

ECIA PORT EXPANSION STUDY

Technical Memo #3 (Tasks 5-6 Long Range Elements)

DRAFT AUGUST 27, 2020
FINALIZED

Prepared for the:
East Central Intergovernmental Association

Prepared by:
WSP, Inc.
in association with:
CPCS Transcom, Inc.
John Martin Associates
Freight Insights, LLC





CONTENTS

1	INTRODUCTION	5
1.1	About the ECIA Port Expansion Study	5
1.2	Overall Workplan	5
1.3	About This Technical Memo.....	7
2	REVIEW OF MARKET OPPORTUNITIES, CAPACITY AND PROGRAM RECOMMENDATIONS, AND NEAR-TERM PROJECTS	8
2.1	Market Opportunities	8
2.2	Capacity Analysis and Program Recommendations	10
2.3	Near-Term Project Recommendations	13
2.4	Benefit-Cost Analysis and Evaluation	17
3	LONG-TERM PROJECT RECOMMENDATIONS AND EVALUATION.....	19
3.1	Long-Term Opportunities (2025-2045)	19
3.2	Recommendations for Gavilon	19
3.3	Recommendations for Logistics Park Dubuque	23
3.4	Summary Evaluation.....	26
3.5	Conclusions And Next Steps	27



LIST OF FIGURES

Figure 1. Spectrum of Commodity Competitiveness	8
Figure 2. Recommended Near-Term Improvements, Gavilon (Showing Updated Leasehold Boundaries).....	14
Figure 3. Recommended Near-Term Improvements, Logistics Park Dubuque	16
Figure 4. Proposed Long-Term Development Plan, Gavilon (Dove Harbor and Salt Harbor).....	21
Figure 5. Proposed Long-Term Development Plan, Gavilon (Seventh Street).....	22
Figure 6. Proposed Long-Term Development Plan, Logistics Park Dubuque Access via US 20	24
Figure 7. Proposed Long-Term Development Plan, Logistics Park Dubuque Terminal Facility	25



LIST OF TABLES

Table 1. Summary of ECIA Region Port Commodity Market Forecast (in Tons)	9
Table 2. Logistics Park Dubuque Berth and Storage Capacity Estimates	10
Table 3. Gaviion Berth and Storage Capacity Estimates	11
Table 4. Long-Range Capacity Shortfalls	12
Table 5. Near-Term Project Costs	17
Table 6. Near-Term Project Benefits	18
Table 7. Long-Term Project Benefits - Cargo Capacity	26



1 Introduction

1.1 ABOUT THE ECIA PORT EXPANSION STUDY

The East Central Intergovernmental Association (ECIA), in partnership with the states of Illinois and Iowa, local and regional governments, and local marine terminal operators, is conducting a study of the potential to expand and enhance the physical and operational capabilities of marine freight terminals in Dubuque, IA and East Dubuque, IL. The ECIA Port Expansion Study is intended to:

- Provide more multi-modal transportation options for regional shippers to connect them to the international and domestic transportation system and associated worldwide markets;
- Serve as a catalyst for economic development in Iowa, Illinois and the local region;
- Evaluate potential market demand for freight to move via the Mississippi River from existing port facilities;
- Document the primary characteristics required for a successful and sustainable operation, including business logistics, transportation access, infrastructure and other factors;
- Identify port expansion opportunities to capture demand, generate economic benefits and achieve the overall goals of the study and its stakeholders;
- Position improvement projects for grant funding through Benefit-Cost Analysis; and
- Provide input for regional and local plans by the Dubuque Metropolitan Area Transportation Study (DMATS), ECIA and others.

1.2 OVERALL WORKPLAN

The study is being conducted over a 14-month period, and consists of eight primary task areas, summarized below.

Task 1. Stakeholder Engagement

- Objective: Establish and implement a program for two-way communication among and between study managers, stakeholders, and the consultant team, to best inform the study process and support consensus findings.

Task 2a. Data Collection / Inventory

- Objectives:



- Identify the most “mission critical” information for the region’s port assets, establish the number of port locations to be addressed, collect the relevant data and summarize the key information in a simple and useful framework.
- Identify the most “mission critical” information for the region’s highway and rail infrastructure linking port locations and their existing/potential customers.
- Identify the most “mission critical” data for regional land use and industry locations, focusing on land uses and development patterns that directly support, or would be supported by, port activity.

Task 3. Market Analysis

- Objective: Document the primary characteristics and components of current market demand by water and the growth potential for commodities that could be served by study area ports in the future, through a 2040 horizon.

Task 4. Capacity Analysis and Program Level Recommendations

- Objective: Match available port, access and service capacity to potential demand, to identify shortfalls which represent opportunities for improved port facilities and services in the year 2025 and 2040 timeframes.

Task 5. Needs Assessment by Port Location

- Objective: Develop location-specific port improvement recommendations.

Task 6. Study Recommendations

- Objective: Evaluate the benefits and costs of the proposed port location-level improvement programs.

Task 7. Final Report and Documentation

- Objectives:
 - Produce Final Report including Executive Summary and Technical Appendices
 - Produce stand-alone Executive Summary
 - Produce confidential Marketing Plan for each port area



1.3 ABOUT THIS TECHNICAL MEMO

All workplan elements have been addressed, but the order of completion was changed so the study could inform two discretionary grant applications for port improvement projects in May 2018, one under the BUILD program and one under the PIDP program. Initially, work on Task 1 and 2 was completed and documented in the study's Technical Memorandum #1. Subsequently, work on Tasks 3-6 covering near-term project recommendations related to the grant applications was completed and documented in Technical Memorandum #2.

This Technical Memorandum #3 addresses the remaining work in Tasks 5 and 6 related to long-term project recommendations, which were not part of the discretionary grant development process. For reference, it includes a brief introductory summary of work in previous tasks that directly supports the long-term recommendations.



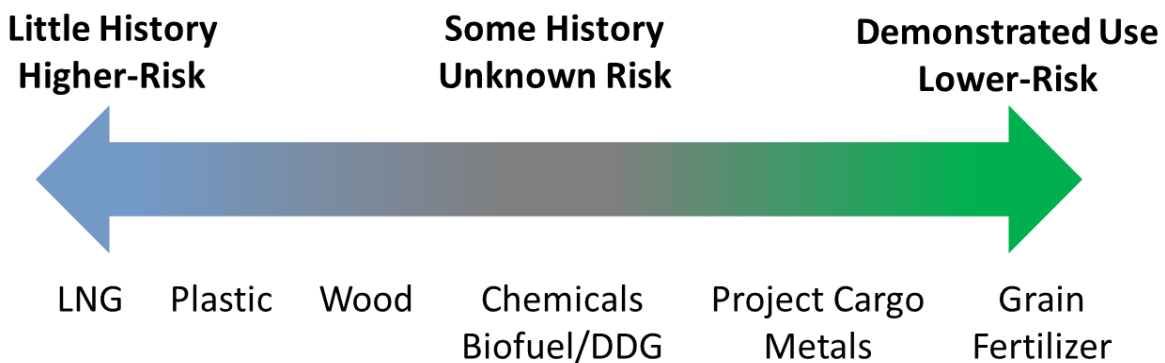
2 Review of Market Opportunities, Capacity and Program Recommendations, and Near-Term Projects

2.1 MARKET OPPORTUNITIES

Task 2 concluded with a synthesis analysis of market opportunities by team member CPCS Transcom. The competitive opportunities for each commodity are varied based on the number and location of competitor terminals, the consumption or demand for materials in the market area, and the previous history of materials' movement on the Mississippi River. Based on these factors, the commodities studied can be arranged on a spectrum of likely competitiveness, shown in Figure 1. Commodities with little to no history of movement on the Mississippi River are shown on the left and are considered more speculative or "higher risk" for potential barge service. In comparison, commodities regularly moved on the Mississippi River are shown on the right and are considered "lower risk" due to their demonstrated history of shipment on the River.

In general, bulk materials related to agriculture and heavy manufacturing (such as grain, fertilizer, and metals) already move on the river, and therefore are considered low-risk commodities to attract to a terminal. However, lighter, higher-value manufacturing inputs such as wood and plastic do not move on the river right now, and demand may be too small to support barge-sized shipments of these commodities. In the absence of current shipments and potential demand, trying to attract these commodities is considered a "higher-risk" strategy.

Figure 1. Spectrum of Commodity Competitiveness





The expanded Task 3 market analysis was completed by team member Martin Associates; it substantially confirms the Task 2 platform work, provides additional detail at the commodity/opportunity level, and concludes with detailed commodity-level forecasts for the region’s ports at 5-year increments through 2045. Note that the forecasts are “unconstrained” in that they show the amount of freight that would logically prefer to use ECIA region ports compared to competing facilities, assuming sufficient capacity and handling capability is available at ECIA ports. In cases where there is a wide variation between low and high forecasts, this reflects cases where there is upside potential but also significant uncertainty; in cases where there is a low variation, this indicates a high degree of confidence.

Table 1. Summary of ECIA Region Port Commodity Market Forecast (in Tons)

	Current (2019)	Low Forecast (2045)	High Forecast (2045)
Soybeans	704,472	912,471	1,178,876
Fertilizer	644,542	1,078,588	1,400,096
Salt	564,542	564,542	564,542
Corn	439,097	568,744	767,854
Steel	37,500	55,464	69,199
Corn Meal	21,526	27,882	27,882
Dry Distillers Grains	21,114	35,333	650,299
Cotton	18,642	18,642	18,642
Soybean Meal	0	0	196,088
Resins	0	0	68.672
Lumber	0	0	9,429



2.2 CAPACITY ANALYSIS AND PROGRAM RECOMMENDATIONS

WSP’s “PRIME” model was used to estimate the capacity of the region’s port facilities, by looking at the various components of cargo throughput – berths, loading/unloading equipment, open and covered storage, truck transfer, and rail transfer – individually and as they are linked to accomplish multi-modal movement of cargo. As inputs, PRIME utilizes physical attribute data (number of berths, acres, etc.) and performance data (dwell time, transfer speed, etc.), to estimate:

- Berth throughput capacity
- Storage yard throughput capacity
- Truck transfer capacity
- Rail transfer capacity
- Pipeline transfer capacity

The resulting capacity estimates are expressed as “Maximum Practical Capacity” or MPC. MPC is the throughput level a terminal can handle at a sustained rate under normal operating practices (work schedules, equipment deployment, number of employees, etc.). Compared to container terminals, which operate consistently over the entire year, river port operations can be highly variable over a year based on scheduled or unscheduled river closures, shifts of water traffic to rail when necessary, and use of facilities for different commodities at different times of the year. For this analysis, PRIME was customized for seasonality in different commodities.

Table 2. Logistics Park Dubuque Berth and Storage Capacity Estimates

Dock	Cargo	Unit	MPC Throughput Capacities (Numbers in red represent constraining factor)	
			Berth	Storage
Dock 1	Fertilizer	Tons/Year	400,000	281,000
Dock 1	Cottonseed	Tons/Year	100,000	229,000
Dock 2	not in use			
Dock 3	Grain	Bushels/ Yr.	17,857,000	13,750,000
Dock 4	Fertilizer	Tons/Year	840,000	115,000
Dock 4	Salt	Tons/Year	560,000	71,000



Table 3. Gavilon Berth and Storage Capacity Estimates

Dock	Cargo	Unit	Throughput Capacities	
			Berth	Storage Yard
Dock 1	Fertilizer	Tons/Year	485,000	285,000
Dock 1	Steel Rebar	Tons/Year	62,550	4,000
Dock 2	Grain	Bushels/Year	21,473,000	14,927,000
Dock 3	Fertilizer	Tons/Year	625,500	218,000
Dock 3	Steel Rebar	Tons/Year	104,250	18,000
Dock 4	Grain	Bushels/Year	11,170,000	4,535,000
Dock 5	Salt	Tons/Year	293,250	85,000
Dock 5	Dry Corn	Bushels/Year	6,982,000	7,488,000
Dock 6	Fertilizer	Tons/Year	488,750	104,000

Program recommendations were developed based on the following considerations:

- **Future shortfalls in capacity compared to demand.** Based on existing capacity and projected demand, Gavilon and LPD combined will reach their maximum capacity for fertilizers in 2030 and are essentially at capacity for salt and steel today. Without improvements, by 2045 these ports will be able to handle only 71% of fertilizer demand, 27% of salt demand, and 32% of steel demand for the region. Berth capacity is adequate – the constraint is storage, and just over 400,000 square feet of additional storage would be required to fully capture demand. Other commodities such as grain, corn and cottonseed are not projected to experience shortfalls.
- **Imminent loss of existing capacity to handle critical commodities.** Today, both Gavilon and Logistics Park Dubuque face the prospect of losing existing fertilizer capacity in antiquated buildings that need replacement. Instead of running out of fertilizer capacity by 2030 as shown in Table 4, the region would face an immediate shortfall of fertilizer capacity. Additionally, Logistics Park Dubuque faces the potential loss of salt handling capacity, as state regulatory pressures lead to the elimination of open storage piles for salt. The region’s ports are already at capacity for salt, so the loss of LPD capacity would create an immediate deficit.
- **“Opportunity commodities” from the market analysis.** Among the many new commodity market opportunities considered in the study market analysis, probably the most achievable and attractive is agricultural by-products (dried distiller grain, soybean meal, corn gluten meal and pellets). There are known regional shippers who are using more distant ports because of a



lack of facilities in the ECIA region, and these would be likely candidates to anchor this business at local ports.

- **Access improvement opportunities.** There are significant existing rail access deficiencies at Gavilon, significant highway access issues at Logistics Park Dubuque, and opportunities for improvements to highway and rail at both ports to meet trip generation needs.
- **Imbalances between berth and storage capacity.** For fertilizer, salt, and grain, berth capacity is substantially higher than storage capacity. Fertilizer and salt storage improvements could bring these capacities more into balance, taking better advantage of the available marine infrastructure. Grain storage improvements would also lead to improved balance, although the current market forecast does not suggest that existing storage is inadequate to serve current and future market demands.

Table 4. Long-Range Capacity Shortfalls

Commodity	Year Capacity Reached	Capacity/Demand in 2045 Without Improvements	Additional Storage Needed
Fertilizers	2030	71%	25,400 SF
Salt	2020	27%	227,000 SF
Steel	2020	32%	160,000 SF

This suggested the following programmatic development direction:

- **Near-term:** ensure the preservation of existing fertilizer and salt-handling capacity; work to capture identified opportunities in agricultural by-products; and remedy the most pressing regional rail deficiencies. Section 4 lays out a specific development plan and program to accomplish this.
- **Long-term:** look to substantially expand capacity for fertilizer, salt, steel, and other market opportunities; address highway access to Logistics Park Dubuque; and leverage planned roadway improvement adjacent to Gavilon to support future terminal expansion.

Two potential types of near-term projects were specifically considered and not advanced – container on barge service and intermodal truck/rail transfer. The market feasibility and identifiable demand for these services in the ECIA region is small; the required facilities would be expensive to develop and would displace active customers, proven markets, and realistic future opportunities; and ECIA region facilities are not projected to be cost-competitive with other transportation options.

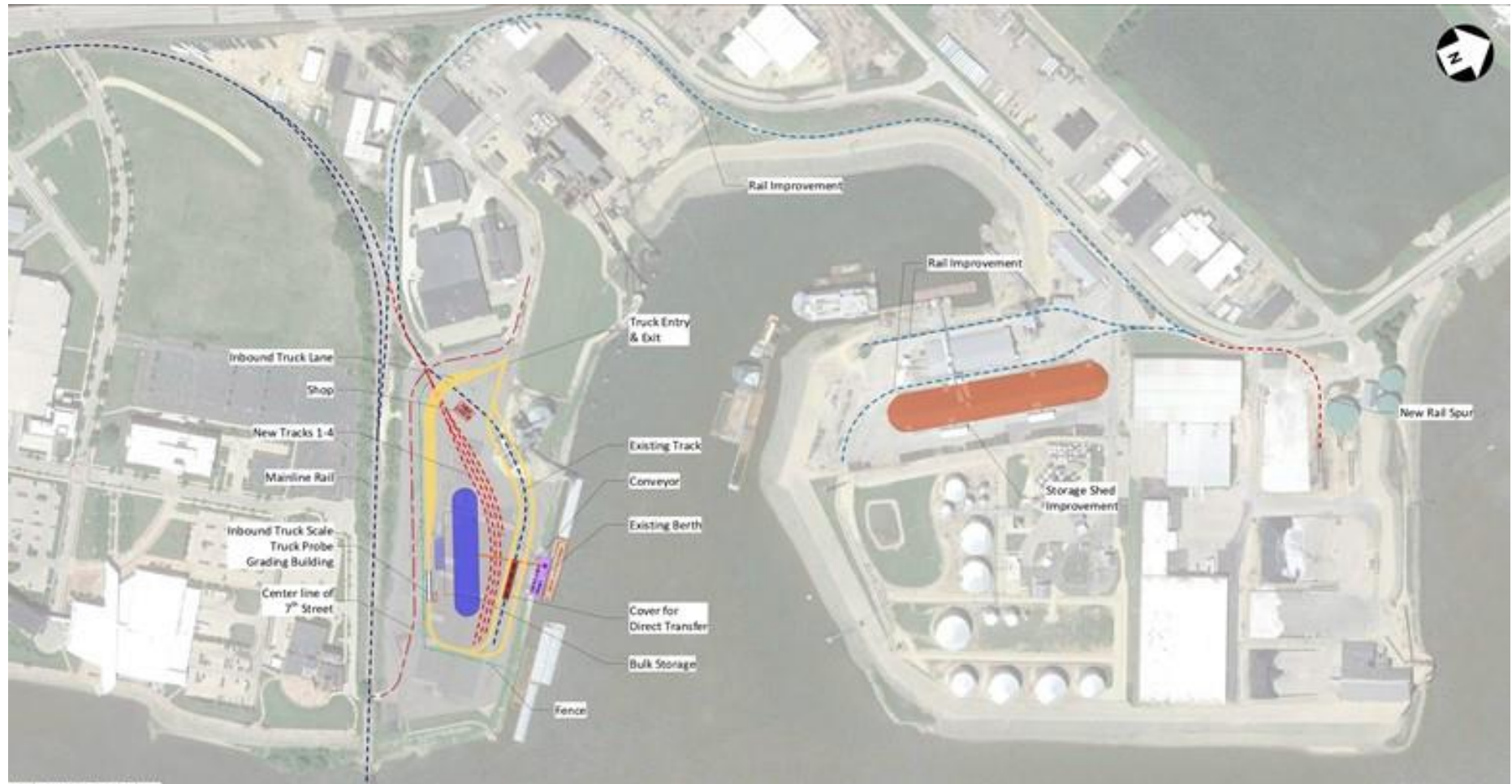
2.3 NEAR-TERM PROJECT RECOMMENDATIONS

Under Task 5, WSP: reviewed the strengths and weaknesses of each port location from the data developed in Task 2 (including marine infrastructure, water depth and navigability, highway and rail access and other relevant factors); worked directly with Gavilon and Logistics Park Dubuque to develop an area-wide improvement program and corresponding projects at each port facility; and created plans and layout diagrams for improvements to marine terminals (addressing salt, fertilizer, and agricultural by-products handling) along with rail access improvements. These projects were included in two discretionary grant applications submitted by ECIA under the BUILD 2020 and PIDP 2020 programs.

Gavilon Projects

- *Replace an older fertilizer storage building with a 20,000-ton capacity shed* – Gavilon is a leading wholesaler of bulk blending fertilizers. Through its seventy-five bulk terminals located on the Mississippi River and in key agriculture growing areas, Gavilon provides crop nutrients to agricultural retailers across the region. A fertilizer storage structure at the 7th Street site in Dubuque is at the end of its useable life. Gavilon would replace this fertilizer warehouse with a 20,000-ton capacity building to enable ongoing operations at the facility.
- *Renovate an existing fertilizer storage shed to increase its capacity by 12,000 tons* – Before wholesale purchase, dry fertilizer is stored at the Dove Harbor site. A fertilizer storage warehouse at Dove Harbor would be expanded by 12,000 tons to accommodate more product on site. This increased capacity will enable Gavilon to handle more commodity shipments.
- *Replace/upgrade inoperable rail track* – The CN railroad connects directly with the Gavilon facility. However, a portion of rail track at the Dove Harbor site is inoperable in its current condition. Replacing and upgrading this track will enable rail service that has been curtailed at the Dove Harbor site, providing multimodal shipment of grain, fertilizer, and steel rebar. CN has provided a letter of support for the project and is working with study partners on design and operating details.
- *Relocate rail track to support direct transfer/transloading of fertilizer and other bulk products from river barge to rail* – Rail track at the 7th Street site will be relocated to accommodate a smaller footprint and maintain the current business structure. This improvement will aid Gavilon in moving product more efficiently from barge to rail.
- *Install new rail equipment, including main line switch, loadout system, and shed* – New rail equipment at the Dove Harbor site is necessary to repair and utilize existing rail infrastructure and expand Gavilon’s multimodal transportation capabilities at the port. The project will support a main line switch from the CN track, a loadout system to enable the loading of fertilizer into rail cars, and a new shed to cover the loadout and reduce emissions.

Figure 2. Recommended Near-Term Improvements, Gavilon (Showing Updated Leasehold Boundaries)

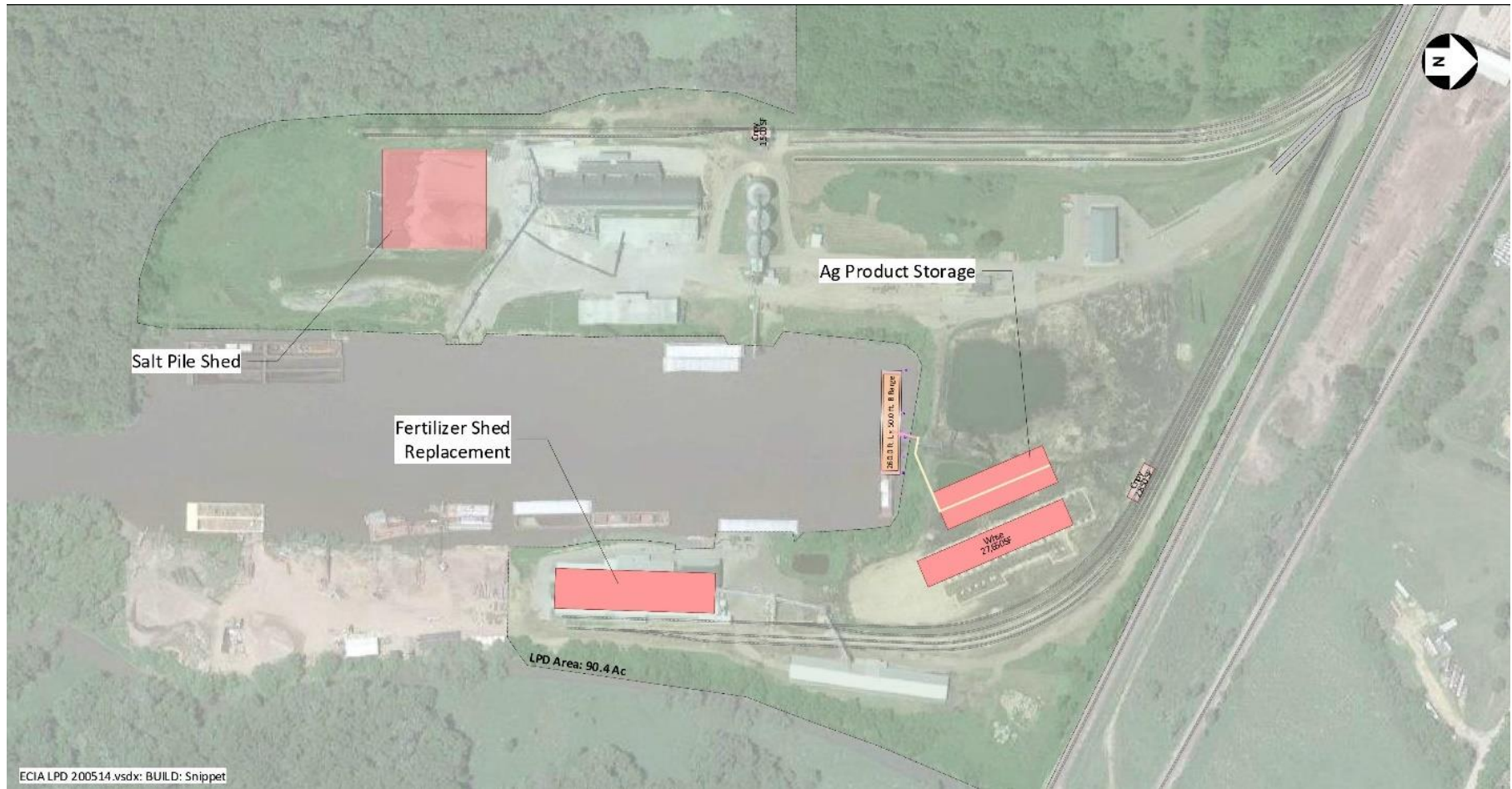




Logistics Park Dubuque Projects

- *Repurpose the coal handling system to transfer “hard to handle” processed grain by-products from rail (and truck) to barge* – The last shipment of coal to the facility occurred in 2015, leaving a sizeable portion of the port idle. The “ECIA Port Expansion Study” identified an opportunity for the Dubuque region to transfer up to 300,00 tons of processed grain by-products (dried distiller grain, soybean meal, corn gluten meal and pellets) from rail to barge annually. Logistics Park Dubuque will make incremental changes and additions to its existing coal system and barge loading infrastructure to capture this market, including weighing improvements, road upgrades, and a storage structure to amass barge load quantities for shipment. When operational, the facility will be able to transfer product to barge at up to 300 tons per hour.
- *Replace 15,100 tons of fertilizer storage buildings that are at the end of their usable life and were built with inefficient handling systems* – Storage sheds built almost 40 years ago were designed to be filled using front-end loaders rather than with conveyors. Carrying product takes significantly longer (14-16 hours versus less than 6 hours). This inefficiency is especially problematic given the seasonal nature of fertilizer. The existing low-profile buildings (16’ tall) also take up a larger footprint than modern storage sheds (30’ or higher). Logistics Park Dubuque will increase storage capacity with larger buildings, enabling the facility to handle more and/or new products. U.S. DOT resources will be leveraged by conveying structures that the port already has in place for other buildings, requiring Logistics Park Dubuque only to make an incremental investment to feed the modern storage structure.
- *Install a new, fixed 250’ x 260’ fabric-covered structure for the facility’s 70,000-ton salt pile* – Every year, approximately 70,000 tons of road salt is sourced to customers including the Iowa and Illinois transportation departments, regional municipalities, counties, and other stakeholders. As required by law, suppliers pay to cover (tarp) the pile at a cost of up to \$70,000 annually. In addition, Logistics Park Dubuque must maintain a stormwater runoff pond to capture salt brine. Not only is the annual tarping an on-going expense, the pond occupies ~1.25 acres of prime waterfront property that could be used to store or transfer other products. Logistics Park Dubuque seeks to cover the salt pile with an economical ClearSpan salt storage structure. This covered, waterproof building will keep rain and snow off piles, eliminating the possibility of salt leaching out and contaminating the surrounding area. Trucks, loaders, and plows can drive inside and easily maneuver throughout, due to the high clearance and lack of internal support columns. Natural ventilation and abundant light that the fabric covers provide also create an atmosphere that keeps moisture and condensation from affecting the quality of the salt.

Figure 3. Recommended Near-Term Improvements, Logistics Park Dubuque





2.4 BENEFIT-COST ANALYSIS AND EVALUATION

Under Task 6, the WSP team prepared a “grant grade” benefit-cost analysis (BCA) consistent with Federal guidance for a program of near-term improvements at Gavilon and Logistics Park Dubuque.

Without the project, the loss of marine terminal capacity and operability will force the proven base of regional freight customers to rely on out-of-region ports. With the recommended program, the region will not only avoid the loss of existing capacity and business, but also position itself for growth, additional market opportunities, and improved rail service.

The total program has a capital cost of \$29.29 million and monetized benefits of \$147.22 million over 30 years, without discounting. With 7% per year discounting, the program has a capital cost of \$20.81 million and monetized benefits of \$40.97 million, producing a net benefit of \$20.16 million and a Benefit-Cost Ratio of 1.97.

Table 5. Near-Term Project Costs

Description	Cost
Rail for 7 th Street and Dove Harbor Connection	\$3,944,020
Dove Harbor Fertilizer Storage/ Loadout	\$3,251,730
7 th Street Fertilizer Storage Replacement	\$11,823,500
Ag Products Handling and Storage	\$5,136,000
Replacement of Existing Fertilizer Storage	\$3,210,000
Cover Existing Open Salt Pile	\$1,926,000
TOTAL	\$29,291,250



Table 6. Near-Term Project Benefits

Undiscounted Benefits	
Transportation Effects	67.2 million truck VMT avoided 1.9 billion rail ton-miles avoided
Safety	1.7 fatal crashes avoided 39.5 injury crashes avoided 94.0 property damage crashes avoided
Good Repair	\$1.6 million in avoided pavement damage savings \$15.9 million in facility operations and maintenance savings
Economic Competitiveness	\$96.3 million in truck and rail operating cost savings
Environmental Protection	12.3 million gallons of fuel consumption avoided 125.343 metric tons of carbon emissions avoided 5.6 metric tons of particulate matter emissions avoided 307.4 metric tons of nitrogen oxide emissions avoided 33.4 tons of volatile organic compound emissions avoided

3 Long-Term Project Recommendations and Evaluation

3.1 LONG-TERM OPPORTUNITIES (2025-2045)

The long-term opportunities for Gavilon and Logistics Park Dubuque focus on capturing proven market demand and positioning for new business opportunities beyond the five-year timeframe of the BUILD/PIDP projects. Conceptual development plans were prepared for each site through the year 2040, in collaboration with the terminal operators and in consultation with other study partners.

3.2 RECOMMENDATIONS FOR GAVILON

For Gavilon, the primary opportunities include:

- Expansion of fertilizer storage capacity on the current leasehold.
- Expansion of salt storage capacity on the current leasehold.
- Expansion of grain storage capacity on the current leasehold.
- Utilization of the new Seventh Street Connector (planned by the City of Dubuque) for truck access.
- Expansion of the current Gavilon leasehold into a portion of the former Alliant Energy Plant, with the development of open storage for steel rebar and the potential for additional open/covered storage for other future commodities, along with reactivation of the existing coal dock for barge transfer; note this is a newly-proposed concept and will require further discussion between the responsible parties, and there are no commitments in place.

The proposed Long-Term Development Plan for the Gavilon terminal includes the following projects in addition to the BUILD/PIDP projects, and is shown on Figure 4 and Figure 5 following.



- Fertilizer Expansion at Dove Harbor:
 - Purpose: Fertilizer storage expansion in Dove Harbor to provide additional capacity.
 - Area/Volume: Volume = 206,000 cu. ft. additional
 - Capacity: ~43,000 tons/year

- Salt at Salt Harbor:
 - Purpose: New open storage and expansion of existing open storage in Salt Harbor to capture identified demand.
 - Area/Volume: Area = ~40,000 sq. ft.
 - Capacity: ~139,000 tons/year

- Liquid Bulk at Salt Harbor:
 - Purpose: To capture liquid bulk commodity as such as Ethanol.
 - Area/Volume: Volume = 396,000 cu. ft.

- Grain Silos at 7th Street
 - Purpose: Provide additional grain storage to supplement existing capacity to meet future grain demand.
 - Area/Volume: Volume = 377,000 cu. ft.
 - Capacity: ~1M tons/year

- Breakbulk (Rebars) at 7th Street:
 - Purpose: Account for loss of steel storage in other areas and provide capacity for flexible future open/covered storage to meet new commodity opportunities, by utilizing a portion of the former Alliant Energy plant.
 - Area/Volume: Area = 3.5 acres
 - Capacity: ~73,000 tons/year
 - Capacity: ~80,000 tons/year

Figure 4. Proposed Long-Term Development Plan, Gavilon (Dove Harbor and Salt Harbor)

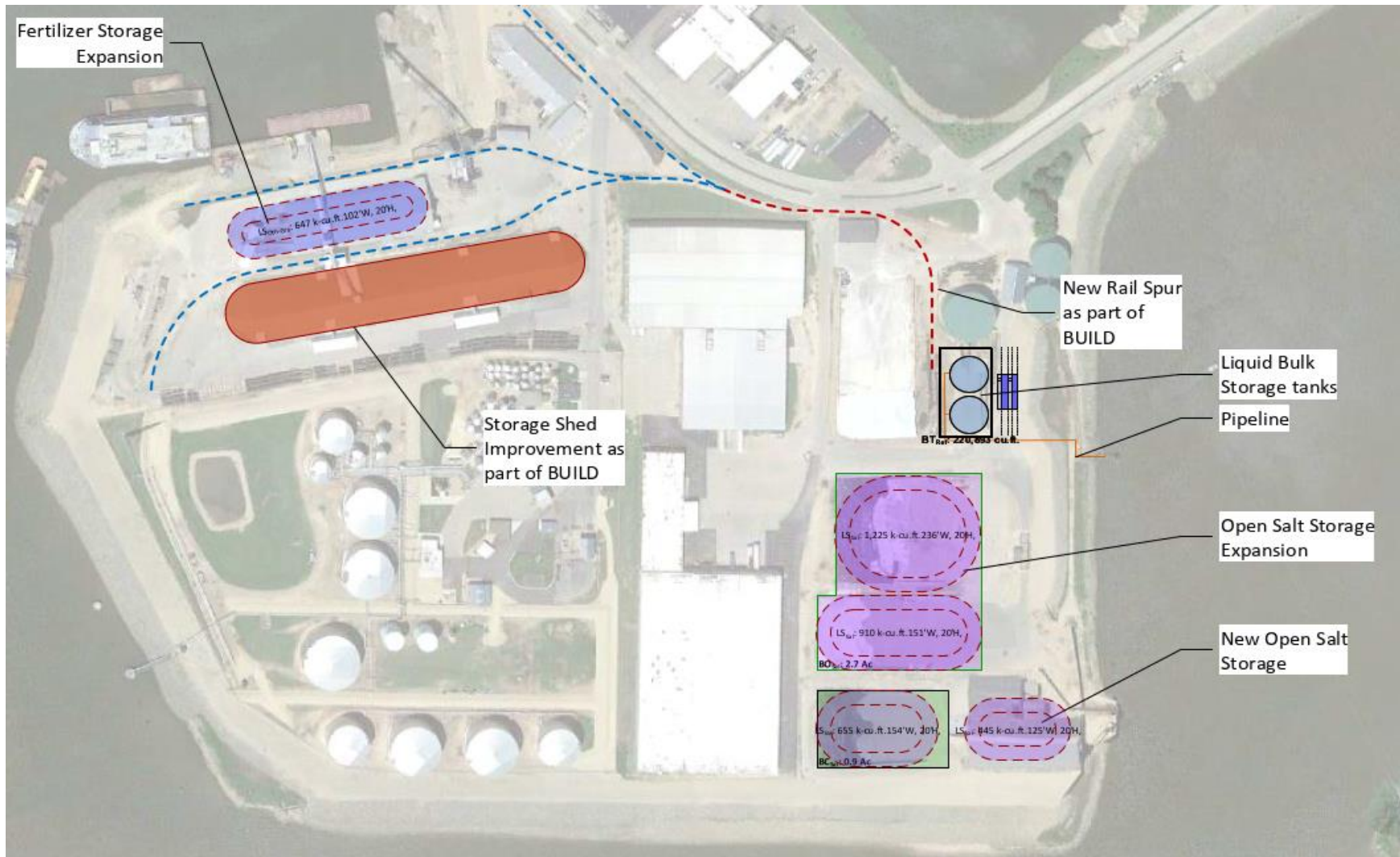
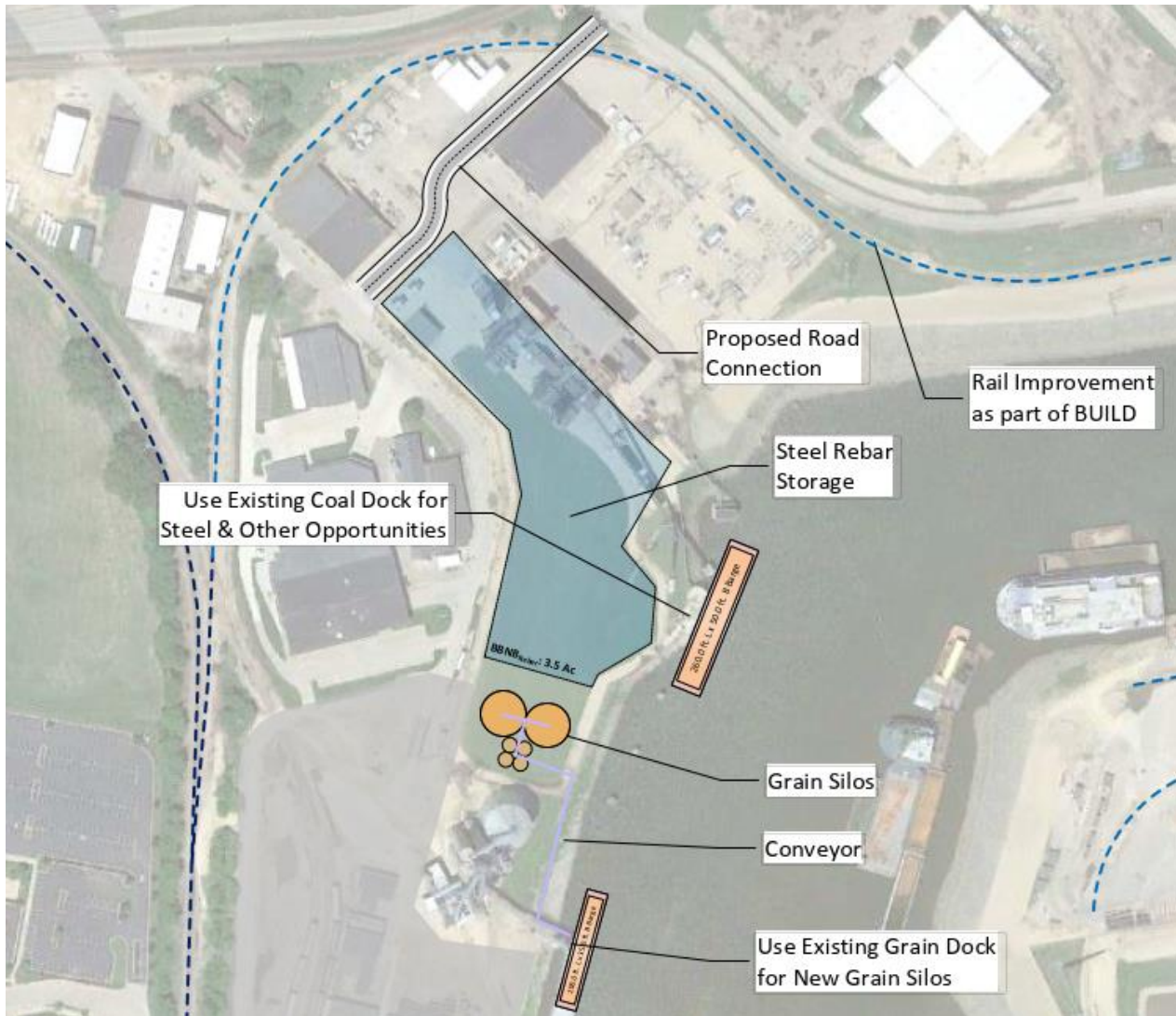


Figure 5. Proposed Long-Term Development Plan, Gavilon (Seventh Street)



3.3 RECOMMENDATIONS FOR LOGISTICS PARK DUBUQUE

For Logistics Park Dubuque, the primary opportunities include:

- Substantial improvement of the US 20 / Barge Terminal Road intersection, which is being designed and implemented by the Illinois Department of Transportation as part of a larger program of safety improvements for the US 20 corridor between East Dubuque and Freeport.
- Expansion of fertilizer storage capacity; expansion of salt storage capacity; and provision of new capacity for opportunity commodities including wood pulp and ethanol, along with a new dock.

The proposed Long-Term Development Plan for Logistics Park Dubuque includes the following projects in addition to the BUILD/PIDP projects, and is shown on Figure 6 and Figure 7 following.

- US 20 / Barge Terminal Road Improvements:
 - Longer truck access / egress / merging lanes and better grades
- Fertilizer:
 - Purpose: To capture the market for additional demand for fertilizer
 - Area/Volume: Area = 1,611,000 cu. ft. in two warehouses; note that the long-term plan would slightly modify the location and alignment of the Agricultural By-Products storage building proposed as a BUILD/PIDP project
 - Capacity: ~294,000 tons/year
- Salt:
 - Purpose: Expansion of existing salt storage at Dock 4 to address the demand.
 - Area/Volume: Volume = 1,640,000 cu. ft. (total salt storage)
 - Capacity: ~270,00 tons/year
- Liquid Bulk (longer-term opportunity):
 - Purpose: To capture liquid bulk commodity as such as Ethanol.
 - Area/Volume: Volume = 324,000 cu. ft.
 - Capacity: ~65,600 tons/year
- Wood Pulp (longer-term opportunity):
 - Purpose: To capture the market for wood pulp and address the possible demand.
 - Area/Volume: Area = 39,000 sq. ft. warehouse
 - Capacity: ~65,600 tons/year
- New Dock #5 to serve Salt, Liquid Bulk, Wood Pulp commodity transfer

Figure 6. Proposed Long-Term Development Plan, Logistics Park Dubuque Access via US 20

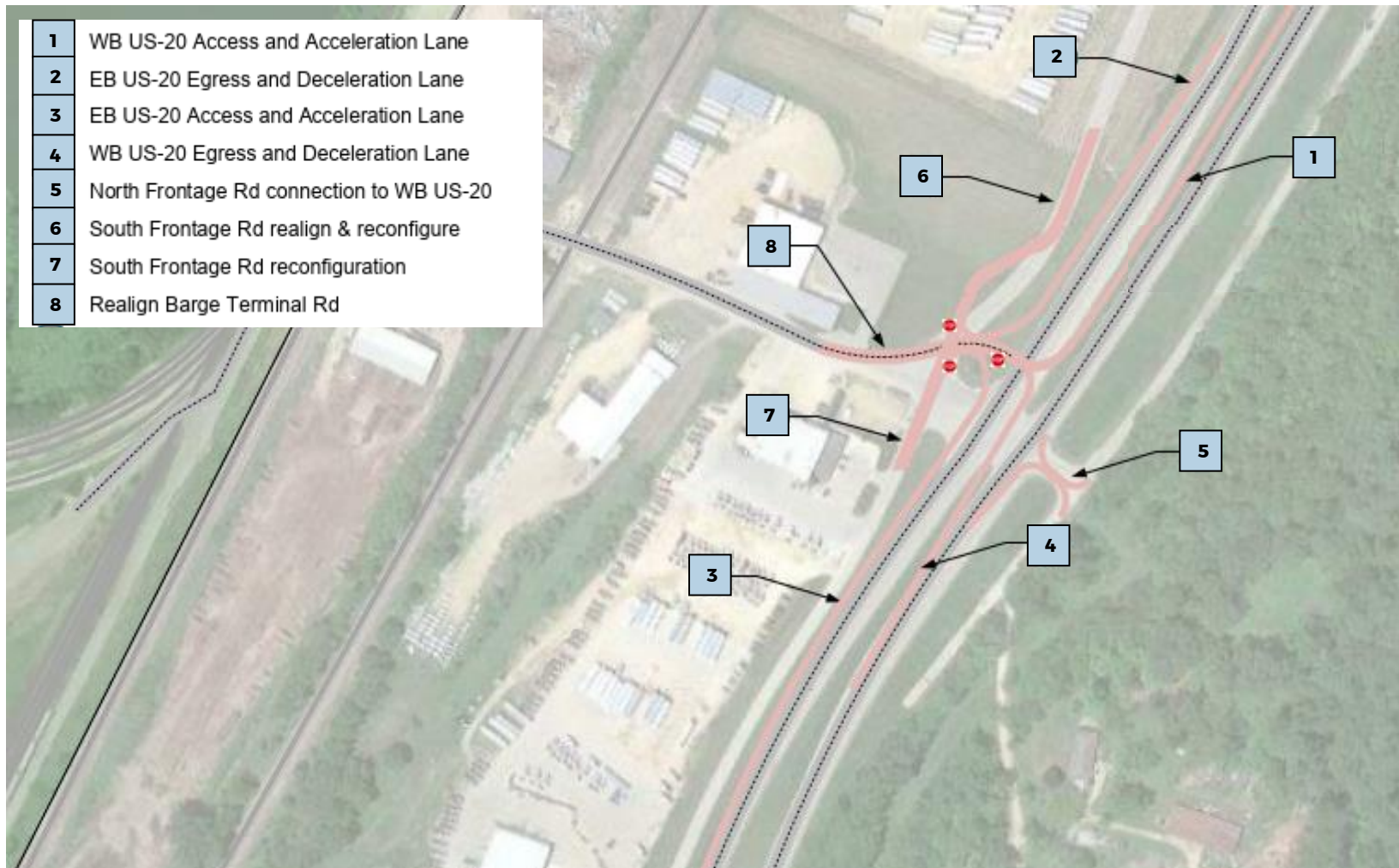
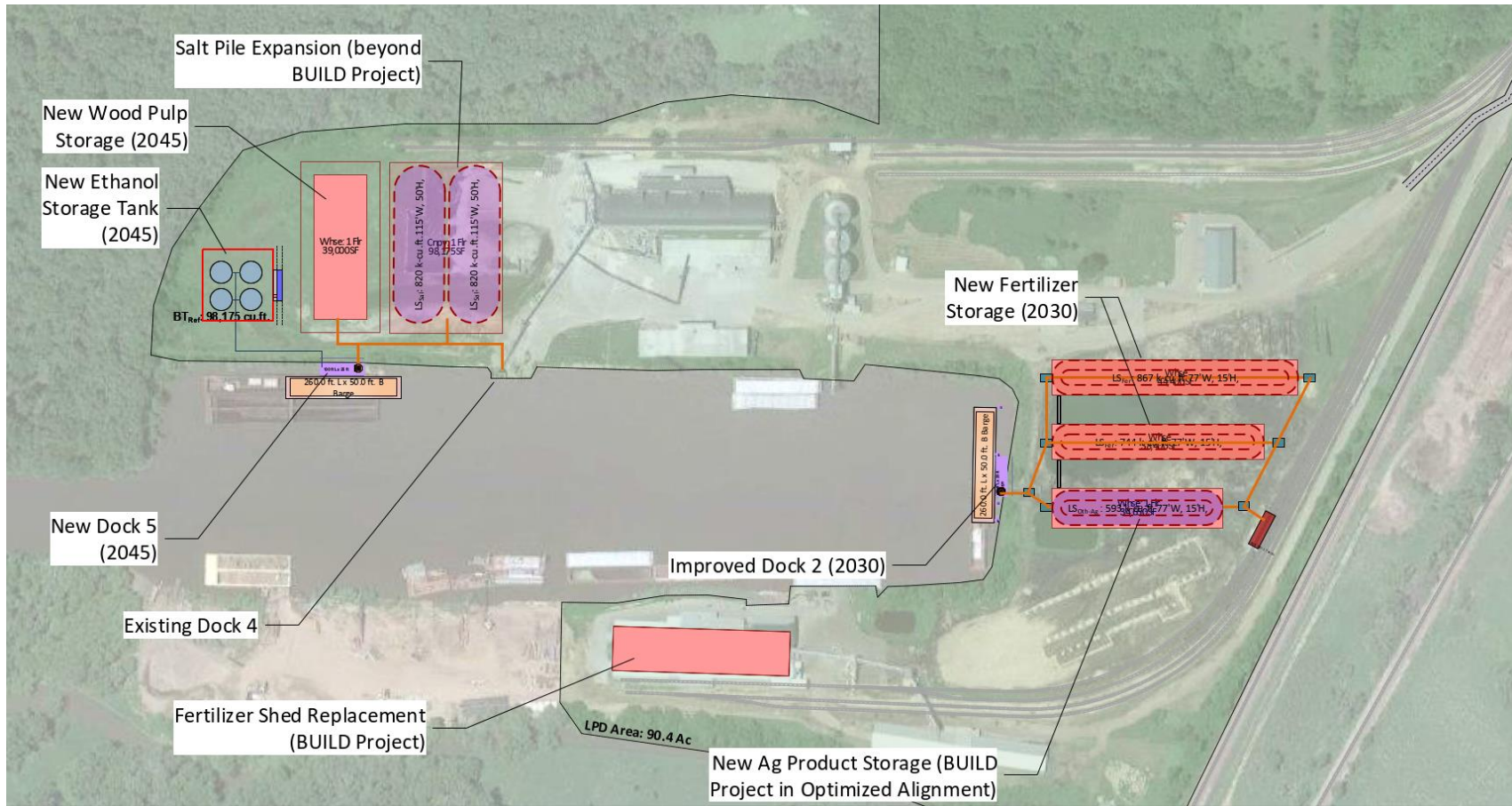


Figure 7. Proposed Long-Term Development Plan, Logistics Park Dubuque Terminal Facility





3.4 SUMMARY EVALUATION

The primary benefits of the long-term marine terminal projects are the provision of substantial additional marine cargo capacity for a diversified range of proven commodities and new business opportunities. While the near-term BUILD/PIDP projects emphasize state of good repair improvements to support ongoing operations, the long-term improvements are intended to strategically position Gavilon and Logistics Park Dubuque for effective market capture and growth through the year 2045.

Table 7. Long-Term Project Benefits - Cargo Capacity

	Current Capacity	BUILD/PIDP projects (2025)	Long-Range Plan (2025-2045)
Logistics Park Dubuque			
Fertilizer	454,000	454,000	748,000
Grain	511,000	511,000	511,000
Salt	130,000	130,000	270,000
Ag By-products	215,000	298,000	298,000
Wood Pulp	-	-	20,000
Ethanol	-	-	65,600
Total	1,310,000	1,393,000	1,912,600
Added in Phase		83,000	519,600
Gavilon			
Fertilizer (Dry)	629,000	702,000	702,000
Fertilizer (Liquid)	162,000	162,000	162,000
Grain	723,000	723,000	1,725,000
Salt	255,000	255,000	394,000
Steel	29,000	29,000	102,000
Dry Corn	210,000	210,000	210,000
Other Liquid Bulk	-	-	80,000
Total	2,008,000	2,081,000	3,375,000
Added in Phase		73,000	1,294,000



3.5 CONCLUSIONS AND NEXT STEPS

The long-term program recommendations represent the final component of the ECIA Port Expansion Study. Moving forward, key milestones and implementation steps include:

- Results of BUILD/PIDP Grant Applications, and potential future grant applications if the current submittals are not successful
- Implementation of the US 20 / Barge Terminal Road improvements by Illinois DOT
- Advancement of on-terminal improvements (design, permitting, and construction) by Gavilon and by Logistics Park Dubuque, in collaboration with responsible local and state agencies
- Discussions between Gavilon and the City of Dubuque regarding potential availability and use of the former Alliant Energy site as part of the recommended long-term program

The ECIA region's ports are critical transportation and economic assets. The ECIA Port Expansion Study is intended to highlight their value to the bi-state region, and the role they play, and to provide a market-feasible foundation for their future growth and continued success through the year 2045.