are to:

- Understand current/anticipated regional freight transportation market conditions.
- Determine current/anticipated needs within the regional freight transportation system.
- Identify potential freight and economic development opportunities.
- Identify site(s) within the Havana Township for potential freight facility expansion or new development.
- Develop an appropriate site master plan.

Hanson's initial efforts included a desktop review of studies, reports, articles, and various other documents applicable to the subject project. The documents were prepared by others and provided to Hanson by the HRPD, Illinois Department of Transportation (IDOT), Greater Peoria Economic Development Council, and/or located by Hanson via internet research.

Next, using a combination of aerial imagery and internet research, Hanson conducted an inventory of existing freight facilities located within a 50-mile radius of Havana. A total of 595 facilities were identified and added to the Freight Facility Inventory. The inventory was catalogued in a geographic information system (GIS) database that includes the facility name, apparently available transportation mode(s), likely commodity type(s) handled at the facility, and the geographic location of the facility. Summary characteristics of the Freight Facility Inventory are provided below.

- The 595 inventoried facilities consist of…
  - 370 industry facilities
  - 51 carrier facilities
  - 149 distribution centers
  - 25 river terminals
- Barge Access
  - 32 facilities have barge access
  - 8 facilities have potential barge access
- Rail Access
  - 98 facilities have rail access
  - 138 facilities have potential rail access
- All facilities have truck access

The information gathered through the Freight Facility Inventory helped Hanson to gauge the "supply" of freight facilities in the Havana region. It was also used to help identify potential freight stakeholders for subsequent stakeholder outreach.

Following the Freight Facility Inventory, Hanson obtained and analyzed freight data from two sources – the Transearch freight database, which contains air, waterborne (barge), and truck freight movements, and a second database containing rail freight movements from the US Surface Transportation Board (STB). Both databases contain freight movements for the years 2019 and 2035, which represent the base scenario and planning horizon projections, respectively.

The freight data was used to analyze freight moving into (destination), out of (origin), within (origin and destination), and through (pass-through) the study region, which generally consists of the same 50-mile radius implemented in the Freight Facility Inventory. Commodities with volumes projected to grow significantly during the 16 years between the 2019 base year and 2035 planning horizon may represent potential business opportunities for the HRPD. As part of the freight data analysis effort, Hanson also obtained waterborne-specific freight data from the US Army Corps of Engineers (USACE) Waterborne Commerce Statistics Center (WCSC), which was used to supplement the Transearch barge freight data.

Below is a high-level summary of the preliminary Freight Data Analysis "take-aways," organized by transportation mode. For reference, Study Area A consists of Mason and Fulton Counties, and Study Area B consists of those two counties plus 12 surrounding counties. In general, due to the current imbalance of inbound/outbound freight being heavily skewed towards inbound (i.e., freight with a destination within the study area), outbound freight (i.e., freight with an origin within the study area) is anticipated to have a higher likelihood of success.

- Air Freight – No air freight movements were reported in Study Area A in 2019, and none are projected in 2035. If a company that utilizes air freight transportation were to locate in the Havana vicinity, it may be feasible for the HRPD to capture a portion of the projected increase in air freight tonnage by implementing significant strategic improvements at the Havana Regional Airport.
- Barge Freight – Overall, Study Area A barge freight tonnage is projected to decrease slightly (-7%) from 2019 to 2035, and Study Area B barge freight tonnage is projected to increase by about 16% during that same period. However, around 575,000 tons of "new" barge freight is projected to move to/from the two Study Areas by 2035. Hanson identified potential barge freight business opportunities related to the following standard commodity classes: Fertilizers, Broken Stone or Riprap, Gravel or Sand, and Potassium or Sodium Compound.
- Rail Freight – The overwhelming majority of Study Area A and B rail freight tonnage is, and is projected to continue to be, pass-through freight. Total rail freight tonnage in Study Area A is projected to decrease by about 24% over the 16-year period from 2019 to 2035, and Study Area B rail freight tonnage is projected to decrease by about 12% during that same period. Unless specific destinations or origins for Study Area B pass-through rail commodities can be identified as just outside of Study Area A, this freight does not likely represent a potential business opportunity for the HRPD.
- Truck Freight – More than half of the total truck freight tonnage passes through Study Area A in 2019 and 2035, and around two-thirds of truck freight tonnage passes through Study Area B during that same period. Total Study Area A truck tonnage is projected to slightly increase by about 4% over the 16-year period from 2019 to 2035, and total Study Area B truck tonnage is projected to increase by about 30% over that same period. Similar to barge freight, Hanson identified potential truck freight business opportunities related to the following standard commodity classes: Broken Stone or Riprap, Gravel or Sand, Misc. Waste or Scrap, and Potassium or Sodium Compound.

Combined, the Freight Facility Inventory and the Freight Data Analysis provided a general understanding of freight facility supply and potential freight facility demand, respectively. This understanding facilitated Hanson's preliminary identification of commodities most likely to benefit from potential freight facility development in the Havana region. However, freight stakeholders in the Havana area – those entities currently involved in freight transportation – were consulted to provide insight regarding current freight needs, issues, and constraints.

To facilitate the freight stakeholder outreach, Hanson developed a preliminary list of freight stakeholders in the Havana region that consume, produce, and/or transport those commodities identified as most likely to benefit from potential freight facility development. In collaboration with the HRPD, the list was narrowed down to 21 freight stakeholders for interviews. Hanson developed an introductory script and a list of interview questions for the identified industry/distribution stakeholders. Questions focused on identification of the stakeholders' perceived needs, issues, and/or constraints within the existing regional freight transportation system for which the HRPD may be positioned to implement solutions.

In addition to the freight stakeholder outreach, the HRPD and Hanson also hosted a presentation for local government and agency stakeholders to convey project objectives, provide a progress update, and solicit stakeholder input that could impact the site selection efforts and/or preparation of this Port Market Analysis and Master Plan Report. Stakeholders were identified in collaboration with the HRPD and consisted of various local, regional, state, and federal entities.

Hanson also reviewed the existing transportation system in the Havana area. Havana has good highway connections via one federal highway and two state highways that pass through the Township. The Illinois River borders the west side of Havana, with almost three miles of "developed" shoreline. The Havana Regional Airport is located approximately 5.5 miles southeast of Havana and has a turf runway that is about 2,235 feet long. The Illinois & Midland Railroad (IMRR) provides rail service to Havana, with connections to all of the Class I railroads except CSX.

The freight data analyses and stakeholder outreach provided the business foundation for potential freight-related development in the Havana area. Hanson also conducted specific freight development analyses and presented concepts that may address potential business opportunities. Hanson reviewed population and industrial trends for both Mason and Fulton Counties, as well as the potential for development of an intermodal freight facility. Concepts such as an inland port and site certification were also presented.

Previously identified potential business opportunities were further defined as transload opportunities (i.e., the transfer of materials/products from one mode of transportation to another, due to the inability or inefficiency of transporting freight from an origin to a destination using only one transportation mode) and modal shift opportunities (i.e., the scenario when a commodity/product that is typically transported by one mode is moved to a different mode of transportation). These transload and modal shift opportunities provided the foundation for determining an appropriate facility type and location for potential freight facility development/redevelopment.

Overall, site selection was based on the Freight Facility Inventory, Freight Data Analysis, and input from various project stakeholders. Hanson began the site selection process by reviewing aerial imagery and parcel data to compile a preliminary list of sites for riverfront and/or rail-focused development, based on the following general criteria:

- Access to multiple transportation modes (barge, rail, and/or truck)
- Relatively flat topography
- Minimal number of parcel owners
- Minimal apparent environmental issues (forestation, wetlands, etc.)
- Existing land use is preferably industrial or agricultural
- Sufficient site/parcel size

After obtaining feedback from the HRPD, the preliminary riverfront and rail sites were evaluated separately with two evaluation matrices generally using the same evaluation criteria, weighting, and ratings. Hanson reviewed both the riverfront and rail site evaluation matrices with the HRPD. With consideration given to the projected tonnage associated with rail potential business opportunities and the relatively low anticipated likelihood of capturing this tonnage, Hanson and the HRPD jointly decided to focus freight facility site planning efforts on two riverfront sites only (the existing Sunrise FS and ADM South river terminal sites). Thus, no rail-only site planning was advanced at this time.

Freight activity forecasts were primarily based on the potential business opportunities summarized in the Freight Data Analysis and further identified as potential transload or modal shift opportunities. The potential annual tonnage guided the development of Concept Plans for the two existing river terminal sites. Most existing infrastructure was intentionally left in place; the proposed development consists mostly of additions to the existing facilities. This approach should allow the facilities to continue existing operations, with proposed improvements adding new capabilities or enhancing existing operations if/when brought online. In addition to the recommended development, potential improvements are also shown at both sites that, while not currently recommended, have the potential to be implemented if warranted in the future. An Opinion of Probable Construction Cost (OPCC) was developed for the phased improvements shown in the Concept Plans.

Hanson provided a high-level overview of potential revenue opportunities, job and economic growth opportunities, and capital improvement planning related to the potential additional development at the Sunrise FS and AMD South sites. Township and HRPD revenue opportunities are anticipated to primarily be in the form of taxes, both direct and indirect. The expenditure of public-sector dollars by the HRPD to develop new and/or expand existing freight capabilities at the Sunrise FS and/or ADM South sites will be expected to have a positive impact on Havana area jobs and the local economy. Hanson also provided guidance on capital improvement planning, including likely operating expenses and potential funding sources.

Any project involving property acquisition or significant capital improvements entails a certain amount of risk. Accordingly, the primary anticipated risks associated with the proposed freight facility development were qualitatively summarized, and Hanson provided suggestions to help minimize these risks. Identified risks primarily focused on project funding, property ownership, environmental permitting, business opportunities, and community support.

Collectively, the information presented in this Port Market Analysis & Master Plan Report establishes the foundation for potential freight facility expansion and/or development within the Havana Township. Successful freight facility expansion/development by the HRPD appears to be feasible. However, the development proposed in the Concept Plans to accommodate the potential business opportunities identified herein should not be interpreted as a “build it and they will come” recommendation.

Considerable additional efforts will be required to fully realize the goals of this project. The following summarizes the recommended next steps for the HRPD to advance their stated goals.

- Initiate outreach with Sunrise FS and/or ADM
- Continue outreach with Jack Tanner Towing
- Initiate outreach with companies that ship/receive the “business opportunity” commodities
- Initiate coordination/involvement with industry partners/organizations
- Pursue funding to support additional planning efforts
    - Strategic Plan
    - Competitive Analysis
    - Refine Concept Plans

This Port Market Analysis & Master Plan project was an important first step for the HRPD in achieving their overarching goals – to accommodate projected increases in freight volumes and facilitate economic growth in the Havana region. The next steps summarized above are anticipated to better position the HRPD for success in achieving those goals.

1. Introduction

The Havana Regional Port District (HRPD), the boundaries of which encompass the Havana Township, was created in 1985. For the past 35+ years, the HRPD has successfully operated the landlocked Havana Regional Airport. The HRPD does not currently own any riverfront assets, but several privately-owned river terminals currently operate along the Havana riverfront and facilitate barge access to/from the Illinois River. Other freight-related infrastructure in the Havana area includes several highways and the Illinois & Midland Railroad, a shortline railroad that interchanges with all of the Class I railroads except CSX.

The HRPD is considering expansion of existing freight facilities or development of new freight facilities to accommodate projected increases in freight volumes and facilitate economic growth in the region. To accomplish these goals, the HRPD applied for and was awarded Statewide Planning & Research (SPR) Funds through the Illinois Department of Transportation (IDOT) to conduct a market analysis and develop a master plan. Hanson Professional Services Inc. (Hanson) was selected by the HRPD to conduct this effort.

The primary objectives of this Port Market Analysis & Master Plan project are to:

- Understand current/anticipated regional freight transportation market conditions.
- Determine current/anticipated needs within the regional freight transportation system.
- Identify potential freight and economic development opportunities.
- Identify site(s) within the Havana Township for potential freight facility expansion or new development.
- Develop an appropriate site master plan.

To accomplish these objectives, the following primary tasks were performed:

- Background information review
- Freight facility inventory
- Freight data analysis
- Freight stakeholder outreach
- Local government and agency outreach
- Existing transportation system review
- Site selection
- Conceptual site planning

The output from these primary tasks is presented herein, along with additional pertinent information and analyses.

2. Background Information Review Summary

Hanson conducted a desktop review of studies, reports, articles, and various other documents applicable to the subject project. The documents were prepared by others and provided to Hanson by the HRPD, Illinois Department of Transportation (IDOT), Greater Peoria Economic Development Council, and/or located by Hanson via internet research. The documents listed below were reviewed by Hanson, and a summary technical memorandum was submitted to HRPD on January 28, 2022.

- Illinois Marine Transportation System Plan ("IMTS Plan;" WSP for IDOT; 2021)
- Illinois State Freight Plan (WSP for IDOT; 2018)
- *M-55 Illinois-Gulf Marine Highway Initiative Final Report* (The RNO Group, LLC, for the Missouri Department of Transportation and Heart of Illinois Regional Port District; 2013)
- *Supply Chain Logistics and Transportation Indicator Study* (Tri-County Regional Planning Commission and The Heartland Partnership for the Heart of Illinois Regional Port District; 2005)
- *Maritime Freight Data Collection Systems and Database to Support Performance Measures and Market Analyses* (Sriraj, P.S., et al, Illinois Center for Transportation, University of Illinois at Urbana-Champaign; 2020)
- *Greater Peoria Multimodal Freight Growth Study, Phase I* (The Tioga Group for the Tri-County Regional Planning Commission; 2017)
- *Greater Peoria Multimodal Freight Growth Study, Phase II* (The Tioga Group for the Tri-County Regional Planning Commission; 2017)
- *The Big Table: Greater Peoria*; 2021-2025 Comprehensive Economic Development Strategy ("CEDS"), Greater Peoria Economic Development Council
- *Illinois River Center at Havana, Linking Resources for Success*, Governor's Conference on the Management of the Illinois River System, October 2005 (author unknown).
- Documents related to the following were also reviewed:
    - Havana Power Plant
    - Corn Belt Ports (various reports, presentations, letters, etc.)
    - City of Havana Comprehensive Plan

3. Freight Facility Inventory

Using a combination of aerial imagery and internet research, Hanson conducted an inventory of existing freight facilities located within a 50-mile radius of Havana. The 50-mile radius was selected because it is roughly equivalent to a one-hour trucking distance, which is a typical maximum distance for which trucking is economically favorable (excluding long-haul trucking). For purposes of the inventory, freight facilities are defined as businesses that appear to meet one or more of the following criteria:

- Consumes/produces significant product volumes (i.e., “industry”)
- Carries a significant volume of freight (i.e., “carriers”)
- Distributes commodities/products in significant volume (i.e., “distributors”)
- Has a facility that is or could be readily served by a railroad
- Has a facility with truck un/loading bays
- Has a riverfront terminal capable of transloading to/from barges

A total of 595 facilities were identified within the 50-mile radius and added to the freight facility inventory. The inventory was catalogued in a geographic information system (GIS) database that includes the facility name, apparently available transportation mode(s), likely commodity type(s) handled at the facility, and the geographic location of the facility. Summary characteristics of the freight facility inventory are provided below.

- The 595 inventoried facilities consist of…
  - 370 industry facilities
  - 51 carrier facilities
  - 149 distribution centers
  - 25 river terminals
- Barge Access
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  - 8 facilities have potential barge access
- Rail Access
  - 98 facilities have rail access
  - 138 facilities have potential rail access
- All facilities have truck access

For reference, “potential barge access” is defined as a riverfront facility that has no in-river infrastructure to facilitate transloading freight to/from barges. Similarly, “potential rail access” is defined as a facility that is immediately adjacent to existing railroad tracks, but rail infrastructure has not been extended onto the facility’s property.

The information gathered through the freight facility inventory helped Hanson to gauge the “supply” of freight facilities in the Havana region. It was also used to help identify potential freight stakeholders for subsequent stakeholder outreach (see Section 5).

An overview of the freight facility inventory is shown below in Figure 1. The freight facility inventory is included as Appendix A.

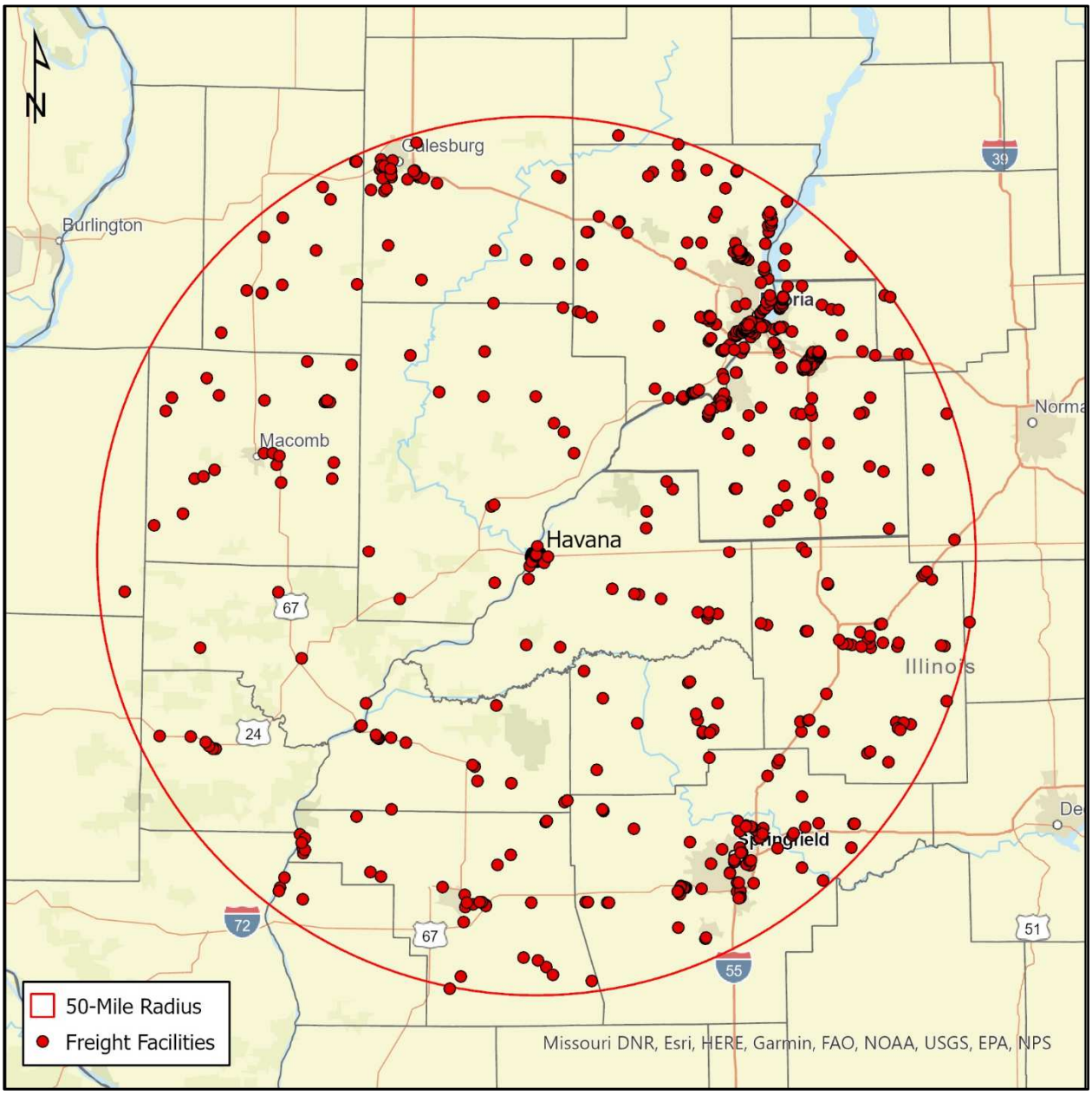


Figure 1 – Overview of Freight Facility Inventory

4. Fright Data Analysis

Hanson obtained and analyzed freight data from two sources. The Transearch freight database, which is developed by S&P Global (formerly IHS Markit, an industry-leading source of freight flow data), contains air, waterborne (barge), and truck freight movements. A second database containing rail freight movements was obtained from the US Surface Transportation Board (STB). Both databases contain freight movements for the years 2019 and 2035, which represent the base scenario and planning horizon projections, respectively.

The freight data was used to analyze freight moving into (destination), out of (origin), within (origin and destination, or O&D), and through (pass-through) the study region. Commodities with significant volumes that are moving in the study area may represent business opportunities for the HRPD. Similarly, commodities with volumes projected to grow significantly during the 16 years between the 2019 base year and 2035 planning horizon may also represent potential business opportunities for the HRPD. A summary of the freight data analysis was submitted to the HRPD in a technical memorandum on February 15, 2023.

As part of the freight data analysis effort, Hanson also obtained waterborne-specific freight data from the US Army Corps of Engineers (USACE) Waterborne Commerce Statistics Center (WCSC). Freight data from the USACE's Lock Performance Monitoring System and the Waterborne Commerce of the United States data sets were used to supplement the Transearch barge freight data.

4.1 Freight Data Analysis Methodology

The freight data analysis encompassed two study areas. The first study area consisted of the immediate Havana vicinity, and the second study area consisted of most counties within a 50-mile radius of Havana. Note, Hanson also utilized a 50-mile radius for the freight facility inventory (see Section 3).

- Study Area A (immediate Havana vicinity)
  - Fulton County
  - Mason County
- Study Area B (roughly 50-mile radius from and including Havana)
  - Brown County
  - Cass County
  - Fulton County
  - Knox County
  - Logan County
  - McDonough County
  - Mason County
  - Menard County
  - Morgan County
  - Peoria County
  - Sangamon County
  - Schuyler County
  - Tazewell County
  - Warren County

Note, as shown in the list above, the two counties in Study Area A (Fulton and Mason Counties) are also included in the 14 counties of Study Area B. Thus, all data reported herein for Study Area B includes Study Area A data.

The two study areas are outlined below and shown in Figure 2.

Figure 2 – Freight Data Analysis Study Areas

Freight data from the Transearch and STB databases is presented in the following sections, organized by transportation mode in alphabetical order (air, barge, rail, and truck). For each transportation mode, an overview of freight movements in both study areas is provided first, followed by multiple commodity-level summaries. The commodity-level analyses contain up to eight summaries for each transportation mode, as summarized below.

- Study Area A Destination
- Study Area A Origin
- Study Area A O&D
- Study Area A Pass-Thru
- Study Area B Destination
- Study Area B Origin
- Study Area B O&D
- Study Area B Pass-Thru

The commodity-level summaries will be presented in the same general order as outlined above. Note, the commodity-level freight summaries are not inclusive of all commodities moving in the two study areas. Rather, a process was undertaken to filter the vast datasets to represent the top 12 commodities for each transportation mode. The factors below were used to facilitate this commodity filtering process:

- Total tonnage of top commodities represents the majority of freight movements.
- Commodity is or may have the potential to be transported via barge.
- Commodity tonnage is projected to increase significantly from 2019 to 2035.
- Professional judgement and/or general industry knowledge.

For reference, freight commodities are commonly grouped/categorized and reported by Standard Transportation Commodity Code (STCC), as will be seen in the commodity-level summaries. Note, percentages presented in tables herein may not sum to 100% due to rounding; similarly, tonnage totals presented in the tables may not equal the sum of their individual components due to rounding.

Also note, all rail tonnages presented herein have been generalized to satisfy STB requirements regarding confidentiality of private shippers/railroads and their respective tonnage data. More specifically, the rail data obtained from the STB is commercially sensitive and has the potential to cause competitive harm to shippers and/or railroads if disclosed. Prior to the previous submittal of this data to the HRPD as a technical memorandum, the STB performed a confidentiality review of the rail-related portions of the data. The STB checks to make sure there are at least three railroads at both the origin and destination of each rail tonnage presented herein [this is known as the “3 FSAC Rule,” which is defined in 48 CFR (Code of Federal Regulations) Part 1244; “FSAC” is the abbreviation for “Freight Station Accounting Code”]. This check ensures that a particular shipper or railroad cannot have their confidential freight data inferred by another party. The initial version of the technical memorandum containing specific rail tonnages failed the confidentiality review when submitted to the STB. To expedite revisions to the final version of the technical memorandum and ease passing the STB confidentiality review process, Hanson elected to generalize all rail tonnages presented in the technical memorandum and subsequently herein.

4.2 Freight Data Overview

A high-level overview of the freight data is presented in Table 1. As shown, most of the 2019 freight (based on tonnages) moving in Study Area A is transported by rail (82%), followed by truck (16%) and barge (2%). The distribution of freight transportation mode is projected to remain generally the same in 2035, with a slight decrease in rail traffic and slight increases in truck and barge traffic. No air freight moved in Study Area A in 2019 or 2035. Total Study Area A freight is projected to decrease by 19% during the 16-year period from 2019 to 2035.

Note, tonnages for all transportation modes in Table 1 were generalized, otherwise the data could be used to “reverse engineer” actual rail tonnages that were generalized in Table 11.

Table 1 – Overall Freight Data Summary

Year	Mode	Study Area A			Study Area B		
		Tonnage	% of Total	Tonnage % Increase 2019 to 2035	Tonnage	% of Total	Tonnage % Increase 2019 to 2035
2019	Air	0	0%	---	> 10k	0%	---
	Barge	> 1M	2%	---	> 8M	3%	---
	Rail	> 42M	82%	---	> 120M	46%	---
	Truck	> 8M	16%	---	> 134.5M	51%	---
	Total	> 51.5M	---	---	> 263M	---	---
2035	Air	0	0%	---	> 20k	0%	52%
	Barge	> 1M	3%	-7%	> 9M	3%	16%
	Rail	> 32M	77%	-24%	> 105.5M	36%	-12%
	Truck	> 8M	20%	4%	> 175M	60%	30%
	Total	> 41.5M	---	-19%	> 290M	---	10%

Source: S&P Global, US Surface Transportation Board (STB), & Hanson. Notes: Truck tonnage excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage; these are "secondary movements." Rail tonnage excludes intermodal shipping container tonnage, since these contain an unknown mix of commodities.

As also shown in Table 1, the freight mode of transportation is more evenly distributed between rail (46%) and truck (51%) in Study Area B in 2019. In 2035, rail freight is projected to decrease by about 12% and truck freight is projected to increase by about 30% in Study Area B, resulting in about 36% and 60% of the total, respectively. In both 2019 and 2035, air and barge freight traffic represent less than 1% and about 3% of Study Area B freight, respectively. Unlike the total tonnage decrease projected for Study Area A, total Study Area B freight is projected to increase by about 10% during the 16-year period from 2019 to 2035.

4.3 Data Summary & Analysis by Transportation Mode – Air Freight

An overview of air freight movements in the two study areas is provided in Table 2. As stated in the preceding section, no air freight moved in Study Area A in 2019 or 2035. This is expected, since there is not an airport that receives or ships air freight in either of the two counties that comprise Study Area A.

Similarly, no air freight had both a destination and an origin in Study Area B in 2019 or 2035. This is not surprising, as air freight is typically used for light weight and high value freight that requires very fast transportation, often over longer distances.

Air freight with a Study Area B destination or origin was relatively balanced at 47% and 53% of the total in 2019, respectively. Projections for 2035 indicate a slight decrease in air freight with a Study Area B destination (to 45%) and a slight increase in air freight with a Study Area B origin (to 55%). Total Study Area B air freight is projected to increase by about 52% from 2019 to 2035. Nearly all Study Area B air freight has a destination or origin in Peoria County, assumed to be the General Downing - Peoria International Airport.

Table 2 – Air Freight Overview

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	0	---	0	---	Destination	6,963	47%	14,816	---
	Origin	0	---		---	Origin	7,853	53%		---
	O & D	0	---		---	O & D	0	---		---
	Pass-Thru	---	---		---	Pass-Thru	---	---		---
2035	Destination	0	---	0	---	Destination	10,192	45%	22,541	46%
	Origin	0	---		---	Origin	12,349	55%		57%
	O & D	0	---		---	O & D	0	---		---
	Pass-Thru	---	---		---	Pass-Thru	---	---		---

Source: S&P Global & Hanson. Note: Pass-Thru air freight tonnage is not feasible to determine using the Transearch database.

As indicated in Table 2, no air freight moved in Study Area A, thus no commodity-level summaries are presented herein for Study Area A air freight.

The commodity-level summary of air freight with a Study Area B destination is provided in Table 3. As indicated, the select top commodities represent 89% and 91% of the total in 2019 and 2035, respectively. As noted below the table, STCC 4711 (Small Packaged Freight Shipments) represents commercial air cargo (such as UPS or FedEx) and accounts for nearly half of all air freight with a Study Area B destination. Overall, select commodities tonnage is projected to significantly increase by 49%.

Table 3 – Air Freight with a Study Area B Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Food or Kindred Products	20XX	171	2%	332	3%	94%
Textile Mill Products	22XX	65	1%	114	1%	75%
Printed Matter	27XX	100	1%	144	1%	44%
Chemicals or Allied Products	28XX	225	3%	327	3%	45%
Drugs	2831	239	3%	379	4%	59%
Fabricated Metal Products	34XX	129	2%	213	2%	65%
Machinery	35XX	1,002	14%	1,179	12%	18%
Electrical Equipment	36XX	288	4%	419	4%	45%
Transportation Equipment	37XX	304	4%	441	4%	45%
Instrum, Photo Equip, Optical Equip	38XX	474	7%	734	7%	55%
Misc Manufactured Products	39XX	71	1%	132	1%	86%
Small Packaged Freight Shipments	4711	3,115	45%	4,812	47%	54%
Total Select Commodities:		**6,183**	**89%**	**9,226**	**91%**	**49%**
Total All Commodities:		**6,963**	---	**10,192**	---	**46%**

Source: S&P Global & Hanson. Notes: STCC 4711 represents commercial air cargo, such as UPS or FedEx. Excludes drayage to/from airports.

The commodity-level summary of air freight with a Study Area B origin is provided in Table 4. As indicated, the select top commodities represent 90% of the totals in 2019 and 2035, and STCC 4711 (commercial air cargo) accounts for about half of all air freight with a Study Area B origin. Overall, select commodities tonnage is projected to significantly increase by 57%.

Table 4 – Air Freight with a Study Area B Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Food or Kindred Products	20XX	2	0%	2	0%	0%
Textile Mill Products	22XX	477	6%	459	4%	-4%
Printed Matter	27XX	3	0%	4	0%	33%
Chemicals or Allied Products	28XX	140	2%	223	2%	59%
Drugs	2831	7	0%	27	0%	286%
Fabricated Metal Products	34XX	13	0%	20	0%	54%
Machinery	35XX	109	1%	166	1%	52%
Electrical Equipment	36XX	898	11%	1,361	11%	52%
Transportation Equipment	37XX	1,234	16%	1,872	15%	52%
Instrum, Photo Equip, Optical Equip	38XX	38	0%	57	0%	50%
Misc Manufactured Products	39XX	205	3%	310	3%	51%
Small Packaged Freight Shipments	4711	3,926	50%	6,570	53%	67%
Total Select Commodities:		**7,052**	**90%**	**11,071**	**90%**	**57%**
Total All Commodities:		**7,853**	---	**12,349**	---	**57%**

Source: S&P Global & Hanson. Notes: STCC 4711 represents commercial air cargo, such as UPS or FedEx. Excludes drayage to/from airports.

As shown in Table 2, no air freight had both a destination and an origin in Study Area B.

As stated earlier, in general, commodities transported by aircraft are typically high value and light weight, which is the opposite of commodities typically transported via barge. For this reason, Hanson does not foresee a potential for air freight summarized above to shift to barge. However, Table 3 and Table 4 both project significant increases in total air freight tonnage. If a company that utilizes air freight transportation were to locate in the Havana area, it may be feasible for the HRPD to capture a portion of the projected increase in air freight tonnage by implementing significant strategic improvements at the Havana Regional Airport.

4.4 Data Summary & Analysis by Transportation Mode – Barge Freight

An overview of barge freight movements in the two study areas is provided in Table 5. As noted below Table 5, it is not possible to determine barge freight that passes through either study area using the Transearch data.

Table 5 – Barge Freight Overview

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	59,612	5%	1,252,979	---	Destination	890,129	11%	8,036,995	---
	Origin	1,193,367	95%		---	Origin	6,993,704	87%		---
	O & D	0	---		---	O & D	153,162	2%		---
	Pass-Thru	---	---		---	Pass-Thru	---	---		---
2035	Destination	78,564	7%	1,167,976	32%	Destination	1,193,006	13%	9,331,913	34%
	Origin	1,089,412	93%		-9%	Origin	7,875,009	84%		13%
	O & D	0	---		---	O & D	263,898	3%		72%
	Pass-Thru	---	---		---	Pass-Thru	---	---		---

Source: S&P Global & Hanson. Note: Pass-Thru barge freight tonnage is not feasible to determine using the Transearch database.

No barge freight movements had both a destination and origin in Study Area A in 2019 or 2035. Far more barge freight had a Study Area A origin (95%) than destination (5%) in 2019, and that distribution

is projected to be about the same in 2035 (93% origin and 7% destination). Overall, Study Area A barge freight is projected to decrease slightly (-7%) from 2019 to 2035.

Barge freight movements in Study Area B have a similar but slightly more balanced distribution. Barge freight with a Study Area B origin represented 87% of tonnage in 2019 and is projected to decrease slightly to 84% in 2035. Barge freight with a Study Area B destination represented 11% of tonnage in 2019 and is projected to increase slightly to 13% in 2035. A small percentage of barge freight (2% in 2019 and 3% in 2035) has both an origin and a destination in Study Area B. Overall, Study Area B barge freight is projected to increase by about 16% from 2019 to 2035.

The commodity-level summary of barge freight with a Study Area A destination is provided in Table 6. As indicated, the select top commodities represent 99% of the totals in 2019 and 2035. Tonnage is projected to increase by about 32%, primarily due to projected increases of 81% and 40% for STCC's 2812 (Potassium or Sodium Compound) and 2871 (Fertilizers), respectively. Due to the New Orleans origin for the STCC 2812 tonnage, Hanson assumes this mostly represents road salt shipments. These projected increases may represent a business opportunity for the HRPD to help balance the overall inbound/outbound tonnage imbalance previously noted regarding Table 5 above. Due to the high agricultural production in Study Area A, the increased tonnage of STCC 2871 may also represent an opportunity. The increase in overall tonnage shown in Table 6 is projected despite the significant decrease (-70%) in STCC 1121 (Bituminous Coal), which Hanson assumes is directly attributable to the closure of the coal-fired power plants in Bartonville, Canton, Havana, and Pekin, IL.

Table 6 – Barge Freight with a Study Area A Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	0	0%	0	0%	---
Oil Kernels, Nuts, or Seeds	0114	54	0%	51	0%	-6%
Bituminous Coal	1121	11,852	20%	3,542	5%	-70%
Broken Stone or Riprap	1421	0	0%	0	0%	---
Gravel or Sand	1441	508	1%	635	1%	25%
Potassium or Sodium Compound	2812	21,075	35%	38,114	49%	81%
Misc. Industrial Organic Chemicals	2818	0	0%	0	0%	---
Misc. Indus Inorganic Chemicals	2819	0	0%	0	0%	---
Fertilizers	2871	25,467	43%	35,629	45%	40%
Petroleum Refining Products	2911	0	0%	0	0%	---
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Total Select Commodities:		**58,956**	**99%**	**77,971**	**99%**	**32%**
Total All Commodities:		**59,612**	---	**78,564**	---	**32%**

Source: S&P Global & Hanson. Note: Excludes drayage to/from barge terminals.

The commodity-level summary of barge freight with a Study Area A origin is provided in Table 7. As indicated, the select top commodities represent nearly all of the total tonnage in 2019 and 2035 (99% and 98%, respectively). Total tonnage and that of the select commodities is projected to decrease by about 9%, due to decreases projected for several select commodities. The largest decrease in tonnage is projected for STCC 0113 (Grain). Hanson assumes this is not an anticipated decrease in grain production, but rather a decrease in grain exports due to an increase in domestic consumption in various forms. The decrease in STCC 1121 (Bituminous Coal) is likely attributable to the overall anticipated decrease in coal mining throughout Illinois and the United States. The projected increase in STCC 1421 (Broken Stone or Riprap) tonnage may represent a business opportunity for the HRPD.

The significant increase in STCC 2812 (Potassium or Sodium Compound) projected by 2035 warrants additional research as a potential opportunity for the HRPD. This may be connected to a freight facility (Hawkins) located in Havana and identified by Hanson while conducting the freight facility inventory.

Table 7 – Barge Freight with a Study Area A Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	533,365	45%	407,720	37%	-24%
Oil Kernels, Nuts, or Seeds	0114	358,346	30%	278,887	26%	-22%
Bituminous Coal	1121	12,814	1%	4,164	0%	-68%
Broken Stone or Riprap	1421	198,802	17%	248,513	23%	25%
Gravel or Sand	1441	0	0%	0	0%	---
Potassium or Sodium Compound	2812	65,196	5%	117,907	11%	81%
Misc. Industrial Organic Chemicals	2818	6,481	1%	11,720	1%	81%
Misc. Indus Inorganic Chemicals	2819	0	0%	0	0%	---
Fertilizers	2871	0	0%	0	0%	---
Petroleum Refining Products	2911	484	0%	295	0%	-39%
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Total Select Commodities:		**1,175,488**	**99%**	**1,069,206**	**98%**	**-9%**
Total All Commodities:		**1,193,367**	---	**1,089,412**	---	**-9%**

Source: S&P Global & Hanson. Note: Excludes drayage to/from barge terminals.

As previously shown in Table 5, no barge freight had both a destination and an origin in Study Area A. And as previously stated, it is not possible to determine barge freight that passes through either study area using the Transearch data.

The commodity-level summary of barge freight with a Study Area B destination is provided in Table 8. As indicated, the select top commodities represent nearly all of the total tonnage in 2019 and 2035 (96% and 97%, respectively). Overall tonnage is projected to increase by 34%, despite decreases (some significant) in several commodities. Similar to Study Area A, barge freight with a Study Area B destination projected to increase significantly may represent business opportunities for the HRPD, including tonnage increases projected for STCC's 2812 (Potassium or Sodium Compound), 2819 (Misc. Industrial Inorganic Chemicals), and 2871 (Fertilizers). Other STCC's are projected to increase significantly from a percentage perspective, but the tonnages are not significant relative to barge transportation.

Table 8 – Barge Freight with a Study Area B Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	8,697	1%	6,438	1%	-26%
Oil Kernels, Nuts, or Seeds	0114	900	0%	843	0%	-6%
Bituminous Coal	1121	43,021	5%	14,810	1%	-66%
Broken Stone or Riprap	1421	0	0%	0	0%	---
Gravel or Sand	1441	107,475	12%	96,652	8%	-10%
Potassium or Sodium Compound	2812	73,562	8%	132,576	11%	80%
Misc. Industrial Organic Chemicals	2818	7,477	1%	10,527	1%	41%
Misc. Indus Inorganic Chemicals	2819	271,460	30%	390,156	33%	44%
Fertilizers	2871	291,225	33%	462,177	39%	59%
Petroleum Refining Products	2911	47,412	5%	28,816	2%	-39%
Primary Iron or Steel Products	3312	4,297	0%	6,886	1%	60%
Metal Scrap or Tailings	4021	1,721	0%	3,017	0%	75%
Total Select Commodities:		**857,247**	**96%**	**1,152,898**	**97%**	**34%**
Total All Commodities:		**890,129**	---	**1,193,006**	---	**34%**

Source: S&P Global & Hanson. Note: Excludes drayage to/from barge terminals.

The commodity-level summary of barge freight with a Study Area B origin is provided in Table 9. As indicated, the select top commodities represent 97% of the totals in 2019 and 2035. The tonnage of select commodities is projected to increase by a modest 12%, despite decreases in several commodities. Similar to Study Area A, barge freight with a Study Area B origin projected to increase significantly may represent business opportunities for the HRPD, including the tonnage increases projected for STCC's 1421 (Broken Stone or Riprap), 1441 (Gravel or Sand), 2812 (Potassium or Sodium Compound), 2818 (Misc. Industrial Organic Chemicals), 2871 (Fertilizers), and 3312 (Primary Iron or Steel Products). Again, other STCC's are projected to increase significantly from a percentage perspective, but the tonnages are not significant relative to barge transportation.

Table 9 – Barge Freight with a Study Area B Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	2,740,612	39%	2,053,883	26%	-25%
Oil Kernels, Nuts, or Seeds	0114	1,921,768	27%	1,905,022	24%	-1%
Bituminous Coal	1121	12,814	0%	4,164	0%	-68%
Broken Stone or Riprap	1421	679,335	10%	849,206	11%	25%
Gravel or Sand	1441	131,549	2%	219,891	3%	67%
Potassium or Sodium Compound	2812	107,249	2%	193,961	2%	81%
Misc. Industrial Organic Chemicals	2818	1,055,153	15%	2,132,835	27%	102%
Misc. Indus Inorganic Chemicals	2819	0	0%	0	0%	---
Fertilizers	2871	35,335	1%	90,586	1%	156%
Petroleum Refining Products	2911	2,600	0%	1,584	0%	-39%
Primary Iron or Steel Products	3312	86,144	1%	163,471	2%	90%
Metal Scrap or Tailings	4021	843	0%	1,754	0%	108%
Total Select Commodities:		**6,773,402**	**97%**	**7,616,357**	**97%**	**12%**
Total All Commodities:		**6,993,704**	---	**7,875,009**	---	**13%**

Source: S&P Global & Hanson. Note: Excludes drayage to/from barge terminals.

Finally, the commodity-level summary of barge freight with both a Study Area B destination and origin is provided in Table 10. As indicated by the total tonnage, relatively short distance barge movements are

uncommon and likely involve unique situations. Accordingly, Hanson does not anticipate that these barge movements represent business opportunities for the HRPD.

Table 10 – Barge Freight with a Study Area B Destination & Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	14,894	10%	9,999	4%	-33%
Oil Kernels, Nuts, or Seeds	0114	0	0%	0	0%	---
Bituminous Coal	1121	0	0%	0	0%	---
Broken Stone or Riprap	1421	0	0%	0	0%	---
Gravel or Sand	1441	120,764	79%	216,877	82%	80%
Potassium or Sodium Compound	2812	0	0%	0	0%	---
Misc. Industrial Organic Chemicals	2818	1,100	1%	1,384	1%	26%
Misc. Indus Inorganic Chemicals	2819	0	0%	0	0%	---
Fertilizers	2871	16,311	11%	35,436	13%	117%
Petroleum Refining Products	2911	0	0%	0	0%	---
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Metal Scrap or Tailings	4021	93	0%	202	0%	117%
Total Select Commodities:		**153,162**	**100%**	**263,898**	**100%**	**72%**
Total All Commodities:		**153,162**	---	**263,898**	---	**72%**

Source: S&P Global & Hanson. Note: Excludes drayage to/from barge terminals.

4.5 Data Summary & Analysis by Transportation Mode – Rail Freight

An overview of rail freight movements in the two study areas is provided in Table 11. As noted below Table 11, the rail tonnages shown exclude intermodal shipping containers, since these contain an unknown mix of commodities and are not anticipated to be a potential business opportunity for the HRPD at this time. As previously noted, all rail tonnages presented herein have been generalized to satisfy STB requirements regarding confidentiality of private shippers/railroads and their respective tonnage data.

Table 11 – Rail Freight Overview

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	> 2.5M	7%	> 42M	---	Destination	> 10.5M	9%	> 120M	---
	Origin	> 300k	1%		---	Origin	> 7M	6%		---
	O & D	0	---		---	O & D	> 5M	4%		---
	Pass-Thru	> 39M	93%		---	Pass-Thru	> 97M	81%		---
2035	Destination	> 2M	6%	> 32M	-28%	Destination	> 5M	5%	> 105.5M	-52%
	Origin	> 250k	1%		-23%	Origin	> 5M	5%		-25%
	O & D	0	---		---	O & D	> 2.5M	3%		-49%
	Pass-Thru	> 29.5M	93%		-24%	Pass-Thru	> 92M	87%		-5%

Source: S&P Global, US Surface Transportation Board (STB), & Hanson. Note: Excludes tonnage associated with intermodal shipping containers.

No rail freight movements had both a destination and origin in Study Area A in 2019 or 2035. Most rail freight tonnage passed through Study Area A, representing about 93% of the total rail freight tonnage in both 2019 and 2035. The remainder of the rail freight tonnage had either a Study Area A destination (7%) or origin (1%) in 2019, and that distribution is expected to remain about the same in 2035. However, total rail freight tonnage in Study Area A is projected to decrease by about 24% over the 16-year period from 2019 to 2035.

Rail freight tonnage in Study Area B is also predominately pass-through, representing 81% and 87% of the total in 2019 and 2035, respectively. The remainder of the rail freight tonnage is somewhat evenly distributed between having a Study Area B destination, origin, or destination and origin at 9%, 6%, and 4% in 2019, respectively. That distribution is projected to be about the same in 2035 (5%, 5%, and 3%). Total rail freight tonnage in Study Area B is projected to decrease by about 12% over the 16-year period from 2019 to 2035.

The commodity-level summary of rail freight with a Study Area A destination is provided in Table 12. As indicated, STCC 1121 (Bituminous Coal) represents all tonnage in 2019 and 2035. However, it is unclear whether the freight data projections were generated prior to the Study Area A coal-fired power plant closures, as the closure announcements were made in August 2019. Regardless, due to the projected decrease in tonnage (-28%) and a general shift away from burning coal for electricity generation in the US, this tonnage is not likely a business opportunity for the HRPD.

Table 12 – Rail Freight with a Study Area A Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	0	0%	0	0%	---
Oil Kernels, Nuts, or Seeds	0114	0	0%	0	0%	---
Iron Ores	1011	0	0%	0	0%	---
Bituminous Coal	1121	> 2.5M	100%	> 2M	100%	-28%
Gravel or Sand	1441	0	0%	0	0%	---
Wet Corn Milling or Milo	2046	0	0%	0	0%	---
Potassium or Sodium Compound	2812	0	0%	0	0%	---
Misc. Industrial Organic Chemicals	2818	0	0%	0	0%	---
Plastic Mater or Synth Fibres	2821	0	0%	0	0%	---
Fertilizers	2871	0	0%	0	0%	---
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Total Select Commodities:		**> 2.5M**	**100%**	**> 2M**	**100%**	**-28%**
Total All Commodities:		**> 2.5M**	---	**> 2M**	---	**-28%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

The commodity-level summary of rail freight with a Study Area A origin is provided in Table 13. As indicated, STCC 0113 (Grain) represents all tonnage in 2019 and 2035, which is projected to decrease by 22%. As stated previously regarding grain movements via barge transportation, Hanson assumes this decreased tonnage is not an anticipated decrease in grain production, rather a decrease in grain exports due to an increase in domestic consumption in various forms. Between the projected tonnage decrease and the existing grain terminals in Havana, STCC 0113 (Grain) does not appear to be a business opportunity for the HRPD based on data analysis alone.

Table 13 – Rail Freight with a Study Area A Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	> 300k	98%	> 200k	99%	-22%
Oil Kernels, Nuts, or Seeds	0114	0	0%	0	0%	---
Iron Ores	1011	0	0%	0	0%	---
Bituminous Coal	1121	0	0%	0	0%	---
Gravel or Sand	1441	0	0%	0	0%	---
Wet Corn Milling or Milo	2046	0	0%	0	0%	---
Potassium or Sodium Compound	2812	0	0%	0	0%	---
Misc. Industrial Organic Chemicals	2818	0	0%	0	0%	---
Plastic Mater or Synth Fibres	2821	0	0%	0	0%	---
Fertilizers	2871	0	0%	0	0%	---
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Total Select Commodities:		**> 300k**	**98%**	**> 200k**	**99%**	**-22%**
Total All Commodities:		**> 300k**	---	**> 250k**	---	**-23%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

As previously shown in Table 11, no rail freight movements had both a destination and an origin in Study Area A in 2019 or 2035.

The commodity-level summary of rail freight that passes through Study Area A is provided in Table 14. As indicated, the select top commodities represent 83% and 69% of the totals in 2019 and 2035, respectively. Total rail pass-through tonnage is projected to decrease by 24% from 2019 to 2035, and select top commodity tonnage is projected to decrease by 37%. The overall decline in pass-through tonnage is primarily due to STCC 1121 (Bituminous Coal), which is likely driven by the general shift away from burning coal for electricity generation in the US. The overall decline is partially offset by significantly increased tonnage for several commodities, including STCC's 1011 (Iron Ores), 2046 (Wet Corn Milling or Milo), 2812 (Potassium or Sodium Compound), 2818 (Misc. Industrial Organic Chemicals), 2821 (Plastic Mater or Synth Fibres), 2871 (Fertilizers), and to a lesser extent, 4021 (Metal Scrap or Tailings). However, unless specific destinations or origins for these commodities can be identified that are just outside of Study Area A, this rail pass-through freight does not likely represent a potential business opportunity for the HRPD.

Table 14 – Rail Freight that Passes Through Study Area A

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	> 1.5M	5%	> 2M	7%	3%
Oil Kernels, Nuts, or Seeds	0114	> 350k	1%	> 350k	1%	2%
Iron Ores	1011	> 2.5M	7%	> 5M	17%	91%
Bituminous Coal	1121	> 23M	59%	> 5.5M	20%	-75%
Gravel or Sand	1441	> 750k	2%	> 750k	3%	-3%
Wet Corn Milling or Milo	2046	> 150k	0%	> 300k	1%	97%
Potassium or Sodium Compound	2812	> 150k	0%	> 250k	1%	73%
Misc. Industrial Organic Chemicals	2818	> 900k	2%	> 2M	8%	161%
Plastic Mater or Synth Fibres	2821	> 350k	1%	> 850k	3%	151%
Fertilizers	2871	> 450k	1%	> 800k	3%	80%
Primary Iron or Steel Products	3312	> 1M	3%	> 1M	4%	4%
Metal Scrap or Tailings	4021	> 250k	1%	> 350k	1%	35%
Total Select Commodities:		**> 32M**	**83%**	**> 20.5M**	**69%**	**-37%**
Total All Commodities:		**> 39M**	---	**> 29.5M**	---	**-24%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

The commodity-level summary of rail freight with a Study Area B destination is provided in Table 15. As indicated, the select top commodities represent 87% and 54% of the totals in 2019 and 2035, respectively. A 70% decrease in tonnage of select top commodities is projected, which is primarily due to a very significant decrease in STCC 1121 (Bituminous Coal). As stated previously, this decrease is likely the result of a general shift away from burning coal for electricity generation in the US. Nearly all of the other select top commodities are projected to increase tonnage by 2035, particularly STCC's 0114 (Oil Kernels, Nuts, or Seeds), 2046 (Wet Corn Milling or Milo), 2812 (Potassium or Sodium Compound), and 2821 (Plastic Mater or Synth Fibres). Depending on the commodity and destination/origin, these tonnage increases may represent business opportunities for the HRPD.

Table 15 – Rail Freight with a Study Area B Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	> 300k	3%	> 300k	6%	0%
Oil Kernels, Nuts, or Seeds	0114	> 90k	1%	> 100k	3%	58%
Iron Ores	1011	0	0%	0	0%	---
Bituminous Coal	1121	> 8M	75%	> 900k	18%	-88%
Gravel or Sand	1441	0	0%	0	0%	---
Wet Corn Milling or Milo	2046	> 150k	2%	> 300k	6%	54%
Potassium or Sodium Compound	2812	> 300k	3%	> 500k	10%	67%
Misc. Industrial Organic Chemicals	2818	> 30k	0%	> 60k	1%	72%
Plastic Mater or Synth Fibres	2821	> 150k	2%	> 250k	5%	64%
Fertilizers	2871	> 100k	1%	> 150k	3%	48%
Primary Iron or Steel Products	3312	> 1k	0%	> 1k	0%	96%
Metal Scrap or Tailings	4021	> 30k	0%	> 40k	1%	19%
Total Select Commodities:		**> 9M**	**87%**	**> 2.5M**	**54%**	**-70%**
Total All Commodities:		**> 10.5M**	---	**> 5M**	---	**-52%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

The commodity-level summary of rail freight with a Study Area B origin is provided in Table 16. As indicated, the select top commodities represent 88% and 75% of the totals in 2019 and 2035, respectively. Overall, tonnage of top select commodities is projected to decrease by 36%, primarily due to decreases in STCC's 0113 (Grain) and 1121 (Bituminous Coal). Potential reasoning for decreases in these STCC's has been stated previously. The projected tonnage increases for STCC's 1441 (Gravel or Sand) and 2818 (Misc. Industrial Organic Chemicals) may represent business opportunities for the HRPD, depending on their origins.

Table 16 – Rail Freight with a Study Area B Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	> 3M	42%	> 2M	41%	-26%
Oil Kernels, Nuts, or Seeds	0114	> 200k	3%	> 150k	3%	-19%
Iron Ores	1011	0	0%	0	0%	---
Bituminous Coal	1121	> 2M	32%	> 550k	11%	-75%
Gravel or Sand	1441	> 100k	2%	> 250k	5%	81%
Wet Corn Milling or Milo	2046	> 150k	3%	> 150k	3%	-15%
Potassium or Sodium Compound	2812	0	0%	0	0%	---
Misc. Industrial Organic Chemicals	2818	> 200k	3%	> 300k	6%	50%
Plastic Mater or Synth Fibres	2821	> 50k	1%	> 80k	1%	51%
Fertilizers	2871	> 50k	1%	> 80k	2%	65%
Primary Iron or Steel Products	3312	> 150k	2%	> 150k	3%	5%
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Total Select Commodities:		**> 6M**	**88%**	**> 4M**	**75%**	**-36%**
Total All Commodities:		**> 7M**	---	**> 5M**	---	**-25%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

The commodity-level summary of rail freight with both a Study Area B destination and origin is provided in Table 17. With the exceptions shown, relatively short distance rail movements are uncommon and likely involve unique situations. Accordingly, Hanson does not anticipate that these rail movements represent business opportunities for the HRPD.

Table 17 – Rail Freight with a Study Area B Destination & Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	> 60k	1%	> 50k	2%	-16%
Oil Kernels, Nuts, or Seeds	0114	0	0%	0	0%	---
Iron Ores	1011	0	0%	0	0%	---
Bituminous Coal	1121	> 5M	98%	> 2.5M	96%	-50%
Gravel or Sand	1441	0	0%	0	0%	---
Wet Corn Milling or Milo	2046	0	0%	0	0%	---
Potassium or Sodium Compound	2812	0	0%	0	0%	---
Misc. Industrial Organic Chemicals	2818	> 1k	0%	> 10k	0%	68%
Plastic Mater or Synth Fibres	2821	> 1k	0%	> 10k	1%	80%
Fertilizers	2871	0	0%	0	0%	---
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Total Select Commodities:		**> 5M**	**99%**	**> 2.5M**	**98%**	**-49%**
Total All Commodities:		**> 5M**	---	**> 2.5M**	---	**-49%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

Finally, the commodity-level summary of rail freight that passes through Study Area B is provided in Table 18. As indicated, the select top commodities represent 69% and 58% of the totals in 2019 and 2035, respectively. Total rail pass-through tonnage is projected to decrease by 5% from 2019 to 2035, and select top commodity tonnage is projected to decrease by 21%. As observed in other commodity-level summaries, STCC's 0113 (Grain) and 1121 (Bituminous Coal) are both projected to decrease significantly, particularly STCC 1121. However, tonnage for many of the other select top commodities is projected to increase significantly over the 16-year period from 2019 to 2035, particularly STCC's 1011 (Iron Ores), 2046 (Wet Corn Milling or Milo), 2812 (Potassium or Sodium Compound), 2818 (Misc. Industrial Organic Chemicals), 2821 (Plastic Mater or Synth Fibres), 2871 (Fertilizers), and 4021 (Metal Scrap or Tailings). Depending on the commodity and destination/origin, these tonnage increases may represent business opportunities for the HRPD.

Table 18 – Rail Freight that Passes Through Study Area B

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	> 6M	7%	> 5.5M	6%	-9%
Oil Kernels, Nuts, or Seeds	0114	> 700k	1%	> 700k	1%	-3%
Iron Ores	1011	> 2.5M	3%	> 5M	6%	91%
Bituminous Coal	1121	> 35M	37%	> 9M	10%	-74%
Gravel or Sand	1441	> 9M	10%	> 10.5M	12%	14%
Wet Corn Milling or Milo	2046	> 2M	2%	> 3.5M	4%	76%
Potassium or Sodium Compound	2812	> 1M	1%	> 2M	2%	67%
Misc. Industrial Organic Chemicals	2818	> 2M	2%	> 4.5M	5%	94%
Plastic Mater or Synth Fibres	2821	> 2.5M	3%	> 5.5M	6%	95%
Fertilizers	2871	> 1M	1%	> 1.5M	2%	77%
Primary Iron or Steel Products	3312	> 2M	2%	> 2M	3%	7%
Metal Scrap or Tailings	4021	> 550k	1%	> 800k	1%	43%
Total Select Commodities:		**> 67M**	**69%**	**> 53M**	**58%**	**-21%**
Total All Commodities:		**> 97M**	---	**> 92M**	---	**-5%**

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; "Total All Commodities" excludes tonnage associated with intermodal shipping containers, since these contain an unknown mix of commodities.

4.6 Data Summary & Analysis by Transportation Mode – Truck Freight

An overview of truck freight movements in the two study areas is provided in Table 19. As noted below Table 19, the truck tonnage shown excludes truck drayage of intermodal shipping containers to/from rail yards, truck drayage of air cargo to/from airports, and warehouse/distribution center tonnage.

Table 19 – Truck Freight Overview

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	1,009,508	12%	8,110,707	---	Destination	21,211,604	16%	134,791,391	---
	Origin	2,882,924	36%		---	Origin	22,026,903	16%		---
	O & D	40,667	1%		---	O & D	3,604,459	3%		---
	Pass-Thru	4,177,608	52%		---	Pass-Thru	87,948,425	65%		---
2035	Destination	1,030,954	12%	8,415,455	2%	Destination	26,791,310	15%	175,314,875	26%
	Origin	2,890,558	34%		0%	Origin	24,797,376	14%		13%
	O & D	42,364	1%		4%	O & D	3,559,549	2%		-1%
	Pass-Thru	4,451,579	53%		7%	Pass-Thru	120,166,640	69%		37%

Source: S&P Global & Hanson; Note: Excludes truck drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage.

More than half of the total truck freight tonnage passed through Study Area A in 2019 and 2035 (52% and 53%, respectively). Only 1% of truck freight had both a destination and origin in Study Area A in both years. Over a third of the truck freight tonnage had an origin in Study Area A in 2019 and 2035 (36% and 34%, respectively). Total Study Area A truck tonnage is projected to slightly increase by about 4% over the 16-year period from 2019 to 2035.

Around two-thirds of truck freight tonnage passed through Study Area B in 2019 and 2035 (65% and 69%, respectively), and this tonnage is projected to increase significantly (37%) by 2035. Truck freight with both a destination and origin in Study Area B is relatively negligible in both years (3% and 2%, respectively). Truck freight tonnage with either a destination or an origin in Study Area B represents 14% to 16% each in 2019 and 2035. Total Study Area B truck tonnage is projected to increase by about 30% over the 16-year period from 2019 to 2035.

The commodity-level summary of truck freight with a Study Area A destination is provided in Table 20. As indicated, the select top commodities represent 86% and 83% of the total in 2019 and 2035, respectively. Overall, select top commodity tonnage is projected to decrease slightly (-1%) during the 16-year period from 2019 to 2035. The tonnage increase projected for STCC 1421 (Broken Stone or Riprap) may benefit from a waterborne transportation opportunity and may represent a business opportunity for the HRPD.

Table 20 – Truck Freight with a Study Area A Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	260,130	26%	237,550	23%	-9%
Oil Kernels, Nuts, or Seeds	0114	134,233	13%	122,406	12%	-9%
Misc. Field Crops	0119	32,857	3%	30,668	3%	-7%
Misc. Fresh Vegetables	0139	3,289	0%	3,576	0%	9%
Broken Stone or Riprap	1421	267,117	26%	290,716	28%	9%
Gravel or Sand	1441	140,626	14%	144,768	14%	3%
Wet Corn Milling or Milo	2046	0	0%	0	0%	---
Petroleum Refining Products	2911	24,981	2%	22,888	2%	-8%
Primary Iron or Steel Products	3312	601	0%	632	0%	5%
Steel Wire, Nails, or Spikes	3315	135	0%	158	0%	17%
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Misc. Waste or Scrap	4029	0	0%	0	0%	---
Total Select Commodities:		**863,969**	**86%**	**853,362**	**83%**	**-1%**
Total All Commodities:		**1,009,508**	---	**1,030,954**	---	**2%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

The commodity-level summary of truck freight with a Study Area A origin is provided in Table 21. As indicated, the select top commodities represent 89% and 86% of the total in 2019 and 2035, respectively. Overall, select top commodity tonnage is projected to decrease slightly (-4%) during the 16-year period from 2019 to 2035. Although most select top commodities are projected to decrease tonnage, STCC's 1441 (Gravel or Sand) and 4029 (Misc. Waste or Scrap) are projected to increase significantly (99% and 171%, respectively). The projections for both commodities appear to represent potential business opportunities for the HRPD.

Table 21 – Truck Freight with a Study Area A Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	1,021,417	35%	821,889	28%	-20%
Oil Kernels, Nuts, or Seeds	0114	284,042	10%	246,967	9%	-13%
Misc. Field Crops	0119	37,823	1%	29,428	1%	-22%
Misc. Fresh Vegetables	0139	106,048	4%	86,492	3%	-18%
Broken Stone or Riprap	1421	0	0%	0	0%	---
Gravel or Sand	1441	183,563	6%	364,892	13%	99%
Wet Corn Milling or Milo	2046	0	0%	0	0%	---
Petroleum Refining Products	2911	887,168	31%	829,786	29%	-6%
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Steel Wire, Nails, or Spikes	3315	0	0%	0	0%	---
Metal Scrap or Tailings	4021	13,591	0%	5,065	0%	-63%
Misc. Waste or Scrap	4029	34,118	1%	92,293	3%	171%
Total Select Commodities:		**2,567,770**	**89%**	**2,476,812**	**86%**	**-4%**
Total All Commodities:		**2,882,924**	---	**2,890,558**	---	**0%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

The commodity-level summary of truck freight with both a Study Area A destination and origin is provided in Table 22. As shown, the select top commodities represent 99% of the total in both 2019 and 2035, and overall tonnage is projected to increase slightly (4%) by 2035. Tonnage for all select top

commodities is projected to decrease, except tonnage of STCC 1441 (Gravel or Sand). Although the increase is small relative to barge transportation, the overall trend of increased tonnage for STCC 1441 in Study Area A may indicate a potential business opportunity for the HRPD.

Table 22 – Truck Freight with a Study Area A Destination & Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	2,035	5%	1,353	3%	-34%
Oil Kernels, Nuts, or Seeds	0114	1,115	3%	791	2%	-29%
Misc. Field Crops	0119	178	0%	121	0%	-32%
Misc. Fresh Vegetables	0139	456	1%	346	1%	-24%
Broken Stone or Riprap	1421	0	0%	0	0%	---
Gravel or Sand	1441	4,353	11%	9,516	22%	119%
Wet Corn Milling or Milo	2046	0	0%	0	0%	---
Petroleum Refining Products	2911	32,157	79%	29,679	70%	-8%
Primary Iron or Steel Products	3312	0	0%	0	0%	---
Steel Wire, Nails, or Spikes	3315	0	0%	0	0%	---
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Misc. Waste or Scrap	4029	0	0%	0	0%	---
Total Select Commodities:		**40,294**	**99%**	**41,806**	**99%**	**4%**
Total All Commodities:		**40,667**	---	**42,364**	---	**4%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

The commodity-level summary of truck freight that passes through Study Area A is provided in Table 23. As previously shown in Table 19, pass-through freight represents about half of all truck freight moving in Study Area A. Tonnage of select top commodities is projected to remain flat from 2019 to 2035, with tonnage of some commodities increasing and others decreasing. The increased tonnage projected for STCC's 1441 (Gravel or Sand), 2046 (Wet Corn Milling or Milo), and 4029 (Misc. Waste or Scrap) may represent potential business opportunities for the HRPD.

Table 23 – Truck Freight that Passes Through Study Area A

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	1,718,074	41%	1,444,266	32%	-16%
Oil Kernels, Nuts, or Seeds	0114	394,251	9%	352,547	8%	-11%
Misc. Field Crops	0119	153,154	4%	160,552	4%	5%
Misc. Fresh Vegetables	0139	815	0%	581	0%	-29%
Broken Stone or Riprap	1421	663,271	16%	657,611	15%	-1%
Gravel or Sand	1441	148,920	4%	206,281	5%	39%
Wet Corn Milling or Milo	2046	357,697	9%	535,720	12%	50%
Petroleum Refining Products	2911	93,581	2%	86,282	2%	-8%
Primary Iron or Steel Products	3312	5,862	0%	7,542	0%	29%
Steel Wire, Nails, or Spikes	3315	16,565	0%	18,938	0%	14%
Metal Scrap or Tailings	4021	753	0%	3,408	0%	353%
Misc. Waste or Scrap	4029	55,198	1%	142,438	3%	158%
Total Select Commodities:		**3,608,141**	**86%**	**3,616,166**	**81%**	**0%**
Total All Commodities:		**4,177,608**	---	**4,451,579**	---	**7%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

The commodity-level summary of truck freight with a Study Area B destination is summarized in Table 24. As indicated, the select top commodities represent about two-thirds of the total, and that tonnage is projected to increase by about 15% by 2035. Depending on the origin and the destination within Study Area B, the increased tonnage projected for STCC's 1421 (Broken Stone or Riprap), 3312 (Primary Iron or Steel Products), and 4029 (Misc. Waste or Scrap) may represent potential business opportunities for the HRPD.

Table 24 – Truck Freight with a Study Area B Destination

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	5,745,291	27%	6,034,725	23%	5%
Oil Kernels, Nuts, or Seeds	0114	1,250,873	6%	1,300,117	5%	4%
Misc. Field Crops	0119	161,983	1%	159,530	1%	-2%
Misc. Fresh Vegetables	0139	32,045	0%	36,754	0%	15%
Broken Stone or Riprap	1421	3,652,570	17%	4,289,201	16%	17%
Gravel or Sand	1441	1,221,406	6%	1,217,946	5%	0%
Wet Corn Milling or Milo	2046	12,595	0%	22,126	0%	76%
Petroleum Refining Products	2911	681,168	3%	586,476	2%	-14%
Primary Iron or Steel Products	3312	683,508	3%	878,673	3%	29%
Steel Wire, Nails, or Spikes	3315	9,719	0%	10,548	0%	9%
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Misc. Waste or Scrap	4029	630,088	3%	1,705,265	6%	171%
Total Select Commodities:		**14,081,246**	**66%**	**16,241,361**	**61%**	**15%**
Total All Commodities:		**21,211,604**	---	**26,791,310**	---	**26%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

Note, with the exception of the rail freight that passes through Study Area A previously summarized in Table 14 and the Study Area B truck freight summarized in Table 24 above, no other commodity-level summary herein shows a projected increase in STCC 0113 (Grain) tonnage. Thus, Hanson preliminarily concludes that a facility is expected to be constructed within Study Area B that consumes grain in some way (an ethanol plant that uses grain as a feedstock is one possibility; another possibility is a grain milling facility – this may also explain some of the projected increases in milled grain product commodities).

The commodity-level summary of truck freight with a Study Area B origin is summarized in Table 25. As indicated, the select top commodities represent about two-thirds of the total, and that tonnage is projected to slightly decrease (-3%) by 2035. About half of the select top commodities are projected to increase tonnage while the other half are projected to decrease tonnage. The increases projected for STCC's 1421 (Broken Stone or Riprap), 1441 (Gravel or Sand), 4021 (Metal Scrap or Tailing), and 4029 (Misc. Waste or Scrap) may represent potential business opportunities for the HRPD, depending on the origin within Study Area B and the destination.

Table 25 – Truck Freight with a Study Area B Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	8,103,389	37%	6,144,479	25%	-24%
Oil Kernels, Nuts, or Seeds	0114	2,259,321	10%	1,814,503	7%	-20%
Misc. Field Crops	0119	184,446	1%	138,502	1%	-25%
Misc. Fresh Vegetables	0139	195,046	1%	148,820	1%	-24%
Broken Stone or Riprap	1421	627,472	3%	807,457	3%	29%
Gravel or Sand	1441	1,688,944	8%	2,750,168	11%	63%
Wet Corn Milling or Milo	2046	149,951	1%	89,498	0%	-40%
Petroleum Refining Products	2911	652,001	3%	612,790	2%	-6%
Primary Iron or Steel Products	3312	2,680	0%	6,005	0%	124%
Steel Wire, Nails, or Spikes	3315	521,259	2%	594,170	2%	14%
Metal Scrap or Tailings	4021	113,604	1%	170,540	1%	50%
Misc. Waste or Scrap	4029	687,906	3%	1,465,156	6%	113%
Total Select Commodities:		**15,186,019**	**69%**	**14,742,088**	**59%**	**-3%**
Total All Commodities:		**22,026,903**	---	**24,797,376**	---	**13%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

The commodity-level summary of truck freight with both a Study Area B destination and origin is provided in Table 26. As shown, the select top commodities represent 52% and 65% of the total in 2019 and 2035, respectively. Tonnage of select top commodities is projected to increase by 25% by 2035, and overall tonnage is projected to decrease slightly (-1%) by 2035. Similar to many other truck freight commodity-level summaries, the increased tonnage projected for STCC's 1421 (Broken Stone or Riprap), 1441 (Gravel or Sand), and 4029 (Misc. Waste or Scrap) may represent potential business opportunities for the HRPD. However, the fact that this tonnage has both a destination and an origin in Study Area B decreases that likelihood, since barge transportation is generally more economical for long-distance freight movements.

Table 26 – Truck Freight with a Study Area B Destination & Origin

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	442,944	12%	312,279	9%	-29%
Oil Kernels, Nuts, or Seeds	0114	97,116	3%	71,863	2%	-26%
Misc. Field Crops	0119	2,720	0%	1,846	0%	-32%
Misc. Fresh Vegetables	0139	5,699	0%	4,392	0%	-23%
Broken Stone or Riprap	1421	140,306	4%	173,299	5%	24%
Gravel or Sand	1441	749,511	21%	1,210,155	34%	61%
Wet Corn Milling or Milo	2046	460	0%	307	0%	-33%
Petroleum Refining Products	2911	294,563	8%	271,862	8%	-8%
Primary Iron or Steel Products	3312	791	0%	2,015	0%	155%
Steel Wire, Nails, or Spikes	3315	20,720	1%	25,577	1%	23%
Metal Scrap or Tailings	4021	0	0%	0	0%	---
Misc. Waste or Scrap	4029	110,455	3%	248,901	7%	125%
Total Select Commodities:		**1,865,285**	**52%**	**2,322,496**	**65%**	**25%**
Total All Commodities:		**3,604,459**	---	**3,559,549**	---	**-1%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

The commodity-level summary of truck freight that passes through Study Area B is provided in Table 27. As shown, the select top commodities represent 47% and 41% of the total in 2019 and 2035, respectively. With two exceptions, tonnage for all select top commodities is projected to increase by 2035. More specifically, tonnage of select top commodities is projected to increase by 19% by 2035, and overall tonnage is projected to increase (37%) by 2035. The increases projected for STCC's 1421 (Broken Stone or Riprap), 1441 (Gravel or Sand), 4021 (Metal Scrap or Tailings), and 4029 (Misc. Waste or Scrap) in particular may represent potential business opportunities for the HRPD, depending on the origin and destination.

Table 27 – Truck Freight that Passes Through Study Area B

Commodity Class	STCC	2019		2035		% Increase from 2019 to 2035
		Tonnage	% of Total	Tonnage	% of Total	
Grain	0113	16,129,301	18%	15,784,617	13%	-2%
Oil Kernels, Nuts, or Seeds	0114	6,352,041	7%	6,981,052	6%	10%
Misc. Field Crops	0119	4,097,727	5%	4,360,250	4%	6%
Misc. Fresh Vegetables	0139	508,943	1%	633,482	1%	24%
Broken Stone or Riprap	1421	3,797,673	4%	4,327,944	4%	14%
Gravel or Sand	1441	2,672,181	3%	2,860,536	2%	7%
Wet Corn Milling or Milo	2046	2,588,470	3%	4,036,438	3%	56%
Petroleum Refining Products	2911	374,490	0%	338,774	0%	-10%
Primary Iron or Steel Products	3312	1,110,788	1%	1,177,144	1%	6%
Steel Wire, Nails, or Spikes	3315	174,959	0%	187,078	0%	7%
Metal Scrap or Tailings	4021	718,433	1%	1,227,161	1%	71%
Misc. Waste or Scrap	4029	3,126,439	4%	7,644,177	6%	145%
Total Select Commodities:		**41,651,445**	**47%**	**49,558,653**	**41%**	**19%**
Total All Commodities:		**87,948,425**	---	**120,166,640**	---	**37%**

Source: S&P Global & Hanson. Note: "Total All Commodities" excludes drayage of intermodal shipping containers to/from rail yards, drayage of air cargo to/from airports, and warehouse/distribution center tonnage. These are "secondary movements."

4.7 Supplemental Barge Freight Data

In addition to the barge freight included in the Transearch database and previously summarized in Table 5, Hanson also obtained and analyzed waterborne-specific data from the USACE's Waterborne Commerce Statistics Center (WCSC). Note, this USACE data is used by S&P Global in development of the Transearch freight database, as described in the following excerpt from the *Transearch 2019 Modelling Methodology Documentation* (IHS Markit, December 10, 2020):

> *The U.S. Army Corps of Engineers (Corps) annually collects information on all shipments moving on the nation's waterways to support its management and planning activities. Transearch uses various components of the data issued by the Corps to develop its waterborne flow data. Although the raw information collected by the Corps is comprehensive, the data released to the public are summarized in ways that mask the details of traffic flows. Consequently, the Transearch data development process aims to reestablish some of this detail.*
>
> *For freight moving by water, the primary data set used for Transearch is the annual Corps file of waterborne commerce, which provides state-to-state and region-to-region annual flows of broad commodity groupings. In addition, the Corps provides data on originating and terminating volumes by port and more specific commodity type. The less detailed state-to-state flow data are disaggregated to the port level using the more*

detailed origination and termination information, supplemented by in-house research on public and private port facilities.

Thus, the barge freight movements previously summarized herein are based on data obtained from the USACE's WCSC. However, Hanson noted that the USACE data available to the public uses commodity codes that differ from STCC (the commodity codes used in the Transearch database), so a direct comparison between the two data sources by Hanson is not readily feasible. To maintain consistency with previously presented freight movement summaries, Hanson recommendations and/or conclusions herein are generally based on the Transearch data, and the following USACE data is presented as supplemental information.

Havana is located roughly half-way between two Illinois River locks/dams – the Peoria Lock & Dam (L&D), which is upriver from Havana near Peoria and Pekin; and the LaGrange L&D, which is downriver from Havana between Beardstown and Meredosia. The locations of these locks/dams are shown in Figure 3. Also shown in Figure 3 is the Heart of Illinois Regional Port District (branded as "TransPORT") boundaries. As indicated by the shading, TransPORT consists of six counties, including Mason County, but the Havana Township is excluded from the Heart of Illinois Regional Port District.

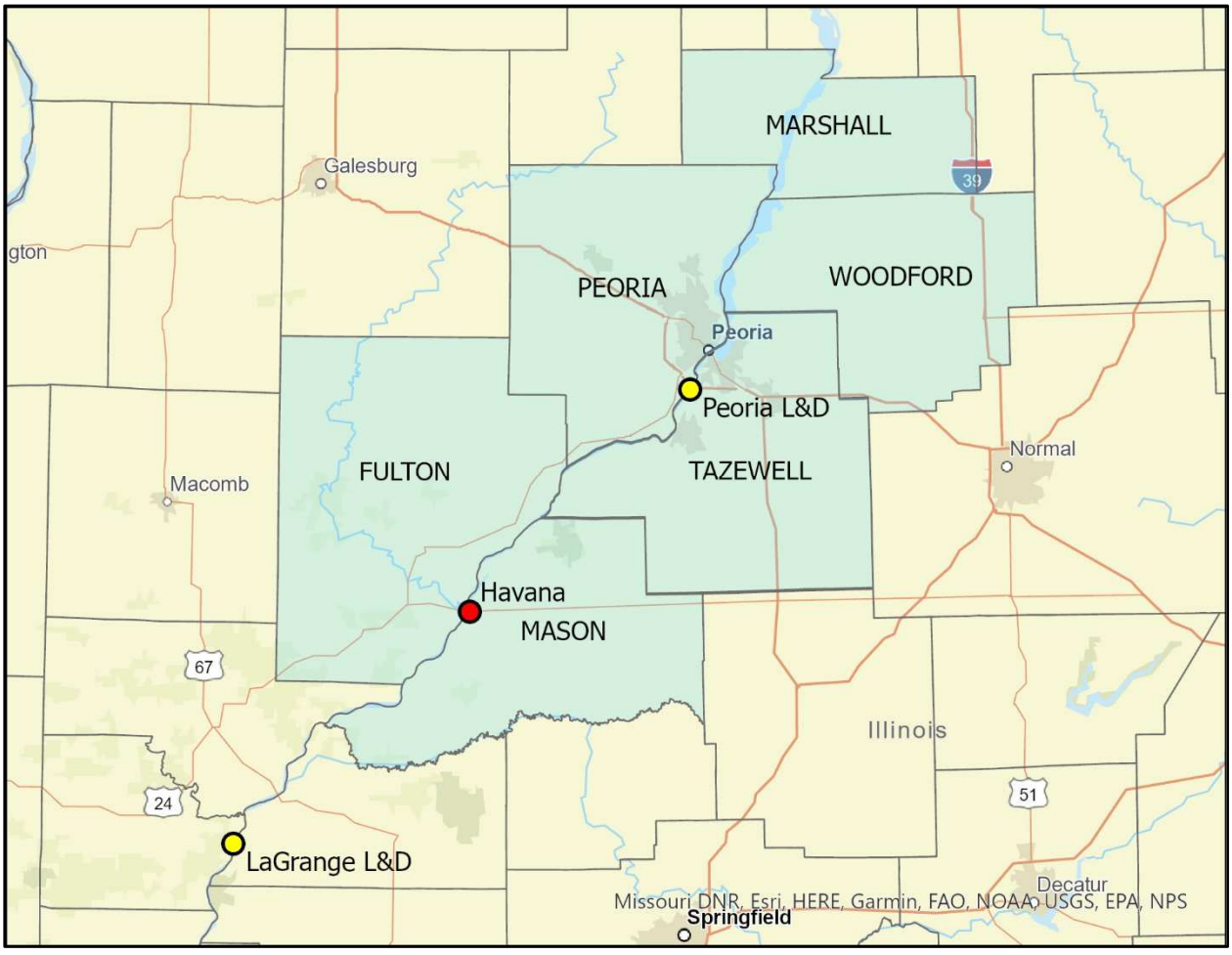


Figure 3 – Heart of Illinois Regional Port District & Nearby Illinois River Locks/Dams

A summary of 2019 tonnage that traversed through the Peoria L&D is provided in Table 28; for comparison, a summary of 2019 tonnage that traversed through the LaGrange L&D is provided in Table 29. Note, the directionality information ("upbound" is freight moving upriver [generally north] and "downbound" is freight moving downriver [generally south]) is an estimate based on Hanson analysis of another dataset obtained from the USACE.

As shown in the tables, a total of almost 20.7M tons of barge freight passed through the Peoria L&D in 2019 and almost 24.5M tons of barge freight passed through the LaGrange L&D. The difference in total tonnage between the two tables (around 3.8M tons) gives an indication of freight that was either added to and/or taken off the Illinois River between the two L&D's. For reference, most river terminals between the two L&D's are located in Pekin, Havana, and Beardstown.

Table 28 – Summary of Peoria L&D 2019 Tonnage

Code Category	Commodity Category Description	2019 Tonnage		
		Total	Upbound	Downbound
1XXX	Coal, Lignite, and Coal Coke	743,000	675,119	67,881
2XXX	Petroleum and Petroleum Products	3,233,500	1,097,848	2,135,652
3XXX	Chemicals and Related Products	4,442,043	3,072,561	1,369,482
4XXX	Crude Materials, Inedible, Except Fuels	3,530,500	2,596,559	933,941
5XXX	Primary Manufactured Goods	2,479,940	1,990,173	489,767
6XXX	Food and Farm Products	6,124,470	276,465	5,848,005
7XXX	Manufactured Equipment & Machinery	69,750	43,829	25,921
8XXX	Waste Material*	18,200	9,100	9,100
9XXX	Unknown or Not Elsewhere Classified*	31,500	15,750	15,750
	Total Tonnage:	**20,672,903**	**9,777,405**	**10,895,498**

*Source: USACE WCSC & Hanson. * Directionality unknown; 50%/50% split is assumed.*

Table 29 – Summary of LaGrange L&D 2019 Tonnage

Code Category	Commodity Category Description	2019 Tonnage		
		Total	Upbound	Downbound
1XXX	Coal, Lignite, and Coal Coke	397,340	361,039	36,301
2XXX	Petroleum and Petroleum Products	3,178,300	1,079,106	2,099,194
3XXX	Chemicals and Related Products	5,288,891	3,658,325	1,630,566
4XXX	Crude Materials, Inedible, Except Fuels	3,775,731	2,776,918	998,813
5XXX	Primary Manufactured Goods	2,529,240	2,029,737	499,503
6XXX	Food and Farm Products	9,153,231	413,187	8,740,044
7XXX	Manufactured Equipment & Machinery	61,550	38,677	22,873
8XXX	Waste Material*	34,200	17,100	17,100
9XXX	Unknown or Not Elsewhere Classified*	36,200	18,100	18,100
	Total Tonnage:	**24,454,683**	**10,392,189**	**14,062,494**

*Source: USACE WCSC & Hanson. * Directionality unknown; 50%/50% split is assumed.*

A summary of Heart of Illinois Regional Port District barge freight movements in 2019 is provided in Table 30. As previously shown in Figure 3, the TransPORT boundaries include much of the Illinois River between the two L&D's, in general excluding Beardstown to the south but including the Peoria area to the north. Thus, considering the roughly 3.8M tons difference in total tonnage between the two L&D's summarized above, the total TransPORT tonnage (shown below in Table 30) of about 4.8M tons appears feasible considering it is not a direct "apples-to-apples" comparison.

Table 30 – Summary of TransPORT 2019 Tonnage

Code	Commodity Description	2019 Tonnage			
		All Movements	Inbound	Outbound	Within Port District
XXXX	All Commodities	4,834,524	1,064,411	3,726,330	43,783
1100	Coal & Lignite	6,084	6,084	0	0
2430	Asphalt, Tar & Pitch	6,800	6,800	0	0
3110	Nitrogenous Fert.	169,810	168,401	1,409	0
3120	Phosphatic Fert.	39,027	39,027	0	0
3130	Potassic Fert.	210,501	14,020	192,303	4,178
3190	Fert. & Mixes NEC	101,464	101,464	0	0
3220	Alcohols	727,403	0	727,403	0
3273	Ammonia	78,667	78,667	0	0
3275	Inorg. Elem., Oxides, & Halogen Salts	4,662	4,662	0	0
3276	Metallic Salts	112,165	112,165	0	0
4161	Wood Chips	6,574	6,574	0	0
4322	Limestone	6,421	6,421	0	0
4331	Sand & Gravel	425,059	262,829	125,705	36,525
4335	Waterway Improv. Mat	3,210	3,210	0	0
4420	Iron & Steel Scrap	91,099	91,099	0	0
4783	Salt	105,608	105,608	0	0
4860	Slag	3,168	0	3,168	0
5210	Lime	2,630	2,630	0	0
5312	Pig Iron	27,835	27,835	0	0
5330	I&S Plates & Sheets	4,625	1,547	3,078	0
5360	I&S Bars & Shapes	66,156	0	66,156	0
5390	Primary I&S NEC	16,911	0	16,911	0
6241	Wheat	38,302	0	38,302	0
6344	Corn	341,117	20,278	317,759	3,080
6522	Soybeans	694,208	0	694,208	0
6590	Oilseeds NEC	15,248	0	15,248	0
6653	Vegetable Oils	20,438	0	20,438	0
6747	Grain Mill Products	112,062	0	112,062	0
6782	Animal Feed, Prep.	1,351,502	0	1,351,502	0
6885	Alcoholic Beverages	40,678	0	40,678	0
7110	Machinery (Not Elec)	5,090	5,090	0	0

Source: USACE WCSC & Hanson

Note on Table 30, “inbound” represents tonnage already on barges that are entering the Port District boundaries from an origin up or downriver, “outbound” represents tonnage loaded onto barges from within the Port District boundaries and moved up or downriver to a destination outside of the Port District boundaries, and “within port district” represents tonnage that moves from one river terminal inside the Port District boundaries to another river terminal inside the Port District boundaries.

Relative to potential business opportunities for the HRPD, the tonnage imbalance between inbound and outbound movements shown in Table 30 is of particular significance. Freight transportation is generally most economical when inbound and outbound movements are closely balanced. Or, in other words and more specific to barge transportation, moving a loaded barge is likely making the carrier money, but moving an empty barge is not likely making the carrier money (or is only indirectly making the carrier money, since carriers typically include the costs of moving empty barges in their prices for moving freight). Having nearly the same tonnage inbound and outbound from a particular area typically results

in moving fewer empty barges. For that reason, a barge carrier is more likely to have a business interest in serving the Havana area for an inbound movement to better balance with the much higher existing outbound movements.

4.8 Supplemental Rail Freight Data

As indicated above, transloading of intermodal shipping containers to/from rail is not anticipated to be a potential business opportunity for the HRPD, thus the tonnages presented in Table 31 are being provided as information. As shown, all intermodal shipping container tonnage passes through Study Areas A and B. This indicates that all intermodal shipping containers that pass through both Study Areas are loaded onto or offloaded from railcars at rail yards outside of both Study Areas. However, it's likely that some of that tonnage is reflected in the truck drayage summarized below in Table 32. As previously noted, all rail tonnages presented herein have been generalized to satisfy STB requirements regarding confidentiality of private shippers/railroads and their respective tonnage data.

Table 31 – Overview of Intermodal Shipping Container Tonnage on Rail

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	0	0%	> 2M	---	Destination	0	0%	> 22.5M	---
	Origin	0	0%		---	Origin	0	0%		---
	O & D	0	0%		---	O & D	0	0%		---
	Pass-Thru	> 2M	100%		---	Pass-Thru	> 22.5M	100%		---
2035	Destination	0	0%	> 3M	---	Destination	0	0%	> 31M	---
	Origin	0	0%		---	Origin	0	0%		---
	O & D	0	0%		---	O & D	0	0%		---
	Pass-Thru	> 3M	100%		37%	Pass-Thru	> 31M	100%		37%

Source: S&P Global, US Surface Transportation Board (STB), & Hanson

4.9 Supplemental Truck Freight Data

As stated above, the tonnage previously shown in Table 19 excludes truck drayage of intermodal shipping containers to/from rail yards and air cargo to/from airports, as this tonnage is already included in the rail-related tonnage of Table 31 and the air tonnage of Table 2, respectively. Drayage is not anticipated to be a potential business opportunity for the HRPD, but these tonnages are presented in Table 32 as information. As shown, truck drayage is anticipated to increase by 26% in both study areas during the 16-year period from 2019 to 2035.

Table 32 – Overview of Truck Drayage

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	176	3%	6,060	---	Destination	43,808	25%	171,844	---
	Origin	164	3%		---	Origin	73,425	43%		---
	O & D	0	---		---	O & D	11,169	6%		---
	Pass-Thru	5,720	94%		---	Pass-Thru	43,442	25%		---
2035	Destination	221	3%	7,629	26%	Destination	55,147	25%	216,326	26%
	Origin	207	3%		26%	Origin	92,431	43%		26%
	O & D	0	---		---	O & D	14,061	6%		---
	Pass-Thru	7,201	94%		26%	Pass-Thru	54,687	25%		26%

Source: S&P Global & Hanson. Note: Includes only truck drayage of intermodal shipping containers to/from rail yards and drayage of air cargo to/from airports, which are considered a "secondary movements."

As also stated above, the tonnage shown in Table 19 excludes truck movements to/from warehouses and/or distribution centers. The primary reasons for this exclusion are: 1) this tonnage contains an unknown mix of commodities; and 2) warehouses and distribution centers are typically located in or adjacent to major population centers, which is not the case for Havana. Regardless, this tonnage is presented in Table 33 as information. As indicated, this tonnage is expected to increase significantly (by 113% in Study Area A and by 103% in Study Area B) during the 16-year period from 2019 to 2035. This projected tonnage increase likely reflects continued growth in e-commerce, which is largely dependent on warehouses and distribution centers.

Table 33 – Overview of Warehouse/Distribution Center Tonnage via Truck

Year	Freight with Study Area A...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035	Freight with Study Area B...	Tonnage	% of Total	Total (tons)	% Increase 2019 to 2035
2019	Destination	56,661	32%	177,900	---	Destination	1,266,802	11%	11,610,886	---
	Origin	1,929	1%		---	Origin	1,690,672	15%		---
	O & D	0	---		---	O & D	65,396	1%		---
	Pass-Thru	119,310	67%		---	Pass-Thru	8,588,016	74%		---
2035	Destination	124,914	33%	379,134	120%	Destination	2,754,646	12%	23,623,722	117%
	Origin	4,206	1%		118%	Origin	2,791,443	12%		65%
	O & D	0	---		---	O & D	107,361	0%		64%
	Pass-Thru	250,014	66%		110%	Pass-Thru	17,970,272	76%		109%

Source: S&P Global & Hanson. Note: Includes only truck movements to/from warehouse/distribution centers.

4.10 Summary of Preliminary Freight Data Analysis "Take-Aways"

Potential HRPD business opportunities were preliminarily identified throughout the preceding freight data analysis summary narratives. This section provides a more concise summary of those potential business opportunities, focusing on those perceived by Hanson to have higher likelihoods of success.

Air Freight

- No air freight movements were reported in Study Area A in 2019, and none are projected in 2035. Total Study Area B air freight tonnage is projected to increase by about 52% (about 7,700 tons) by 2035. Around half of the total Study Area B air freight tonnage represents commercial air cargo (such as UPS or FedEx), which is not anticipated to represent a business opportunity for the HRPD.

- In general, commodities transported by aircraft are typically high value and low weight, which is the opposite of commodities typically transported via barge. For this primary reason, Hanson does not foresee a potential for air freight in Study Area B to shift to barge.
- If a company that utilizes air freight transportation were to locate in the Havana vicinity, it may be feasible for the HRPD to capture a portion of the projected increase in air freight tonnage by implementing significant strategic improvements at the Havana Regional Airport. Potential Havana Regional Airport improvements are presented in a stand-alone technical memorandum included as Appendix B.

Barge Freight

- Overall, Study Area A barge freight tonnage is projected to decrease slightly (-7%) from 2019 to 2035, and Study Area B barge freight tonnage is projected to increase by about 16% during that same period.
- Projected decreases in STCC 0113 (Grain) tonnage likely do not indicate an anticipated decrease in grain production, rather a decrease in grain exports due to an increase in regional consumption in various forms.
- The significant tonnage decrease projected for STCC 1121 (Bituminous Coal) with a Study Area A or B destination is assumed to be directly attributable to the closure of the coal-fired power plants in Havana and Canton, IL. However, it is unclear whether the freight data projections were generated prior to the Study Area A coal-fired power plant closures. The tonnage decrease projected for STCC 1121 with a Study Area A or B origin is likely attributable to the overall anticipated decrease in coal mining throughout Illinois and the US.
- Due to the significantly higher outbound tonnage (Study Area A or B origin), the HRPD may have greater initial success attracting an inbound movement (Study Area A or B destination) to better balance inbound/outbound tonnage/barges for a potential carrier.
- Potential barge freight business opportunities are summarized in Table 34.
    - Around 575,000 tons of “new” barge freight is projected to move to/from the two Study Areas by 2035. This tonnage equates to over 375 barge-loads.
    - Considering the significant agricultural production in the Havana region, inbound STCC 2871 (Fertilizers) appears to be a strong business opportunity for the HRPD, with over 170,000 tons of “new” barge freight projected for the two Study Areas.
    - If additional sand mines/rock quarries are established in the Havana vicinity, the HRPD may have success transloading outbound STCC 1421 (Broken Stone or Riprap) or STCC 1441 (Gravel or Sand) from truck to barge. Almost 260,000 “new” tons of these commodities is projected to move outbound from the two Study Areas, with almost 50,000 tons of that from Study Area A.
    - Movement of STCC 2812 (Potassium or Sodium Compound) both into and out of the two Study Areas may warrant additional research. This commodity is likely road salt, and if so, the HRPD may have success in capturing a portion of that tonnage, particularly the inbound tonnage (almost 60,000 tons for the two Study Areas).
    - Identification of pass-through barge freight is not feasible using the Transearch database; however, pass-through barge freight is not anticipated to be a potential business opportunity, as capturing this freight would likely result in significant drayage costs to transport a commodity to/from its destination/origin.

Table 34 – Potential Barge Freight Business Opportunities

Study Area	Direction	Commodity Class	STCC	Tonnage					
				2019	2035	Increase	Total "New" Inbound	Total "New" Outbound	Total "New" Pass-Thru
A	Inbound	Potassium or Sodium Compound	2812	21,075	38,114	17,039	27,201	102,422	---
	Inbound	Fertilizers	2871	25,467	35,629	10,162			
	Outbound	Broken Stone or Riprap	1421	198,802	248,513	49,711			
	Outbound	Potassium or Sodium Compound	2812	65,196	117,907	52,711			
B	Inbound	Potassium or Sodium Compound	2812	73,562	132,576	59,014	229,966	344,925	---
	Inbound	Fertilizers	2871	291,225	462,177	170,952			
	Outbound	Broken Stone or Riprap	1421	679,335	849,206	169,871			
	Outbound	Gravel or Sand	1441	131,549	219,891	88,342			
	Outbound	Potassium or Sodium Compound	2812	107,249	193,961	86,712			

Source: S&P Global & Hanson; Inbound = Study Area A/B Destination; Outbound = Study Area A/B Origin; Study Area B tonnage includes Study Area A in most cases; Pass-Thru barge freight tonnage is not feasible to determine using the Transearch database.

Rail Freight

- The overwhelming majority of Study Area A and B rail freight tonnage is, and is projected to continue to be, pass-through freight (93% in 2019 and 81% to 87% in 2035).
- Unless specific destinations or origins for Study Area B pass-through rail commodities can be identified as just outside of Study Area A, this freight does not likely represent a potential business opportunity for the HRPD.
- Total rail freight tonnage in Study Area A is projected to decrease by about 24% over the 16-year period from 2019 to 2035, and Study Area B rail freight tonnage is projected to decrease by about 12% during that same period. As stated previously, this is mostly attributable to decreases in STCC 1121 (Bituminous Coal).
- With the exception of rail freight that passes through Study Area A (and truck freight with a Study Area B destination), no other commodity-level summary table shows a projected increase in STCC 0113 (Grain) tonnage. Thus, Hanson preliminarily concludes that a facility is expected to be constructed within Study Area B that consumes grain in some way (an ethanol plant that uses grain as a feedstock is one possibility; another possibility is a grain milling facility).
- Only intermodal shipping container rail freight tonnage is projected to increase, by about 37% for both Study Area A and B. However, this is not anticipated to represent a business opportunity for the HRPD.
- Potential rail freight business opportunities are summarized in Table 35.
    - Over 450,000 tons of “new” rail freight consisting of STCC 2812 (Potassium or Sodium Compound) and STCC 2871 (Fertilizers) is projected to pass through Study Area A by 2035. If a destination/origin near Study Area A can be identified, the HRPD may have success capturing a portion of that tonnage.
    - Over 1.5M tons of “new” rail freight consisting of STCC 2812 (Potassium or Sodium Compound) and STCC 2871 (Fertilizers) is projected to pass through Study Area B by 2035. Depending on destination/origin, the HRPD may have success capturing a small portion of that tonnage.
    - If a destination for the over 200,000 tons “new” inbound STCC 2812 (Potassium or Sodium Compound) freight can be identified that is just outside of Study Area A, this

may represent a potential business opportunity for the HRPD in the form of transloading from rail to truck.

- If an origin for the over 100,000 tons "new" outbound STCC 1441 (Gravel or Sand) freight can be identified that is just outside of Study Area A, this may represent a potential business opportunity for the HRPD in the form of transloading from truck to rail.

Table 35 – Potential Rail Freight Business Opportunities

Study Area	Direction	Commodity Class	STCC	Tonnage					
				2019	2035	Increase	Total "New" Inbound	Total "New" Outbound	Total "New" Pass-Thru
A	Pass-Thru	Potassium or Sodium Compound	2812	> 150k	> 250k	> 100k	---	---	> 450k
	Pass-Thru	Fertilizers	2871	> 450k	> 800k	> 350k			
B	Inbound	Potassium or Sodium Compound	2812	> 300k	> 500k	> 200k	> 200k	> 100k	> 1.5M
	Outbound	Gravel or Sand	1441	> 100k	> 250k	> 100k			
	Pass-Thru	Potassium or Sodium Compound	2812	> 1M	> 2M	> 900k			
	Pass-Thru	Fertilizers	2871	> 1M	> 1.5M	> 750k			

Source: S&P Global, US Surface Transportation Board (STB), & Hanson; Inbound = Study Area A/B Destination; Outbound = Study Area A/B Origin; Study Area B tonnage includes Study Area A in most cases.

Truck Freight

- More than half of the total truck freight tonnage passes through Study Area A in 2019 and 2035, and around two-thirds of truck freight tonnage passes through Study Area B during that same period.
- Total Study Area A truck tonnage is projected to slightly increase by about 4% over the 16-year period from 2019 to 2035, and total Study Area B truck tonnage is projected to increase by about 30% over that same period.
- With the exception of truck freight with a Study Area B destination (and rail freight that passes through Study Area A), no other commodity-level summary table shows a projected increase in STCC 0113 (Grain) tonnage. Thus, Hanson preliminarily concludes that a facility is expected to be constructed within Study Area B that consumes grain in some way (an ethanol plant that uses grain as a feedstock is one possibility; another possibility is a grain milling facility).
- Drayage (truck freight moving to/from rail yards/airports) is not anticipated to be a potential business opportunity for the HRPD.
- Warehouse/distribution center tonnage is expected to increase significantly (by 113% in Study Area A and by 103% in Study Area B) during the 16-year period from 2019 to 2035. This projected tonnage increase likely reflects continued growth in e-commerce, which is largely dependent on warehouses and distribution centers. Warehouses and distribution centers are typically located in or adjacent to major population centers, which is not the case for Havana. Accordingly, this tonnage is not anticipated to represent a business opportunity for the HRPD.
- Potential truck freight business opportunities are summarized in Table 36.
    - Due to transportation economics associated with travel distance, potential business opportunities related to truck freight located in Study Area A (i.e., close proximity to Havana) are anticipated by Hanson to have a higher likelihood of success for the HRPD.
    - Depending on the origin of the "new" inbound STCC 1421 (Broken Stone or Riprap) tonnage projected for Study Area A (over 23,000 tons), it may be feasible for this

tonnage to be shipped into the region via barge and transloaded to truck at a HRPD facility.

- Depending on the destination of the "new" outbound STCC 1441 (Gravel or Sand) and STCC 4029 (Misc. Waste or Scrap) tonnage projected for Study Area A (almost 240,000 tons), it may be feasible for this tonnage to be transloaded from truck to barge at a HRPD facility.
- Almost 150,000 tons of "new" STCC 1441 (Gravel or Sand) and STCC 4029 (Misc. Waste or Scrap) truck freight is projected to pass through Study Area A by 2035. Depending on destination/origin, the HRPD may have success capturing a portion of that tonnage.
- If the HRPD were to establish a facility to handle one or more of the Study Area A commodities listed in Table 36, it may be feasible for the HRPD to capture a small portion of the matching tonnage shown for Study Area B (over 8.5M tons combined for inbound, outbound, and pass-through freight movements).

Table 36 – Potential Truck Freight Business Opportunities

Study Area	Direction	Commodity Class	STCC	Tonnage					
				2019	2035	Increase	Total "New" Inbound	Total "New" Outbound	Total "New" Pass-Thru
A	Inbound	Broken Stone or Riprap	1421	267,117	290,716	23,599	23,599	239,504	144,601
	Outbound	Gravel or Sand	1441	183,563	364,892	181,329			
	Outbound	Misc. Waste or Scrap	4029	34,118	92,293	58,175			
	Pass-Thru	Gravel or Sand	1441	148,920	206,281	57,361			
	Pass-Thru	Misc. Waste or Scrap	4029	55,198	142,438	87,240			
B	Inbound	Broken Stone or Riprap	1421	3,652,570	4,289,201	636,631	1,711,808	2,018,459	5,236,364
	Inbound	Misc. Waste or Scrap	4029	630,088	1,705,265	1,075,177			
	Outbound	Broken Stone or Riprap	1421	627,472	807,457	179,985			
	Outbound	Gravel or Sand	1441	1,688,944	2,750,168	1,061,224			
	Outbound	Misc. Waste or Scrap	4029	687,906	1,465,156	777,250			
	Pass-Thru	Broken Stone or Riprap	1421	3,797,673	4,327,944	530,271			
	Pass-Thru	Gravel or Sand	1441	2,672,181	2,860,536	188,355			
	Pass-Thru	Misc. Waste or Scrap	4029	3,126,439	7,644,177	4,517,738			

Source: S&P Global & Hanson; Inbound = Study Area A/B Destination; Outbound = Study Area A/B Origin; Study Area B tonnage includes Study Area A in most cases.

In summary, the "new" freight tonnage presented in this section for each transportation mode represents potential business opportunities on their own. However, when the "new" tonnage for each commodity is summed across the transportation modes, the potential business opportunities for the HRPD may increase significantly.

5. Freight Stakeholder Outreach Summary

Combined, the freight facility inventory (Section 3) and the freight data analysis (Section 4) provided a general understanding of freight facility supply and potential freight facility demand, respectively. This understanding facilitated Hanson's preliminary identification of commodities most likely to benefit from potential freight facility development in the Havana region. However, insight from freight stakeholders in the Havana area – those entities currently involved in freight transportation – were consulted to provide insight regarding current freight needs, issues, and constraints.

To facilitate the freight stakeholder outreach, Hanson first developed a preliminary list of freight stakeholders in the Havana region that consume, produce, and/or transport those commodities identified as most likely to benefit from potential freight facility development. In collaboration with the HRPD, the list was narrowed down to 21 freight stakeholders for interviews. The list of industry/ distribution stakeholders is provided below, along with each stakeholder's primary commodity and/or other pertinent information.

1. ADM (grain/fertilizer)
2. Ag-Land FS (grain/fertilizer)
3. Brandt (seed/fertilizer)
4. Cargill (grain)
5. Central Stone (aggregates)
6. Vistra/Dynegy (Havana power plant site)
7. Fornoff Fertilizer Services (fertilizer)
8. HG&N Fertilizers (fertilizer)
9. Heidelberg Materials (aggregates; formerly Hanson Aggregates; not associated with Hanson Professional Services Inc.)
10. Havana Dock & Rail (formerly SCH Terminal)
11. Hawkins Inc. (chemicals)
12. Helena Chemical (seed/fertilizer)
13. Hitchcock Scrap (scrap metal)
14. Metal Culverts (metal pipe)
15. Nutrien Ag Solutions (seed/fertilizer)
16. Otter Creek Sand & Gravel (aggregates)
17. Riden Farm Supply (seed/fertilizer)
18. Sunrise FS (seed/fertilizer)

The list of stakeholders also included the following carrier-related stakeholders:

1. Illinois & Midland Railroad (owned by Genesee & Wyoming, or G&W)
2. Illinois River Carriers' Association
3. Jack Tanner Towing Company

Hanson developed an introductory script and a list of interview questions for the identified industry/distribution stakeholders and obtained input/approval on the questions from the HRPD prior to conducting interviews. Questions focused on identification of the stakeholders' perceived needs, issues, and/or constraints within the existing regional freight transportation system for which the HRPD may be positioned to implement solutions. The interview script/questions are included as Attachment 1 of Appendix C.

5.1 Industry/Distribution Stakeholder Interviews Summary

Hanson made reasonable attempts to contact and interview the stakeholders identified above, but some stakeholders were not responsive or not interested in participating. For those stakeholders that Hanson interviewed, completed interview forms are included as Attachment 2 of Appendix C. The following industry/distribution stakeholders participated in an interview:

- Grain Companies: ADM, Ag Land FS, and Cargill
- Seed/Fertilizer Companies: Helena Chemical, Riden Farm Supply, and Sunrise FS
- Aggregate Companies: Central Stone and Heidelberg Materials
- Chemicals: Hawkins Inc.
- Scrap Metal: Hitchcock Scrap

Key take-aways from the industry/distribution stakeholder interviews are summarized below. Note, Hanson made several unsuccessful attempts to conduct an interview with Sunrise FS. However, through an agency/local government contact that attended the stakeholder presentation on May 25, 2023 (see Section 6), Hanson was able to conduct an informal interview with representatives from Sunrise FS on June 7, 2023. Key take-aways from the interview are included below, and Hanson notes from the interview are included in Attachment 3 of Appendix C.

- How are raw materials currently transported to your facility? – The grain companies all receive crops from farmers by truck. Central Stone, Hawkins, Hitchcock Scrap, and Riden Farm Supply also receive their inbound materials by truck. Helena Chemical receives their inbound materials via truck and barge, and Sunrise FS receives their inbound materials via barge. Heidelberg Materials mines their “inbound” materials locally.

- Are any of those raw materials currently transported to your facility in bulk? If so, how are they transported? – All companies interviewed (except for Heidelberg Materials) receive materials in bulk, mostly via truck. Cargill and Sunrise FS receive bulk materials via barge, and Helena Chemical receives bulk materials via truck and barge.
- Are finished or partially finished products shipped out from your facility? How are they generally/typically transported? Generally, where are they going? – About half of the stakeholders indicated that they ship finished/partially finished products, all by truck. Helena Chemical and Riden Farm Supply deliver fertilizer directly to farm fields via truck. Central Stone, Heidelberg Materials, and Hitchcock Scrap distribute materials locally via truck.
- What are your current freight transportation needs, issues, or constraints, including any related to real estate availability or infrastructure? – Those stakeholders that provided input on current needs indicated an issue with truck queues when farmers all deliver to the same place at the same time, as well as varying hours of operation, the need for additional trucks and barges, the need for consistent river levels (i.e., not too high or too low), and a lack of truck drivers. Sunrise FS expressed a need for increased storage capacity.
- Can you identify any freight transportation system improvements in the Havana region, including Mason or Fulton Counties, that could benefit your business? – Helena Chemical indicated the Illinois River bridge in Havana will need to be replaced soon. [Clarification – per IDOT sources reviewed by Hanson, the bridge is programmed for rehabilitation in FY2025, but replacement of this bridge is not apparently warranted at this time nor anticipated in the near future.] There was some desire for road improvements amongst the stakeholders, as well as minor issues with road closures in the winter.

- Could your business benefit from a waterborne freight transportation option (i.e., a public river terminal)? – Ag Land FS and Riden Farm Supply indicated they could benefit from a barge transportation option. Central Stone has no river access, and Hawkins is too small to benefit from barge transportation. The remainder of interviewed stakeholders already have barge access.
- Could your business benefit from a rail freight transportation option (i.e., a public rail terminal)? – ADM, Ag Land FS, Cargill, and Central Stone all indicated they could benefit from rail access; however, ADM indicated they don't currently have the storage capacity necessary to add rail access, and Ag Land FS indicated they haven't added rail access due to cost. Cargill indicated rail access near the river would be a challenge. [With the exception of the existing power plant and Havana Dock & Rail sites, Hanson generally concurs with this assessment.] Riden Farm Supply indicated that rail access may be beneficial. The remainder of interviewees indicated that rail access would not be beneficial at this time.
- Could your business benefit from a freight hub and/or warehousing in the Havana area? – Riden Farm Supply indicated they could benefit from a fertilizer warehouse in the area. Central Stone and Hawkins indicated they could potentially benefit from warehouse space, depending on future growth. The remainder of interviewees indicated they would not benefit from an additional warehouse space in the area.
- If you could ask for one thing from the community or Port District to benefit your business, what would it be? – Ag Land FS indicated they want another processing plant. Hawkins and Riden Farm Supply want better roads and road maintenance. Heidelberg Materials indicated they desire more business, but they had nothing further to say when asked to clarify or expand on the comment.
- Miscellaneous Interview Notes/Comments
    - At the time of our interview, Ag Land FS was in the process of merging with another company, which is projected to double their total tonnage (from around 7M tons per year to about 15M tons).
    - Hawkins indicated that the Havana Park District is one of their customers.

5.2 Carrier Stakeholder Interviews Summary

The script/interview questions used for the industry/distribution stakeholders were not generally applicable to the carrier stakeholders, so a "free form" conversation was conducted through virtual meetings with carriers. The following summarizes key take-aways from the carrier "interviews," and Hanson notes from these "interviews" are included in Attachment 3 of Appendix C.

- Illinois & Midland Railroad (IMRR)
    - IMRR has additional capacity on the line that passes through Havana, and they have interest in adding tonnage to the line.
    - IMRR has primarily transported coal on the line that passes through Havana in the past, but they also transport agricultural products, plastics, coke, minerals, stone, chemicals, lumber, and forest products on that line.
    - The line through Havana connects with all Class I railroads except CSX.
- Jack Tanner Towing

- They are the only tow boat company operating in Havana [not to be interpreted to indicate they are the only tow boat company that *passes through* Havana].
- They serve all the grain elevators in Havana.
- They have capacity/capability for additional business.
- They are of the opinion that inbound commodities would be better than outbound to help with the current barge imbalance (the area has much more outbound tonnage than inbound).
- They are also of the opinion that road salt, mulch, and scrap metal are commodities likely to be successful in Havana.
- The dynamic river shoreline (sedimentation issues in some areas and loss of shoreline in other areas; discussed further below) will make finding additional barge fleeting locations difficult.

5.3 Miscellaneous Stakeholder Input/Issues

Through the course of Hanson's stakeholder outreach, some miscellaneous information was collected, and a river sedimentation issue was brought up by stakeholders, as summarized below.

- Vistra/Dynegy – Vistra/Dynegy is the current owner of the shuttered, coal-fired power plant in Havana. In late 2021 and early 2022, they conveyed preliminary plans to use the power plant site for commercial-scale battery storage as part of a larger "Coal-to-Solar" program in Illinois. In May 2023, Hanson contacted Vistra/Dynegy to determine the status of the site plans and to inquire about potential site redevelopment collaboration with the HRPD. The reply from Vistra/Dynegy indicated they might be willing to discuss the site in about six months (around November 2023) when they anticipate having site plans complete. This correspondence is included in Attachment 3 of Appendix C.
- River Sediment Dynamics – A representative of the Havana Park District indicated that they are having a significant issue with river sediment collecting in the vicinity of their dock (located about 500 feet upriver from the boat ramp at the foot of West Jefferson Street). A representative of Sunrise FS indicated that they have the opposite problem, they are losing shoreline at their riverfront facility (located just upriver from the power plant). A representative of Jack Tanner Towing summarized by indicating that the river current seems to "bounce" from one shoreline to the other through Havana, resulting in shoreline accretion (i.e., a build-up of sediment) in some areas and shoreline loss in other areas.

  Although the HRPD may not be in a position to implement solutions for this issue (this likely falls under the jurisdiction of the US Army Corps of Engineers), the issue may impact potential HRPD riverfront site development and future operations.

5.4 Illinois Waterway Ports Commission

On June 30, 2023, the Illinois Waterway Ports Commission Act was signed into law. This legislation grants the newly created Illinois Waterway Ports Commission with jurisdiction in various Illinois port districts and counties, including the Havana Regional Port District and Mason and Fulton Counties. This legislation provides the Commission with the following responsibilities and/or authorities:

- Coordinate statistical data reporting.

- Make recommendations to larger government agencies regarding transportation decisions within the region of interest.
- Coordinate efforts on the Illinois Waterway with the Mid-America Port Commission and the Joliet Regional Port District.
- Coordinate activities related to sponsorship of the M-55 Illinois-Gulf Marine Highway.
- Request funding for the Commission area as necessary.

With this Act signed into law, the Illinois Waterway Ports Commission should be included as a stakeholder in any future port facility development undertaken by the HRPD.

6. Local Government & Agency Stakeholder Outreach Summary

On May 25, 2023, the HRPD and Hanson hosted a presentation for local government and agency stakeholders to convey project objectives, provide a progress update, and solicit stakeholder input that could impact the site selection efforts and/or preparation of this Port Market Analysis and Master Plan Report. Stakeholders were identified in collaboration with the HRPD and consisted of various local, regional, state, and federal entities. The invited local government and agency stakeholders included the following:

- City of Havana
- Fulton County
- Greater Peoria Economic Development Council (GPEDC)
- Havana Area Chamber of Commerce
- Havana Park District
- Heart of Illinois Regional Port District (“TransPORT")
- Illinois Department of Commerce & Economic Opportunity (DCEO)
- Illinois Department of Natural Resources (DNR)
- Illinois Department of Transportation (IDOT)
- Illinois Environmental Protection Agency (EPA)
- Illinois Farm Bureau
- Illinois Natural History Survey
- Illinois River Biological Station
- Illinois State Representative (District 94)
- Mason County
- The Nature Conservancy (Emiquon National Wildlife Refuge)
- Tri-County Regional Planning Commission
- US Army Corps of Engineers
- US Department of Agriculture, Natural Resources Conservation Service
- US Department of Transportation (USDOT) Maritime Administration (MARAD)
- US Fish & Wildlife Service (USFWS)

In summary, 12 stakeholder representatives attended in person, and ten stakeholder representatives attended virtually. The stakeholders represented either in-person or virtually included the following:

- City of Havana
- Fulton County
- GPEDC
- Havana Area Chamber of Commerce
- Havana Park District
- Illinois DCEO
- Illinois DNR
- IDOT
- Illinois Farm Bureau
- Illinois Natural History Survey
- Mason County
- TransPORT
- USFWS

A copy of the presentation is included as Appendix D.

Limited feedback was provided by the local government and agency stakeholders, primarily in the form of suggestions. Those suggestions are summarized below.

- The HRPD should consider seeking an opportunity to buy property and potentially lease it back to the current owner. This suggestion primarily refers to an existing river terminal and would allow the HRPD to generate revenue in the form of lease payments. This concept would also allow the HRPD to seek grant funding for site improvements of which the current (assumed to be private) owner would not likely be eligible.
- Tourism-related development should be considered by the HRPD, not just freight-related development. For example, river cruise vessels have previously stopped in Havana, allowing guests to visit the downtown Havana area.
- Relative to the portion of the presentation discussing commodities that may have success in the Havana region, a stakeholder suggested that a business related to Asian carp control may be a potential opportunity.
- Remain informed regarding the Corn Belt Ports initiative (an effort led by TransPORT that created a port statistical area encompassing this Illinois River and is anticipated to increase the likelihood of port districts along the Illinois River obtaining grants), and when feasible, leverage this initiative to help obtain grant funding for HRPD freight facility development.
- The GPEDC may be able to assist in the identification of sites for potential freight facility development.

7. Existing Transportation System Summary

The existing Havana area transportation system is shown below in Figure 4. US Highway 136 (US 136) passes through Havana, generally in an east-west orientation. IL Route 97 (IL 97) and IL Route 78 (IL 78) approach Havana from the southeast and southwest, respectively, briefly join US Highway 136 to cross over the Illinois River, and they diverge from US 136 to continue northward less than a mile west of the Illinois River. Promenade Street and Schrader Street are significant north/south corridors that pass through the eastern and western sides of the Havana core, respectively. Similarly, Franklin Street is a significant east/west corridor along the northern portion of the Havana core. Additional information regarding the primary roadways in Havana is provided in Table 37.

Figure 4 – Existing Transportation Network

Table 37 – Characteristics of Havana Area Roadways

Roadway	Location	Functional Classification	2019 Annual Avg. Daily Traffic	Number of Lanes (total)
US 136	W of IL 78	Principal Arterial	5,600	2
	IL 78 to S Promenade St	Principal Arterial	6,700	2
	S Promenade St to S Prairie Dr	Principal Arterial	5,500	2
	E of S Prarie Dr	Principal Arterial	3,750	2
IL 78	N of W Tinkham St	Minor Arterial	3,350	2
	S of W Tinkham St	Minor Arterial	2,850	2
IL 97	N of E Windsor St	Minor Arterial	3,100	2
	E Windsor St to E Mason St	Minor Arterial	2,950	2
	S of E Mason St	Minor Arterial	2,300	2
N Promenade St	US 136 to E Adams St	Major Collector	5,650	2
	E Adams St to E Market St	Major Collector	4,600	2
	E Market St to E Jefferson St	Major Collector	4,300	2
	E Jefferson St to E Franklin St	Major Collector	400	2
	E Franklin St to E Mound St	Major Collector	2,700	2
	N of E Mound St	Major Collector	2,150	2

Source: IDOT (gettingaroundillinois.com)

The Illinois River borders the west side of Havana, with almost three miles of "developed" shoreline (i.e., primarily consisting of river terminals and parks). Seven river terminals exist on the Havana side of the river, all of which are owned by ADM, Cargill, Havana Dock & Rail, or Sunrise FS. The locations of these river terminals are also shown in Figure 4.

The Havana Regional Airport is located along CR 1100 N, about a half-mile west of IL 97 and approximately 5.5 miles southeast of Havana. The turf runway is about 2,235 feet long. As previously stated in Section 4, the Transearch data reported no air freight moving through the airport in 2019 and projected no air freight in 2035.

The Illinois & Midland Railroad (IMRR) tracks approach Havana from the southeast, originating in Springfield, IL. The tracks generally traverse north/south along the east side of Havana, then diverge from Havana in a northeast direction towards Peoria, IL. Just south of the Havana core, a rail spur diverges in a generally westward direction from the mainline to provide rail service to the Vistra/Dynegy power plant site. Figure 5 shows the existing regional railroad network, including the railroad owner for each rail line.

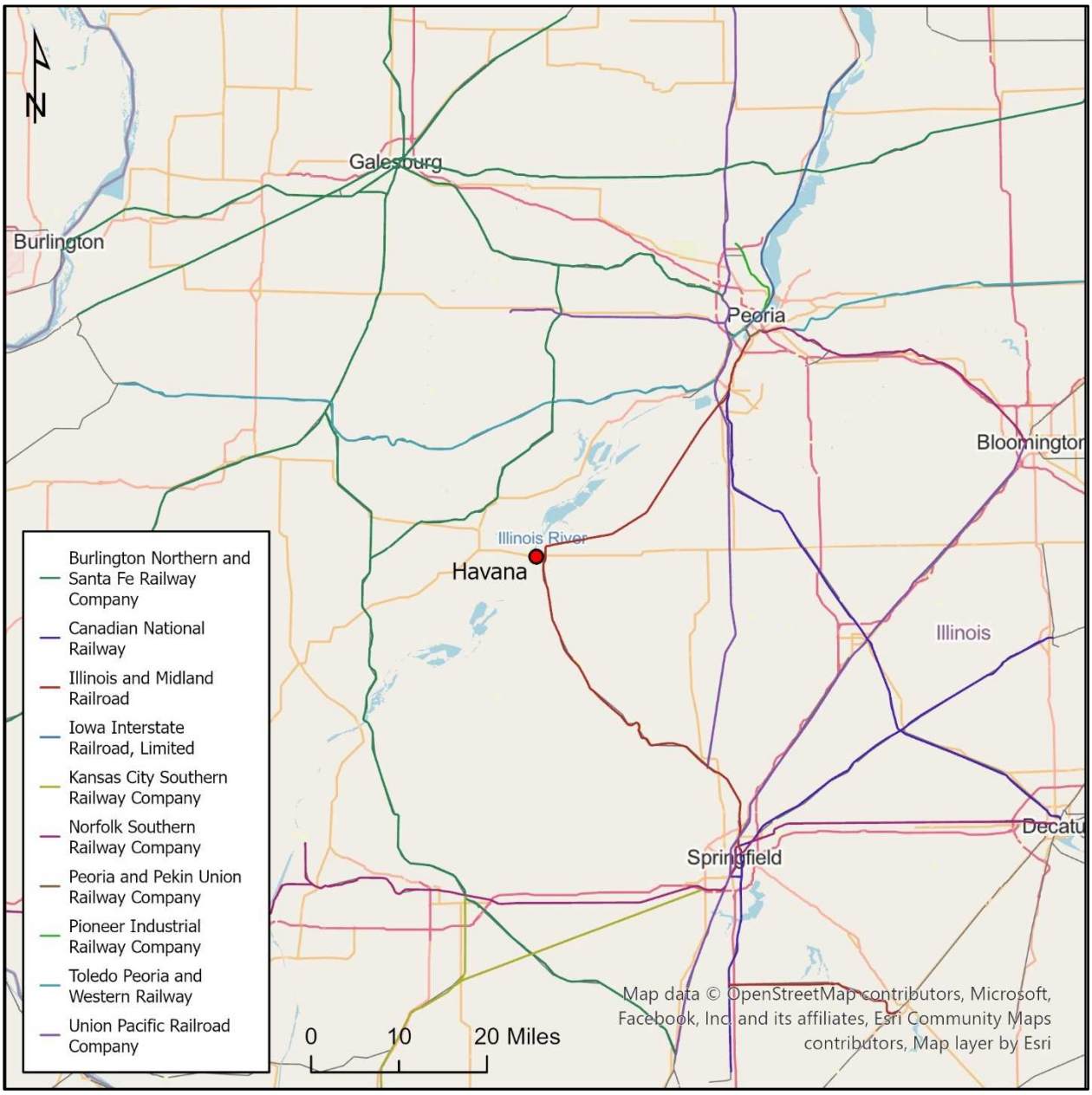


Figure 5 – Existing Regional Railroad Network

8. Freight Development Summary

The preceding freight data analyses (Section 4) and stakeholder outreach (Sections 5 and 6) provided the business foundation for potential freight-related development (or redevelopment) in the Havana area. This section presents specific freight development concepts that may address potential business opportunities previously identified herein.

8.1 Population Trends for Mason & Fulton Counties

Regional population trends can have a direct impact on the potential for new industrial development, which is the type of development typically supported (directly or indirectly) by ports or river terminals. Recent key population trends for Mason and Fulton Counties over the 10-year period from 2010 to 2020 are summarized in Table 38.

Table 38 – Population Trends for Mason & Fulton Counties

Statistic	Mason County			Fulton County		
	2010	2020	% Increase	2010	2020	% Increase
Total Population	14,921	13,486	-10%	37,205	34,654	-7%
Working-Age Population (16-64)	9,147	8,056	-12%	23,588	21,598	-8%
Population w/ HS Diploma (or Equivalent)	4,401	4,199	-5%	11,068	9,898	-11%
Population w/ Bachelor Degree or Higher	1,829	1,671	-9%	3,743	4,885	31%

Source: US Census Bureau

As shown, the working-age population of both counties has decreased at about the same rate (around 10%) as the total population during the 10-year period. With the closure of coal-fired power plants in both counties and a general lack of new industrial development, these declines in population are not unexpected. Both counties also experienced a decline in population with a high school diploma (or equivalent), declining at 5% and 11% for Mason and Fulton Counties, respectively. A corresponding decline in population with a college degree (bachelor's degree or higher) was observed in Mason County, but Fulton County was a significant outlier, with an increase of 31%. The largest employers in Fulton County are in the healthcare and education industries, so this population increase could be associated with those industries where degreed workers are common. Regardless, the overall population decline for the two counties, combined with a relatively small skilled workforce, is likely to be a challenge in any pursuit of new industrial development in the Havana region.

8.2 Industrial Analyses for Mason & Fulton Counties

An industry cluster analysis identifies industries that are geographically concentrated in an area, or are of a similar nature, such that they can make use of related buyers, suppliers, infrastructure, and/or workforce. By identifying industry clusters, economic development efforts can focus on companies that complement existing businesses or that complement each other. The analysis identifies sectors, or clusters, that have competitive advantages based upon the concentration of establishments and employment compared to the nation as a whole.

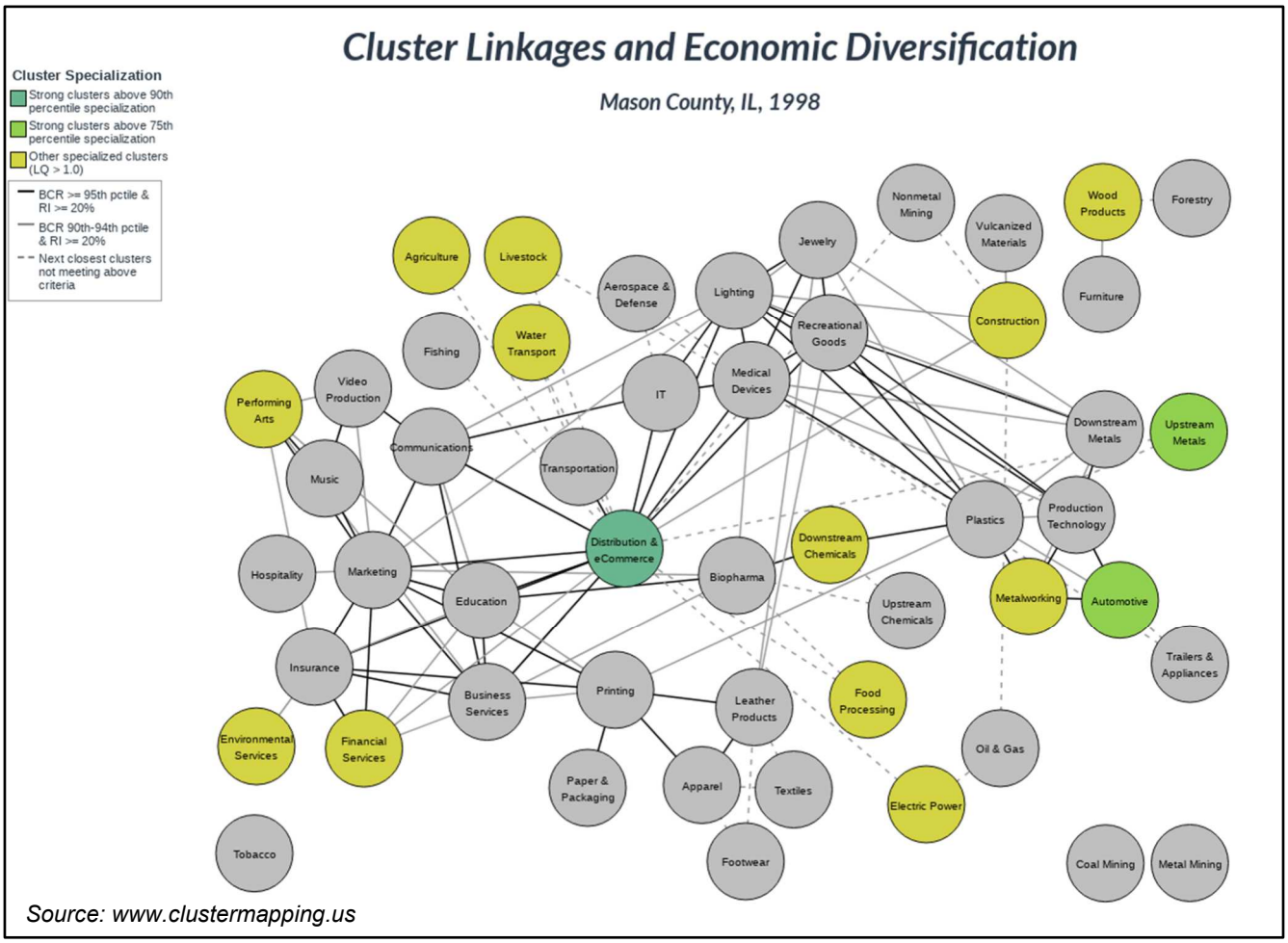
Note, the analysis herein is only preliminary, as a typical industry cluster assessment requires a much “deeper dive,” which is beyond the scope of this project. However, the results of this analysis are indicative of potential target industry groups in which Havana may have a competitive advantage in the market.

Three (3) benchmarks are traditionally used to identify industries that may have a competitive advantage: location quotients, high wage levels, and average annual wage. The subject effort only examines location quotients, which is defined as a ratio that compares employment or establishments in a particular industry in the region to the employment or establishments in that same industry in the nation as a whole. If the location quotient exceeds 1.0, the region's share exceeds the national share, which means it is more concentrated.

Industry clusters for Mason County in 1998 and 2016 (note, 2016 is the most current year for which this data is available) are shown in Figure 6 and Figure 7, respectively. The coloring of the industry clusters is defined below.

- Gray indicates that the area is at or below the national average (location quotient less than 1.0).
- Yellow indicates a slight concentration of industries, but not enough to skew transportation demand (location quotient between 1.0 and 1.24).
- Light green indicates that the area has a concentration of industries, due to its natural resources or location within a specific distribution network (location quotient between 1.25 and 1.49). Also indicates a specialization in that sector, industry, or cluster when compared to the national average.
- Dark green indicates the area has an expertise in a specific industry, would be considered a manufacturing region, and would draw in significant products to support the manufacturing (location quotient of 1.50 or greater). Sectors, industries, or clusters with concentration of 1.50 or greater indicates the region has a concentration of 50% or greater than that found in the US as a whole.

For purposes of the analyses summarized herein, industry clusters that do not drive transportation of freight commodities and product demand (such as education, finance, performing arts, etc.) were not considered.



Source: www.clustermapping.us

Figure 6 – Mason County Industry Clusters, 1998

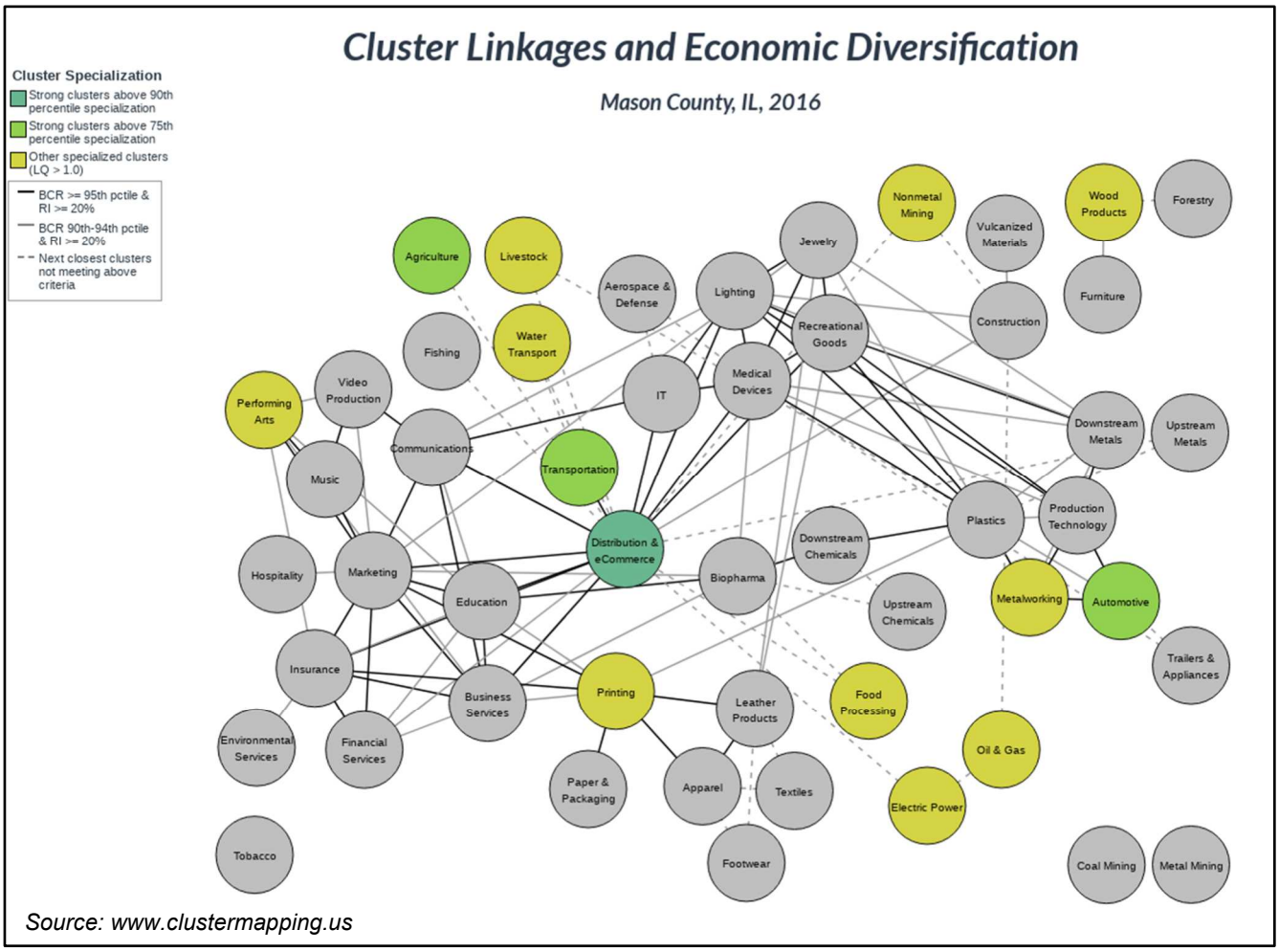


Figure 7 – Mason County Industry Clusters, 2016

Comparing the Mason County industry cluster for 1998 in Figure 6 versus the 2016 industry cluster in Figure 7, the industrial base in the Mason County portion of the greater Havana region has made some shifts over the 18-year period. For purposes of this assessment, a location quotient increasing to 1.25 or greater (i.e., changing from gray or yellow in Figure 6 to light green or dark green in Figure 7) is generally indicative of expansion within an industry, and a location quotient decreasing below the 1.25 threshold (i.e., changing from light green or dark green in Figure 6 to gray or yellow in Figure 7) is indicative of contraction in an industry. Applicable observations for Mason County related to the industrial shift and commodity transportation are summarized below.

- Expansion occurred in the Agriculture and Transportation industries, while Automotive and Distribution & eCommerce maintained a relatively high location quotient.
- Contraction occurred in the Upstream Metals industry.
- Other applicable industries remained unchanged at this aggregate level.

Similar to the preceding industry clusters for Mason County, industry clusters for Fulton County in 1998 and 2016 are shown in Figure 8 and Figure 9, respectively.

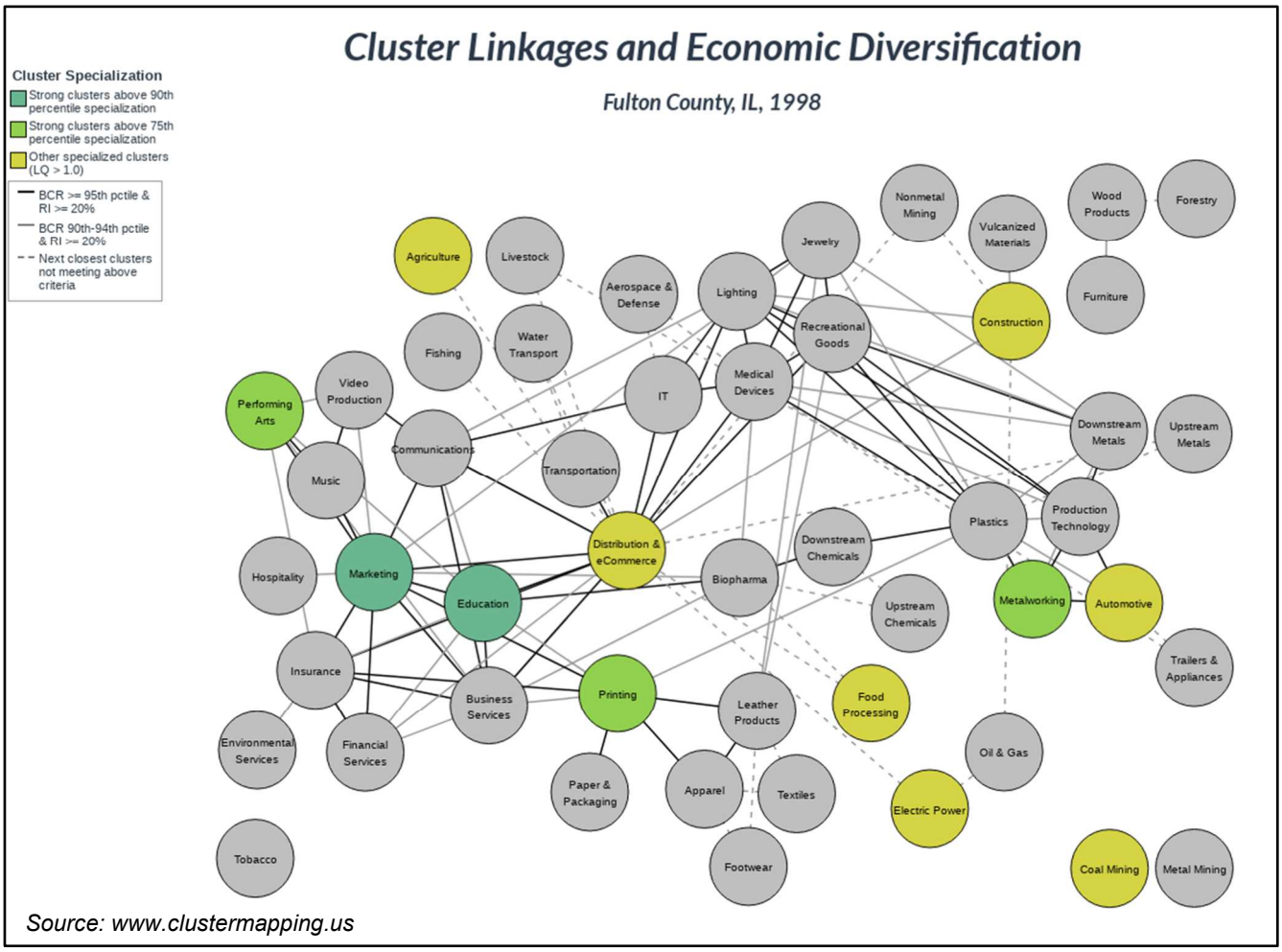


Figure 8 – Fulton County Industry Clusters, 1998

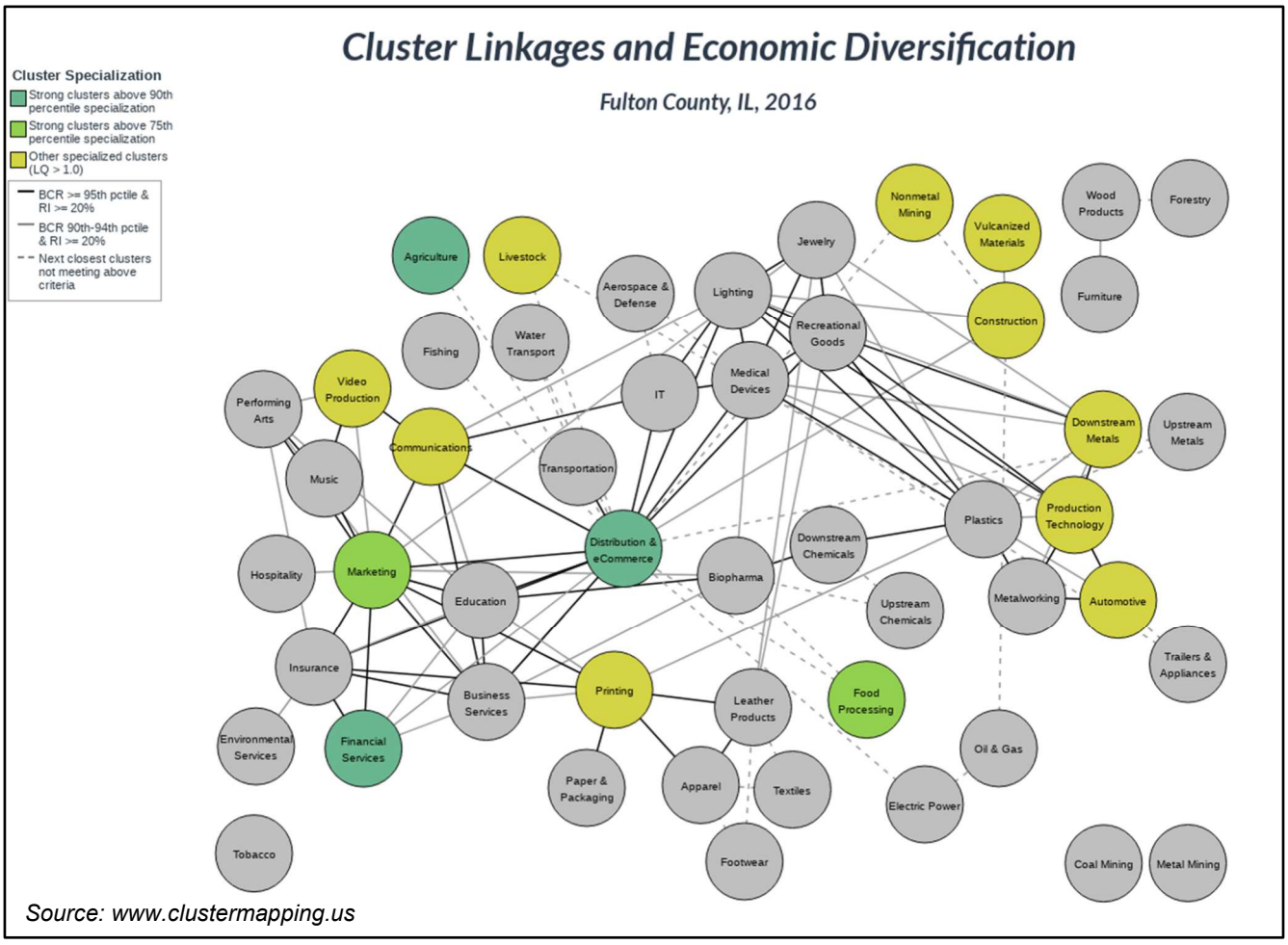


Figure 9 – Fulton County Industry Clusters, 2016

Comparing the Fulton County industry cluster for 1998 in Figure 8 versus the 2016 industry cluster in Figure 9, the industrial base in the Fulton County portion of the greater Havana region has made some shifts over the 18-year period as well. Again, for purposes of this assessment, a location quotient increasing to 1.25 or greater (i.e., changing from gray or yellow in Figure 8 to light green or dark green in Figure 9) is generally indicative of expansion within an industry, and a location quotient decreasing below the 1.25 threshold (i.e., changing from light green or dark green in Figure 8 to gray or yellow in Figure 9) is indicative of contraction in an industry. Applicable observations for Fulton County related to the industrial shift and commodity transportation are summarized below.

- Expansion has occurred in the Agriculture, Distribution & eCommerce, and Food Processing industries.
- Contraction has occurred in the Printing and Metalworking industries.
- Other applicable industries remained unchanged at this aggregate level.

The information gleaned from the industry clusters above can be supplemented by a review of job creation and decline for specific industries. Job creation can correspond with the industries (or related industries) that experienced expansion in the industry clusters above, and job decline can correspond

with the industries (or related industries) that experienced contraction in the industry clusters above. Mason County job creation by industry cluster from 1998 to 2016 is shown in Figure 10.

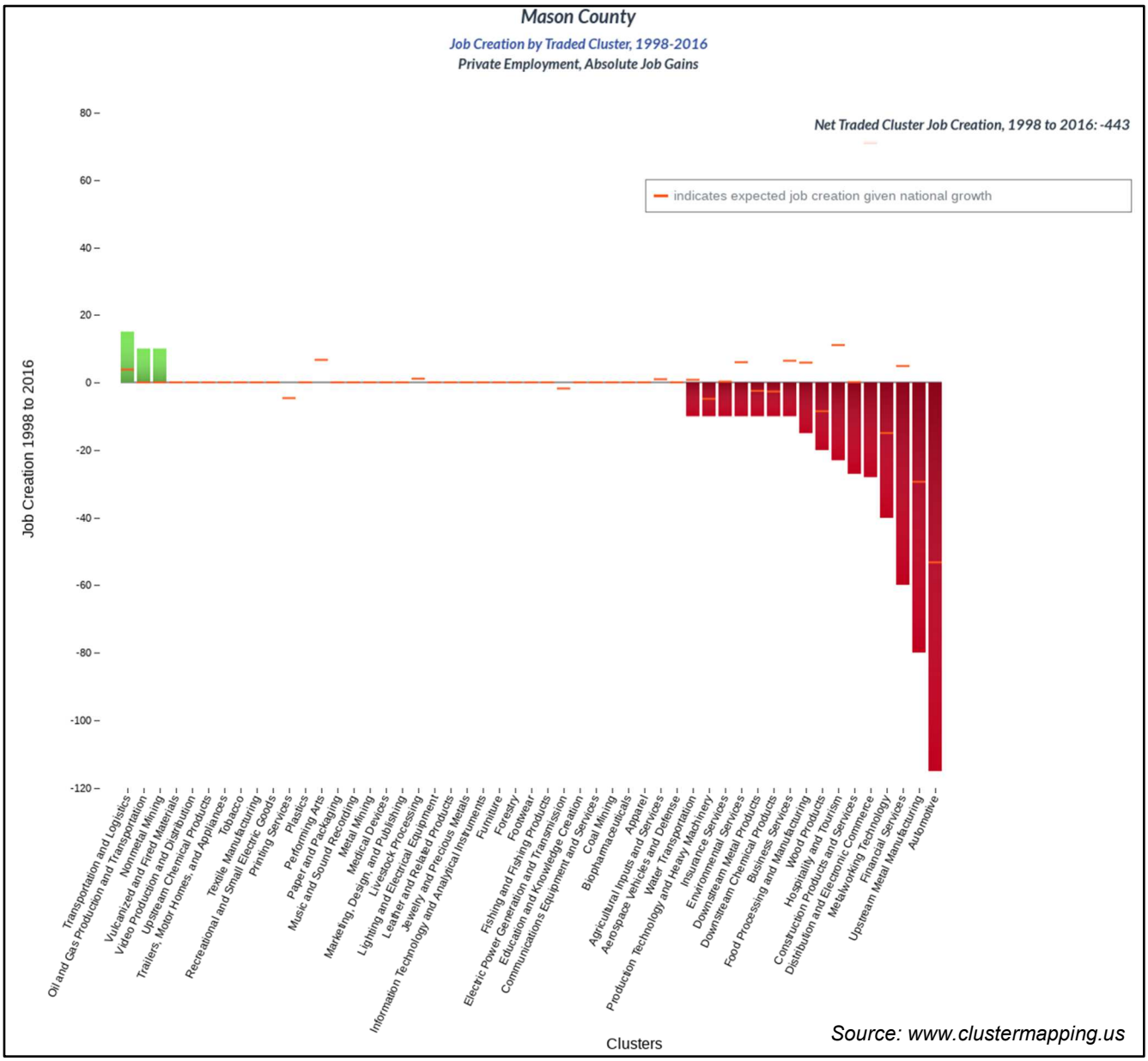


Figure 10 – Mason County Job Creation by Traded Cluster, 1998 to 2016

As shown, there was a net loss of 443 jobs in Mason County during the 18-year period (note, this is prior to the power plant closure). Slight increases in jobs were observed in the Transportation and Logistics, Oil and Gas Production and Transportation, and Nonmetal Mining industries. In all three industries, this job growth exceeded the expected job creation rate given the national growth. All other industry clusters had no job creation/loss or had a loss of jobs.

Note, Mason County job creation in the two transportation-related industries appears to correspond with expansion in the Transportation industry clusters previously presented for Mason County in Figure 6

and Figure 7. Also note, job creation related to Nonmetal Mining appears to correspond to a previously identified potential business opportunity for the HRPD (see Section 4.10) – Broken Stone or Riprap (STCC 1421) and Sand or Gravel (STCC 1441).

Fulton County job creation by industry cluster from 1998 to 2016 is shown in Figure 11.

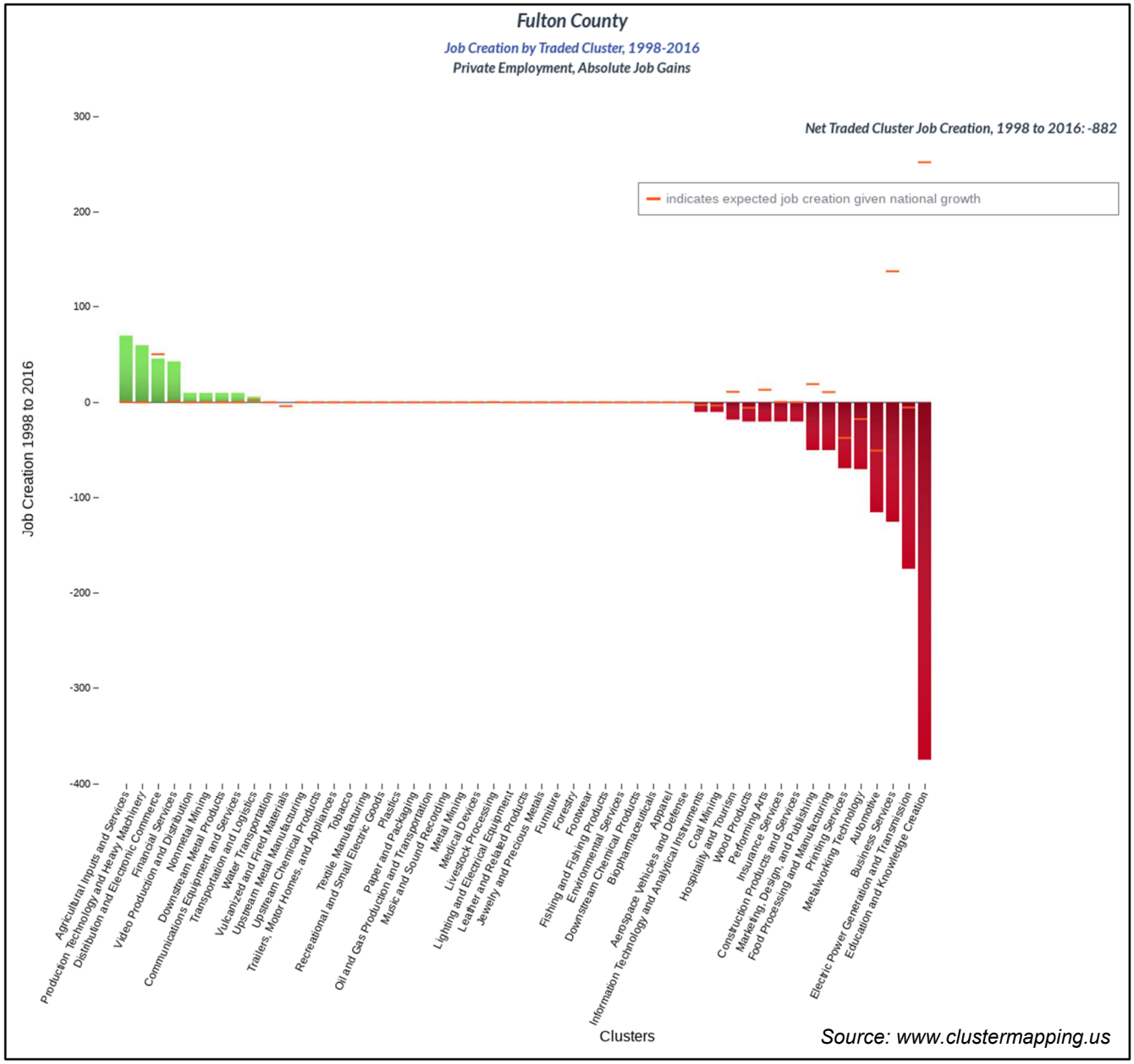


Figure 11 – Fulton County Job Creation by Traded Cluster, 1998 to 2016

As shown, there was a net loss of 882 jobs in Fulton County during the 18-year period. Relatively significant job increases were observed in the Agricultural Inputs and Services, Production Technology and Heavy Machinery, and Distribution & eCommerce industry clusters. Slight job increases were observed in the Nonmetal Mining, Downstream Metal Products, and Transportation and Logistics

industries. In all industries except Distribution & eCommerce, this job growth exceeded the expected job creation rate given the national growth. All other industry clusters had no job creation/loss or had a loss of jobs.

Job creation by industry cluster for Fulton County included job growth in the Nonmetal Mining industry, which was noted above to be a potential business opportunity for the HRPD. The highest job growth for Fulton County was shown in the Agricultural Inputs and Services industry, which likely includes fertilizer-related businesses. Fulton County job growth was also shown in the Downstream Metal Products industry. These industries may also correspond to previously identified potential business opportunities for the HRPD (see Section 4.10) – Fertilizers (STCC 2871) and Misc. Waste or Scrap (STCC 4029), respectively.

8.3 Transload Opportunities

Transloading is the transfer of materials/products from one mode of transportation to another, due to the inability or inefficiency of transporting freight from an origin to a destination using only one transportation mode. A multitude of transloading examples exist in Havana, including the transloading of grain from trucks to barges at the ADM, Cargill, and Sunrise FS facilities.

Based primarily on the freight data analyses (Section 4.0), input from Havana area freight stakeholders (Section 5.0), and information obtained from the preceding industrial analyses, several potential transload opportunities were identified and are summarized in Table 39.

Table 39 – Potential Transload Opportunties Tonnage

Transload Direction	Commodity	STCC	Study Area	Total "New" Tons*	Initial Capture - Low			Initial Capture - High		
					% of Total	Potential Tons	Total Tons	% of Total	Potential Tons	Total Tons
Barge-to-Truck	Potassium or Sodium Compound	2812	A	17,039	15%	2,556	4,655	50%	8,520	16,915
			B	41,975	5%	2,099		20%	8,395	
	Fertilizers	2871	A	10,162	10%	1,016	4,232	30%	3,049	15,912
			B	160,790	2%	3,216		8%	12,863	
						Total Inbound via Barge:	**8,887**			**32,826**
Truck-to-Barge	Broken Stone or Riprap	1421	A	49,711	15%	7,457	13,465	50%	24,856	48,888
			B	120,160	5%	6,008		20%	24,032	
	Gravel or Sand	1441	A	0	---	---	8,834	---	---	26,503
			B	88,342	10%	8,834		30%	26,503	
						Total Outbound via Barge:	**22,299**			**75,390**
Rail-to-Truck	Potassium or Sodium Compound	2812	A	> 100k	0%	0	> 10k	0%	0	> 30k
			B	> 1.0M	1%	> 10k		3%	> 30k	
						Total Inbound via Rail:	**> 10k**			**> 30k**
Truck-to-Rail	Gravel or Sand	1441	A	0	---	---	> 2k	---	---	> 5k
			B	> 100k	2%	> 2k		5%	> 5k	
						Total Outbound via Rail:	**> 2k**			**> 5k**

* *Total "New" Tons for Study Area B does not include Total "New" Tons for Study Area A.*

The barge-to-truck potential transload opportunities generally represent projected increased barge tonnage with a destination in Study Area A or B. Commodities shown are those previously identified as potential barge business opportunities for the HRPD in Table 34. As indicated, almost 230,000 “new”

tons of the select commodities are projected to be inbound via barge, and Hanson anticipates that between about 9,000 and almost 33,000 tons of that could be initially "captured" by, or moved through, a river terminal in Havana. For reference, this tonnage represents between about 6 and 22 barges per year, assuming 1,500 tons per barge. In this barge-to-truck transload scenario, the "captured" tonnage would arrive via barge, the commodity would be transloaded from barges to trucks at a river terminal in Havana, then transported via truck to its destination.

The truck-to-barge potential transload opportunities generally represent projected increased barge tonnage with an origin in Study Area A or B. Again, commodities shown are those previously identified as potential barge business opportunities for the HRPD in Table 34. As indicated, almost 260,000 "new" tons of the select commodities are projected to be outbound via barge, and Hanson anticipates that between almost 23,300 and almost 75,400 tons of that could be initially "captured" by, or moved through, a river terminal in Havana. For reference, this tonnage represents between about 15 and 50 barges per year. In this truck-to-barge transload scenario, the "captured" tonnage would arrive via trucks, the commodity would be transloaded to barges at a river terminal in Havana, then transported via barge to its destination.

Note, for both the barge-to-truck and truck-to-barge transload scenarios, the potential "initial capture" range is anticipated to be lower for Study Area B than Study Area A, since any commodity transloaded to/from trucks in Havana would have a further distance to travel via truck to/from a Study Area B destination/origin, potentially increasing overall transportation costs. Any commodity movement through a river terminal in Havana that increases overall transportation costs is unlikely to be successful.

Also shown in Table 39 are potential rail-to-truck and truck-to-rail transload opportunities. This tonnage is based on the potential rail freight business opportunities previously shown in Table 35. However, upon further analysis of those opportunities, specifically the origins and destinations of this tonnage, Hanson determined that most origins/destinations are of sufficient distance from the Havana area that the trucking portion of the rail-to-truck and truck-to-rail transloading opportunities are not likely to be financially viable for the shipper. Thus, many of the potential rail freight business opportunities previously identified in Table 35 are not shown in Table 39 above.

The potential rail-to-truck transload opportunities generally represent projected increased rail tonnage with a destination in Study Area B. As indicated in Table 39, more than 1.1M "new" tons of STCC 2812 (Potassium or Sodium Compound) are projected to be inbound via rail, and Hanson anticipates that from more than 10,000 to more than 30,000 tons of that could be initially "captured" by, or moved through, a rail terminal in Havana. For reference, this tonnage represents from over 90 to over 270 railcars per year, assuming 110 tons per railcar. In this rail-to-truck transload scenario, the "captured" tonnage would arrive via railcars, the commodity would be transloaded to trucks at a rail terminal in Havana, then transported via trucks to its destination.

The potential truck-to-rail transload opportunities generally represent projected increased rail tonnage with an origin in Study Area B. As indicated in Table 39, more than 100,000 "new" tons of STCC 1441 (Gravel or Sand) are projected to be outbound via rail, and Hanson anticipates that from more than 2,000 to more than 5,000 tons of that could be initially "captured" by, or moved through, a rail terminal in Havana. For reference, this tonnage represents from over 18 to over 45 railcars per year. In this truck-to-rail transload scenario, the "captured" tonnage would arrive via trucks, the commodity would be transloaded to railcars at a rail terminal in Havana, then transported via rail to its destination.

As indicated in Table 39 for both the rail-to-truck and truck-to-rail transload scenarios, no "initial capture" is anticipated for Study Area A, because all Study Area A potential rail freight business opportunities tonnage previously shown in Table 35 passes through the study area and doesn't have an origin/destination within a reasonable trucking distance of Havana. For similar reasons, the potential "initial capture" range is anticipated to be low for Study Area B, since any commodity transloaded in Havana would have a further distance to travel via truck to/from a Study Area B destination/origin. This scenario has the potential to increase overall transportation costs, and as stated above, any commodity movement through a rail terminal in Havana that increases overall transportation costs is unlikely to be successful.

8.4 Modal Shift Opportunities

A modal shift describes the scenario when a commodity/product that is typically transported by one mode (truck, for example) is moved to a different mode of transportation (barge, for example). Similar to the potential transload opportunities identified in the preceding section, the potential modal shift opportunities were identified based primarily on the freight data analyses (Section 4.0), input from Havana area freight stakeholders (Section 5.0), and information obtained from the industrial analyses presented in Section 8.1. The potential modal shift opportunities are summarized in Table 40.

Table 40 – Potential Modal Shift Opportunities Tonnage

Commodity	STCC	Direction	Study Area	Current Mode	Potential Mode	Total "New" Tons	Initial Capture - Low		Initial Capture - High	
							% of Total	Potential Tons	% of Total	Potential Tons
Gravel or Sand	1441	Inbound	B	Truck	Barge	6,636	20%	1,327	45%	2,986
Gravel or Sand	1441	Outbound	A	Truck	Barge	67,617	25%	16,904	50%	33,809

* *Total "New" Tons for Study Area B includes Total "New" Tons for Study Area A.*

As shown in Table 40, two potential modal shift opportunities were identified, both involving STCC 1441 (Gravel or Sand) potentially shifting to barges from the current truck mode of transportation. The first potential opportunity involves inbound movements with a Study Area B destination. Based on the specific origins/destinations of this movement, Hanson projects between about 1,300 and almost 3,000 tons could arrive via barge through a river terminal in Havana, then be transloaded to truck for delivery to the Study Area B destination. For reference, this tonnage equates to only 1 to 2 barges per year, or around 53 to 120 trucks per year (assuming 25 tons per truck).

The second potential modal shift opportunity involves outbound movements with a Study Area A origin. Based on the specific origins/destinations of this movement, Hanson projects between about 16,900 and over 33,800 tons could arrive at a river terminal in Havana via truck from a Study Area A origin, then be transloaded to barge for delivery to its destination. For reference, this tonnage equates to about 11 to 22 barges per year, or around 675 to over 1,350 trucks per year. Due to the Study Area A origin and the current inbound/outbound barge imbalance previously discussed in Section 4.4 and elsewhere herein, Hanson anticipates that the latter of these two modal shift opportunities has a higher likelihood of success.

8.5 Intermodal Freight

In practice, freight movements generally follow the most economical route. Each time freight is handled or delayed, additional costs are typically incurred and cost/time efficiencies are diminished. For example, if freight moving from Chicago to Indianapolis were to stop in Havana, this longer route and the delay that would be experienced for all of the freight on the particular truck/train while stopped in

Havana would decrease the efficiency and increase the transportation costs for the overall freight movement. While a stop in Havana would likely be beneficial for any freight with a Havana area origin or destination, the overall costs for the entire shipment on the given truck/train would increase, thereby decreasing overall freight efficiency and increasing overall freight transportation costs.

Intermodal freight involves the transportation of commodities/products in shipping containers using multiple modes of transportation, typically consisting of ships, trains, and trucks. For example, an inbound shipping container from an overseas origin would likely arrive on a ship at a coastal port, it would then be transferred to a railcar and moved to an inland rail yard by train, and finally be transported by truck from the inland rail yard to its final destination. Intermodal freight typically remains in the shipping container when transferred from one transportation mode to another, with the commodities/products inside the container only being handled at the origin and final container destination. One exception to this is when cargo is transloaded at the port of entry from 20-foot or 40-foot containers that are typically used for international movements to 53-foot containers that are more common for domestic movements in the US.

A 2015 database of intermodal freight facilities was obtained from the USDOT. These existing facilities, along with 2016 truck volumes on the National Highway Freight Network (NHFN), are shown in Figure 12. Significant truck traffic (represented by the thicker lines) is shown between Chicago and the other major Midwest metropolitan areas. Noteworthy in Figure 12 is the concentration of intermodal freight facilities around major metropolitan areas. In general, and particularly with distribution centers, the success of an intermodal freight facility is dependent on the close proximity of a consumption market, typically in the form of a large population base. To emphasize this point, the same intermodal freight facilities shown in Figure 12 are also shown in Figure 13; however, Figure 13 also shows the population of Midwest urban areas that have a population greater than 15,000 people. For reference, the 2020 population estimate for the Havana Township was 4,360 according to the US Census Bureau. Figure 13 clearly shows that existing intermodal freight facilities are mostly clustered around larger population bases.

Based on the information above and the information related to intermodal freight previously presented in Sections 4.8 and 4.9, the likelihood of developing a successful, major intermodal freight facility near Havana appears to be low. Mason and Fulton County industries that are experiencing growth, as identified in the industry clusters in Section 8.1, may benefit by receiving raw materials at or shipping finished products from a local multimodal facility. However, the logistics plans that currently support these industries are clearly established, and changes are likely to occur only if significant transportation savings could be realized by these industries.

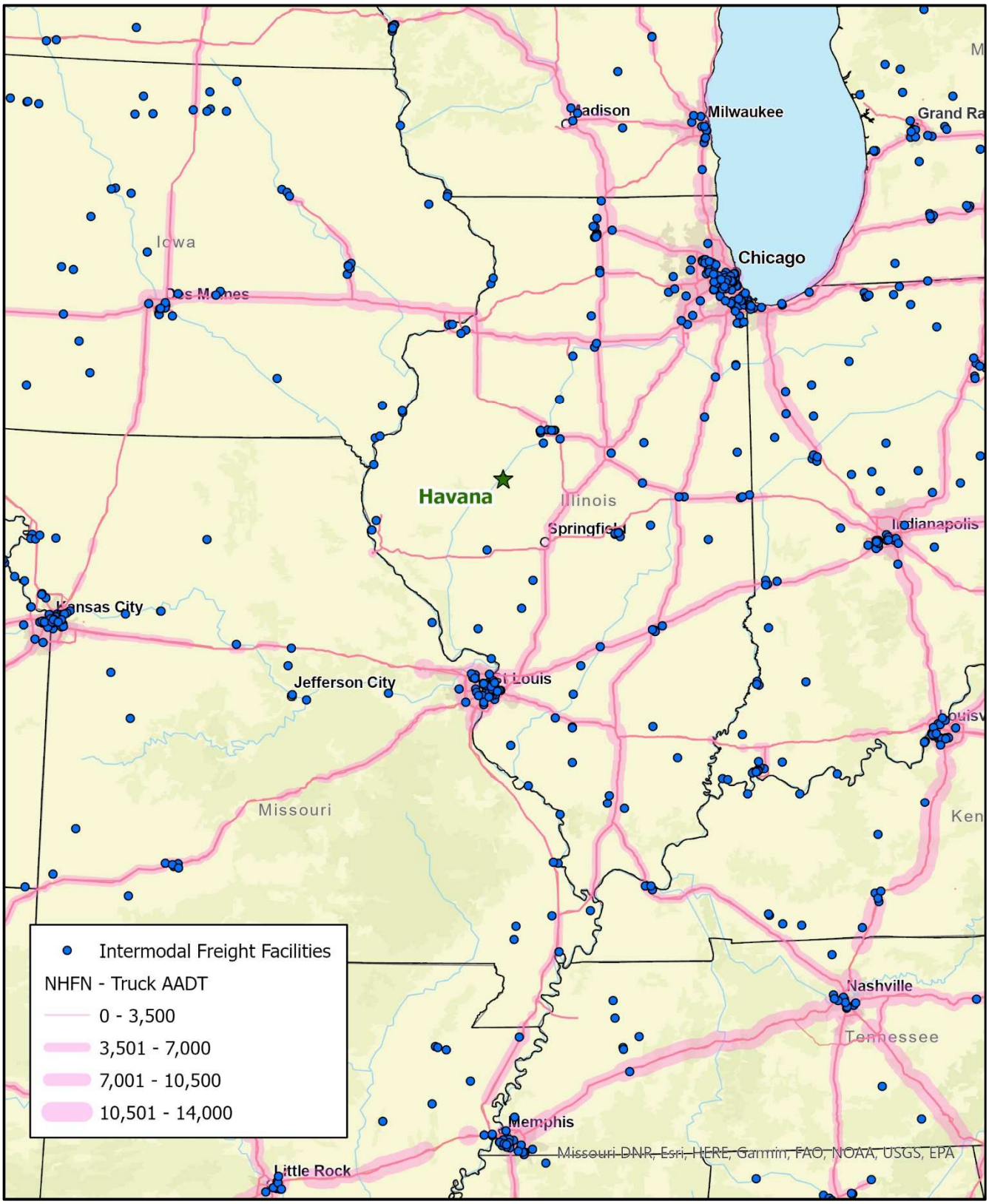


Figure 12 – Highway Truck Volumes & Intermodal Freight Facilities

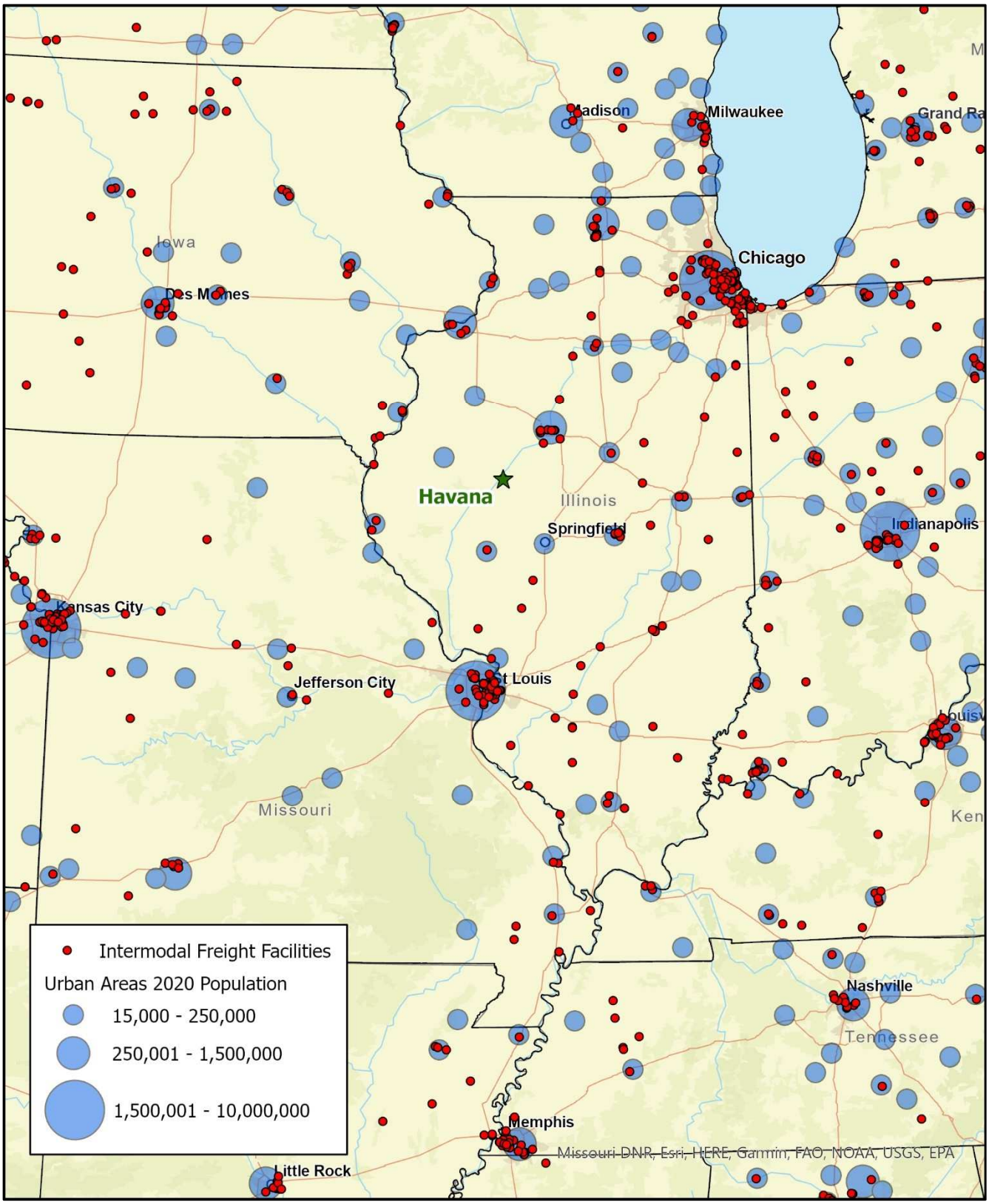


Figure 13 – Population & Intermodal Freight Facilities

8.6 Inland Port Concept

An inland port is “a site located away from traditional land, air, and coastal borders with the vision to facilitate and process international trade through strategic investment in multi-modal transportation assets and by promoting value-added services as goods move through the supply chain” (Center for Transportation Research, University of Texas). Examples of existing successful inland ports include those located in or adjacent to the cities listed below.

- Chicago, IL
- Atlanta, GA
- Memphis, TN
- Kansas City, MO
- Columbus, OH
- Dallas/Ft. Worth, TX

Inland ports are typically located near multiple interstate highways and multiple Class I railroad mainlines. Interstate 55 (I-55) and I-155 both pass within 10 miles of Mason County and I-74 passes within 10 miles of Fulton County, but no interstate highways pass through Havana. As previously shown in Figure 5, only the IMRR passes through Havana, although the IMRR ultimately connects with all Class I railroads except CSX. The only other railroad operating in Mason County is the Union Pacific Railroad (UPRR), which has a north/south oriented mainline that passes through the east side of the county, over 20 miles east of Havana. Thus, from the perspective of interstate highway and Class I railroad options, Havana does not appear to be an ideal location for an inland port.

Further, one common characteristic of the successful inland ports listed above that is lacking for Havana is its location in or adjacent to a major population center. As previously shown in Figure 13, the nearest major population centers to Havana are Chicago to the northeast and St. Louis to the southwest; the latter of these could be considered an emerging inland port itself. Inland ports that do not meet the highway, railroad, and population criteria are typically either unsuccessful or can take a decade or more to achieve success. Absent the major population center, Havana is not likely to attain success as an inland port for the foreseeable future.

8.7 Site Certification

Site certification has become a valuable tool for land developers and economic development agencies seeking to promote industrial development. “Certifying sites confirms site readiness to a point that creates a benefit in the site selection process, leverages job creation, and attracts capital investment. For corporations desiring to locate manufacturing facilities, access to certified sites presents a unique site screening advantage that reduces overall site location risk, saves time, and reduces site development costs” (“Site Certification: Now More than Ever, A Critical Tool for Successfully Locating Projects,” *Site Selection Magazine*, May 2012). Site certification generally consists of the following aspects of site development:

- The property shape and terrain should be conducive to development, with an appropriate buffer between it and adjacent properties.
- The property should have favorable transportation access.
- The property should be acquired or have an option in place to quickly acquire the property.
- All required studies, such as geotechnical and environmental, should be completed.
- The property should have utilities, or the ability to quickly install utilities, that are of capacity appropriate for industrial development.

The certification of an industrial site, or multiple sites, may give the HRPD a competitive advantage for future potential industrial development, but pursuing that process is not recommended at this time, as the HRPD's limited capital resources are likely better spent elsewhere. However, site certification may be an economic development "tool" for future HRPD consideration.

8.8 Facility Type & Location

The overall population decline for Mason and Fulton Counties discussed in Section 8.1, combined with a relatively small skilled workforce, does not appear to be conducive to attracting new industrial development in the Havana area. Based on the information summarized in Section 8.5, the likelihood of developing a successful, major intermodal freight facility near Havana appears to be low. And absent a major population center, Havana is not likely to attain success as an inland port for the foreseeable future, as discussed in Section 8.6.

However, in the cluster analyses for both Mason and Fulton Counties (shown in Section 8.2), agriculture is an industry indicated to be expanding. This industry expansion also generally coincides with the potential business opportunities previously identified through the freight data analyses (see Section 4.10) and further discussed in the context of transload and/or modal shift opportunities in Sections 8.3 and 8.4, respectively. Accordingly, expansion of existing transloading capabilities in Havana, along with development of new transloading capabilities, appears to have the highest likelihood of success. More specifically, existing riverfront facility expansion and new facility development may be warranted to accommodate both truck-to-barge and barge-to-truck movements identified as transload and modal shift opportunities. The ability to facilitate these freight movements at a particular location provided focus during the site selection process (Section 9).

9. Site Selection Summary

Overall, site selection was based on the freight facility inventory, freight data analysis, and input from various project stakeholders. Ideally, any freight facility development should provide an option for more than one mode of transportation. Section 4.10 identified potential business opportunities for barge, rail, and truck transportation modes based on projected freight volumes, so the initial site selection efforts encompassed all three modes.

Hanson began the site selection process by reviewing aerial imagery and parcel data to compile a preliminary list of sites for riverfront and/or rail-focused development, based on the following general criteria:

- Access to multiple transportation modes (barge, rail, and/or truck)
- Relatively flat topography
- Minimal number of parcel owners
- Minimal apparent environmental issues (forestation, wetlands, etc.)
- Existing land use is preferably industrial or agricultural
- Sufficient site/parcel size
    - Riverfront – around 5 acres or more
    - Rail – accommodate unit trains, if feasible; 150-acre rectangular site for a rail loop or a long/narrow site for rail sidings

Based on the above general criteria, five groups of parcels were identified as preliminary riverfront sites (see Figure 14), and seven groups of parcels were identified as preliminary rail sites (see Figure 15).

In both figures, Parcel Group 1 refers to the Vistra/Dynegy power plant site. As previously noted in Section 5.3, Dynegy was unwilling to discuss potential site redevelopment collaboration with Hanson or the HRPD until their completion of site redevelopment plans, expected sometime during Fall 2023. For this reason, the site was evaluated along with other potential sites, but no site planning was conducted by Hanson at this time regardless of its ranking in the evaluation matrices presented below.

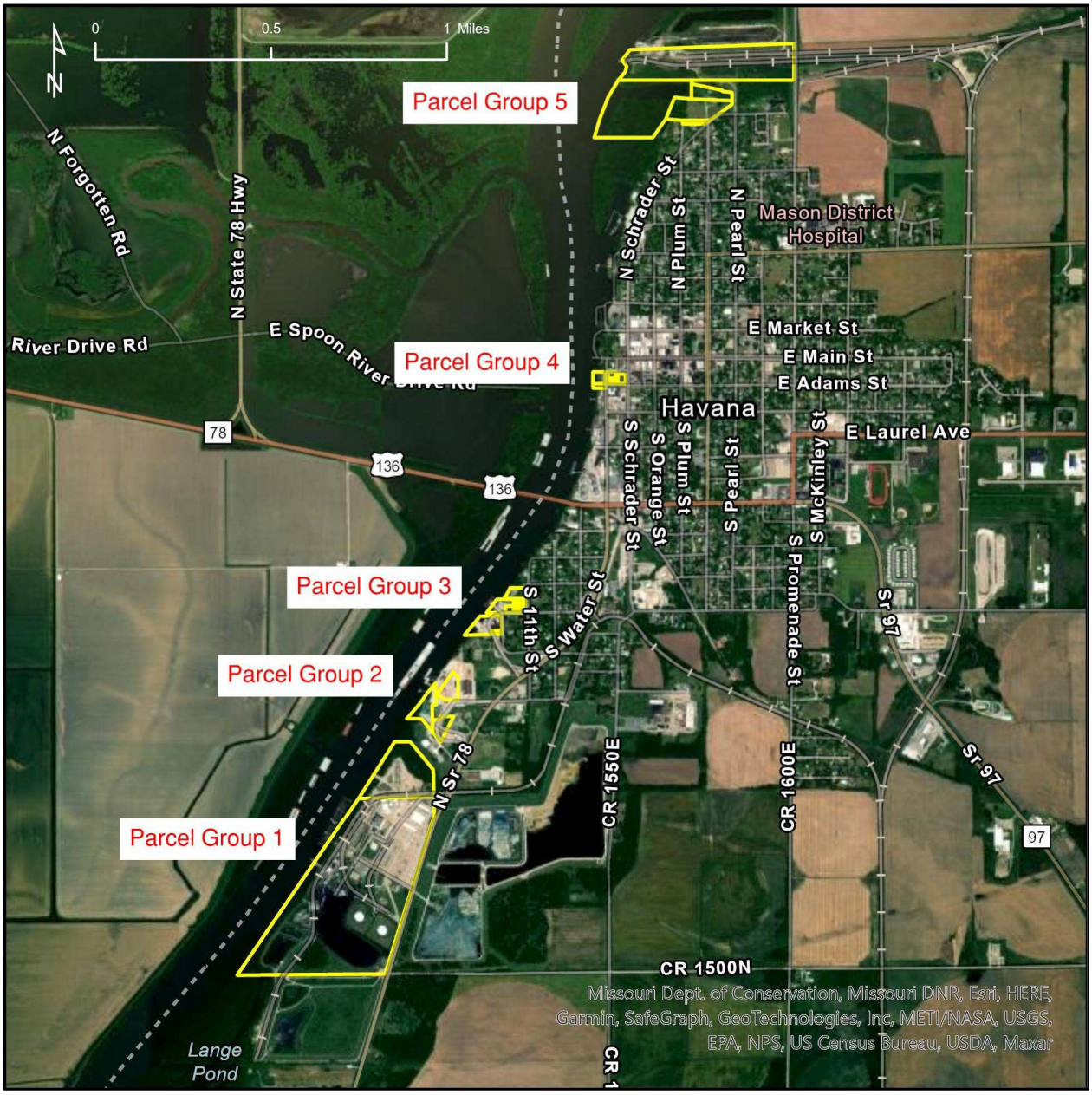


Figure 14 – Riverfront Parcel Groups

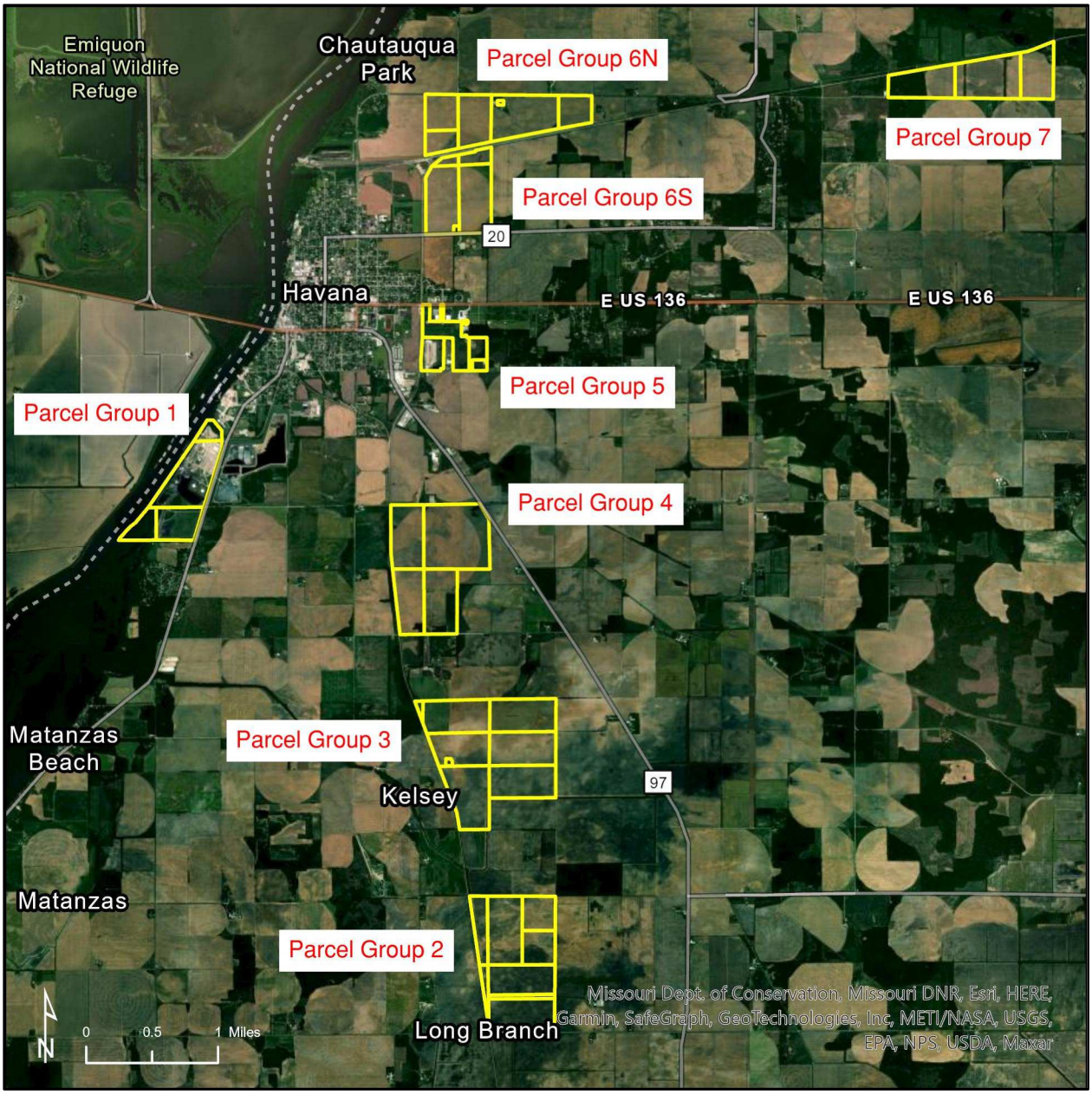


Figure 15 – Rail Parcel Groups

After obtaining feedback from the HRPD, the preliminary riverfront and rail sites were evaluated separately with two evaluation matrices generally using the same criteria, as described below.

- Proximity to Major Highway – This criterion compares the relative distance of the parcels to the major highways in the Havana vicinity (IL 78, IL 97, or US 136). Closer proximity to a highway generally allows for more efficient truck ingress/egress.
- Location On/Near Rail (for riverfront sites) or Proximity to River (for rail sites) – This criterion provides an indication of how feasible it may be to integrate a third transportation mode (i.e., adding rail access to a riverfront site or river access at a rail site).
- Quality/Extent of River Access (for riverfront sites) or Quality/Extent of Rail Access (for rail sites) – The quality of the river/rail access considers the anticipated ease/difficulty of implementation. A longer extent of river access provides more area for barge operations. Longer rail extent provides more options for where to connect to the mainline track and, subsequently, the layout of the rail facility.
- Number of Parcel Owners – This criterion considers the number of parcels that would be required to assemble the overall site. Negotiating with fewer property owners is anticipated to simplify the land acquisition process.
- Site Layout/Shape/Size – Although layout/shape isn't critically important for a riverfront site, a larger size allows more space for equipment, commodity storage, and efficient overall operations. For a rail site to accommodate a rail loop, it needs to be roughly rectangular in shape and around 150 acres or more in size to provide sufficient space for the required track curve radii, storage, and operations space.
- Topography – This criterion considers how flat or hilly a site may be. Freight facilities need to be generally flat (particularly those used for railcar storage), and a hilly site can add significant construction costs to make it relatively flat.
- Apparent Environmental Issues – This criterion considers environmental issues that may impact site development. For example, a site with significant, unavoidable wetlands will likely require impact mitigation, which will increase the site development cost. Similarly, cleanup of contamination (potentially at the power plant site, for example) is also likely to increase the site development cost.
- Anticipated Development Cost – Funding for site development and/or capital improvements are anticipated to be limited, so a lower anticipated development cost is preferred.
- Access to Utilities – This criterion provides an indication of each site's anticipated proximity to existing utilities. Sites closer to the Havana core are more likely to have utilities on-site or nearby, which should result in lower development costs.
- Disruption to Surrounding Area – This criterion considers the impact potential site development may have on the surrounding area. The purpose of the potential freight facility development is to foster economic development for the Havana community. However, development of a freight facility in a residential neighborhood, for example, is not likely to be well-received by the community.

The criteria were then weighted, which is an indication of each criterion's relative importance compared to the other criteria. The criteria weighting is summarized in Table 41 below.

Table 41 – Evaluation Criteria Weighting

Weight	Qualitative Description
1.2	Essential
1.1	Very Important
1.0	Important
0.9	Somewhat Important
0.8	Minimally Important

Each potential site (i.e., parcel group) was then given a rating for each criterion. The ratings are used as a comparison of each site versus the other sites. Ratings from 1 through 5 were used, as summarized in Table 42 below.

Table 42 – Evaluation Criteria Ratings

Rating	Qualitative Description
5	Superior
4	Above Average
3	Average/Acceptable
2	Below Average
1	Inferior

To execute the evaluation matrix process, the weights and ratings for each criterion were multiplied together and then summed within each parcel group to give each parcel group a total score. The parcel group with the highest total score is theoretically the best site for potential freight facility development. The riverfront site evaluation matrix is shown below in Table 43.

Table 43 – Evaluation Matrix for Riverfront Parcel Groups

Criteria	Weight	Parcel Group 1		Parcel Group 2		Parcel Group 3		Parcel Group 4		Parcel Group 5	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Proximity to Major Highway	1.2	5	6.0	5	6.0	4	4.8	3	3.6	1	1.2
Location On/Near Rail	1.1	5	5.5	3	3.3	2	2.2	1	1.1	5	5.5
Quality/Extent of River Access	1.2	5	6.0	4	4.8	4	4.8	1	1.2	1	1.2
Number of Parcel Owners	0.8	3	2.4	3	2.4	3	2.4	2	1.6	1	0.8
Site Layout/Shape/Size	1.1	5	5.5	4	4.4	3	3.3	1	1.1	1	1.1
Topography	1.1	3	3.3	3	3.3	3	3.3	3	3.3	2	2.2
Apparent Environmental Issues	1.1	1	1.1	4	4.4	4	4.4	2	2.2	1	1.1
Anticipated Development Cost	1.2	2	2.4	5	6.0	5	6.0	2	2.4	1	1.2
Access to Utilities	0.9	5	4.5	5	4.5	5	4.5	3	2.7	1	0.9
Disruption to Surrounding Area	1.0	3	3.0	3	3.0	3	3.0	1	1.0	2	2.0
		Total:	**39.7**	**Total:**	**42.1**	**Total:**	**38.7**	**Total:**	**20.2**	**Total:**	**17.2**
		Rank:	**2**	**Rank:**	**1**	**Rank:**	**3**	**Rank:**	**4**	**Rank:**	**5**

As indicated in the evaluation matrix, Parcel Groups 1, 2, and 3 all scored highly, with Parcel Group 2 scoring slightly higher than the other two. However, as discussed above, no planning on Parcel Group 1 will be conducted at this time. Considering the close scores of the other two parcel groups, their close physical proximity to each other, and input received from the HRPD, Hanson proceeded with riverfront site planning on Parcel Groups 2 and 3.

All parcels within Parcel Group 2 appear to be owned by Sunrise FS, and all parcels within Parcel Group 3 appear to be owned by ADM. Both sites are in very close proximity to IL 78 and in relatively close proximity to the IMRR spur track that serves the power plant site. Both parcel groups are relatively flat, with Parcel Group 2 and Parcel Group 3 totaling about 20 acres and 6.5 acres adjacent to the river, respectively. Combined, the two parcel groups have about 2,000 feet of total river frontage, including significant in-river infrastructure (i.e., dock and mooring structures). Neither parcel groups appear to have potential environmental issues. Utilities are assumed to be on-site at both locations, and considering the currently developed portions of the sites are already used as river terminals, no negative impact to the community is anticipated should the HRPD pursue additional freight facility development at either site.

Although some of the rail parcel groups are larger than the minimum required for a rail loop (around 150 acres is needed), each rail parcel group was treated as one site for the purpose of the evaluation matrix. Note, Parcel Group 6 was divided into Parcel Group 6S and Parcel Group 6N (to indicate South and North, respectively), because the parcels are physically divided by the existing IMRR railroad tracks and they differ in road access, extent of rail access, etc. The rail site evaluation matrix is shown below in Table 44.

As shown in Table 44, Parcel Group 1 (the power plant site) scored the highest. However, for the reasons conveyed above, no planning on Parcel Group 1 will be conducted at this time. As shown, Parcel Group 4 was the second-best ranked rail site based on the evaluation matrix results.

Parcel Group 4 is bordered by the IMRR railroad tracks on the west, CR 1500N to the north, and CR 1400N to the south. A small portion of the site borders IL 97 in the northeast corner. Parcel Group 4 is composed of two parcel owners. Based on Hanson's review of the National Wetland Inventory (NWI), two wetland areas may be present on the site, but they are relatively small and likely avoidable. Parcel Group 4 is relatively square, and development of a rail freight facility will likely only require using around 150 acres of the approximately 380-acre total.

Hanson reviewed both the riverfront and rail site evaluation matrices with the HRPD. With consideration given to the projected tonnage associated with rail potential business opportunities and the relatively low anticipated likelihood of capturing this tonnage, Hanson and the HRPD jointly decided to focus freight facility site planning efforts on the riverfront sites only. Thus, no rail-only site planning was advanced at this time.

Table 44 – Evaluation Matrix for Rail Parcel Groups

Criteria	Weight	Parcel Group 1		Parcel Group 2		Parcel Group 3		Parcel Group 4		Parcel Group 5		Parcel Group 6S		Parcel Group 6N		Parcel Group 7	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Proximity to Major Highway	1.2	5	6.0	4	4.8	4	4.8	5	6.0	5	6.0	3	3.6	1	1.2	2	2.4
Proximity to River	1.1	5	5.5	2	2.2	2	2.2	2	2.2	3	3.3	3	3.3	4	4.4	1	1.1
Quality/Extent of Rail Access	1.2	5	6.0	2	2.4	2	2.4	3	3.6	1	1.2	3	3.6	4	4.8	4	4.8
Number of Parcel Owners	0.8	5	4.0	2	1.6	3	2.4	4	3.2	3	2.4	4	3.2	4	3.2	5	4.0
Site Layout/Shape/Size	1.2	3	3.6	5	6.0	4	4.8	5	6.0	1	1.2	5	6.0	2	2.4	2	2.4
Topography	1.1	3	3.3	3	3.3	3	3.3	3	3.3	3	3.3	3	3.3	3	3.3	3	3.3
Apparent Environmental Issues	1.1	1	1.1	3	3.3	4	4.4	3	3.3	4	4.4	5	5.5	5	5.5	3	3.3
Anticipated Development Cost	1.2	4	4.8	3	3.6	2	2.4	3	3.6	2	2.4	3	3.6	2	2.4	3	3.6
Access to Utilities	0.9	5	4.5	2	1.8	3	2.7	4	3.6	4	3.6	4	3.6	3	2.7	2	1.8
Disruption to Surrounding Area	1.0	5	5.0	4	4.0	3	3.0	4	4.0	2	2.0	3	3.0	2	2.0	4	4.0
		Total:	**43.8**	**Total:**	**33.0**	**Total:**	**32.4**	**Total:**	**38.8**	**Total:**	**29.8**	**Total:**	**38.7**	**Total:**	**31.9**	**Total:**	**30.7**
		Rank:	**1**	**Rank:**	**4**	**Rank:**	**5**	**Rank:**	**2**	**Rank:**	**8**	**Rank:**	**3**	**Rank:**	**6**	**Rank:**	**7**

10. Freight Facility Development Summary

The Freight Development Summary (Section 8) provided a compilation of potential HRPD business opportunities, and the Site Selection Summary (Section 9) established appropriate locations to facilitate the identified freight movements. This section summarizes the anticipated freight activity, presents the conceptual site plans and opinions of probable construction cost, and summarizes anticipated traffic impacts associated with the potential development.

10.1 Activity Forecasts

Freight activity forecasts are primarily based on the potential business opportunities summarized in the Freight Data Analysis (Section 4.10) and further identified as potential transload opportunities (Section 8.3) or modal shift opportunities (Section 8.4). The potential annual tonnage is consolidated and summarized in Table 45.

Table 45 – Summary of Potential Annual Activity

Direction	Modes	Commodity	Potential Tonnage		Equivalent Barges*		Equivalent Trucks*	
			Low	High	Low	High	Low	High
Inbound	Barge-to-Truck	Road Salt	4,655	16,915	3	11	233	846
		Dry Fertilizer	4,232	15,912	3	11	212	796
		Gravel/Sand	1,327	2,986	1	2	66	149
Total Inbound:					**7**	**24**	**511**	**1,791**
Outbound	Truck-to-Barge	Stone/Riprap	13,465	48,888	9	33	673	2,444
		Gravel/Sand	25,738	60,312	17	40	1,287	3,016
Total Outbound:					**26**	**73**	**1,960**	**5,460**

* *Equivalent Barges assumes 1,500 tons per barge; Equivalent Trucks assumes 20 tons per truck.*

As indicated in Sections 8.3 and 8.4, the tonnage summarized in Table 45 represents a range of initial projected activity. Initial activity could be lower or higher, depending on a multitude of factors.

The overall potential barge activity (a total of 33 to 97 barges per year) is relatively low. Further, the activity related to road salt and dry fertilizer is likely to be seasonal, with road salt deliveries mostly arriving in the Fall and dry fertilizer deliveries mostly arriving in the Spring. The aggregate commodities are likely to be shipped year-round, except possibly during Winter. Assuming the barge activity is limited to a 9-month period (Spring, Summer, and Fall) and 20 workdays per month (i.e., weekdays only), even the high end of the potential barge activity shown in Table 45 equates to only un/loading about a half-barge per day.

Conversely and primarily due to the significant capacity difference in the two transportation modes, the overall potential truck activity (a total of almost 2,500 to about 7,250 trucks per year) could be relatively high. The seasonality comments above regarding potential barge activity are also applicable to the potential truck activity. An analysis of potential traffic impacts to Havana area roadways due to this truck traffic can be found in Section 10.4.

10.2 Concept Plans

Concept Plans were developed for the Sunrise FS and ADM South sites to accommodate the activity forecasts summarized above in Section 10.1. Most existing infrastructure was intentionally left in place; the proposed development consists mostly of additions to the existing facilities. This approach should

allow the facilities to continue existing operations, with proposed improvements adding new capabilities or enhancing existing operations if/when brought online. In addition to the recommended development, potential improvements are also shown at both sites that, while not currently recommended, have the potential to be implemented if warranted in the future.

Note, the Concept Plans show improvements to properties that are neither owned nor controlled by the HRPD. To date, neither Hanson nor the HRPD have discussed said improvements with the existing property owners. The Concept Plans were developed by Hanson under the assumption that the HRPD and the respective property owners would establish a business relationship that will allow the proposed improvements to be implemented in the future. Further, given the market for freight in the region, combined with the freight capacity already provided by existing facilities, both Hanson and HRPD believed the likelihood of success in developing and successfully implementing an entirely new freight facility in the area was low.

An overview of the existing/current Sunrise FS and ADM South sites are provided below in Figure 16. This is followed by a summary of the existing freight-related infrastructure at the Sunrise FS site and a description of the proposed phased improvements shown in the Concept Plans. The same is then provided for the ADM South site. A full-size (11”x17”) version of Figure 16 can be found in Appendix E.

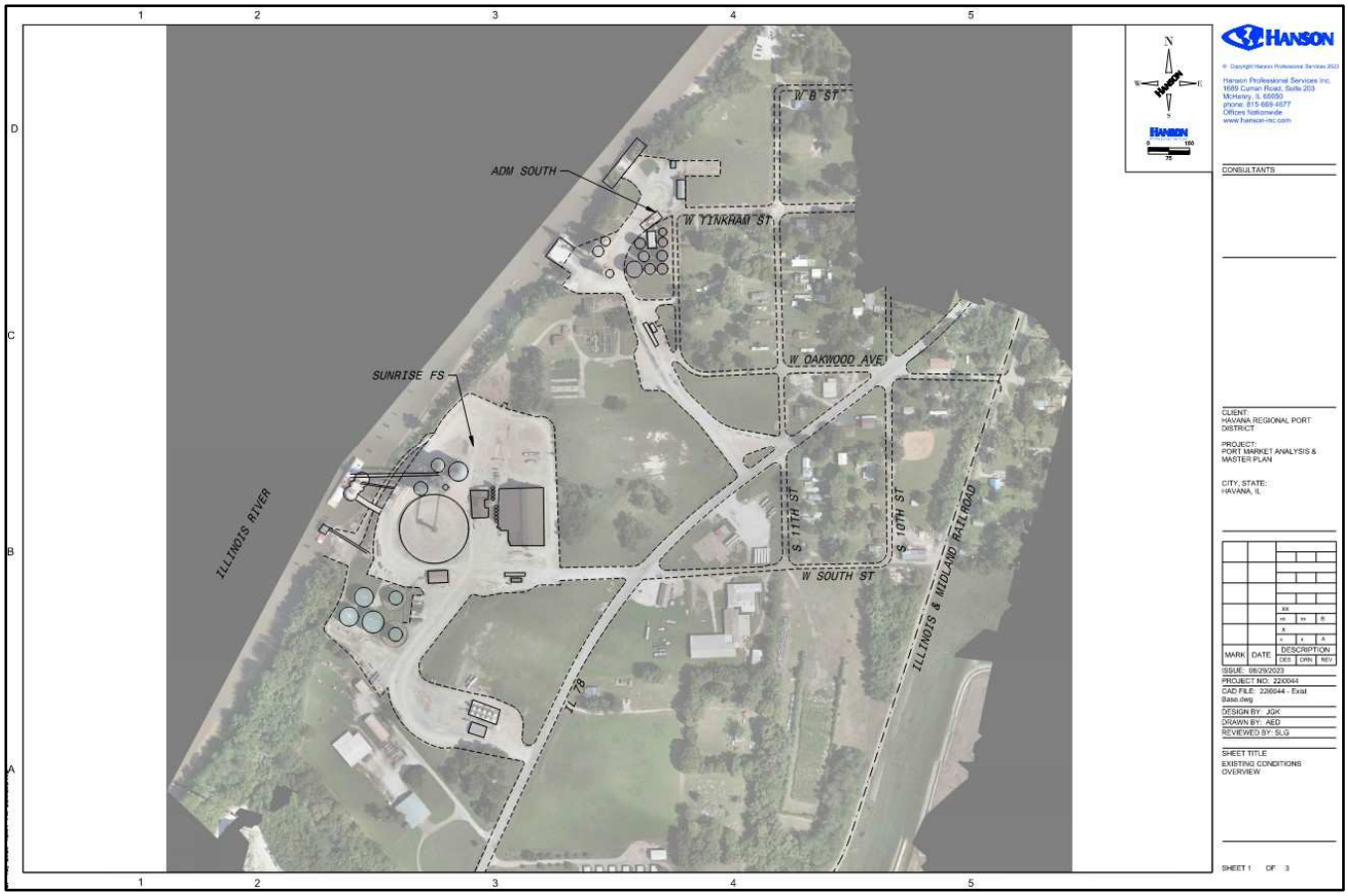


Figure 16 – Overview of Existing Sunrise FS & ADM South Sites Vicinity

Sunrise FS Existing Capabilities – Based on information obtained during the freight stakeholder interviews, Hanson understands Sunrise FS currently accommodates about 45,000 tons of inbound dry

fertilizer, 25,000 tons of inbound liquid fertilizer; and 24 to 32 million bushels of outbound grain annually. The facility has on-site storage and distribution capabilities for both liquid and dry fertilizer, as well as storage bins for grain. Inbound and outbound conveyor systems for dry fertilizer and grain, respectively, are used to transload these dry commodities to/from barges, and pipelines are used to convey liquid fertilizer from barges to storage tanks. Barges are accessed via two dock structures, with the south dock used for liquid fertilizer and the north dock used for the dry bulk commodities. Barge operations are facilitated through dolphin structures located upstream and downstream of each dock structure.

Note, the current inbound conveyor system appears to only convey dry fertilizer from barge to truck, not directly to the nearby storage building. In essence, trucks appear to be used to “convey” dry fertilizer from the north dock area to storage, which is likely inefficient from operational and potentially cost perspectives.

Inbound fuel storage and distribution capabilities are also located on-site. Access to the facility is provided via two driveway connections to IL 78. A truck scale and scale house are located near the northern access point, west of the IL 78 intersection with West South Street.

The existing capabilities at Sunrise FS are shown in Figure 17 below. A full-size (11”x17”) version of Figure 17 can be found in Appendix E.

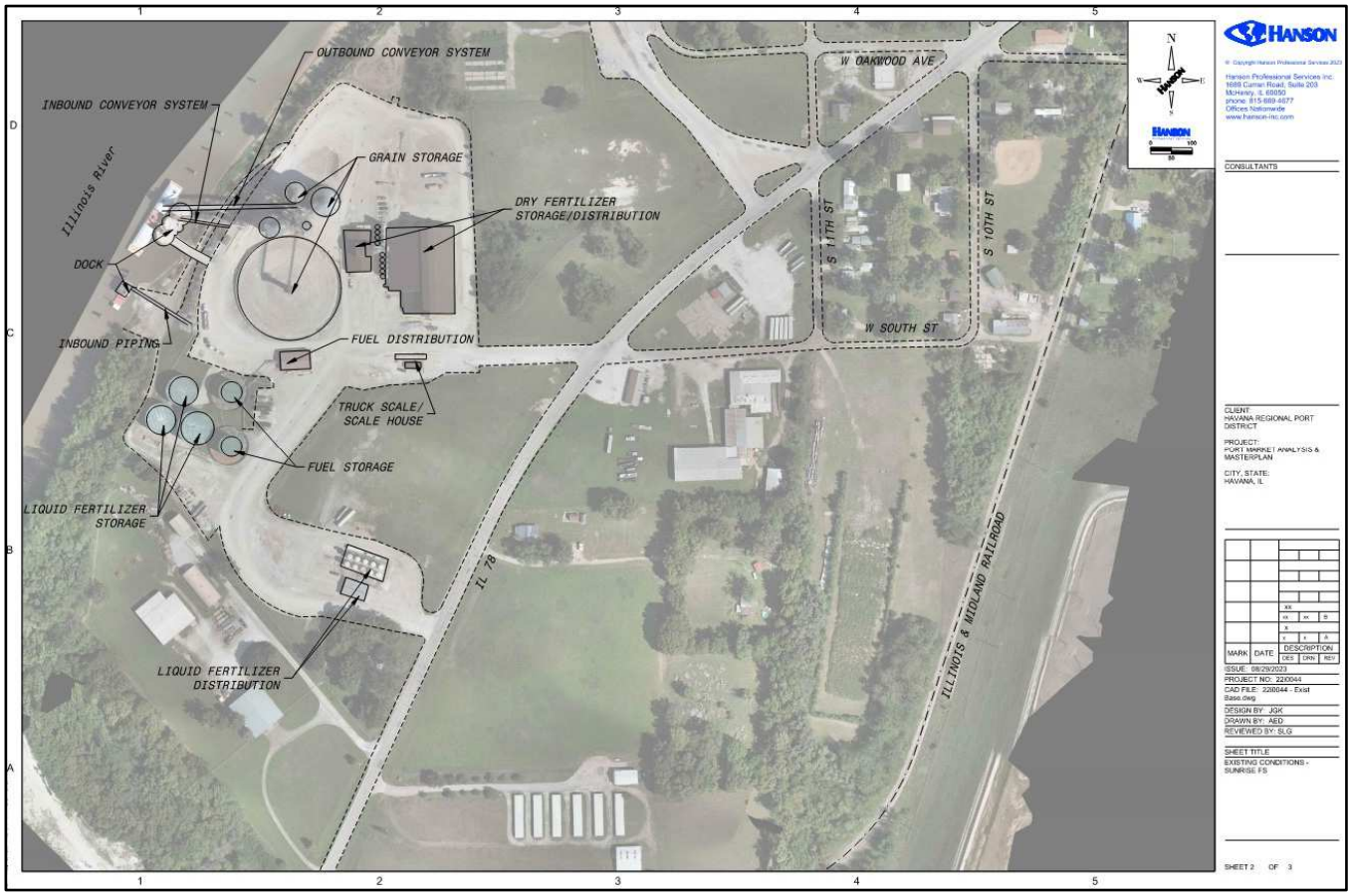


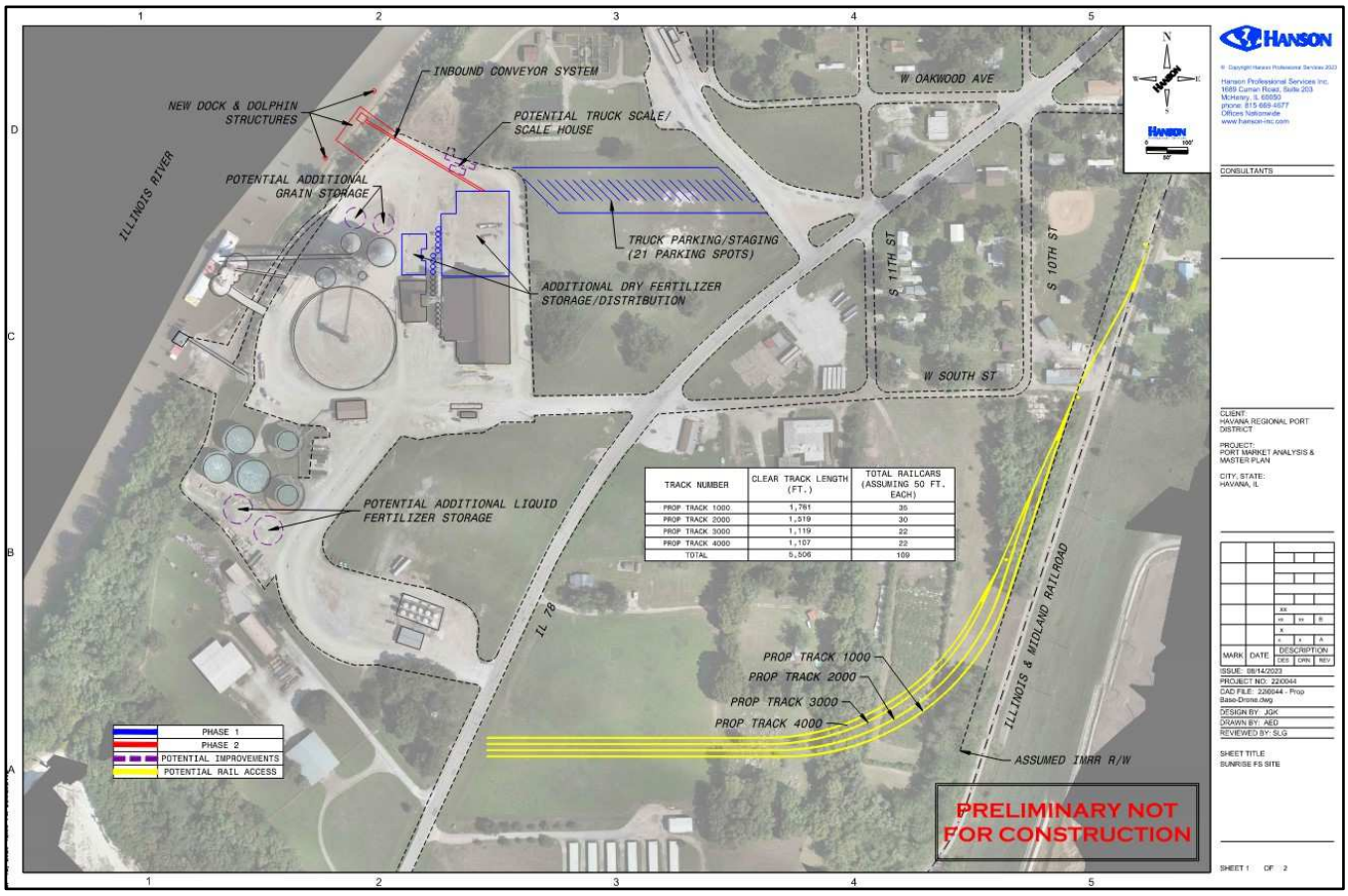
Figure 17 – Sunrise FS Existing Capabilities

Sunrise FS Phase 1 – The first phase of potential development at the Sunrise FS site includes construction of a second adjacent building (or expansion of the existing building) to double the facility's inbound dry fertilizer storage and distribution capacity. The existing structure was replicated for the purpose of showing this capacity increase in the Concept Plan. Based on information provided to Hanson by a contractor experienced with constructing similar buildings, the existing structure is estimated to have a capacity of about 21,000 tons divided amongst three or four bins inside the structure.

Figure 18 below presents historic Google Street View imagery, which shows trucks queuing along the shoulder of IL 78 during grain harvest season. Note, the third truck/trailer in the image is not completely out of the travel lane. With a 50-mph speed limit through this area, these trucks can inadvertently create a safety issue. Thus, further recommended Phase 1 improvements include a truck parking/staging lot constructed of an aggregate surface. Access to this 21-spot parking/staging lot is provided via an existing unnamed aggregate access road that also currently provides access to the ADM South facility. Considering this safety improvement will allow trucks to queue in the parking/staging lot rather than along the shoulder of IL 78, an IDOT-owned and maintained highway, it may be feasible to obtain funding for at least a portion of this improvement from IDOT. Note, based on information readily available to Hanson, ownership of the parcel on which the parking/staging lot is proposed is not clear.

Figure 18 – Google Street View of IL 78 at Sunrise FS

The phased Concept Plan for the Sunrise FS site is shown in Figure 19. A full-size (11"x17") version of Figure 19 can be found in Appendix F.



TRACK NUMBER	CLEAR TRACK LENGTH (FT.)	TOTAL RAILCARS (ASSUMING 50 FT. EACH)
PROP TRACK 1000	1,761	35
PROP TRACK 2000	1,519	30
PROP TRACK 3000	1,119	22
PROP TRACK 4000	1,107	22
TOTAL	5,506	109

Figure 19 – Sunrise FS Concept Plan

Sunrise FS Phase 2 – The second phase of potential development at the Sunrise FS site consists of a new dock and dolphin structures, along with an inbound conveyor system (see Figure 19 or Appendix F). This new infrastructure will provide direct transloading from barges to the dry fertilizer storage structures, rather than the current inefficient method of "conveyance" using trucks described above. The new dock structure is proposed as to not interfere with current operations at the existing north dock and to provide a clear, direct path for the proposed conveyor system from the new dock to the expanded storage building.

Sunrise FS Potential Improvements – Other potential improvements were identified and included in the Concept Plan, consisting of two additional grain storage bins and two additional liquid fertilizer storage tanks. An additional truck scale/scale house is also shown near the proposed truck parking/staging lot, which would allow trucks to weigh their loads upon exiting the proposed parking/staging lot, facilitating efficient truck circulation at the site. These potential improvements are intended to show capabilities only, and they are only recommended if warranted by demand. Further grain and/or liquid fertilizer storage capacity expansion appears to be feasible, although not shown in the Concept Plan.

Sunrise FS Potential Rail Access – Although not recommended at this time, there is potential for rail access in relatively close proximity to the Sunrise FS site. The rail yard shown in the Concept Plan consists of four storage tracks ranging from 1,100 feet to 1,700 feet in length. This will accommodate storage for around 110 railcars, assuming each railcar is 50 feet long. For the purposes of Concept Plan development, Hanson assumed that the IMRR right-of-way extends approximately 55 feet west of

the existing tracks. The proposed rail infrastructure crosses through four parcels, not including the IMRR right-of-way. One of those parcels is owned by Sunrise FS, and another is owned by ADM.

ADM South Existing Capabilities – Currently, the ADM South site has the capability to transload/store liquid fertilizer and grain. Inbound liquid fertilizer is conveyed from barges to storage tanks via pipeline. Outbound grain can be transloaded from trucks to storage or directly to barges via conveyor system. The facility has two dock structures, and all operations appear to be conducted at the south dock. The existing north dock appears to be constructed of a barge that is in poor condition.

Access to the site is provided through multiple locations, including the west leg of the intersection at West Tinkham Street and South 12th Street, two other connections to South 12th Street, and a longer unnamed aggregate roadway that approaches the facility from the southeast. A truck scale/scale house is located along the latter access road.

The existing capabilities at ADM South are shown in Figure 20 below. A full-size (11”x17”) version of Figure 20 can be found in Appendix E.

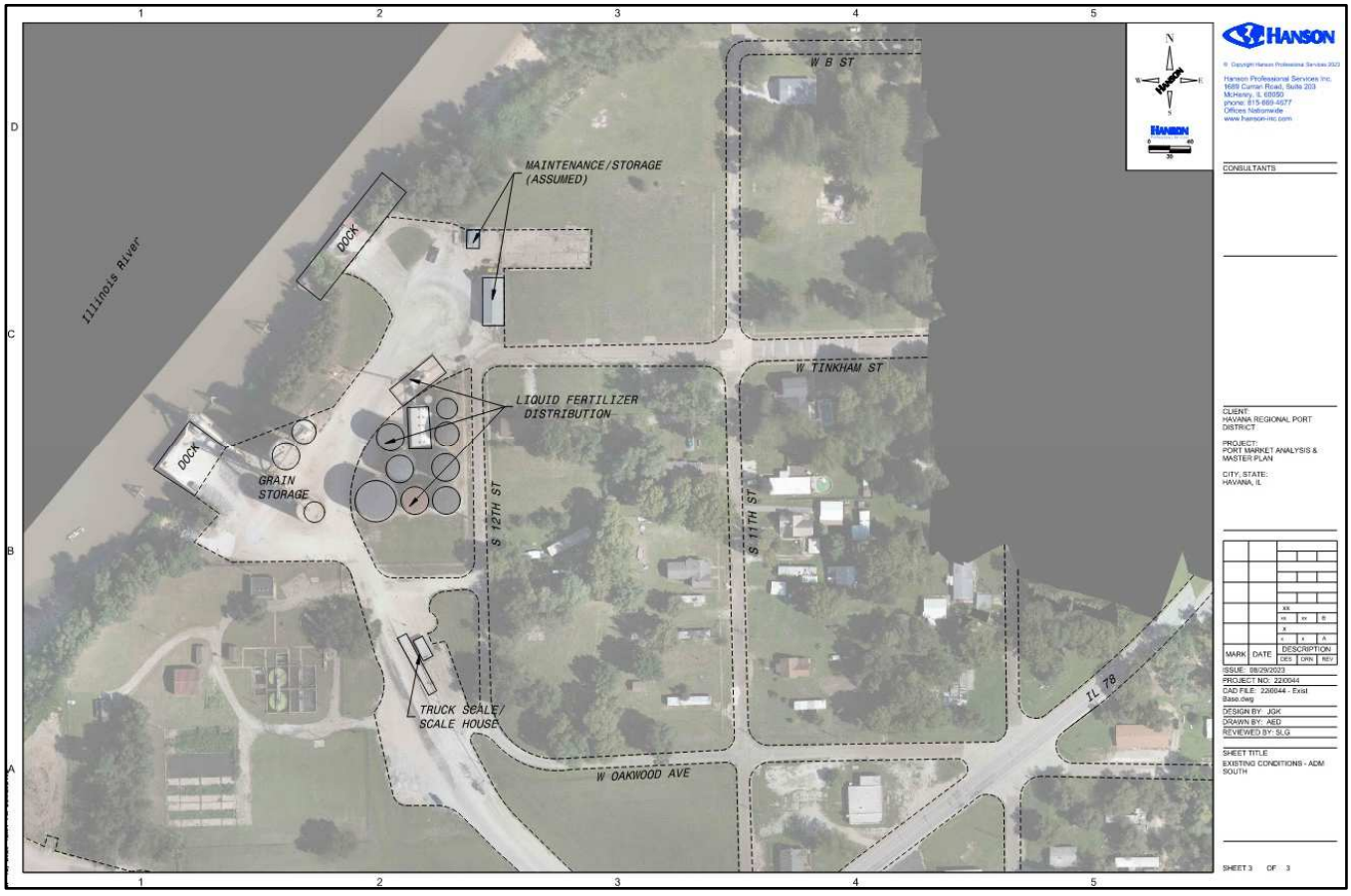


Figure 20 – ADM South Existing Capabilities

ADM South Phase 1 – The first phase of proposed development at the ADM South site consists of removing the existing north dock structure. As indicated above, the existing dock is constructed of a barge that appears to be in poor condition. The proposed dock and dolphin structures will facilitate the

transloading of outbound aggregates directly from trucks to barges. The new dock could also be used to facilitate the transloading of inbound road salt directly from barges to trucks.

The phased Concept Plan for the ADM South site is shown in Figure 21. A full-size (11”x17”) version of Figure 21 can be found in Appendix F.

Note, depending on activity levels at the existing south dock, it may be feasible to initiate outbound aggregates and/or inbound road salt transloading at the south dock, only constructing the new north dock when warranted by demand or due to congestion at the south dock.

ADM South Phase 2 – The second phase of proposed development at the ADM South site primarily consists of constructing a fabric-roofed structure intended for storage of inbound road salt. As shown, the structure is 100 feet long by 55 feet wide, so a total of 5,500 square feet. To minimize construction cost, it may be feasible to utilize what appears to be an existing building foundation, as shown in the Concept Plan. Construction of this structure is only recommended if on-site storage is needed, instead of directly transloading salt from barges to trucks.

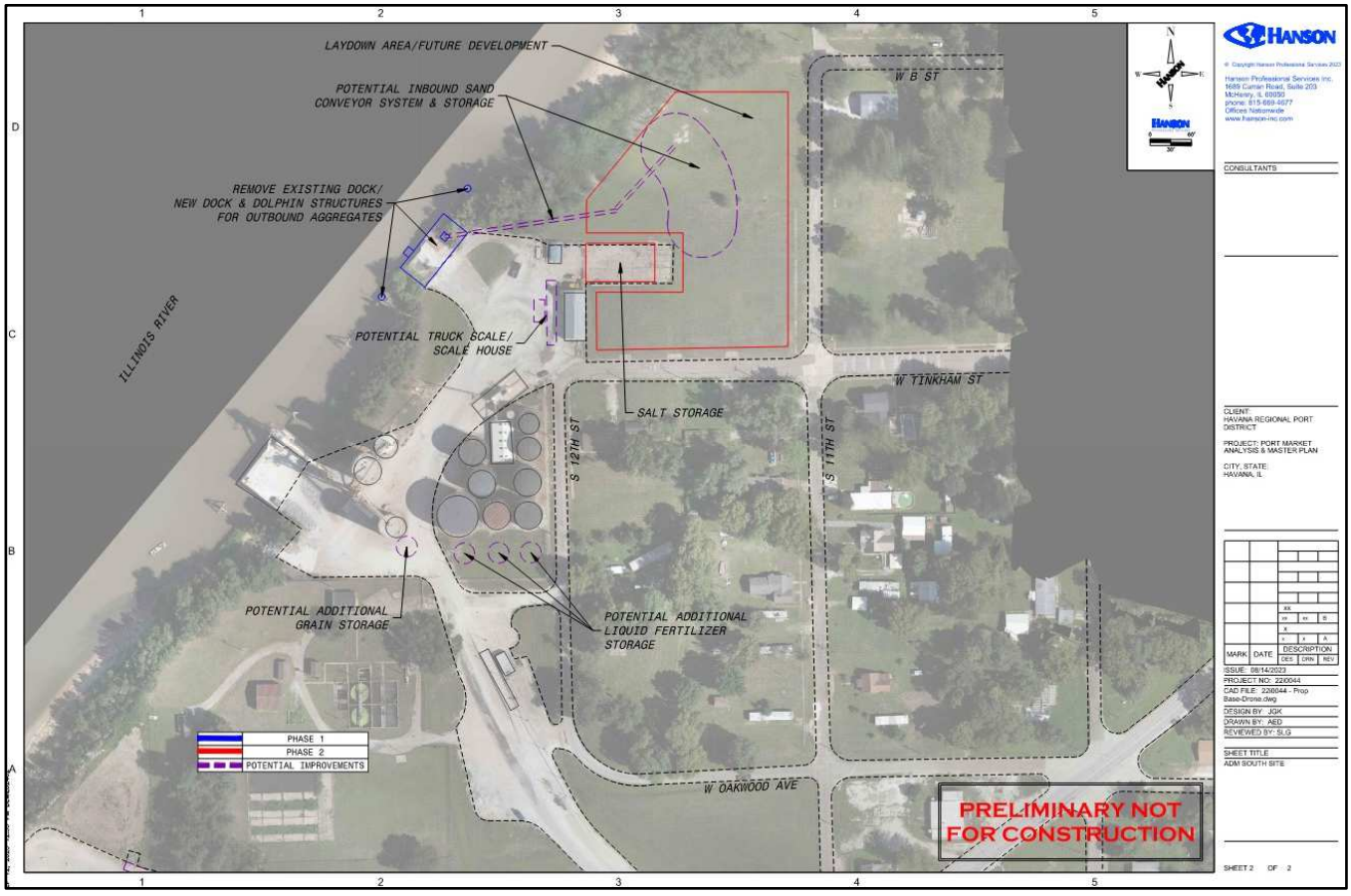


Figure 21 – ADM South Concept Plan

Also included in the second phase of proposed development at the ADM South site is the construction of a laydown yard. This yard consists of an aggregate surface, similar to that constructed at the Havana Dock & Rail site to accommodate wind turbine components. This improvement is only recommended when warranted by a specific business opportunity.

ADM South Potential Improvements – Other potential improvements were identified and included in the Concept Plan, consisting of two additional grain storage bins, three additional liquid fertilizer storage tanks, and a conveyor system and storage area for inbound sand/gravel. Note, although inbound sand/gravel was identified as a potential business opportunity for the HRPD, the projected tonnage increase does not warrant infrastructure investment at this time. An additional truck scale/scale house is also shown near the proposed salt storage structure to accommodate the additional site throughput.

Similar to the Sunrise FS site, these ADM South site potential improvements are intended to show capabilities only, and they are only recommended if warranted by demand. Further grain and/or liquid fertilizer storage capacity expansion appears to be feasible, although not shown in the Concept Plan.

10.3 Opinions of Probable Construction Cost

An Opinion of Probable Construction Cost (OPCC) was developed for the phased improvements presented in the preceding section. As shown in Table 46, the subtotal for the proposed Sunrise FS Phase 1 improvements, including engineering, permitting, and surveying, is about $7.9M. The majority of this cost is related to the dry fertilizer storage expansion, estimated at about $6.8M. As stated previously, this expansion is envisioned to duplicate/double the existing storage capacity, which is estimated to be about 21,000 tons. However, considering the planning-level design detail and a multitude of unknown factors related to site conditions, material acquisition, etc., a contingency of 35% was added to the subtotal. The total OPCC for the potential Phase 1 improvements at Sunrise FS, with the contingency added, is about $10.6M.

Table 46 – OPCC for Sunrise FS Phase 1

QTY.	UNIT	DESCRIPTION	UNIT COST	TOTAL COST
1	LS	Engineering/Permitting/Surveying	8%	$581,559
1	LS	Mobilization/Demobilization	5%	$346,166
1	EA	Dry Fertilizer Storage Expansion (approx. 21k tons)	$6,800,000	$6,800,000
6,166	SY	Truck Parking/Staging Lot (aggregate)	$20	$123,320
			SUBTOTAL:	$7,851,045
1	EA	Contingency	35%	$2,747,866
			TOTAL:	$10,598,911

NOTES: 2023 Dollars; OPCC does not include site acquisition or similar property control mechanism.

An OPCC for the Sunrise FS Phase 2 potential improvements is shown in Table 47. As indicated, the majority of the cost is related to the dock structure, dolphin structures, and conveyor system, which combine for a total of about $3.4M. With a 35% contingency added, the total OPCC for the potential Phase 2 improvements at Sunrise FS is about $5.2M.

Table 47 – OPCC for Sunrise FS Phase 2

QTY.	UNIT	DESCRIPTION	UNIT COST	TOTAL COST
1	LS	Engineering/Permitting/Surveying	8%	$285,835
1	LS	Mobilization/Demobilization	5%	$170,140
1	EA	Dock Structure	$2,000,000	$2,000,000
2	EA	Dolphin Structures	$220,000	$440,000
332	LF	Conveyor System	$2,900	$962,800
			SUBTOTAL:	$3,858,775
	LS	Contingency	35%	$1,350,571
			TOTAL:	$5,209,347

NOTES: 2023 Dollars; OPCC does not include site acquisition or similar property control mechanism.

An OPCC for the ADM South Phase 1 potential improvements is shown in Table 48. As shown, the majority of the cost is related to demolition of the old dock structure and construction of the new dock structure and dolphin structures, which combine for a total of about $2.2M. With a 35% contingency added, the total OPCC for the potential Phase 1 improvements at ADM South is about $3.4M.

Table 48 – OPCC for ADM South Phase 1

QTY.	UNIT	DESCRIPTION	UNIT COST	TOTAL COST
1	LS	Engineering/Permitting/Surveying	8%	$185,220
1	LS	Mobilization/Demobilization	5%	$110,250
1	EA	Dock Structure Demolition	$365,000	$365,000
1	EA	Dock Structure	$1,400,000	$1,400,000
2	EA	Dolphin Structures	$220,000	$440,000
			SUBTOTAL:	$2,500,470
1	LS	Contingency	35%	$875,165
			TOTAL:	$3,375,635

NOTES: 2023 Dollars; OPCC does not include site acquisition or similar property control mechanism.

Lastly, an OPCC for the ADM South Phase 2 potential improvements is shown in Table 49. As indicated, the majority of the cost is related to construction of the fabric-roofed structure, which is about $450k. With a 35% contingency added, the total OPCC for the potential Phase 2 improvements at ADM South is about $1M.

Table 49 – OPCC for ADM South Phase 2

QTY.	UNIT	DESCRIPTION	UNIT COST	TOTAL COST
1	LS	Engineering/Permitting/Surveying	8%	$53,696
1	LS	Mobilization/Demobilization	5%	$31,962
1	EA	Fabric-Roofed Structure (approx. 5,500 SF)	$450,000	$450,000
9,462	SY	Laydown Area (aggregate)	$20	$189,240
			SUBTOTAL:	$724,898
1	LS	Contingency	35%	$253,714
			TOTAL:	$978,613

NOTES: 2023 Dollars; OPCC does not include site acquisition or similar property control mechanism.

10.4 Traffic Projections & Analysis

Freight activity forecasts were provided in Section 10.1, and a summary of potential annual barge and truck activity was provided in Table 45. Traffic impact on the Havana area roadways associated with the potential/additional freight activity is anticipated to be minimal. To quantify the potential traffic impact, the combined high estimate of inbound and outbound equivalent trucks in Table 45 was used as a worst-case scenario. The mathematical analysis and assumptions are as follows:

$$1{,}791\ trucks\ inbound + 5{,}460\ trucks\ outbound = \ 7{,}251\ trucks\ annually$$

As indicated in Section 10.1, this truck traffic is anticipated to be distributed over much of the year based on the commodity (dry fertilizer in the Spring, road salt in the Fall, and aggregates year-round except possibly Winter). For this analysis, Hanson assumed that all of this truck traffic will occur during a 9-month period (Spring, Summer, and Fall). Applying the above annual truck traffic to the projected 9-month period:

$$\frac{7{,}251\ trucks/yr}{9\ operational\ months} = 805\ trucks/operational\ month$$

Assuming only weekday operations, 12 hours per workday:

$$\frac{805\ trucks/month}{20\ workdays/month} = 40\ trucks/workday \times \frac{1\ workday}{12\ hrs} = 3\ trucks/hr$$

As shown, the potential impact to Havana area roadways due to the potential additional freight activity is anticipated to be about 40 trucks per workday, which equates to about 3 trucks per hour or 1 truck every 20 minutes during the 9-month period of operations.

For reference, the Annual Average Daily Traffic (AADT) volume on IL 78 near the Sunrise FS and ADM South facilities in 2021 was 2,850 vehicles, with about 12% of that representing truck traffic (per IDOT's "Getting Around Illinois" website). Adding 40 trucks per day would only represent about a 1% increase in traffic volume on IL 78 in this area.

Employment by transload facilities is relatively low, so traffic associated with additional employees at the Sunrise FS and ADM South facilities is also anticipated to be minimal. Additional information regarding potential job creation is provided in Section 11.2.

11. Economic Overview

This section provides a high-level overview of potential revenue opportunities, job and economic growth opportunities, and capital improvement planning related to the potential additional development at the Sunrise FS and AMD South sites summarized in Section 10.2. Opinions of probable construction cost (OPCC's) for said potential development were provided in Section 10.3.

11.1 Township and HRPD Revenue Opportunities

Potential additional development at the Sunrise FS and ADM South sites may generate revenue for both the Havana Township and the HRPD. An increase in Township revenue would primarily be in the form of taxes, both direct and indirect.

Direct taxes typically consist of property taxes and sales taxes. Most public port authorities/districts, including those in Illinois, are exempt from paying property taxes and sales taxes. However, tenants leasing port-owned properties are required to pay a leasehold tax in lieu of property taxes, and they are not exempt from paying sales taxes. Thus, a tenant on property owned by the HRPD would generate revenue for the Havana Township in the form of leasehold taxes and sales taxes.

Similarly, indirect taxes typically consist of property taxes, sales taxes, fuel taxes, etc. that would be paid by employees and users of the facilities. For example, if the increased tonnage throughput warrants a facility hiring additional employees and those employees relocate to the Havana Township, said employees' property taxes will generate revenue for the Township. And whether or not said employees relocate to the Havana Township, they are likely to purchase food, fuel, and/or similar products while in Havana, which would also generate tax revenue for the Township.

In general, public port districts are not profit driven. Rather, they seek sufficient revenue to allow for maintenance of existing infrastructure and construction of new infrastructure when needed. If the port district has staff, revenue should also be sufficient to pay typical employee-related expenses (wages, benefits, payroll taxes, etc.).

Most public port districts are "landlord ports," where they own property that is leased to tenants. Under this model, port districts often pay for the construction and, sometimes, maintenance of infrastructure on the property, but other property maintenance/improvements are often the fiscal responsibility of the lessee. Lease agreements vary with regard to ownership of improvements upon lease termination.

The "landlord port" operational model is recommended for the HRPD, particularly considering the HRPD has no staff (beyond volunteer Board members) at this time. Under this model, port district revenue is generated through tenant lease payments and possibly throughput charges (a charge for each ton or bushel that passes over the dock, for a river terminal example). Hanson recommends that the HRPD focus on lease revenue over that for commodity throughput, since this approach provides for a more consistent revenue stream that is not impacted by commodity volume fluctuations. Note, public port districts in Illinois are exempt from paying income/revenue taxes. Recent (2023) Hanson research indicates lease rates could range from $1,000 per acre per year to $10,000 per acre per year for public port district properties, depending on a multitude of factors.

11.2 Community Job and Economic Growth Opportunities

The expenditure of public-sector dollars by the HRPD to develop new and/or expand existing freight capabilities at the Sunrise FS and/or ADM South sites will be expected to have a positive impact on Havana area jobs and the local economy.

Several temporary jobs will be created during the construction of any proposed infrastructure improvements (i.e., new and/or expanded capabilities). After any needed facility expansions and/or improvements have been implemented, a slow but steady increase in permanent jobs can be expected as the "new" tonnage detailed herein begins moving through one or both of the existing facilities, taking advantage of expanded capabilities. Similarly, a small jump in permanent jobs can be expected as new freight transloading capabilities come online (the transloading of aggregates from truck to barge, for example, since this commodity/movement is not currently done at either site).

From an overall permanent job growth perspective, it is unfortunate that most freight transload facilities are efficient operations, so they do not typically require a large workforce. Thus, permanent job growth associated with the potential increased tonnage moving through the Sunrise FS and ADM South facilities is expected to be on the order of 5 to 15 jobs initially.

Due to the relatively small number of new permanent jobs anticipated as a result of the new and/or expanded transloading capabilities, the initial economic growth associated with the potential development is anticipated to be relatively minimal. Some direct economic impacts are likely to be realized through local taxes from business spending on supplies and taxes on employee wages. Similarly, indirect economic impacts are likely to be realized through worker spending on basic necessities, such as groceries and fuel. Economic growth associated with these indirect impacts could be further enhanced if new workers relocate to the Havana Township, as this would induce additional tax revenue.

11.3 Capital Improvement Planning

The initial capital investment required to implement the proposed infrastructure improvements will depend on a multitude of internal and external factors. It is unknown at this time and beyond the scope of this project to conduct the outreach necessary to determine which of the potential HRPD business opportunities (previously summarized in Sections 4.10, 8.3, and 8.4) is most likely to occur first. As stated in Section 10.2, neither Hanson nor the HRPD have discussed potential improvements at the Sunrise FS or ADM South sites with their respective owners. So, the priorities, preferences, etc. of the existing terminal owners are currently unknown. Accordingly, the Concept Plans were phased in a logical manner, but outreach with specific stakeholders will be required to determine the appropriate initial capital investment amounts, timing, and schedules.

Similar to the initial capital investment, quantifying the anticipated operating expenditures is not feasible at this time. However, assuming the HRPD elects to proceed with development of new and/or expanded transload capabilities under the "landlord port" operational model described in Section 11.1 (i.e., the HRPD acquires property), operating expenditures are anticipated to be relatively fixed and minimal. Potential operating expenses under this model consist of:

- Staff Payroll (the HRPD would likely need to hire an executive director/administrator and possibly an administrative assistant, at least on a part-time basis, to manage operations)
- Payroll Taxes (Medicare, Social Security, FICA, etc.)
- Insurance (health insurance for staff and property insurance for any acquired property)
- Office Space/Supplies
- Other potential operating expenditures are related to property and infrastructure maintenance, if not imposed on the tenant through a lease agreement.

- To be fiscally sustainable, the HRPD should aim for a minimum 10% return on investments (ROI), which would support the anticipated operating expenditures and provide a revenue source for grant matching funds.

Another significant factor in potential transload facility development and/or expansion is funding availability. The primary existing source of HRPD revenue is through the operation of the Havana Regional Airport. Hanson understands this revenue stream is generally sufficient to fund facility maintenance, but it is not sufficient to fund major capital improvements at the airport. Accordingly, airport revenue would likely not be sufficient to fund major capital improvements at a river terminal site. One or more of the funding options summarized below may facilitate expanded and/or new development at the Sunrise FS or ADM South sites.

- Grants (see additional information below).
- Joint venture or public/private partnership (P3).
- Bond financing or low-interest loans.
- Partnership with a local/regional economic development organization, such as the Greater Peoria Economic Development Council.
- Local funding, such as the City of Havana, Mason County, Fulton County, and/or a chamber of commerce.

The HRPD is not likely to obtain grants for infrastructure improvement funding on property that is not owned or otherwise controlled by the HRPD. This is yet another reason for the HRPD to pursue the "landlord port" operational model, if possible. Below is an overview of grants that the HRPD may consider pursuing to fund infrastructure improvements. Note, other grants/funds may be available/ applicable.

- Federal Funding
    - Port Infrastructure Development Program (PIDP); US Department of Transportation (USDOT); this program is intended for "projects that will improve the safety, efficiency, or reliability of the movement of goods into, out of, around, or within a port."
    - Rebuilding American Infrastructure with Sustainability and Equity (RAISE, formerly BUILD and TIGER); USDOT; this program is intended for "for surface transportation infrastructure projects that will improve: safety; environmental sustainability; quality of life; mobility and community connectivity; economic competitiveness and opportunity including tourism; state of good repair; partnership and collaboration; and innovation."
    - US Marine Highway Program; USDOT; this program is intended to fund projects that expand usage of navigable waterways.
    - Thriving Communities Program; USDOT; this program is intended for "planning and development of transportation and community revitalization activities" in disadvantaged communities.
    - Congestion Mitigation and Air Quality Improvement Program (CMAQ); USDOT; this program is intended for transportation projects that result in emissions reductions.

  - Diesel Emissions Reduction Act (DERA); US Environmental Protection Agency (USEPA); this program "funds grants and rebates that protect human health and improve air quality by reducing harmful emissions from diesel engines."

- State Funding
  - Illinois Port Facilities Capital Investment Grant Program; IDOT; this program is intended to fund capital improvements at Illinois public ports.
  - Illinois Competitive Freight Program; IDOT; this program "aims to improve the mobility of freight throughout the State of Illinois" and "address one or more goal areas which include safety, reliability, system enhancements, operational needs, truck parking, modal connectivity, and mode shift."
  - Statewide Planning & Research (SPR) Funds Annual Program; IDOT; this program is intended for transportation-related planning and research activities (this is the funding source of the subject Port Market Analysis & Master Plan project).

12. Risk Management Overview

Any project involving property acquisition or significant capital improvements will entail a certain amount of risk. Because the potential development of a new and/or expanded transload facility is in the early planning stages, quantifying the various risks involved is not feasible at this time. However, the primary anticipated risks are qualitatively summarized below, along with suggestions to help minimize these risks.

Project Funding – Without grants, a partnership, bond financing, and/or some other significant revenue stream, the HRPD is not likely to have sufficient funds for property acquisition and/or infrastructure development. For this reason, project funding likely represents the biggest initial and sustained risk to initial and overall project success.

Property Ownership – As noted in Section 11.3, the HRPD is not likely to obtain grants for infrastructure improvements on property that is not owned or otherwise controlled by the HRPD. For that reason, establishment of a business relationship in the form of a joint venture, P3, or similar mechanism that results in HRPD control of the property will be critical. Without this property control, obtaining project funding will be challenging.

Another potential solution to the property ownership issue may be a “purchase/lease-back” scenario, where the HRPD purchases property from Sunrise FS and/or ADM and leases the property back to the respective current owner to continue (and expand) operations. As implied in Section 11.1, a lessee on HRPD-owned property would be required to pay leasehold taxes to the State. If this leasehold tax rate is lower than the current property tax rate, this savings could incentivize Sunrise FS and/or AMD to pursue a “purchase/lease-back” scenario with the HRPD. Additionally, a “purchase/lease-back" would provide the property seller with a sizeable influx of capital now, in exchange for (likely) higher future operating costs. We are aware of larger companies executing such arrangements, including Dow Chemical selling their rail and port assets to Watco Companies, a shortline railroad and terminal operating company (https://www.railwayage.com/financeleasing/watco-to-acquire-dows-rail-assets-for-310mm/).

Environmental Permitting – Depending on the proposed infrastructure improvement (primarily in-river versus on-land improvements), several federal, state, and local agencies will be involved in the permitting process. Issuance of permits is never guaranteed, as unexpected issues can arise during the agency review process. Further, depending on multiple factors, regulatory reviews can extend over a significant period of time. However, consultation with the various environmental permitting agencies early in the project development timeline can minimize the risk of unexpected permitting issues and related project delays.

Business Opportunities – The potential business opportunities identified herein were primarily based on freight data projections obtained from a reputable source, the freight facility inventory, and Hanson’s general inland river industry knowledge. Hanson provides no guarantee, implied or otherwise, that the identified business opportunities will come to fruition. However, the information provided in this report can guide initial HRPD outreach to businesses currently involved in the movement of these commodities. This outreach could establish the foundation for a potential business relationship and facilitate development/enhancement of the identified freight movements.

Community Support – Local support will be important for any new freight facility development, particularly in a relatively small community such as Havana. Considering river terminals have been

present along the Havana riverfront for decades, expansion and/or new development at, or immediately adjacent to, existing river terminal sites is not expected to generate push-back from the community. Further, with the closure of the power plant in 2019, the community is likely to support job creation efforts by the HRPD.

13. Conclusions & Recommendations

The HRPD is seeking to accommodate projected increases in freight volumes and facilitate economic growth in the Havana region through the potential expansion of existing freight facilities or development of new freight facilities. To accomplish these overarching goals, this project had the following primary objectives:

- Understand current/anticipated regional freight transportation market conditions.
- Determine current/anticipated needs within the regional freight transportation system.
- Identify potential freight and economic development opportunities.
- Identify site(s) within the Havana Township for potential freight facility expansion or new development.
- Develop an appropriate site master plan.

These primary objectives were achieved through the tasks summarized herein. Based on output from those tasks, along with additional pertinent information and analyses, several potential business opportunities were identified. Potential business opportunities primarily involve accommodating projected increases in freight tonnage, which will necessitate development of increased capacity for commodities that already move through Havana and/or new infrastructure to support commodities that would be “new” to the Havana riverfront. The potential business opportunities were summarized in Section 4.10 and further refined in Sections 8.3 and 8.4 as transload opportunities and modal shift opportunities, respectively. Further, these potential business opportunities provided the design basis for the Concept Plans presented in Section 10.2.

Collectively, the information presented in this Port Market Analysis & Master Plan Report establishes the foundation for potential freight facility expansion and/or development within the Havana Township. Successful freight facility expansion/development by the HRPD appears to be feasible. However, the development proposed in the Concept Plans to accommodate the potential business opportunities identified herein should not be interpreted as a “build it and they will come” recommendation. Considerable additional efforts will be required to fully realize the goals of this project. The following summarizes the recommended next steps for the HRPD to advance their stated goals.

- Initiate outreach with Sunrise FS and/or ADM. These existing facilities were identified in Section 9 as the best options within the Havana Township for new and/or expanded freight capabilities. Thus, initial discussions should focus on the potential establishment of a business relationship between HRPD and Sunrise FS and/or ADM. The HRPD’s lack of property ownership needs to be addressed in the initial discussions, as well as potential solutions that are mutually beneficial. The “purchase/ lease-back” scenario presented in Section 12 could be one potential solution.
- Continue outreach with Jack Tanner Towing. Hanson initiated contact with Jack Tanner Towing during the freight stakeholder outreach portion of this project. They are the only barge towing company currently operating in Havana, so the success of any barge freight facility expansion/ development in Havana will likely be dependent on the support of Jack Tanner Towing. Hanson’s contact with Jack Tanner Towing during this project indicated that they are interested in accommodating additional barge tonnage.
- Initiate outreach with companies that ship/receive the “business opportunity” commodities. The transportation of bulk commodities often involves long-term contracts. Outreach with companies

that ship/receive these "business opportunity" commodities will allow the HRPD to gauge the interest of these companies in utilizing new or expanded freight capabilities in Havana. If interested, it will also allow those companies to begin planning for changes in commodity transportation. More definitive interest from these companies would give HRPD greater confidence and bolster the development of the HRPD's business case to expend additional funds and advance facility planning. Without their interest/support, establishing the HRPD's business case to advance the project will be challenging.

- Initiate coordination/involvement with industry partners/organizations. The HRPD should initiate coordination with the recently established Illinois Waterway Ports Commission, which has jurisdiction over the HRPD (see Section 5.4). The HRPD should also consider involvement with industry organizations on the state and national level, such as the Illinois Port Authority Association (IPAA) and Inland Rivers Ports & Terminals (IRPT), respectively. This coordination and involvement will provide opportunities for the HRPD to interact with others involved in freight transportation, raise awareness regarding the HRPD's goals, and may assist in establishing unexpected business relationships and/or freight opportunities.
- Pursue funding to support additional planning efforts. As conveyed in Section 11.3, the HRPD currently generates limited revenue. Advancing the HRPD's overarching goals will require funding, and additional planning efforts are warranted. Further, Hanson has observed that projects with advanced planning efforts already completed are more likely to be awarded other/additional grant funding. For some grants, this current Port Market Analysis & Master Plan effort may be considered only the minimum required. Accordingly, recommended additional planning efforts include those listed below:
    - Strategic Plan – The master planning efforts presented herein focus on infrastructure, whereas strategic planning is goal based. In other words, strategic planning focuses on the goals, vision, objectives, etc., related to freight facility development; a master plan focuses on how commodities are physically moved at the freight facility. A strategic plan is considered a roadmap for planning and development, creating a long-term vision and providing a means of getting stakeholders on the same path forward. Development of a strategic plan may increase the likelihood of the HRPD obtaining other/additional grants in the future, particularly the larger grants needed for infrastructure construction.
    - Competitive Analysis – Hanson is aware of several other public port districts located along the Illinois River in greater central Illinois that are pursuing freight facility development. Although it is not always feasible, the capabilities in one port district *should* complement the capabilities in the other port districts, rather than competing. Regardless, being aware of the strategic position of other port districts (compared to HRPD) related to potential freight facility development is expected to better position the HRPD for success. A competitive analysis should be included in the development of a strategic plan.
    - Refine Concept Plans – The Concept Plans presented in Section 10.2 were developed based on the information available to Hanson at this time and using best practices related to designing facilities for efficient operations. As previously stated, neither Sunrise FS nor ADM were involved in the Concept Plan development. Collaboration with either/both entities will be necessary to advance freight facility expansion/development, and refinement of the Concept Plans is likely to be an important part of the process.

This Port Market Analysis & Master Plan project was an important first step for the HRPD in achieving their overarching goals – to accommodate projected increases in freight volumes and facilitate

economic growth in the Havana region. The next steps summarized above are anticipated to better position the HRPD for success in achieving those goals.