Port Development Master Plan for Plaquemines Parish

Tasks 1-9 Deliverables

October 21, 2010

Trident Holdings Inc.

In association with:

- **Vickerman & Associates, LLC.**
- **Coastal Environments, Inc.**
- **Professional Engineering and Environment Consultants**
- **Infrastructure Management Group, Inc.**

1809 Barrington Street, Suite 805
CIBC Building, Halifax, Nova Scoita
Canada B3J 3K8
Direct: 902-406-0372
Main: 902-482-9993
Fax: 902-468-3532

Port Development Master Plan for Plaquemines Parish

Task Deliverables Table of Contents

Appendices – provided as a separate Volume

Acknowledgements

It is always difficult to give full recognition to everyone who assisted in the development of this project and Master Plan. Everyone's efforts were valuable, timely and gratefully received by Trident Holdings and our Team members. It is hard to say in any particular order or value how much everyone's advice, experience, related materials, and sincere interest in serving the people of Plaquemines Parish has meant to our efforts in completing this Comprehensive Port Development Master Plan. Know that your efforts and dedication are reflected throughout this Master Plan and the Trident Holding's Team is proud to have worked with you!

Trident Holdings, Inc. would first like to acknowledge the dedication and direction of the Plaquemines Parish Council; Council and Administration Councils and staff; the Plaquemines Parish Harbor & Terminal District Council Committee, Port Manager and staff; without the advice and efforts of all of these dedicated Public Servants this project would have been very difficult. The regular meetings with the Plaquemines Parish Council and the Plaquemines Parish Harbor & Terminal District Council Committee were instrumental in giving guidance. All nine Council representatives were very helpful in the completion of this Master Plan.

The ability to reference needs, experience and information beyond the Parish served in providing great insight to our Team and in rendering a State and Regional perspective. State Senators David Heitmeier, O.D. District 7; and A.G. Crowe, District 1 met with our Team members and provided assistance and guidance. The Louisiana Department of Transportation and Development under the direction of former Secretary of Transportation, Dr. William Ankner and his staff in Planning & Programming, Intermodal Transportation, Marine & Rail, and Traffic Engineering all were very helpful in supplying valuable information about the transportation infrastructure, funding of projects and their status, traffic projections, and past relevant studies. Trident Holdings is indebted to their help. Trident also thanks the assistance of the Louisiana Economic Development, particularly Paul Sawyer Director of Federal Programs.

Trident Holdings would like to express our sincere appreciation to both the Rio Grande Pacific/NOGC and the New Orleans Public Belt Railroad/NOPB for their information on their service; system mapping and respective individual interests in developing new expanded freight service to lower Plaquemines Parish. Both Richard Bertel, CEO of the Rio Grande Pacific and Jim Bridger, General Manager of the NOPB gave valuable assistance and gave us access to their information and staffs. Trident Holdings also is thankful for the assistance of the Norfolk Southern Railroad and the information shared with our team. Particular appreciation is given to Rob Martinez, Senior Vice President, Norfolk Southern.

Often there are insights, potential opportunities and differing opinions that are secured through open discussion with private sector interests and this project has had some of those opportunities. There is always the threat of leaving out those private sector interests which helped in giving perspective however all such contacts were of noteworthy assistance. These interests were a collection of companies already located within the Parish and looking to sustain or expand their operations; potential development interests of various properties or relocated business opportunities interested in a new Port location in the Parish; and other Port interests throughout the lower Mississippi River and Midwest looking to potentially partnering with a new Plaquemines Parish Port. Trident Holdings expresses appreciation to all who sought out our Team to share their view points.

Trident Holdings, Inc. appreciates the efforts of the entire Team in development of this Comprehensive Port Master Plan. Our Senior Management of Robert Stevens, CEO of Trident Holdings; George Gefrich, Project Manager; Paul Martin, President of Trident Holdings, Inc.; Richie Mann, Vice President of Marketing; Patrick Garahan, Senior Transportation Analyst; Christopher Steele, Distribution Center and Private Sector Outreach Analyst, and Mike Uberoi, Senior Revenue and Financial Analyst have all worked with dedication to the client and the needs of the people of Plaquemines Parish and the development of a document that would guide the Parish in its future efforts. We cannot say enough about how proud we are of all of the teams efforts and we have appreciated the dedicated and timely completion of all work assignments and extra effort that our team went through in the completion of this project. One of the most dedicated and central component of the Trident Team has been Angela Henhoeffer, Executive Assistant without whom so many facets of this project would have been more difficult.

Most notable among the Sub-Consultant team members is the tireless devotion to the project and professionalism of M. John Vickerman founder and CEO of Vickerman & Associates. John's depth of knowledge, extensive contacts within the marine and logistic industries and his understanding of national and global trading has made this project exemplary, timely and a force by which the Parish will be able to focus meaningful future efforts to develop its Port Development. Working closely with John was the excellent research of Alan Finger, Principal whose effort created the backbone of the project's market research and findings.

There are always those who go the extra mile, take direction willingly and focus on a job well executed and completed and to Trident Holdings that person is Dr. Karen Wicker Senior Vice President of Coastal Environments. Karen's work was always on or ahead of schedule, well prepared and detailed and her insight was always welcome and on target. Working with Karen was Ed Fike who was a solid help in the final product of the environmental documentation.

Trident Holdings fully appreciates the efforts of Mo Saleh and Ron Guidry of Professional Engineering and Environmental Consultants, Inc. and their staff. Their work was accurate, timely and their guidance and insight helpful to the entire Team. The communication with both Mo and Ron was excellent throughout the course of the entire project.

One of the principal mainstays in this project was the efforts of Matthew Gehman and the staff of Manhard. Mr. Gehman's Marine Planning and Engineering background provided excellent guidance in the development of potential site potentials, screening of those sites, concept development for select sites and further concept Port analysis. His work provided a solid basis by which the entire Team was able to proceed. Mr. Gehman and Manhard exhibited this professional approach throughout the course of the entire project and for which Trident Holdings is very appreciative.

Lastly, Bruce Badon, Executive Vice President of Burk-Kleinpeter, Inc. and his staff provided valuable oversight throughout the project on every level of project development from the scope of work, to project administration, and review of all deliverables. Their primary reason for their review was to provide assurance to the Plaquemines Parish Council on completion of all project efforts however their work also gave the Trident Holdings' Team guidance for developing a Comprehensive Port Development Master Plan in order to speak to the greater good and need of the Parish.

Task 1 – Prior Port Studies, Concepts and Opportunities & Data Collection

Table of Contents

Task 1 – Prior Port Studies, Concepts and Opportunities & Data Collection

Introduction

The intent of this Task is to introduce the Trident Holdings Team, present the project area designation, state how Trident will initiate the project, how we will later conduct site assessments and evaluate those sites, rank our findings and what studies and materials Trident is reviewing for forming our base analysis.

Trident Holdings Inc.'s ("Trident") approach to The Comprehensive Port Development Master Plan for Plaquemines Parish is not a conventional study approach. In addition to the normal "rear view mirror" standard study approach of assessing **what has happened** and **what is happening**, Trident uses the Wayne Gretzky approach, "A good hockey player goes where the puck is; a great hockey player goes where the puck is going to be", and attempts to assess what the future potential will be and what needs to be done to achieve that potential. Trident subscribes to that concept and then uses private sector investment preparedness as validation to determine what the best opportunities are in order to meet demand.

Figure 1: Project Base Map

The project area is defined by Plaquemines Parish boundary lines but evaluation of transportation infrastructure extends to the nearby Interstate and Class 1 Railroads as shown in this Base Map (Figure 1).

It was clear from the beginning of the Comprehensive Port Development Master Plan for Plaquemines Parish that several previous studies had extensively reviewed a number of potential Port development scenarios and it was also clear that few of the recommendations contained in those studies had ever been implemented. Neither the Parish Council nor Trident wanted to gather more data and develop concepts without having a specific implementation program. Such direction was clear from the Parish Council and was consistent with the views of Trident – that this study would be different from previous ones right from the start. The big difference would be the use of prior studies and data to develop an analytical process that would support a decision for making a definitive "**Go or No Go**" commitment to build a Port in Plaquemines Parish. Existing data would form a baseline for comparison of past and current market demands so as to best identify viable and feasible port development alternatives.

The initiation of the project began with the System of Intensive Team Effort (SITE Week). This was an effort to contact and interact as quickly as possible with the Plaquemines Parish Council, key interested parties, potential Port tenants or companies that could utilize the Port's facilities and key decision makers. This also included discussions with Parish and State Officials and potential transportation carriers. The project initiation and SITE week began November 16, 2009.

System of Intensive Team Effort (SITE) Meetings and Workshops

During SITE Week, Trident principals met with all members of the Parish Council in separate meetings. Some meetings with private sector interests in Plaquemines Parish were attended by representatives not only from the Plaquemines Parish Council, but also Jefferson Parish, and included a State Representative and a State Senator. In addition, Trident was able to discuss future development plans with some private sector industries and parties as specifically approved and selected by the Plaquemines Parish Council. The Rio Grande Railroad participated in several discussions and shared their plans for the extension of service in the Parish along with their efforts to relocate their rail-line to reduce the number of existing level-grade crossings. The need for the Rio Grande Railroad (NOGC) relocation is evident given the potential growth in service to their existing clients near and south of the Naval Air Station. The potential for a Port located anywhere nearby would increase the demand for the railroad's relocation which would allow for the railroad's growth, increase development and employment opportunities for the Parish while providing for a more efficient and safe rail operation. Trident toured the area with Rio Grande officials to see where the potential new rail-line Right-of-Way (ROW) would be located. Trident later met with the New Orleans Public Belt (NOPB) Railway to discuss their plans for providing rail service to the Lower Plaquemines Parish West Bank. Trident received and reviewed NOPB drawings depicting future rail access plans. Trident had the opportunity to speak with representatives of Citrus Lands, a site that might be suitable and available for a Port facility. The owner's representative shared property mapping and information to help assess the suitability of the site. Trident was then given a tour of Citrus Lands by the Plaquemines Parish Port Director and that provided the opportunity to examine firsthand the existing levees on the Mississippi River.

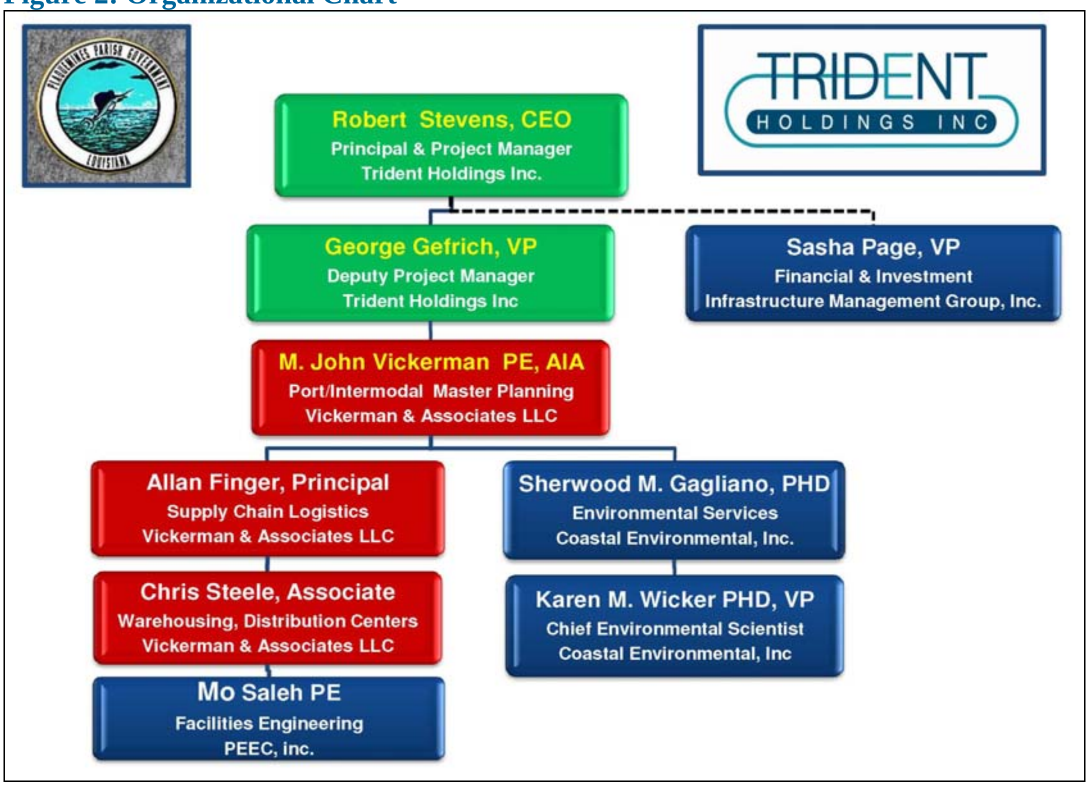
Targeted Port Development Opportunities

As a result of suggestions made by Parish Council, Trident was able to identify other key people to interview, including members of the Sheriff's Office who have the responsibility of providing Homeland Security for the Parish. Trident discussed the on-going river security operations and the requirement for communication going forward with any "build alternatives", especially with matters relating to Port Security.

The Parish Port Director was able to provide two separate river tours, enabling Trident to look at a number of potential Port sites. The Director provided valuable information relative to river depths, anchorages, existing operating conditions and practices on the river, locations for utility and ferry crossings and relevant site specific information from a waterside perspective. The first tour looked at the East Shore locations of Amax, Bender Shipyard, the Norfolk Southern property, and other locations in and around the English Turn to the Parish boundary. The second tour looked at the West Shore locations Citrus I and II and the IMT properties. Generally, these tours were valuable not only to allow Trident to see the various sites, but to enable further discussions about river operations, potential Port locations and on current and past use of the Venice Port area.

During the SITE Week, Trident also met internally to discuss the scope of work and potential work assignments. Meetings were also held with subcontractors PEEC and Coastal Environments and project requirements were identified. Figure 2 is the Trident Holdings Inc Team Organization Chart.

Figure 2: Organizational Chart



SITE Week activities resulted in the creation of a process to evaluate potential Port site locations and to compare their respective values, thus enabling Trident to effectively and credibly reduce the number of sites to those most suitable for further in-depth evaluation. This process is demonstrated in Targeted Port Development Opportunities. The evaluation method and matrix below was provided to the Parish on November 29, 2009.

Evaluation Methodology and the Master Plan Evaluation Criteria Recommendations

The Comprehensive Port Development Master Plan evaluation methodology and specific evaluation criteria are derived from the overall project goals, objectives and principles. The specific recommendations will be used to evaluate and identify the most favorable alternative port development plans. The purpose of developing these criteria is to ensure an unbiased process and documentation to support the evaluation of the Comprehensive Port Development Master Plan alternatives.

This report includes a description of the recommended evaluation criteria that can be used to evaluate the Comprehensive Port Development Master Plan alternatives, the methodology for developing the evaluation matrix and a summary of the proposed performance scores.

Evaluation Criteria Development

The Plaquemines Parish Port District objectives and guiding principles were derived from the Port's historic "Mission" and "Vision" statements. Previously stated development objectives also provided guidance to Trident. These objectives and guiding principles created a starting point to develop the Master Port Development Alternatives evaluation criteria. These criteria will be used to evaluate the relative feasibility of the proposed Port Master Plan Alternatives currently under development through the Comprehensive Port Development Master Plan.

Each component of the evaluation criteria will be weighted for relative importance and applied to a raw performance score for each alternative, leading to a final evaluation score (weighted score), and a numeric identification of the preferred development plan.

The recommended objectives that are identified in the following evaluation criteria are fundamental. These criteria are explained in the following paragraphs. A numeric performance score of 1 to 10 is attributed to each evaluation criterion. The score of 1, 2 or 3 corresponds to low weight. A score of 3, 4, 5 or 6 corresponds to medium weight. A score of 7, 8 or 9 corresponds to high weight, and 10 would indicate the highest score.

Weighting can apply to each evaluation criterion to represent the corresponding weights associated with each development scenario or alternative. The following examples provide a general description of the evaluation criterion matrix and the weights associated with each criterion.

Table 1: Hypothetical Example Evaluation Matrix and Weighting Score

Evaluation Criteria	Weight	Alternative 1	Alternative 2	Alternative 3
Flexibility	10.0	6.0	6.0	8.0
Expandability	9.0	5.0	5.0	8.0
Environmentally Responsive	2.0	7.0	8.0	7.0
Berth Efficiency	7.0	6.0	8.0	6.0
Rail Efficiency/Access	4.0	3.0	3.0	3.0
Truck Efficiency/Access	8.0	9.0	7.0	7.0
Adjacency	8.0	8.0	5.0	8.0
Marketability	4.0	7.0	7.0	7.0
Conducive to Security	7.0	5.0	8.0	7.0
Cost Effective Construction	10.0	7.0	7.0	7.0
Market Driven	9.0	8.0	8.0	8.0
On-Terminal Traffic	9.0	7.0	5.0	8.0
Responsive to Technology	5.0	7.0	7.0	7.0
Weighted Score	92.0	612.0	591.0	666.0
Percent of Maximum		66.52%	64.24 %	72.39%

An evaluation matrix sample template has been developed to compare the relative merits of proposed development alternatives. Weighted values were then applied to the criteria to determine a score for each.

Note that the weighting of the criteria is separate from the raw scoring of each development alternative. This weighting is typically approved in advance of the scoring of Master Plan alternatives. The two numbers (weight and performance scores) are multiplied for each criteria, then added together to provide a weighted evaluation score for each alternative development plan. This process results in a meaningful comparison and final evaluation score for each alternative. An example of this type of evaluation matrix and the equations used are provided in the following table.

Table 2: Hypothetical Example Evaluation Matrix Illustrating the Weighted Performance Scores Approach

EVALUATION CRITERIA	(Scenario) WEIGHT	ALTERNATIVES EVALUATION SCORES		
		A	B	C
1. Flexibility	W1	W1 x PSAI	W1 x PSB1	W1 x PSC1
2. Expandability and Contractibility	W2	W2 x PSA2	W2 x PSB2	W2 x PSC2
3. Environmentally Responsive	W3	W3 x PSA3	W3 x PSB3	W3 x PSC3
4. Rail Efficiency	etc.	etc.	etc.	etc.
5. Truck Efficiency				
6. Conducive to Security				
7. Cost Effective Construction				
8. Linear Flow within Terminal				
Maximum Possible Score	**SUM W1...8**			
WEIGHTED SCORE		**SUM**	**SUM**	**SUM**
Percentage of Maximum Possible Score		**0%**	**0%**	**0%**

Note: "PS" = Performance Score

The result of the evaluation matrix provides a weighted score for each of the proposed alternatives. Also, the comparative value of each alternative (Percent of Maximum Possible Score) is provided in the matrix. The matrix also shows the variance that exists between alternatives.

Trident will then have the information needed to determine which alternative will best fulfill the vision and meet the principles, goals and objectives of the Plaquemines Parish Port Strategic Master Development Plan. It will also show how each alternative stacks up against these goals and objectives and each other.

Comprehensive Port Development Master Plan Evaluation Criteria Recommendations

The following evaluation criteria will then be recommended by Trident for review, discussion and acceptance by the Plaquemines Parish Port District Council. The order of presentation for each specific evaluation criterion has no bearing on the relative importance of each criterion to one another.

Flexibility: A key criterion is the ability to adjust, to reconfigure and alter operations within and around the Comprehensive Port Development Master Plan for Plaquemines Parish. Flexibility, as it applies to changing conditions and new opportunities has been identified as one of the most important issues in this planning process. It is very important that each of the alternatives under any plan be flexible enough to complement each other.

Expandability: The ability to expand terminal and adjacent areas to enable growth is an important selection criterion. The inability to grow is detrimental to long-term planning. Environmental Sustainability: A reduced environmental impact and the ability to employ leading environmental technology practices and equipment is a plus and must be considered in all new developments. Does the development plan exhibit a high degree of environmental and energy efficiency?

Plaquemines Parish Port District Job Creation Capability: Does the development plan identify a variety of economic activities that will result in a diversified economy with local job creation? Will the alternative generate sufficient revenue from rent and taxes to provide financial self-sufficiency of the Plaquemines Parish Port District Community?

Marketability: The proposed development plan should be able, on its own, to attract private and public investors, users, tenants and stakeholders.

Cost Effective Construction: Lower development plan costs are a plus and evaluation must consider total development costs, including site remediation and infill. Efficient use of existing resources and construction of an industrial park could be a primary criterion for attracting new business. The identified demand will be the critical driver and the cost of construction will be less important if the planned development is dependent on private sector infrastructure investment.

Market Driven Development: The ability of a development to respond to projected demand is extremely important. All the alternatives should meet the identified market driven demand for this master plan.

Responsive to Technology: The ability to incorporate new terminal operating technology and information systems is fundamental to this responsiveness. The capability for technology integration will be a factor in attracting outside investment. The development options will require advanced technology to assist the Plaquemines Parish Port District to best manage their infrastructure.

Return on Investment (ROI) Capability: The ability of the development to return to the Plaquemines Parish Port District an acceptable ROI.

The initial evaluation criteria are for the selection of potential terminal sites as they respond to market needs and Plaquemines Parish priorities. Terminal traffic and ROI will be assessed upon the completion of design, capacity and cost analysis. In Task 7 there will be an additional evaluation of the concept responsiveness and design as it relates to terminal efficiencies, capabilities and capacity. Specifically it will assess flexibility, expandability, environmental responsiveness, berth efficiency and access, rail efficiency access, truck efficiency access, adjacency, marketability, security, cost effective construction, market driven development, on-terminal traffic, costs, ROI, and responsiveness to technology.

Trident and the Plaquemines Parish Port Harbor & Terminal District Council's Port Committee ("Port Authority") were asked to approve the evaluation criteria and the associated recommended weighting system. If these are accepted, a final evaluation matrix will be prepared by Trident and will be used to evaluate the recommended Comprehensive Port Development Master Plan for Plaquemines Parish and development alternatives.

To assist Trident in the creation of the Comprehensive Port Development Master Plan evaluation criteria and associated weighting system, the following evaluation matrix is proposed for Plaquemines Parish Port Authority consideration.

The following proposed evaluation matrix (criteria and scoring) was offered for review and Trident requested any recommended changes and comments.

Table 3: Proposed DRAFT Plaquemines Parish Comprehensive Port Development Master Plan Evaluation Criteria Matrix - For Discussion Purposes Only

No.	Evaluation Criteria	Recommended Weight	Plaquemines Parish Port District Port Master Plan Development Alternatives (Raw Performance Score, Scale 1 to 10)		
			Alternative 1	Alternative 2	Alternative 3
1	Market Driven Development	10.00			
2	Environmentally Responsive & Sustainable Solution	8.00			
3	Port Development Flexibility	6.00			
4	Port Development Expanadbility	8.00			
5	Port Development Marketability	9.00			
6	Plaquemines Parish Job Creation Capability	7.00			
7	Port Development Health, Safety & Security	6.00			
8	Port Development Cost Effective Construction	7.00			
9	Port Development Responsive to Technology Advantages	7.00			
10	Return on Investment (ROI) Capability	10.00			
11	Other Evaluation Criteria Determined by Plaquemines Parish	8.00			
	Maximum Possible Score	**860.00**			
	Alternative Raw Performance Score (Sum of All Raw Scores)		**0.00**	**0.00**	**0.00**
	Weighted Score (Individual Criteria Weight x Raw Score)		**0.00**	**0.00**	**0.00**
	Percent of Maximum Possible Score		0.00%	0.00%	0.00%

To Be Determined by the Port Master Plan Team - In Concert with the Plaquemines Parish Port Council

Throughout the initiation of the project and course of Task 1, no additional comments or revisions were offered on the Evaluation Matrix. Trident then adopted a Matrix, criteria and associated weights that were reflective of the needs of the Parish in reviewing potential Port sites.

Table 4: Site Comparison Evaluation Matrix Example

Site Comparison Evaluation Matrix Example

No.	Hypothectical Evaluation Criteria	Weight	SITE 1	SITE 2	SITE 3	SITE 4	SITE 5
1	Flexibility	8.00	0.00	0.00	0.00	0.00	0.00
2	Expandability	8.00	0.00	0.00	0.00	0.00	0.00
3	Environmentally Responsive	9.00	0.00	0.00	0.00	0.00	0.00
4	Berth & Water/Navigational Access	10.00	0.00	0.00	0.00	0.00	0.00
5	Rail Efficiency Access (Potential)	10.00	0.00	0.00	0.00	0.00	0.00
6	Truck Efficiency Access	8.00	0.00	0.00	0.00	0.00	0.00
7	Terminal Functional Adjacency	5.00	0.00	0.00	0.00	0.00	0.00
8	Marketability	5.00	0.00	0.00	0.00	0.00	0.00
9	Conducive to Security	5.00	0.00	0.00	0.00	0.00	0.00
10	Cost Effective Construction	7.00	0.00	0.00	0.00	0.00	0.00
11	Market Driven	10.00	0.00	0.00	0.00	0.00	0.00
12	On Terminal Traffic Flow	6.00	0.00	0.00	0.00	0.00	0.00
13	Responsive to Technology	6.00	0.00	0.00	0.00	0.00	0.00
	Maximum Possible Score	970.00					
	Alternative Raw Performance Score (Sum of All Raw Scores)		0.00	0.00	0.00	0.00	0.00
	Weighted Score (Individual Criteria Weight x Raw Score)		0.00	0.00	0.00	0.00	0.00
	Percent of Max Possible Score		0.00	0.00	0.00	0.00	0.00

During SITE Week, Trident began gathering all available reports, data, and relevant studies as part of our response to Data Collection/Review of Existing Terminal Concepts. The Parish Council had some relevant materials but not a complete package. Additional resources were gathered from the Louisiana Department of Transportation and Development LADOTD, the Rio Grande Railroad, public officials and from the archives of Trident principals. Trident developed a document review form and Trident personnel were assigned to review and analyze the documents. The following list of documents has been assembled by Trident, reviewed and analyzed for potential use in our study:

Data Collection/Review of Existing Plaquemines Parish Studies

Studies

Date	File Name
1985-12-03	Plaquemines Master Port Plan by LSU Ports & Waterways Institute
1991-1992	Mississippi River Hydrographic Survey
1994-07-20	Plaquemines Port Terminal Tariff
1994-09-01	Plaquemines "Master Port Plan"
1998-12-17	Port Millennium – Development and Investment Study Market Report – Market Forecast
1905-06-20	Port Millennium Development Team-Growth of Containerized Trade
1999-07-30	Millennium Port Study
2002-06-26	Coal Transportation Services Letter to the Rio Grande Pacific Corporation
2002-11-01	Application to Louisiana Port Construction and Development Priority Program
2002-11-15	Mississippi River Corridor Initiative Business Plan
2002-12	Plaquemines Parish Intermodal Feasibility Study
2003-05	Louisiana Statewide Rail System Plan
2003-08-03	Norbridge Report
2004-04-11	Plaquemines Parish Harbor Master Plan
2005-04-19	MPA-MRCI marketing study
2007-08	Comparative Analysis of Intermodal Ship-to-Rail Connections at Louisiana Deep Water Ports
2007-09	Louisiana Marine Transportation System Plan State Project No 750-99-013 (ES and Chapters 1&2 of a 500 page report)
2007-12	New Orleans Rail Gateway Infrastructure Feasibility Analysis
2007-2011	Five-Year Capital Improvement Plan for Ports Association of Louisiana Member Ports
2005-06-29	Spring Economic Forecasting Review
1905-06-30	Kinder Morgan Myrtle Beach, LA Terminal
2008-02	2020 Master Plan - Charting the Future of the Port of New Orleans
2008-07-02	Kinder Morgan - Louisiana Bulk Terminals
2008-08-14	TranSystems Cargo Market Assessment and Opportunities for Plaquemines Parish
2008-10	Potential Sites for Plaquemines Ports & Airport Facilities
2009-01	Americas ports and transportation system
2009-02-27	TranSystems Proposal for Port Development Master Plan
2009-02	Ports Association of Louisiana Strategic Development Plan - Summary Report

2009-04	Venice Boat Base Siting Analysis Full Report
2009-06-10	Executive Summary, BRAC and GNO, Inc. Trade Study Strategy
2009-06-10	Final Report BRAC and GNO, Inc Trade Study
2009-06-22	PONO Strategic Advisory Report
2009-06	Strategic Advisory Report: Napoleon Avenue Container Terminal
2009-09-14	Section 3 – Ariel
2009-09-14	Section 4 – Ariel
2009-09-16	Plaq_Overall_w_EBNFL – Ariel
2009-09-16	Plaquemines_WBNFL_rev - Ariel
2009-09	Bayonne Bridge Air Draft Analysis
2009-12-19	ATK Container Market Assessment and Strategy Report (FINAL)
2009	Jones Lang LaSalle CITRUS LANDS Offering Memorandum
2009	LATTS SecB
2009	LATTS Strategic Port System Investment Neds SECTION D1
2009	Port Terminal Planning Modules appendix iv
2009	RAND Fast Forward - FINAL Version
2010-01-07	Letter to J Dean Goodell from NO Rail Company
2009-01-22	Resolution No. 09-34, adopted January 22, 2009, to conduct a traffic study of the Belle Chasse area.
2009-03-16	General Aviation Airport Feasibility Study Prepared for New Orleans Regional Planning Commission (NORPC) Plaquemines Parish Government

Non-dated

	Millennium Port Authority Planning Process Update
	Venice Boat Base Siting Analysis, Development Plan, and Cost Estimate (not electronic)
	Latter Blum Amax Metals Recovery Facility
	Jones Long LaSalle Port Facility Clay Source Site
	Adams & Reese - New Louisiana Tax Credits Result in Higher Profitability for Businesses that Utilize Louisiana Ports

CD

	Track Alignment Videos & Aerials

Maps

	Campbell Technology Corporation Maps
	Rio Grande Pacific Corporation & New Orleans & Gulf Coast Railway Company – Rail lines map
	Lower Mississippi River & Inner harbor Navigation Canal Navigation Maps
	Rio Grande & NO Gulf Railway Aerial Map of Proposed ByPass & Extension (9ft)

Trident will continue to identify and obtain relevant Studies and Documents as they become known and will incorporate them into our review, assessment and utilization as the project continues. The documents listed represent a thorough review of all available reports and documents that could be obtained.

Conclusion:

Trident finalized the evaluation criteria and matrix and reviewed the input received from the participants of SITE Week. Utilizing all this information Trident then initiated Task 2 and 3 - Market Assessment and Competitive Port Analysis and the initial review of Facilities and Sites for Potential Port Development.

Task 1 Figures and Tables

Figures

Tables

Task 2 – Market Assessment Study for the Comprehensive Port Development Master Plan for Plaquemines Parish

Table of Contents

Task 2 – Market Assessment Study for the Comprehensive Port Development Master Plan for Plaquemines Parish

Introduction

This Task introduces relevant data and information from past studies, evaluates the findings from those studies while testing their conclusions against what is currently happening in global and regional trade, and evaluates whether there is sufficient justification to warrant a new Port investment in Plaquemines Parish.

The Comprehensive Port Development Master Plan for Plaquemines Parish Market Assessment has been organized into the following major deliverable elements:

1. Market Assessment Preamble and Methodology Summary - Included in the Comprehensive Port Development Master Plan for Plaquemines Parish Main Report.

2. Market Assessment Study Executive Summary - Included in the Comprehensive Port Development Master Plan for Plaquemines Parish Main Report.

3. Market Assessment Research and Analysis Resource Information – Included as a Comprehensive Port Development Master Plan for Plaquemines Parish Appendix document.

All the results of the Task 2 Market Forecasting and Port Assessments were integrated into the above deliverables. The Task 2 deliverable is a description of the current and potential target market assessments for the Plaquemines Parish Port Comprehensive Port Development Master Plan. The above Task 2 deliverables are all predicated on available public and industry data and include a description of the current market and estimates of projections of future volumes available to the Plaquemines Parish. Trident has significant experience in modal mix distribution and relevant customer receptivity studies necessary to augment the review of existing documents and to form conclusions.

Market Forecasting and Competitive Port Assessment Preamble and Methodology

Consistent with the February 25, 2009 Trident proposal for a Comprehensive Port Development Master Plan for Plaquemines Parish, on advice from the Plaquemines Parish Council and as recommended by the senior leadership of the Parish Council Port Authority, Trident has elected to develop a market assessment and cargo demand estimate for the Plaquemines Parish Comprehensive Port Development Master Plan based principally on publicly available prior port studies, industry data, and additional studies and reports on the Louisiana trade region. This approach has been recommended due to the reported quantity and quality of related port market demand studies and related reports which directly relate to the development of a port in Plaquemines Parish.

A listing of all referenced publicly available port and maritime market related documents is included in the Plaquemines Parish Comprehensive Port Development Master Plan for Task 1. Task 1 of the Plaquemines Parish Comprehensive Port Development Master Plan (Prior Port Studies, Concepts and Opportunities & Data Collection) gathered available resource materials to assist Trident in assembling and consolidating a market background information base to conduct the market assessment study and analysis. This included all specific Plaquemines Parish, State and Federal information on modes of transport data, access information, existing environmental conditions, and planned or "under-construction" engineering at chosen sites.

Trident and the Plaquemines Parish Port Authority and staff gathered information in as much detail as could be readily obtained from publicly available sources including the World Wide Web and industry publications. The intent of this effort was not to perform a comprehensive empirical analysis but rather to gather applicable publicly available information from prior studies and established sources which were reported to be abundant in the Plaquemines Parish area.

The results System of Intensive Team Effort (SITE) Meetings and interviews were used as a direct input in the Plaquemines Parish Comprehensive Port Development Master Plan Market Assessment effort. Trident planners, logisticians and key sub-consultant personnel met with Plaquemines Parish Port Authority members and staff, port tenants and key stakeholders (all as specifically approved and selected by the Plaquemines Parish Council) for a series of intensive investigations into the requirements for the Comprehensive Port Development Master Plan. SITE is an acronym for a process that provides opportunities for refining market forecast planning and design criteria, illuminating subtle differences among elements competing for priority and accelerating the efforts of the market assessment effort.

North American comprehensive port strategic master plans typically employ extensive econometric market analysis for port and rail traffic demand forecasts. Econometric market forecast preparation typically involves:

Development of macroeconomic forecasts based on world trade forecasts for a specific region and specific trades;

- Comparisons of the macroeconomic forecasts with existing Port forecasts;
- Development of a base forecast scenario derived from the comparisons; and
- Development of alternative low and high forecasts, based on qualitative assessments of customer-specific opportunities, reviews of existing Port forecasts and discussions with Port marketing and planning staff

On advice from the Plaquemines Parish Council and as recommended by the senior leadership of the Parish Council Port Authority, it was decided that Plaquemines Parish will not develop a comprehensive econometric market assessment and cargo demand forecast as outlined above. The Plaquemines Parish Council and the Parish Council Port Authority have chosen instead to direct that the market assessment and demand for the Plaquemines Parish Comprehensive Port Development Master Plan be based principally on publicly available prior port studies, industry data, and additional studies and reports in the Louisiana trade region.

This METHODOLOGY SECTION is organized into the following subsections:

Task 2.1	Development of Market Trade/Cargo Background Data and Information
Task 2.2	Stakeholder Identification of Key Market Drivers
Task 2.3	Interview Program
Task 2.4	Conceptual Analysis of Competitive Position for Local and Hub Traffic
Task 2.5	Conceptual Trade Level Forecasts
Task 2.6	Modal Preference Conceptual Analysis using Truck and Rail Trip Generation Estimates
Task 2.7`	Conceptual Origin Destination Analysis
Task 2.8	Development of a Publicly Available Port Market Assessment Data

Development of Market Trade/Cargo Background Data and Information

This task focused on local, regional and international trade, and on publicly available competitive port cargo considerations. Major task items included:

- A review of publicly available trade data currently held by the Plaquemines Parish and the State of Louisiana.
- A review of publicly available previous trade and transport studies of particular relevance to Plaquemines Parish and the US Gulf Coast.
- A review of publicly available specific marketing studies previously undertaken by Plaquemines Parish and the State of Louisiana and involving the US Gulf Coast.
- A survey of publicly available area statistics and other sources that provide insights into the potential future trade through the US Gulf Coast region.
- A review of publicly available competitive port information on US Gulf Coast ports and intermodal facilities to review current trades and service programs and planned services which may offer opportunities and / or create issues for Plaquemines Parish.
- Trident developed a trade classification system for trade forecasting and competitor analysis.
- The trade classification is comprised of containerized trade and non-containerized trade, refrigerated container products, roll on/roll off cargos, motor vehicles, timber, iron and steel, miscellaneous break bulk and dry bulk products.
- A recent history of trade activity in the US Gulf Region and its estimated potential contribution to the overall potential Port demand was included in the port market assessment.
- Trident identified key factors likely to influence the future development of each trade component.

Examples of major reports and sources of information are identified in Figures 1 and 2.

Figure 1: Recent Southeast Louisiana Port & Market Analysis

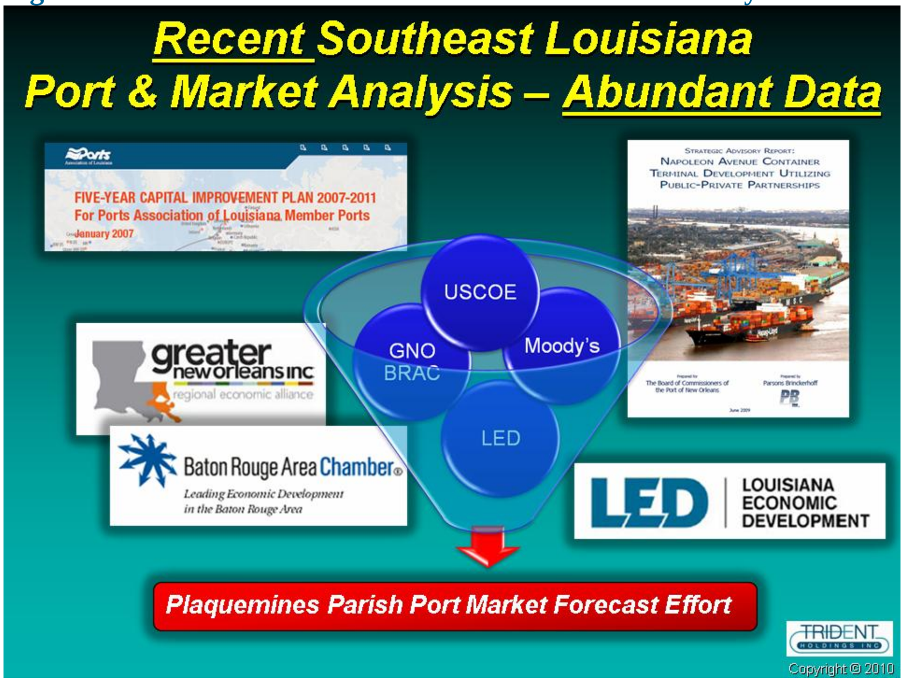


Figure 2: Major Port Southeast Louisiana Port Strategic Master Plans

Stakeholder Identification of Key Market Drivers

The forces that drive global trade are a complex mix of economic and political factors magnified by a high rate of growth in goods consumption. Trident assessed ongoing trends in the broader maritime industry (such as shipping industry consolidation, intermodal capacity challenges and changes in the structure of trade supplying cargo to the world's ports) and the nature of their impact was evaluated, including a consideration of the likelihood of occurrence and the degree of impact.

As the drivers for maritime trade industry influence demand and supply, the market for cargo trade is likely to adapt to develop ways to meet the requirements of the drivers. This task identified previous studies that discussed the implications of the trends in terms of opportunities for the Plaquemines Parish Port as part of the US Gulf Port region.

Informal Interview Process

An informal interview program was employed based on Trident experience with port customer analysis resulting from the conclusions in Stakeholder Identification of Key Market Drivers to provide a better understanding of the competitive dynamics which potential customers and stakeholders might deploy relative to services offered by a Plaquemines Parish Port.

It was determined that the need for new in-depth formal interviews was not necessary as there was sufficient publicly available market data to properly determine the market demand forecast for a Plaquemines Parish new port.

The informal interview process gathered supplemental information in support of the publicly available trade data while retaining the flexibility needed to adapt to the specific circumstances of individual trade lane requirement.
The scope of the informal interviews generally included, but was not necessarily limited to:

- Specific plans for trade expansion or contraction over the market forecast period.
- Growth prospects for the trade associated with a new US Gulf Coast Port development.
- The nature and scope of the growth of the trade and US Gulf Coast Regional opportunities.
- Current and future transport opportunities to and from external markets and inland distribution points relative to Plaquemines Parish.
- Transport alternatives that have been considered or may be considered in the foreseeable future.

The results of the informal interview process were integrated into the Market Assessment Study Executive Summary and included in the Plaquemines Parish Port Comprehensive Port Development Master Plan Main Report and the Market Assessment Research and Analysis Resource Information. They were also included as a Plaquemines Parish Port Comprehensive Port Development Master Plan Appendix document.

Conceptual Analysis of Competitive Port Position for Local and Hub Traffic

The nature and intensity of developing an inter-port competition is conditioned by a number of factors, such as the location of production or consumption, the relative cost and quality of inland transport links, and the availability of suitable handling and storage facilities that will vary significantly from component to component. Therefore, the analysis of the competitive position for the conceptual development of a Plaquemines Parish Port was undertaken for each of the identified major trade components.

In order to forecast potential market growth on the Gulf Coast and particularly Plaquemines Parish in light of the recession and recovery, Trident was required to review the most current and available data from multiple sources. Any new trends and trade opportunities developing in the post-recession period would need to be considered for impact on potential growth in Louisiana and, specifically, Plaquemines Parish. The review of existing reports, coupled with newly acquired information, form the basis for determining future growth and the need for new Port infrastructure.

For most components, the basic structure of the analysis was derived from previous port studies and as follows:

- Identification of potential competitors. Particular attention was paid to actual or potential competition from US Gulf Coast regional ports. The scope of the competitive analysis included other US Gulf Coast ports for trades such as containers, break bulk and bulk cargoes.
- Identification of industry related port charges that may impact the Port of Plaquemines Parish competitive position. These included possible changes to handling performance and costs at rival US Gulf Coast ports.
- Assessment of the relative importance of competitive port charges in the total transport chain costs.
- Estimation of the scope of planned port and intermodal facilities that could influence the Port's potential market share.

Conceptual Trade Level Forecasts

Where available low, high and medium market forecast projections were analyzed, depending on the quality of available public market data. Trident was hopeful that quantitative forecasts for five-year, 10-year, 15-year and 20-year planning horizons could be reviewed based on publicly available data.

Unfortunately available public market forecast data was not sufficient to provide Trident with suitable market forecast data for quantitative forecasts for five-year, 10-year, 15-year and 20-year planning horizons. Thus the available general market forecasts were used to determine a recommended estimate of the market forecast for the Plaquemines Parish Comprehensive Port Development Master Plan. From a private sector market driven perspective, the priorities of shippers are reflected in the following graphic, Figure 3.

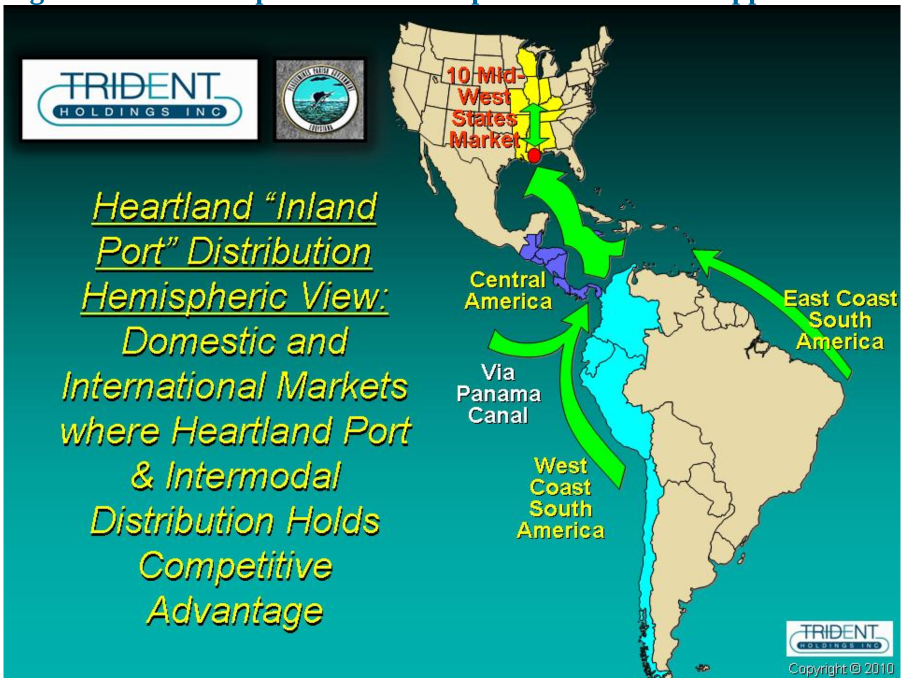
Figure 3: Potential New Trade with South America

The final decision on forecasting methodology was made after the review of all available data and the informal interview programs were completed, and the structuring of the trade for forecasting purposes was completed.

A trend analysis and simple model relating trade volumes for the movement of underlying economic variables was used from available public reports. Different methods were employed for the different trade market forecast components. Port strategic master planning experience indicates that forecasting of heterogeneous elements such as container imports may be best done by relating volumes to anticipated levels of disposable income, inventories and interest rates, while for exports of specific commodities the factors include exchange rates and economic growth of the importing counties. In the case of both imports and exports, a trend analysis serves as a supplement to, or a substitute for comprehensive econometric analysis; again all based on the quality and applicability of the publicly available data.

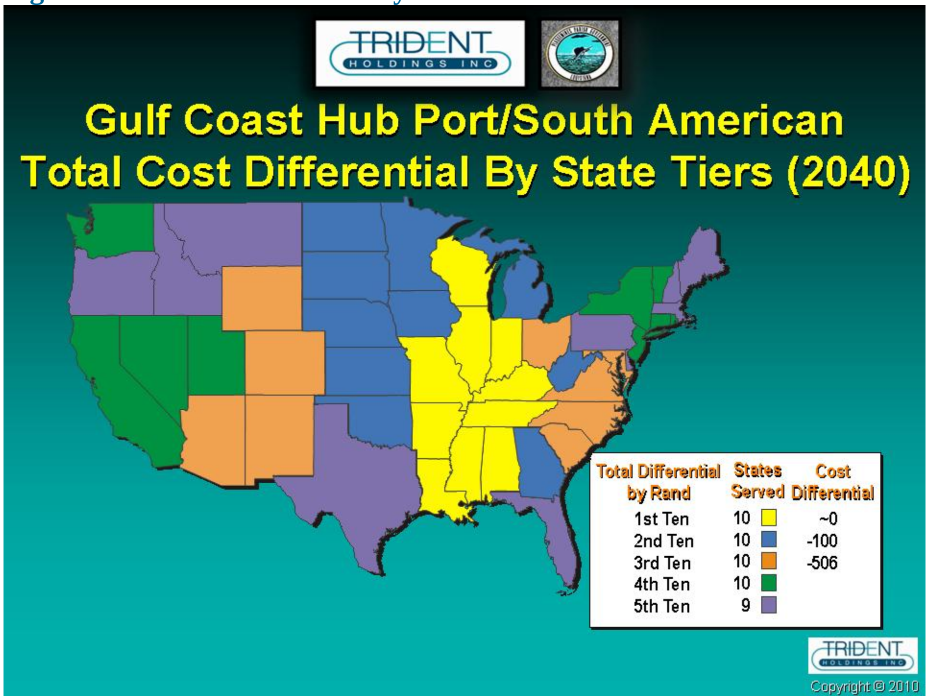
Economic growth and Port development is occurring around the globe and the recent recession is causing shifts in trade patterns. New development such as the Panama Canal expansion present new trade opportunities, not only for the United States, but also other countries which can take advantage of the new trade routes, associated lower costs and faster shipping. It is important to emphasize that trade growth and opportunity is not determined by capacity but rather by competitive advantage. As a result of new developments in South and Central America (see Figure 4), ports are being developed and/or expanded, creating new opportunities for the Gulf Coast, Louisiana and Plaquemines Parish to attract new cargo. Ultimately, the ability to distribute cargo to the ten (10) Midwestern States competitively will determine the success in attracting these new volumes to Plaquemines Parish.

Figure 4: Poll of Top 1000 "Blue Chip" Multinational Shipper Priorities



The following graphic, Figure 5, demonstrates cost differentials for transport of goods using Louisiana as a point of entry.

Figure 5: Inland Distribution by Cost



In general the Plaquemines Parish Comprehensive Port Development Master Plan forecasts have taken into account:

- Historic trends in cargo growth.
- Projections by respected consulting firms along with trade and economic organizations relative to North American trade and financial recovery scenarios.
- Events identified during desk research and the informal interview process which could influence future volumes.
- Potential changes in the relative competitive position of Louisiana ports relative to other US Gulf Coast ports.
- To facilitate future updating of trade forecasts, the cargo forecasts were consolidated into a final single forecast element.

Modal Preference Conceptual Analysis using Truck and Rail Estimates

Using Trident experience and public available data, this task attempted to assess the modal preference for freight that can be diverted to Plaquemines Parish. Drawing on the publicly available information gathered during the informal interview process and examination of current modal usage patterns, general rail and truck movement preferences were established for the applicable trade and modal patterns within the Plaquemines Parish competitive market region. Task 4 and 5 will provide estimated truck and rail estimates for recommended planned improvements based on the conclusions drawn from the market assessment in Task 2.

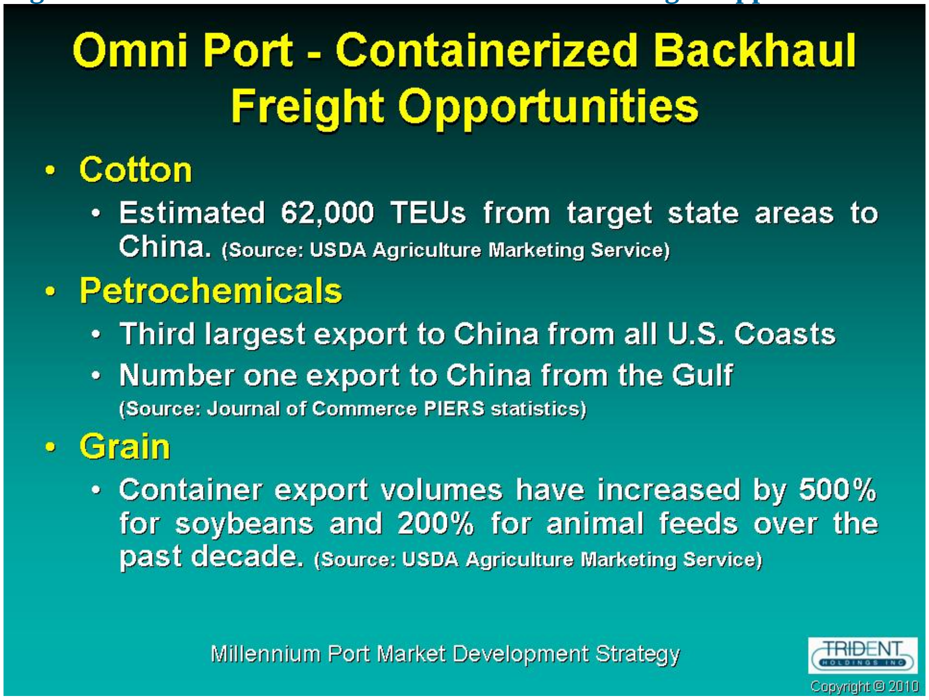
When applicable and found in existing public information documents, variables that exert influence on modal choice decision-making were explored and integrated into the Market Assessment Study Executive Summary, included in the Plaquemines Parish Comprehensive Port Development Master Plan Main Report, the Market Assessment Research and Analysis Resource Information and included as a Plaquemines Parish Comprehensive Port Development Master Plan Appendix document.

Conceptual Origin/Destination Analysis

Trident reviewed publicly available data to generate a general market analysis for the Plaquemines Parish port region. Data acquisition and review utilized global, national, regional and local data whenever possible and as deemed relevant by Trident.

Cargo from origins and destinations were studied and those commodities that were most readily attracted to Omni Port in Plaquemines Parish are shown below in Figure 6.

Figure 6: Omni Port Containerization Backhaul Freight Opportunities

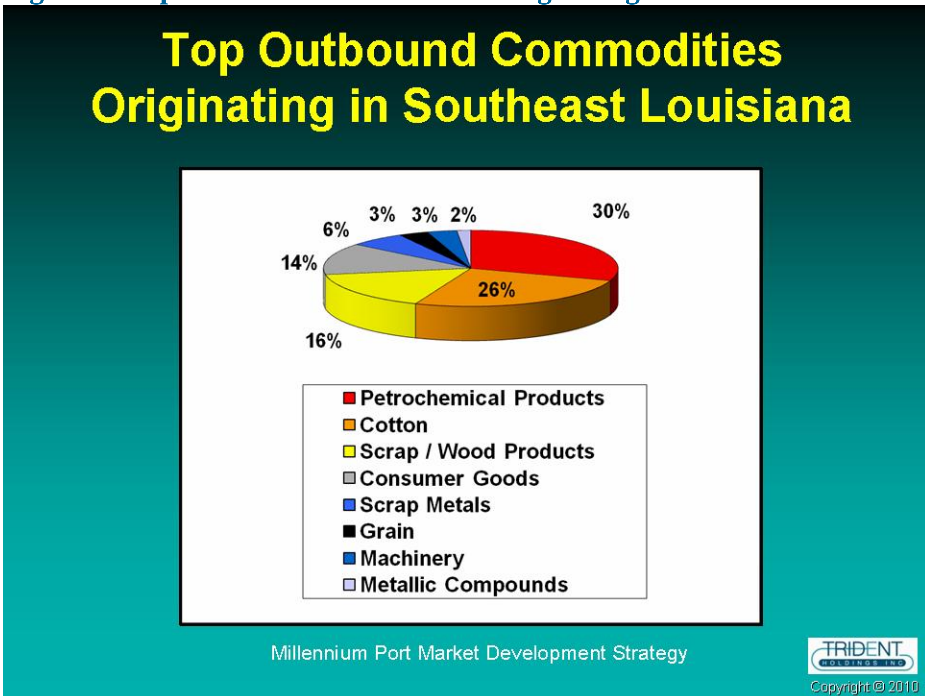


Variables for the conceptual Origin/Destination analysis were analyzed only when they were available in public records, and included primarily container volumes for international or domestic (import or export) cargo. In addition, dry bulk, break bulk, neo-bulk and liquid bulk cargos were reviewed and examined. The data and information for this analysis included, but was not necessarily limited to:

- Origins of potential cargo arriving within the Plaquemines Parish Regional Area for exports,
- Destinations of potential cargo departing from locations within the Plaquemines Parish Regional Area for imports,
- Current containerized commodity flows transported to and from competing ports,
- Potential train networks for origins and destination distribution as well as future trends in intermodal rail carriage in the US Gulf Coast port region.

The current structure of the market was reviewed as it relates to container and intermodal origins and destinations, as well as dynamics of other marine cargos in the US Gulf Coast Region. The data review included informal interviews with key industry representatives to supplement available public data. Information collected from this informal interview process supplemented the data review. While this effort relies on current and anticipated trade patterns, this information was extrapolated to consider the development of a new potential Omni Multipurpose (potential container/break bulk/ and or bulk) port terminal concept somewhere within Plaquemines Parish greater regional area (see Figure 7).

Figure 7: Top Outbound Commodities Originating in Southeast Louisiana



Development of a Publicly Available Port Market Assessment Data

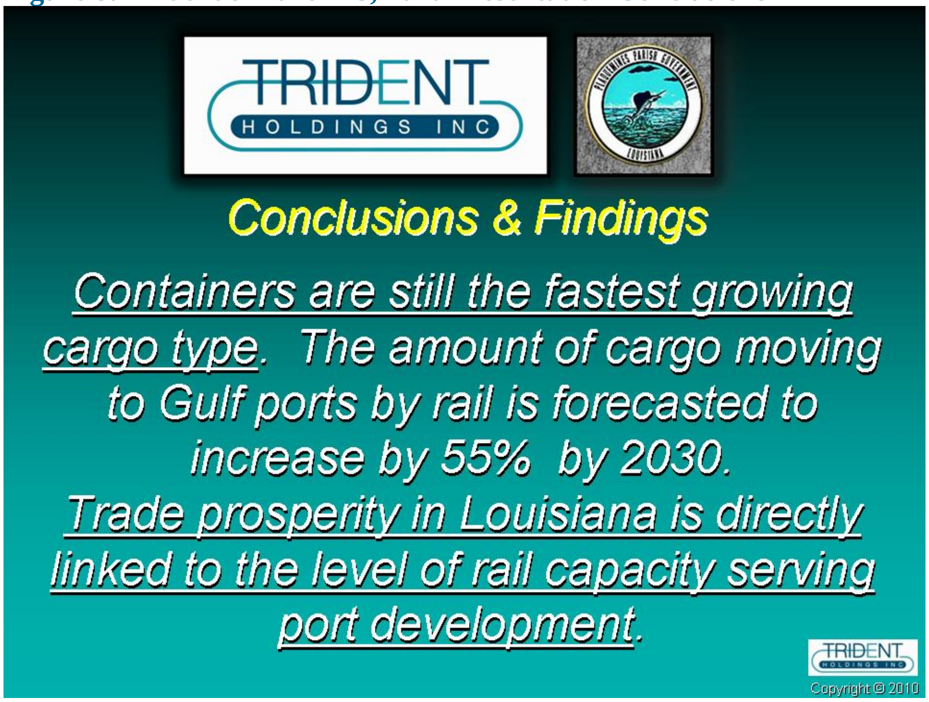
Based on the conclusions and summaries in Tasks 2 Trident developed a Summary Market Forecast and estimated potential cargo volume projections for the Plaquemines Parish Port and conceptual market share analysis for the Port of New Orleans, based on publicly available data obtained in concert with the Plaquemines Parish Council and Plaquemines Parish Port Authority.

This Summary Market Forecast provided updated findings from all prior tasks with any additional information developed or identified in the informal interview process. The Summary Market Forecast was integrated into the Market Assessment Study Executive Summary as the concluding section and was included in the Plaquemines Parish Comprehensive Port Development Master Plan Main Report.

The conclusions of the Market Assessment Data became the foundation for:

- Development of a specific business opportunity for the port development.
- Determining additional market potential cargo volume projections for the Plaquemines Parish Port and conceptual market share analysis for the Port of New Orleans.
- Determining a low, mid and high forecast for the specific port opportunity as initiated earlier in this task.
- Note: At the time of financing a bank or banking syndicate “acceptable” market forecast will be required to support final port development.

Figure 8: Trident's March 25, 2010 Presentation Conclusions



Assessment Study Preamble and Methodology Assumptions

The Market Assessment Study is an analysis of U.S. International Port trade, both historical and looking forward. The data focuses on U.S. Public Port Authorities on the East Coast, the Gulf region, and specifically the State of Louisiana.

The data and information is based on publicly available materials obtained from various sources available on the internet. The data is current as of the fourth quarter of 2009. A majority of the numerical data and analysis is derived from the USA Trade Online website. This website is sponsored by the U.S. Census Bureau and allows the user to access current and cumulative U.S. export and import data for over 18,000 export commodities and 24,000 import commodities. The trade data uses the North American Industry Classification System (NAICS) commodity classification codes. As noted in the study, a majority of the trade data trends exclude the NAICS category 27[1]. This category includes crude oil, coal and other such raw materials and was excluded in much of the analysis to better reflect competitive characteristics.

The USA Trade Online data base allows the user to track imports and exports traveling through more than 40 custom districts in the United States and its territories. A custom's district is an area within the United States comprised of several ports in the same geographic location. A district is not specific to a state, and ports from different states can be in the same district. The data base also allows the user to track imports and exports traveling through more than 400 ports in the United States and its territories. In the United States, the port data includes trade through airports, pipelines, roads, railroads, mail, as well as the more traditional sea-based ports. In the United States, physical ports are grouped into districts based on geography. The name of the district is the name of the primary port in the district.

Per the USA Trade Online database:

> *"…the port and district data" is a complete enumeration of documentation collected by the U.S. Customs and Border Protection (CBP) and is not subject to sampling error. Quality assurance procedures are performed at every stage of collection, processing and tabulation of the information.*
>
> *The data is however still subject to non-sampling errors, which include reporting errors, undocumented shipments, timeliness, data capture errors, and errors in low value estimation. "In addition to the reporting errors that affect the general merchandise trade statistics, there are reporting errors that specifically affect data tabulated by port. In general, the businesses or individuals that report the data may not be the same individuals who physically convey the shipments. This can lead to inaccurate information about where a shipment enters or exits the United States and how it is transported.*
>
> *The U.S. Census Bureau (Census Bureau) quality assurance procedures include checking that reported ports are valid CBP ports and performing relational checks between the ports and the method of transportation."*

The New Orleans, Port District, includes the following Ports:

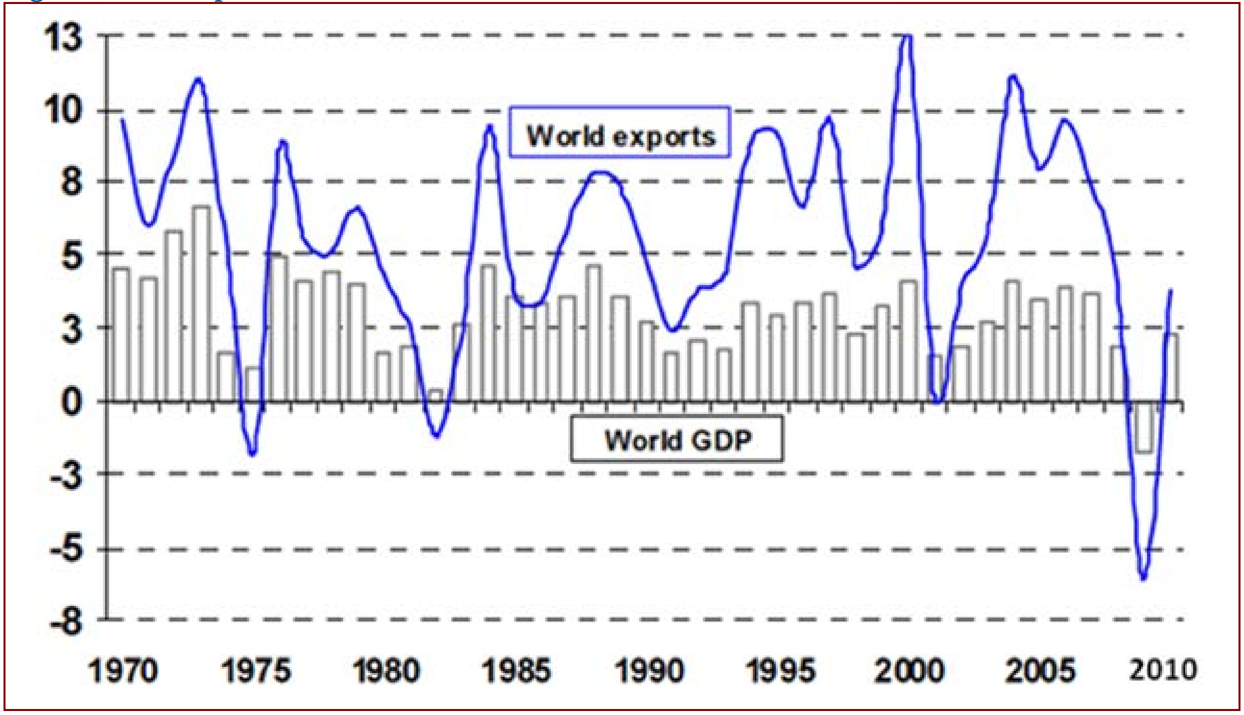
- The Port of New Orleans
- The Port of Morgan City
- The Port of Gramercy
- The Port of Lake Charles
- The Port of Baton Rouge
- Plus 13 smaller Ports that usually do not import or export goods via vessels

The Economic Outlook[2]

World Economy

GDP drives world trade and U.S. Trade. The 2009 downturn in world GDP is unprecedented (Figure 9). World GDP declined by 1.0% in 2009 and is forecasted to expand at a rate of 3.8% in 2010. This GDP growth will again expand world trade.

Figure 9: A Comparison of the Growth Rate of World Trade and GDP



The sharp pullback in consumer and business spending and the subsequent de-stocking of inventories impacted economic performances globally in 2009. The inventory cycle will eventually add to growth as the process stabilizes then reverses as inventories are rebuilt.

Excess economic capacity and weakened global demand should ensure that inflationary pressures remain well contained globally over the next two years.

The "Great Recession" appears to have ended in second half of 2009, and the world economy is expected to expand by 3.8% in 2010. "But the recovery remains fraught with risks and the global recession served to exacerbate a number of imbalances. This leaves the world economy a dangerous place full of uncertainties. It also warrants close monitoring of economic developments to access the true path of the recovery." [3]

Reports of a rebounding world economy are substantiated by multiple sources as indicated below in Figures 10 and 11).

Figure 10: World Economic Trends and Expected Rebound[4]

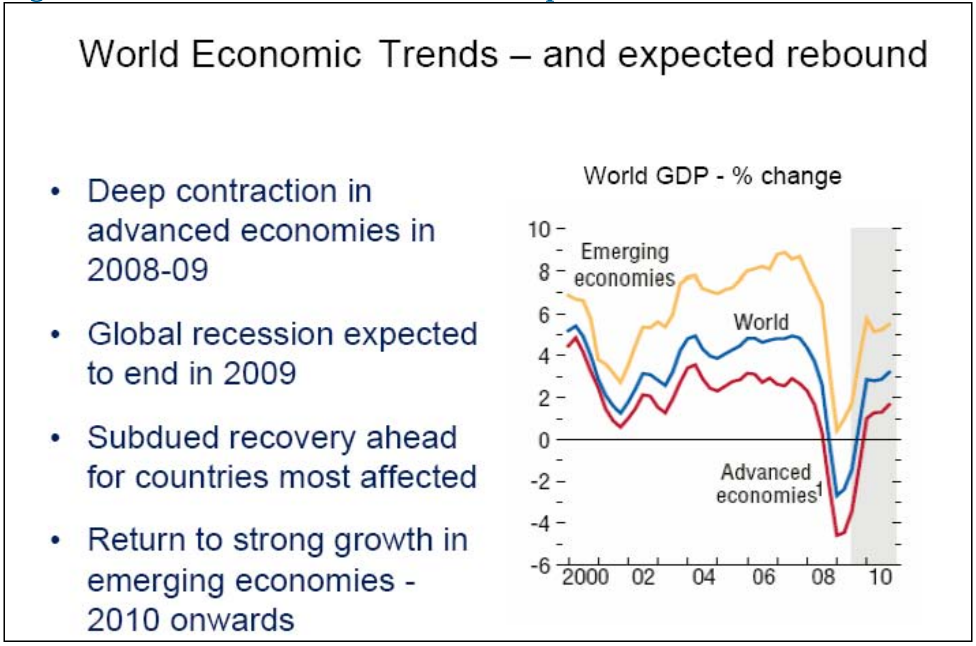
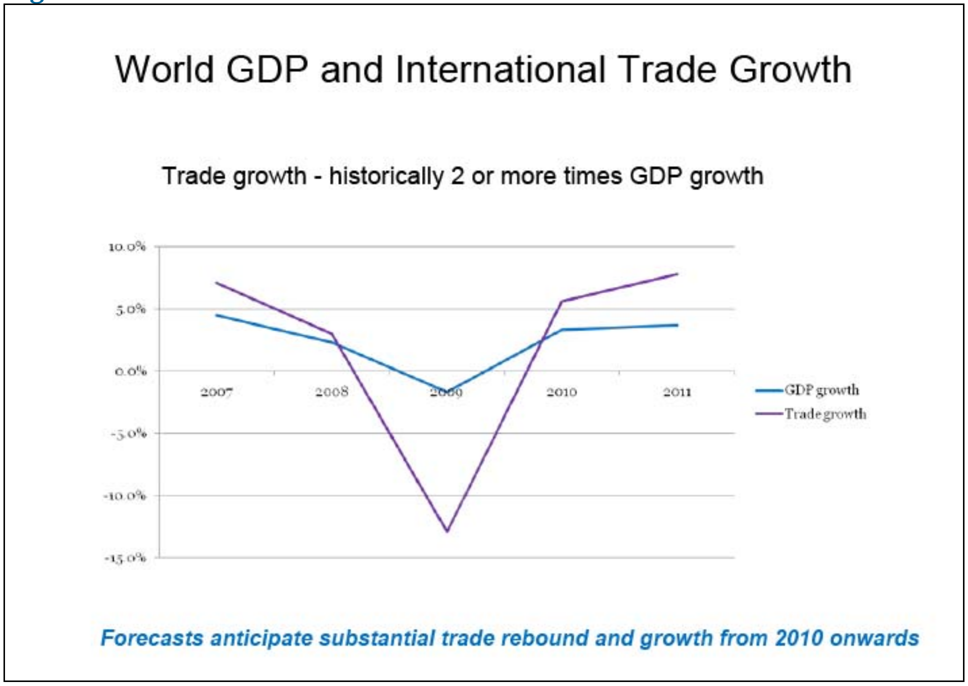


Figure 11: World GDP and International Trade Growth



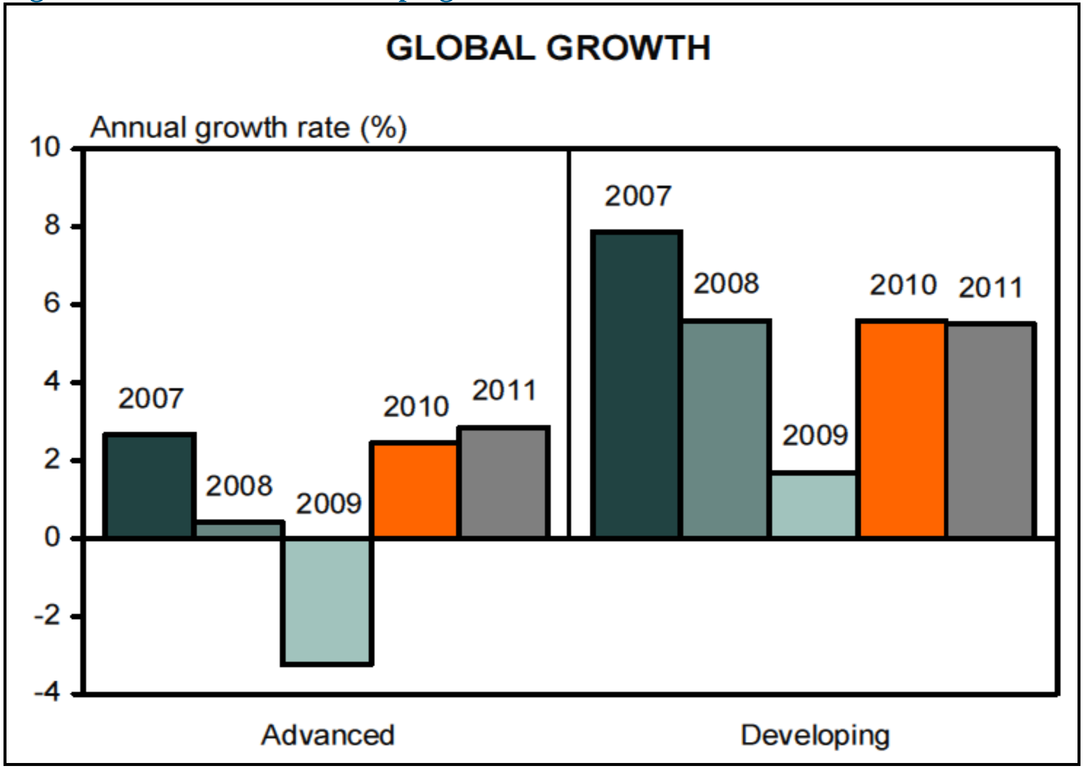
Conclusion:

There appears to be substantial recovery to justify the investment in a new Plaquemines Parish port however the targeting and positioning of that port is a crucial element in its success.

The Importance of Emerging Markets

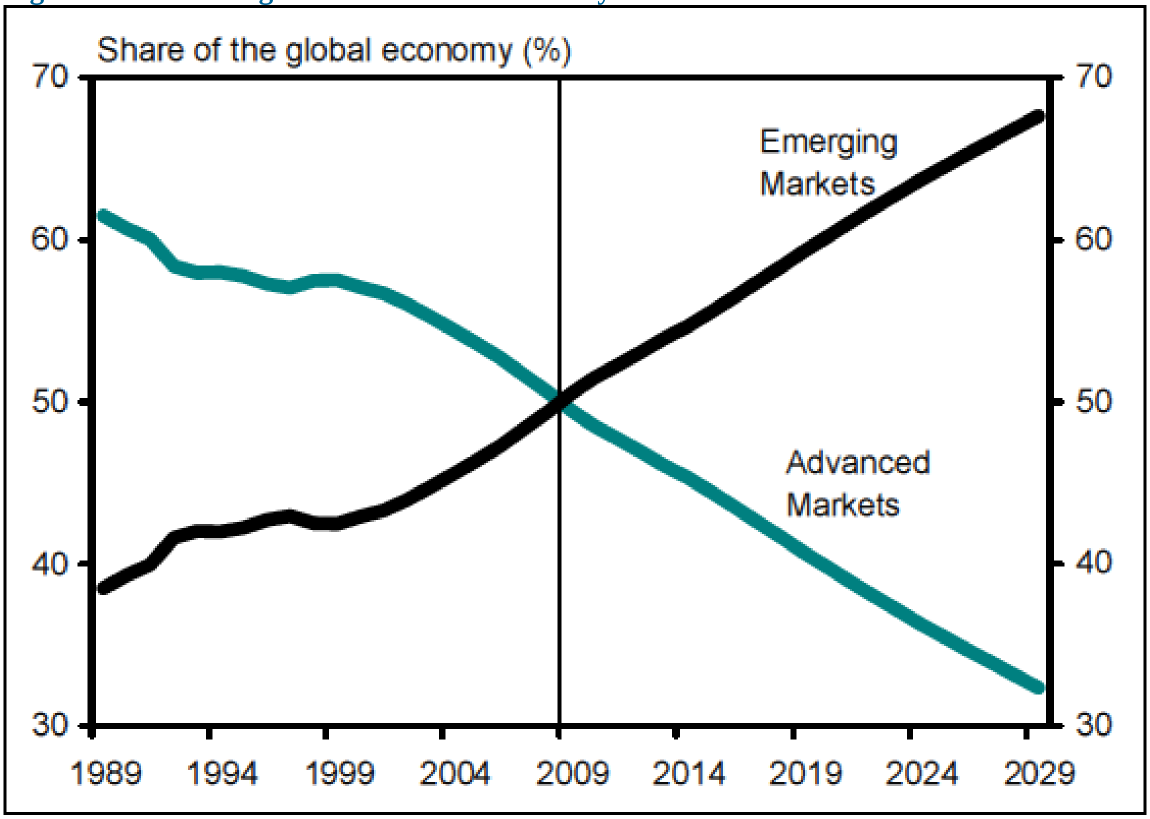
The world is evolving and it appears that the world economy is at the pivot point of a new economic era. For the advanced economies the early stage of output expansion is not going to have the typical strength of past recoveries (Figure 12). But emerging markets and the developing world will see the faster pace of growth, accelerating from a 1.8% in 2009 to 5.6% in 2010. Advanced economies are expected to post a 2.5% growth rate in 2010, after a 3.3% contraction in 2009.

Figure 12: Advanced vs. Developing Countries Growth[5]



Twenty years ago advanced nations / markets made up two-thirds of the global economy. Today they comprise only half and within 20 years advanced markets will account for only one-third of the global output. As a result of this changing market share (in spite of slower expansion in the mature advanced economies) the global economy will see a higher average pace of growth in the future (Figure 13).

Figure 13: A Turning Point in Economic History[6]



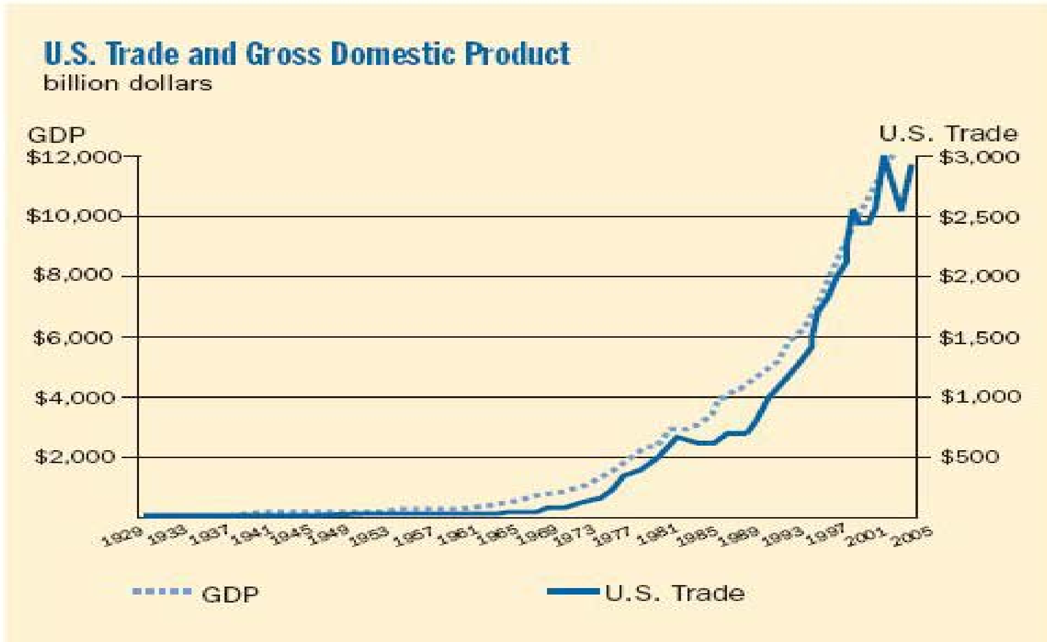
Conclusion:

Developing countries (Brazil, Russia, India, and China, "BRIC"), representing more than 40% of the world population will become the future of all freight origins and destinations.

U.S. Foreign Trade

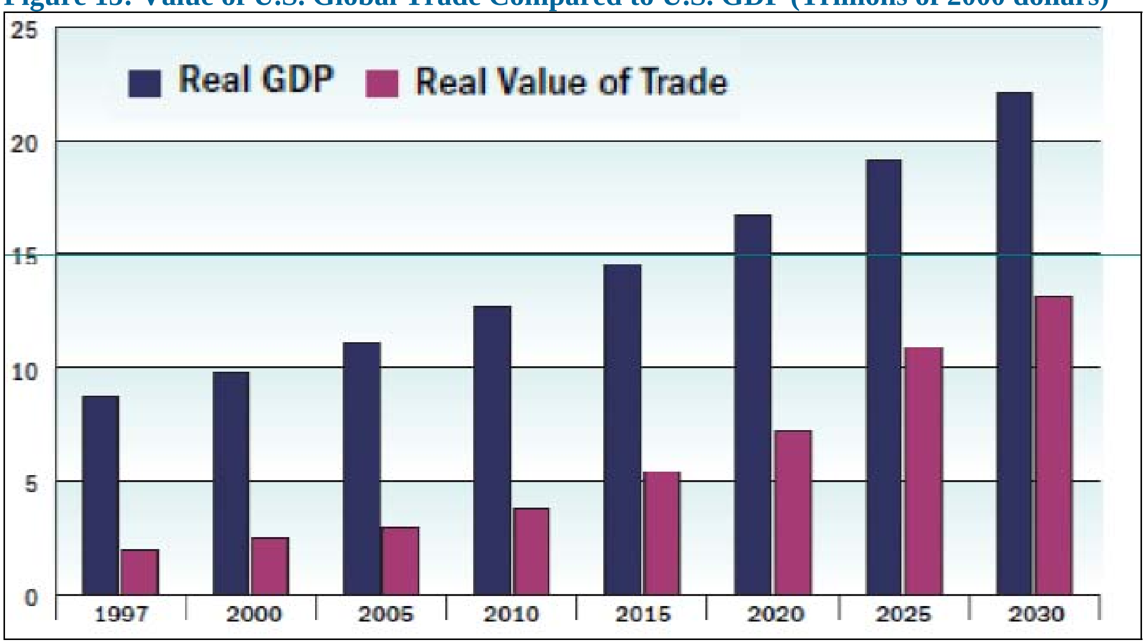
U.S. trade performance is reliant upon the health of the global economy, the value of the dollar, and the shift in consumer goods manufacturing to low labor cost nations such as China, Southwest Asia and India. For the U.S., GDP growth and world trade are closely dependent (Figure 14).

Figure 14: For the U.S., as Goes Economic Growth, as Goes Trade[7]



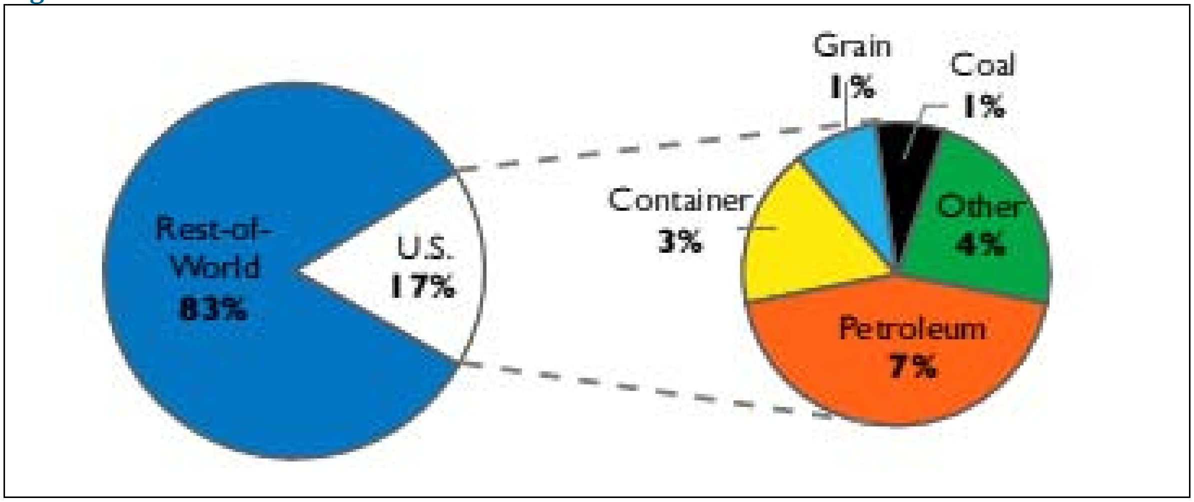
Foreign trade accounted for only 13% of U.S. GPD in 1990; but it grew to nearly 22% by 2006. Recent projections indicate that foreign trade will be equivalent to 35% of GDP by 2020, and may grow to 60% by 2030 (Figure 15). As foreign trade continues to grow marine transportation will become even more important to our economy.

Figure 15: Value of U.S. Global Trade Compared to U.S. GDP (Trillions of 2000 dollars)[8]



In 2008, U.S. foreign trade accounted for about 17% of global waterborne trade (Figure 16), U.S. petroleum trades accounted for about 7% of global trade (all commodities).

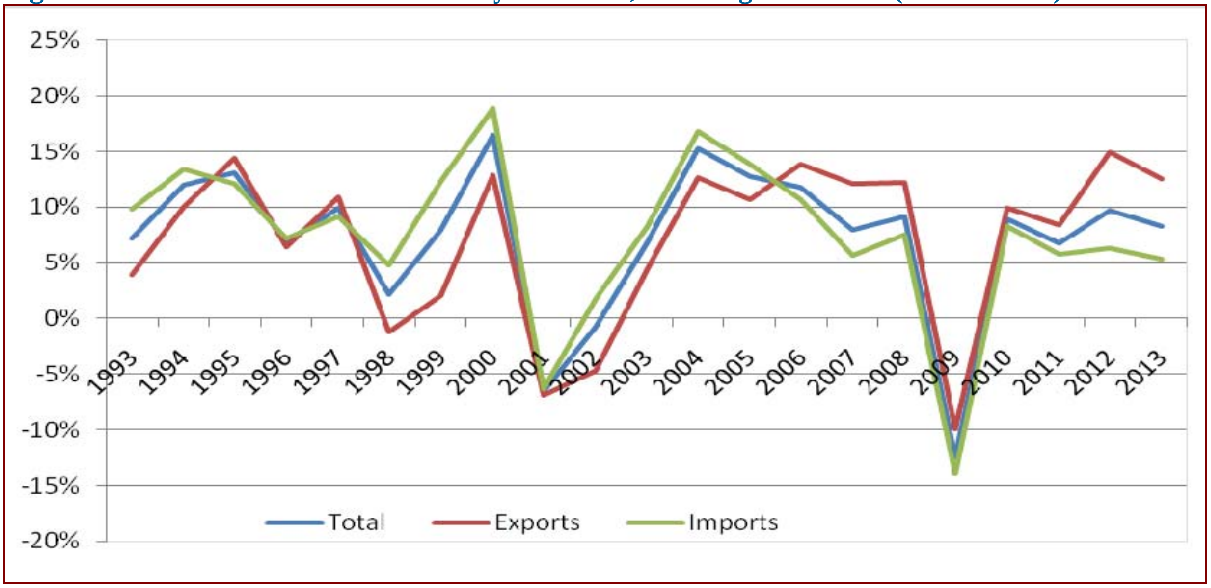
Figure 16: U.S. Share of Global Trade



For the period 2002 to 2008 total dollar U.S. trade (in goods) was up 84%, exports were up 89%, and imports up 81%. In 2008, total trade was up 9%, and imports accounted for 62% of total trade, with basically no change in the mix from 2002.

In the U.S., recovery in 2010 and beyond is expected to be shallow relative to historic experiences due to the lingering economic costs (Figure 17).

Figure 17: U.S. Trade in Goods - history / forecast, annual growth rate (U.S. Dollars)[9]



Going forward, due to the rapid rate of economic growth of emerging markets, it is expected that the global economy will grow for the next 20 years and therefore help drive U.S. trade and the U.S. GDP.

The U.S. GDP is forecasted to grow an average of 2.7% in the next 10 years and 2.3% between 2020 and 2029. After a decline of over 13% in the U.S. trade in 2009, the forecast is for a major turnaround in both imports and exports, up over 8% in 2010 and over 7% in 2011. The growth is again due to an expansion of overseas markets.

Emerging markets will face challenges, but their longer-range prospects are bright. Short-term growth will still outpace activity in traditional markets.[10]

Conclusion:

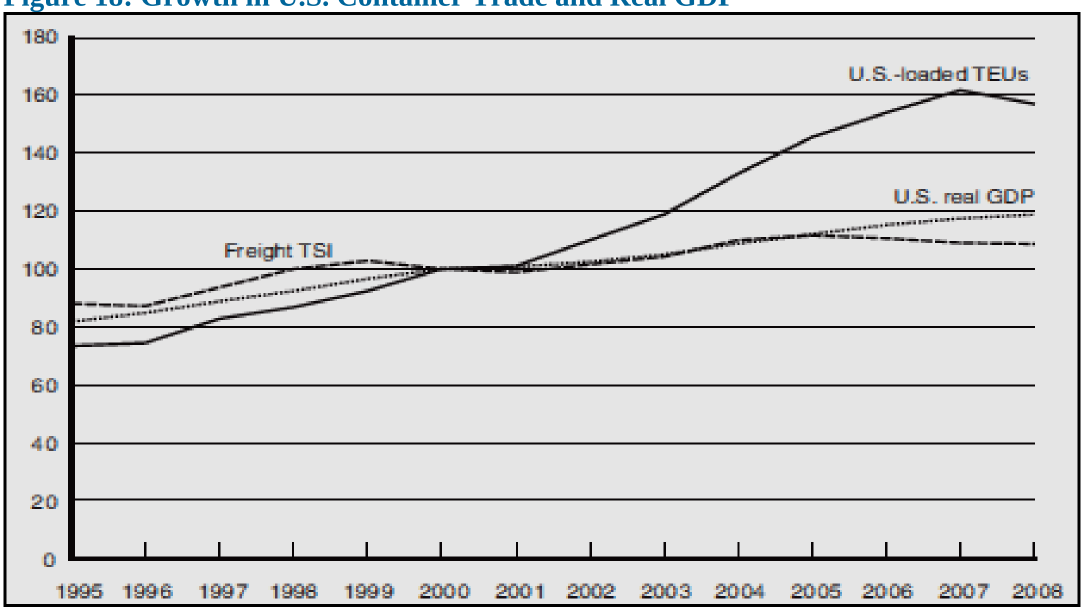
U.S. Trade and GDP are closely dependent and the value of trade is becoming a larger component of real GDP. For the U.S., the recession ended in 2009 and the recovery has commenced in 2010. Plaquemines Parish has an opportunity to participate in the growing recovery.

America's Ports

Containerization

From 1995 to 2008, the volume of containerized cargo moving through U.S. ports grew at a faster rate, 6%, than the U.S. real GDP at 3% (Figure 18).

Figure 18: Growth in U.S. Container Trade and Real GDP[11]



In March 2010 the Journal of Commerce (JOC) projected total U.S. containerized ocean imports will grow at 9.1% in 2010 after the steep decline in 2009. The JOC forecast projects containerized imports on the Trans-Pacific trade lanes will grow 12.1% in 2010.

Today one container in every 10 that is engaged in global trade is bound for or originates in the U.S., representing 10% of worldwide container traffic.

Between 2004 and 2008 U.S. foreign container trade increased by 35%, compared to a 10% increase for non-container trade. Between 2003 and 2008 the size of vessels has grown 204%, and the number of port calls has grown by 23% ... and this is prior to the opening of the "new" Panama Canal. In addition the South Atlantic area had the highest growth (221%) in vessel calls among all U.S. coastal regions.

The 2009 recession has had a dramatic negative impact on trade, but total U.S. trade dollars are still up slightly from 2005 (as shown in Tables 1 and 2), driven by the strength of container export shipments. [12]

Table 1: Dollar Trends - 2009 vs. 2005 (Sept YTD Comparisons) w/o Category 27

	Imports	**Exports**
Containers	+ 1%	+ 26%
Bulk trade	(37)%	+ 31%

Table 2: Total Trade 2009 vs. 2005 (Sept YTD Comparisons) w/o Category 27

	Dollars	**Tonnage**
Containers (w/o cat 27)	+ 7%	(4)%
Bulk trade (w/o cat 27)	(10)%	(19)%
Total U.S. Trade (w/o cat 27)	+ 2%	(14)%
Total Category 27	+ 5%	(9)%

Over 85% of the U.S.'s containerized freight flows through 10 ports:

- Los Angeles
- New York / New Jersey
- Savannah
- Long Beach
- Hampton Roads
- Oakland
- Charleston
- Houston
- Seattle
- Tacoma

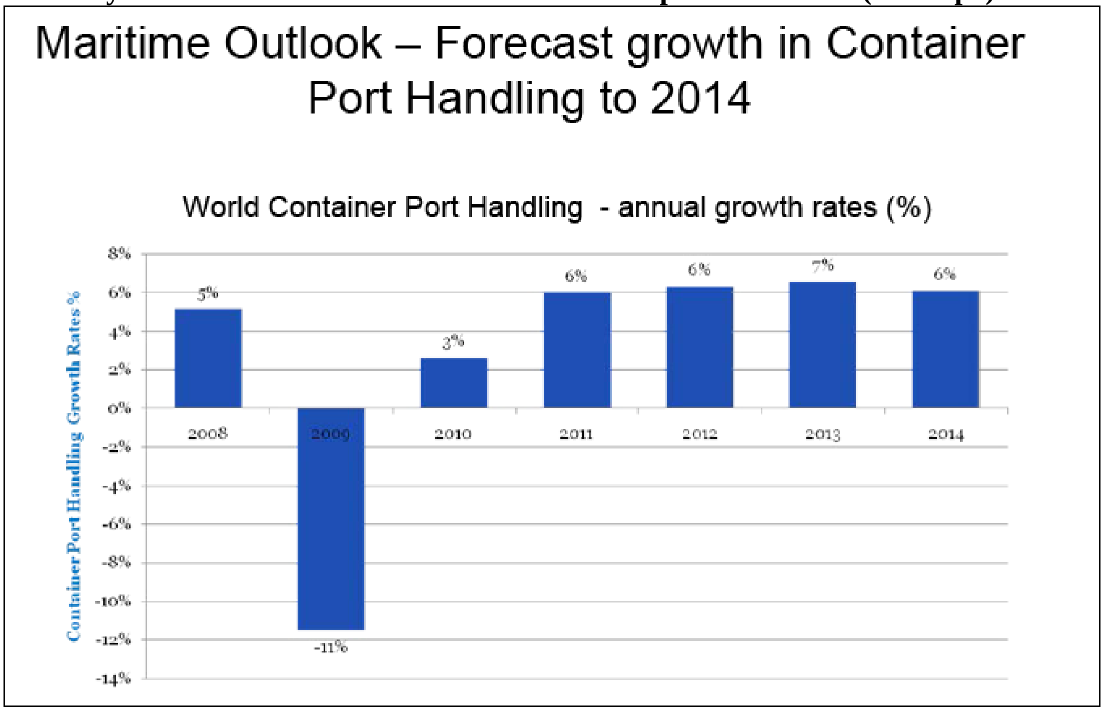
Projections of continued growth in containerized trade will put pressure on these 10 ports and on their intermodal systems. Therefore medium and small ports will have an essential role in relieving this anticipated pressure.

Projected growth in the U.S. economy and historical trends at U.S. ports suggest that port container traffic will double by 2020 and triple by 2030 (Figure 20). This may occur even if the average annual rate of growth in container traffic falls from the 1995-2006 average of 6.4% (or the 2000-2006 rate of 6.5%, or

1990-2006 rates of 6%) to 5%, as shown below. Even if the growth rate falls to 4%, container traffic could still more than double by 2030.[13]

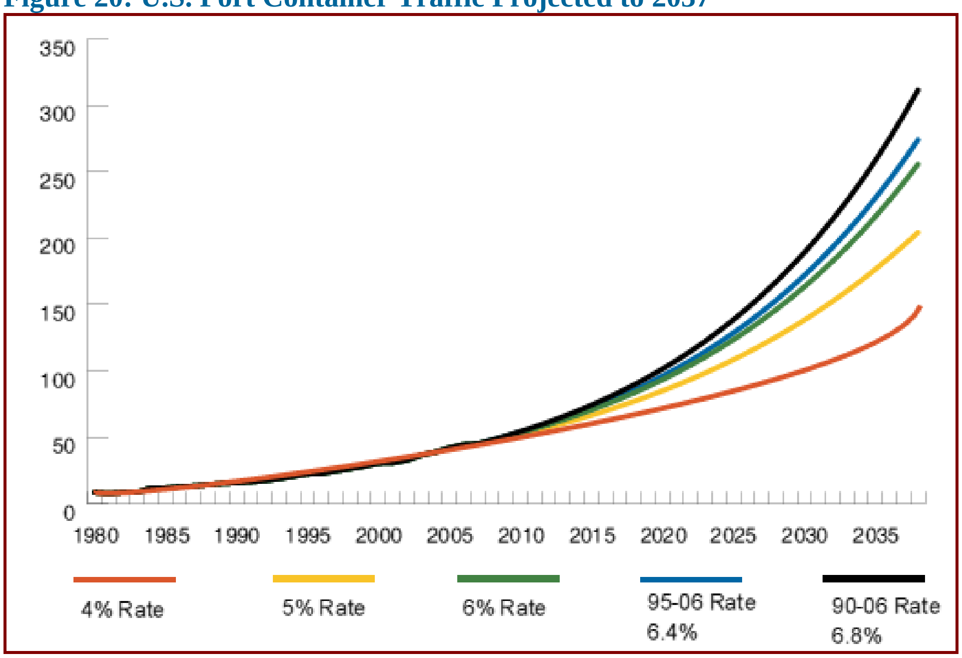
Figure 19: Global Short-Term Container Volume Recovery and Forecast Growth[14]

Recovery from 2009 fall – but container rates below previous trends (>10% pa)



The US Port Container forecast shows continued growth for the foreseeable future.

Figure 20: U.S. Port Container Traffic Projected to 2037[15]



Conclusion:

Global and U.S. containerized trade growth will continue. Based on current market projections and trade flows, there is a trend toward the return to previous pre-recession growth levels. Projected growth in the U.S. economy and historical trends at U.S. ports suggest even at lower growth levels of 4 or 5%, port container traffic could double by 2020 and triple by 2030.

Recent Port of New Orleans conservative studies projects average annual growth of container volumes of 3.5-4% in the Gulf region over the 20 year forecast period ending in 2028.

Capital expenditures at Public Ports[16]

In all regions of the U.S., the data from 35 ports showed they spent over 40% of their capital expenditures on container facilities, and 20% on general cargo facilities. In addition the Gulf Ports spent more dollars on dry bulk facilities than any other region.

For the period 2007 to 2011, the South Atlantic Ports forecasted the highest capital expenditures (37%) of the 33 U.S. reporting ports. The Gulf Ports forecasted the next highest expenditure ... 23% of the total forecasted expenditures. For the forecast period (2007 to 2011) 53% of the dollars are projected to be spent on container facilities, 26% on general cargo and 10% on passenger facilities.

Conclusion:

To maintain or to increase market share it is essential that capital expenditures are made to meet the current market demands.

Origin –Destination Trade Trends - Virginia to Texas excluding Category 27 [17]

The Gulf Port Districts have experience a higher trade growth rate than the South Atlantic Ports (Table 3). The Port District of New Orleans has not experienced as much growth as the other Gulf Districts, but compared to the South Atlantic Port Districts' its growth rate is stronger.

Table 3: Regional Port District Dollar Growth (w/o Category 27)

	Total Trade			
Port Districts included*	**2008 Yr vs. 2003 Yr.**	**2009 Sept YTD vs. 2003 YTD**	**Exports as% of total Trade**	**Category 27 as a% of total Trade in 2008**
Norfolk, Wilmington, Charleston, Savannah, Miami	80%	40%	43%	5%
Tampa, Mobile, Port Arthur, Houston	139%	69%	57%	53%
New Orleans	**95%**	**48%**	**43%**	**64%**

For exports, the New Orleans Port District's growth has not been as robust as the South Atlantic Ports (Table 4). But for imports the New Orleans growth has equaled or exceeded both the South Atlantic Port Districts and the Gulf Port Districts. New Orleans has a much higher mix of bulk trade verses both the Gulf and the South Atlantic Districts.

Table 4: Regional Port Districts' Import and Export Trends

	Vessel Export dollars			Vessel Import dollars		
	Growth 2008 Yr. vs. 2003 Yr.		Containerized Exports as a% of total Trade in 2008	Growth 2008 Yr. vs. 2003 Yr.		Containerized Imports as a% of total Trade in 2008
Port Districts	Bulk Exports	Containerized Exports		Bulk Imports	Containerized Imports	
Norfolk, Wilmington, Charleston, Savannah, Miami	120%	103%	63%	27%	72%	85%
Tampa, Mobile, Port Arthur, Houston	164%	154%	35%	131%	94%	39%
New Orleans	**82%**	**49%**	**13%**	**149%**	**85%**	**24%**

For the Port Districts from Florida to Texas, there is no one commodity that accounted for more than 30% of the total trade in 2009 (September YTD). The commodity types are diversified and each geographic port area tends to "dominate" a specific commodity (Table 5).

Table 5: Regional Port Districts Commodity Mixes

	(Major) Commodity mix in 2009 (Sept YTD) Vessel Value in U.S. dollars					
	Exports			**Imports**		
Major Category	**Gulf Districts**	**New Orleans**	**Florida**	**Gulf Districts**	**New Orleans**	**Florida**
10 Cereals		**30%**				
12 Oil Seeds Etc.; Misc Grain, Seed, Fruit, Plant Etc		**28%**				
29 Organic Chemicals	19%					
84 Nuclear Reactors, Boilers, Machinery Etc.; Parts	24%		20%	17%		
87 Vehicles, Except Railway Or Tramway, And Parts Etc			17%			15%
72 Iron And Steel					**16%**	
73 Articles Of Iron Or Steel				19%		
61 Apparel Articles And Accessories, Knit Or Crochet						14%

For the Port Districts from Florida to Texas, there is no one dominant trading country. No one country accounts for more than 18% of an area's imports or exports (Table 6). Each trading area also tends to emphasize different countries.

Table 6: Trading Country with Highest Share

	Imports	Exports
New Orleans District	**Brazil 13%**	**China & Japan, each @ 11%**
Gulf Districts	China 12%	Brazil 7%
Florida Districts	Japan 18%	Venezuela 8%

Conclusion:

For the Gulf Port Districts there is no one commodity that accounts for more than 30% of the total trade in 2009 and there is no one dominant trading country.

Origin-Destination Trends - The State of Louisiana[18]

Export-supported jobs linked to manufacturing account for an estimated 5.7% of Louisiana's total private-sector employment (direct)[19]. Nearly one-seventh (13.1%) of all manufacturing workers in Louisiana depend on exports for their jobs (indirect). (2006 data)

A total of 2,555 companies exported goods from Louisiana locations in 2007. Of those, 2,166 (85%) were small and medium-sized enterprises (SMEs), with fewer than 500 employees. SMEs generated almost one-third (30%) of Louisiana's total exports of merchandise in 2007.

Among manufactured products, the state's leading export category in 2008 was petroleum and coal products, which alone accounted for $10.0 billion, or almost one-quarter (24%) of Louisiana's total merchandise exports. Other top manufactured exports in 2008 were chemical manufactures (2008 exports of $7.1 billion), processed foods ($3.7 billion), and manufactured machinery ($1.3 billion).

Louisiana is also a major supplier of agricultural products. In 2008, Louisiana's exports of agricultural products totaled $15.8 billion, which alone accounted for 38% of the state's total merchandise exports.

Vessel Imports[20]
Louisiana accounted for 6% of all U.S. vessel dollar imports in 2009 (November YTD) and only 1% of container imports. In 2003 the State accounted for 5% of the imports, and also 1% of all container imports.

In 2009 (November YTD), Louisiana accounted for 18% of Category 27 imports, versus 17% in 2003. The State also accounted for 52% of fertilizers, and 25% of all Iron and Steel U.S. imports (Table 7).

Table 7: Louisiana Primary Imports vs. Total U.S. Dollar Imports. % of U.S. Dollar Vessel Imports

Major import Commodities	2009 (Nov. YTD)	2003
Category 27	18%	17%
Fertilizers	52%	59%
Iron and Steel	25%	24%
Animal / vegetable fats & oil	24%	12%
Copper	18%	5%
Coffee, tea, spices	16%	13%
Aluminum	13%	15%

By country, Louisiana imported 17% of its imports from Saudi Arabia. The State accounted for 40% of all the U.S. imports from Saudi Arabia in 2009 (November YTD), verses only 27% of the Saudi Arabia imports in 2003 (Table 8).

Table 8: % of U.S. Vessel Dollar Imports by the State of Louisiana

Major import Countries	2009 - Nov. YTD	2003
Saudi Arabia	40% ⇧	27%
Kuwait	36%	41%
Angola	27% ⇧	16%
Venezuela	23%	23%
Nigeria	20%	23%
Iraq	20% ⇧	13%
Russia	20%	18%
Algeria	17%	13%
Brazil	14%	12%
Mexico	14%	12%

Vessel Exports[21]

For exports the State of Louisiana accounted for 9% of the U.S. vessel dollar exports (vs. 6% of the exports) and 2% of the total U.S. container dollars exported in 2009 (November YTD). The States share has not changed since 2003. The State accounts for 51% of the U.S. exports of category 12 (Oil Seeds Etc.; Misc Grain, Seed, Fruit, Plant Etc), and 46% of the cereals exported (Table 9).

Table 9: Louisiana Primary Exports vs. Total U.S. Total Dollar Imports ... % of U.S. Dollar Vessel Imports

Major export Commodities	2009 (Nov. YTD)	2003
Oil seeds, misc. grain, seed, fruit	51%	60%
Animal / Vegetable fats	51%	36%
Cereals	46%	54%
Food industry residues and waste	39%	52%
Category 27	12%	12%
Organic Chemicals	10%	11%

By country, Louisiana's share of its major export countries has seen little change since 2003. China accounts for 16% of Louisiana's exports and Louisiana accounts for 12% of the total U.S. exports to China (Table 10).

Table 10: % of U.S. Vessel Dollar Exports by the State of Louisiana

Major export Countries	2009 (Nov. YTD)	2003
China	12%	13%
Japan	12%	10%
Mexico	15%	20%
S. Korea	9%	6%
Netherlands	10%	10%
Egypt	32%	29%

Conclusion:

The State of Louisiana has become a leader in the export and import of bulk and break bulk cargoes. If Louisiana could match these strategies for containerized imports and exports, Louisiana could substantially increase its containerized cargo market share.

Modal Transportation Preference Trends in Louisiana

Water

The State of Louisiana has the second highest number of inland waterway miles, second only to Alaska. Arkansas is third, with 34% fewer miles.

Rail [22]

The State is served by 16 railroads, while Texas is served by 45 railroads, and Alabama is served by 25. The state has 2,855 miles of rail, which is about equal to number of miles in Florida. Texas has 10,800 miles and Alabama has 3,300 miles of rail.

Based on a study by the U.S. Transportation Research Board, train volumes will exceed capacity in much of the Nation by 2035. Two exceptions are the State of Louisiana and the State of Florida, where they are forecasted to be below capacity.

Conclusion:

Louisiana is one of only two prime locations in the U.S. where six Class-I railroads are co-located. New Orleans is the only U.S. Public Port Authority with that number of Class-I Railroads available for its distribution. For Plaquemines Parish this affords a unique opportunity to capitalize on existing transportation assets for the improvement and enhancements of inland distribution networks.

Louisiana has the opportunity to utilize the Mississippi River inland waterways for enhancing distribution to the heartland of the United States. The Mississippi River inland waterways system provides the safest and least expensive transportation mode for shipping product to the Mid-West.

The Ports of Louisiana – Competitive Port Dynamics

In the pre-recession year of 2007, 5 ports in Louisiana ranked in the top 25 for total trade (short ton) volume. Only the State of Texas had more short ton trade. (Table 11)

For container TEU volume, the Port of New Orleans ranks 19th, and the Port of Lake Charles ranks 36th. The port of Lake Charles is one of a few ports that actually saw an increase in container volume in 2008 versus 2007. (Table 12)

Table 11: U.S. Port Ranking by Cargo Volume 2007[23]

Short Tons				
TOTAL FOREIGN TRADE				
RANK			**Rank**	**Rank**
Total Trade	**PORT/STATE**	**TONS**	**Exports**	**Imports**
1	Houston, TX	145,342,439	2	1
2	**South Louisiana, LA, Port of**	**107,490,101**	**1**	**6**
3	New York, NY and NJ	91,421,955	6	2
4	Long Beach, CA	70,556,376	4	4
5	Corpus Christi, TX	58,365,262	16	5
6	Los Angeles, CA	57,340,976	5	7
7	Beaumont, TX	57,043,894	19	3
8	Hampton Roads, VA	42162322	3	26
9	Texas City, TX	40,479,252	26	8
10	**Lake Charles, LA**	**39,712,226**	**24**	**9**
11	**New Orleans, LA**	**37,791,019**	**7**	**14**
12	Mobile, AL	34,815,614	13	10
13	Savannah, GA	34,794,977	11	13
14	Baltimore, MD	26,748,214	15	18
15	Paulsboro, NJ	24,158,048	40	11
16	Freeport, TX	24,065,126	31	16
17	**Plaquemines, LA, Port of**	**23,995,715**	**8**	**31**
18	Pascagoula, MS	23,366,928	27	17
19	Portland, ME	22,811,579	111	12
20	Philadelphia, PA	21,665,893	62	15
21	Seattle, WA	21,328,354	14	28
22	Charleston, SC	19,575,381	20	20
23	Tacoma, WA	19,346,668	12	33
24	Portland, OR	18,810,473	10	35
25	**Baton Rouge, LA**	**18,543,110**	**25**	**19**

Table 12: North America Container Port Traffic in TEUs[24]

Rank		2008	2007	Yrly. chg.
1	Los Angeles	7,849,985	8,355,039	-6%
2	Long Beach	6,350,125	7,312,465	-13%
3	New York/New Jersey	5,265,058	5,299,105	-1%
4	Savannah	2,616,126	2,604,312	0%
5	Oakland	2,236,244	2,388,182	-6%
6	Hampton Roads	2,083,278	2,128,366	-2%
7	Tacoma	1,861,352	1,924,934	-3%
8	Houston	1,794,309	1,768,627	1%
9	Seattle	1,704,492	1,973,505	-14%
10	Charleston	1,635,534	1,754,376	-7%
11	Port Everglades (FY)	985,095	948,680	4%
12	Miami (FY)	828,349	884,945	-6%
13	Jacksonville (a) (FY)	697,494	710,073	-2%
14	Baltimore	612,877	610,466	0%
15	Wilmington(DE)	267,684	284,352	-6%
16	Philadelphia	255,994	253,492	1%
17	Portland(OR)	245,459	260,128	-6%
18	Palm Beach (FY)	244,638	249,931	-2%
19	**New Orleans**	**235,324**	**250,649**	**-6%**
20	Gulfport	214,074	206,622	4%
21	Boston	208,626	220,139	-5%
22	Wilmington(NC)	196,040	191,070	3%
23	Mobile (b)	114,439	118,699	-4%
24	San Diego	90,028	93,671	-4%
25	Richmond(VA)	49,530	51,557	-4%
26	Panama City	47,228	53,652	-12%
27	Tampa	44,265	39,653	12%
28	Hueneme	32,197	35,704	-10%
29	Fernandina	30,477	30,603	0%
30	Everett	17,719	17,515	1%
31	Fort Pierce	17,480	15,760	11%
32	Galveston	8,666	9,356	-7%
33	Manatee	6,666	4,818	38%
34	Barbers Point (FY)	5,678	268	2019%
35	Portland(ME)	4,820	9,464	-49%
36	**Lake Charles**	**3,621**	**2,598**	**39%**

The Port District of New Orleans includes 19 ports, however only 6 are active as shipping and commodities via vessels. St. Rose is included in the 6 ports, but only accounts for about 1% of the District's dollar volume. (Table 13)

Table 13: The Ports in the New Orleans Port District

	Total Vessel Dollar Trade (Imports plus Exports)	
	Total $	**Container $**
New Orleans, LA	38%	93%
Morgan City, LA	21%	
Gramercy, LA	19%	4%
Lake Charles, LA	12%	2%
Baton Rouge, LA	9%	1%
St. Rose, LA	1%	
Other 13 Ports	0%	0%
Total New Orleans Port District	100%	100%

The port with the strongest growth is Gramercy, up 46% (Table 14) in total trade dollar volume since 2006 (September YTD), with growth centered in bulk shipments. Lake Charles has the largest containerized dollar growth since 2006, but containers only account for 2% of the total trade volume September 2009 YTD. The New Orleans Port is the primary container port ... shipping over 90% of the total container trade dollars. (Table 13)

Imports:

Morgan City accounts for the highest volume of the District's dollar volume, but the port's volume trend is declining more rapidly than other ports.
Two ports have the strongest growth in containerized dollar imports: Gramercy and Lake Charles. However the mix of their total container dollar volume is less than 5%.

Exports:

The Port of New Orleans accounted for 55% of the exports in 2009. But the port's growth rate since 2006 is not as strong as Morgan City's, Gramercy's, and St. Rose's. Lake Charles' containerized export dollars are growing faster than any of the other ports.

Table 14: New Orleans Ports Growth Trends

	Total Vessel U.S.$ value				**Total Containerized Vessel U.S.$**		**Total Bulk Vessel U.S.$ value**	
	06 vs. '09 growth%	'09 vs. '08	'08 vs. '07	'07 vs. 06	06 vs. '09 growth%	'09 vs. '08	06 vs. '09 growth%	'09 vs. '08
New Orleans District	-11%	-46%	50%	10%	30%	-17%	-14%	-48%
New Orleans Port	-6%	-39%	37%	12%	28%	-16%	-13%	-44%
Morgan City	-38%	-59%	63%	-7%	-62%	-48%	-38%	-59%
Gramercy	46%	-39%	75%	36%	128%	4%	45%	-39%
Lake Charles	-8%	-41%	27%	24%	408%	33%	-9%	-42%
Baton Rouge	-22%	-49%	46%	4%	-21%	-73%	-22%	-48%
St Rose	706%	-52%	562%	152%			706%	-52%

NAICS category 27 accounts for over 64% of the total trade of the New Orleans District (in U.S. dollars)

Table 15: 2008 Category 27 Trade

	% of Imports	% of Exports
New Orleans District	80%	26%
New Orleans Port	50%	22%
Morgan City Port	100%	3%
Gramercy Post	73%	6%
Lake Charles Port	98%	71%
Baton Rouge Port	67%	51%
St Rose Port	0	100%

Of the six active vessel-shipping ports in the New Orleans District, the ports of New Orleans, Gramercy and Baton Rouge are the ports that are diversified. With the other three ports: (Table 15)

- Morgan City: 100% of its imports are in category 27, and its exports are only 1% of the District's
- Lake Charles: 98% of its imports are in category 27, and it accounts for only 4% of the Districts exports, and 71% of those exports are in category 27
- St. Rose: it has virtually no imports and 100% of its exports are category 27

Opportunities exist for three New Orleans Port District ports to expand their commodity imports. Other regional competitive ports are strong in commodities where the local ports have minimal participation (Table 16).

Table 16 Key Imported Commodities by Port

Competitive Ports					
2008 -- mix% of Ports total imports ... w/o category 27					
	Houston District	Mobile District	**Baton Rouge / Gramercy / New Orleans**	Miami District	Tampa District
Iron & steel	6%	16%	**31%**		
Articles of iron and steel	23%		**4%**		
Vehicles	6%	10%			51%
Nuclear reactors, parts, machinery	14%	7%	**4%**	10%	
Organic chemicals	9%		**8%**		
Electrical machinery	6%			8%	
Knit Apparel articles		13%		20%	
Beverages				7%	
Aluminum and articles of aluminum		9%			
Misc. Chemical products	4%				
Non knit apparel articles		7%		7%	
Rubber products			**5%**		
Fish				4%	

Edible fruit and nuts					
Recovered wood pulp		5%			
Inorganic chemicals			**10%**		6%
Copper					14%
Paper and paper board					2%
Fertilizers			**13%**		
other	32%	34%	**26%**	44%	26%
	100%	100%	**100%**	100%	100%

Container Trade by Dollar Volume [25]

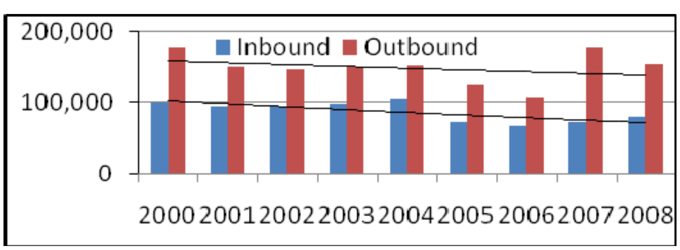
For the 3 diversified ports, the mix of container imports is low compared to the U.S. average, and to other competing port districts. However the growth of container shipments, in dollars, is far above average for both Baton Rouge and Gramercy. New Orleans container growth is equal to the National average, and below its bulk shipment growth (Table 17).

Table 17: Container Import Dollar Shipments

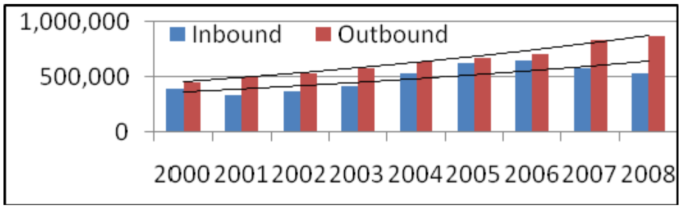
	2008 Imports … w/o Category 27		
	Containerized dollar shipments		**Total Trade $**
	Mix% of total 2008 $ trade	**Growth '08 vs. '03**	**Growth '08 vs. '03**
Baton Rouge	**8%**	**587%**	**187%**
Gramercy	**6%**	**600%**	**349%**
New Orleans	**34%**	**67%**	**191%**
Miami District	89%	15%	17%
Tampa District	18%	103%	50%
Mobile District	49%	13%	68%
Houston District	46%	111%	162%
Total US	76%	62%	56%

TEU Container Shipping Trends [26]

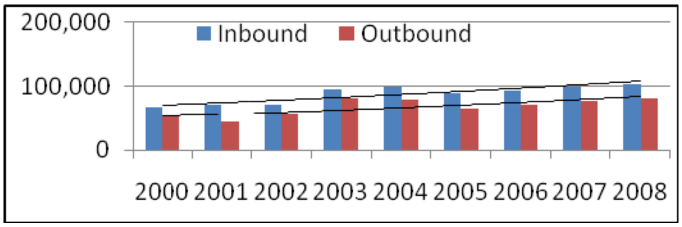
For the Port of New Orleans the number of loaded TEUs has not kept pace with two U.S. Gulf competitive ports, based on AAPA data.



For New Orleans the number of total loaded TEUs is down 16% from 2000 to 2008



For Houston, the total loaded TEUs are up 66%



For Gulfport, the total loaded TEUs are up 52% since 2000

Conclusion:

The Ports of Louisiana continue to exhibit strong trade growth in bulk and break bulk products but a weakness in developing and sustaining container traffic. This suggests that there is an opportunity in Plaquemines Parish to continue to develop bulk and break bulk capabilities and to seize an opportunity to develop a systemic approach to containerized cargoes.

The research indicates that there may be an opportunity in developing Roll-On/Roll-Off (Ro-Ro) capabilities to compete for the market dominance of two Gulf Coast Ports (Tampa and Houston).

Competition [27]

Port activity and expansion planned or currently under way with Competitive US Gulf Ports

Port of New Orleans:

In 2008 they announced a billion dollar, 20-year master plan, including $500 million for container infrastructure. Their intermodal on-dock rail will likely prove to be an essential element in the support and growth of container volume. New Orleans is the only deepwater port in the U.S. served by 6 Class I railroads

Port of Gulfport:

Containers will remain the mainstay of the Port, with banana imports and a Ro/Ro service with Central America. The rebuilding of the Port will raise the port 3 feet above Katrina's surge and increase its footprint by filling in 40 acres of sea bottom.

Port of Mobile:

In Oct '08 Mobile opened a new container terminal with a capacity of 350,000 TEUs (a public-private partnership). The terminal will be expanded to a capacity of 800,000 TEUs as demand picks up. They are now working on phase 1 (a 3 year project) of a $50 million intermodal rail terminal adjacent to the new container terminal that will connect CSX, CN, NS and BNSF. Mobile is also building a $115 million cargo terminal to handle slab steel imports to feed the new mills being built 40 miles north of the Port.

Port Manatee:[28]

Manatee is a niche Port that will focus on handling proprietary bulk and break bulk commodities for selected shippers, as well as an expanding volume of containerized cargoes. The Port is projected to approach 15 million tons of throughputs within the planning horizon of the master plan and imports will continue to dominate at 95% of their business.

The 5-year plan through 2013 is for a $116.5 million project, and includes an intermodal terminal, bulkhead rehabilitation, and the construction of an intermodal cold storage transfer facility, road and rail improvements, and additional land acquisitions. A subsequent 5-year plan (through 2018), assumes the dredging of 2 berths, the purchase of 2 rubber tired cranes, the construction a new Ro-Ro ramp, and a new 20-acre container yard.

Port of Galveston:

In 2008 (despite Hurricane Ike) general cargo trade was up 370% from '07 to 98,017 tons. A major contributor was wind turbine parts and equipment. However, shippers are requesting to store wind components for longer periods of time and now, once available, cargo open storage area is filled. Ro-Ro volume is up 24% to 301,536 tons.

Port of Houston:

80% of their imports stay in Texas and they do 80% of the Gulf's trade with China. In 2008 general cargo was up 20%, with steel pipe for oil and gas the primary driver, up 33% from '07 (only 7% was exports). 80% of the Port's tonnage is related to petroleum and related products. The Port expects container traffic to grow 8% to 12% per year. Construction continues at Bayport Container Terminal (BCT). When it is completed in 15 years, the BCT will have a total of 7 container berths, a 378-acre marshalling yard and a 123-acre intermodal facility.

Port Freeport:

In 2008, 21 vessels called at the Port carrying wind components; in 2009 the Port expected this number to double.

Construction continues on the Velasco Terminal. Phase 1 will add 800 feet to the Port's existing 2,640 linear feet of berth, and at full build out (scheduled to be completed in 2014) the terminal will add 1,200 linear feet of berth and capacity for 750,000 TEUs.

Port of Beaumont:

General cargo was down 18% in 2008, forest products were off 43%, and military and project cargoes were also down. In 2008 metals (including steel), were up 10%, due to pipe imports related to large energy pipeline projects. Due to an agreement with BNSF, KCS, and Union Pacific, the Port began moving its rail storage yard inside the Port, increasing the ports rail storage capacity.

Port of Corpus Christi:

In ’08 break bulk cargo was up 24% driven by wind turbines (170,000 tons), drilling rigs and project cargo (216,000 tons), and iron and steel (125,000 tons). The type of cargo being shipped through the Port requires more cargo open storage area, and in 2008 the Port paved 25 acres, bring the total paved area to 55 acres. In 2009 they will pave an additional 20 acres.

Conclusion:

Neighboring ports continue to substantially invest in port infrastructure which will continue to erode market share for Louisiana Ports unless a viable strategy can be developed.

These ports have historically funded these improvements through a combination of federal, state and local funding. Emerging new public private partnership strategies afford Plaquemines Parish the opportunity to lever limited financial resources to meet this competition and dramatically change market share in the U.S. Gulf Coast.

The Panama Canal

The “new” Panama Canal will change the competitive environment at both East and Gulf Coast Ports. Between 2009 and 2012 the Canal will reach maximum sustainable capacity. Therefore, the Panama Canal Authority in March 2009 took steps to begin a $5.25 billion construction plan. In announcing bids to build locks on Panama’s Atlantic and Pacific coasts, the authority set in motion an effort to assure available capacity. The project will add a third set of locks by 2014, and will allow the canal to handle ships with nominal capacities of up to 12,600 TEUs; this is more than double the approximate 4,800 TEUs which is now considered Panamax. The “new” Canal will double capacity and allow more traffic allowing the canal to meet the changing economics of ocean shipping. In recent years container shipping has become the Canal’s primary income generator and main driving force of traffic growth. Between 1999 and 2004, the Canal’s share of the Northeast Asia / U.S. East Coast container trade grew from 11% to 38%. The change will shift supply chains that have built Southern California’s ports into behemoths of trade.

The ports of Los Angeles and Long Beach have thrived as the fastest gateway for goods moving from Asia across North America.

Two recent studies by Drewry Supply Chain Advisors and the Dutch consulting firm Dynamar predict Atlantic and Gulf ports could seize up to 25% of the West Coast’s cargo base during the next decade. “Even if volumes grow, the West Coast’s trade share will decline,” the Drewry report said.

> The consulting firm, the Tioga Group, said in a rebuttal, that the Drewry report “understates the importance of transit time and reliability in shipper routing choices and the role of the Southern California consumer market” and “ignores the substantial investments being made in West Coast port and rail intermodal capacity, and significant capacity limits on alternative routes.”
>
> Tioga said it’s likely there will be growth opportunities for intermodal services via the West Coast as well as all-water services to the East and Gulf Coast; especially once the economy permits resumption of a decades-long trend toward increased container volume
>
> “If I were an importer, I’d be thinking about what ports will open up, whether I need a distribution center there, and whether I should do some transshipment. The flow is mostly west-to-east now, but shippers need to prepare for east-to-west as well.” Clifford F. Lynch, executive vice president of CTSI, a supply chain technology and services provider in Memphis.

The average size of ships is increasing rapidly:

- In 1999, 2% of ships were over 5,000 TEUs, with a total capacity of 4 million TEUs
- In 2006, 10% of ships were over 5,000 TEUs, with a total capacity of 8 million TEUs
- In 2011 it is estimated that 50% of the global shipping fleet will be over 5,000 TEUs

“We anticipate that after 2014, the workhorse of the industry in the U.S. East Coast will be the vessel in the range of 6,000 to 8,000 TEUs,” said Rodolfo Sabronge, the canal authority’s vice president of research and market analysis. “They offer more flexibility to vessel operators and are in line with infrastructure investment plans in the East Coast and Gulf regions.”

Richard Wainio, Port Director at Tampa, Fla., said his port and others along the Gulf Coast will be able to handle ships beneath the size of the post-Panamax giants. “Every port doesn’t need to be able to handle the biggest ships,” he said. “If you’ve got 40 feet of water, you’re going to see an increase in your volume, post-2014.”

“Tampa expects growth in containers trade after expansion of the Panama Canal is completed in 2014. Growth could come through direct calls or through containers transshipped through Caribbean and regional container hubs that canal handle the largest container ships.

Wainio foresees services in which large vessels will transit the canal, drop cargo at a transshipment point in Panama or the Caribbean and continue on to a couple of larger U.S. ports that serve markets large enough to support direct calls. Transshipment adds transit time, but Wainio said that could be minimized by careful scheduling and efficient hub-and-spoke operations. “Post-2014, I don’t see a lot of East and Gulf Coast ports that can handle the bigger ships straight in,” he said, “but I do see opportunities for regional ports in conjunction with two or three really big deep-water ports.”

Wainio, who served 15 years as chief economist at the U.S. Panama Canal Commission, said he thinks canal officials are conservative in predicting all-water services eventually will carry 50% of U.S. import volume from Asia. “The bottom line is that as the pie grows, there will be a lot more opportunities for carriers,” he said. “I think that once the markets start to recover and we get closer to 2014, some of these carriers are going to be chomping at the bit to put some of these ships into Panama. I think they’re going to be ready to go and you’re going to see a fairly quick movement in that direction.”

Conclusion:

The new increase in Panama Canal capacity (vessel size and container slots) along with the proven advantages in all-water Asia to U.S. East Coast and Gulf Coast port traffic destinations offers Louisiana and Plaquemines Parish a unique window of opportunity to capture incremental discretionary cargoes in the 2014 time frame.

East Coast Ports

The canal expansion could shift the bottleneck to East and Gulf Coast ports. To handle 10,000-TEU or larger ships, the ports will need water depths up to 55 feet, cranes that can reach across 22 or 26 rows aboard ship (compared with 13 for an existing Panamax vessel), and terminals that can efficiently process surges in cargo. "East and Gulf Coast ports face a 2014 deadline to prepare to handle the post Panama ships of 8,000-10,000 TEUs. Only a few ports will be ready by then, so expect to see a proliferation of feeder services that will shuttle cargo from big ports to smaller, shallower East Coast ports".

Virginia's Hampton Roads terminals could be best positioned. They already have 50-foot/55-foot channels, modern terminals with room to expand, and the prospective intermodal rail connection. CenterPoint Properties, an industrial real estate developer, cited the port's attributes when the company bid $3.5 billion, in today's dollars, for a 60-year concession to operate Virginia's publicly owned terminals.

The East Coast's dominant port, **New York-New Jersey**, will remain a must-call port for most services because of its large regional market. The port will have 50-foot channels by 2014, but it is yet to come up with a plan to raise, replace or raze the Bayonne Bridge, whose 151-foot vertical clearance limits the size of vessels that can serve the port's largest terminals. Replacement of the bridge is at least a decade away.

Philadelphia has proposed building a new multi-million-dollar container terminal. The RFP is currently on hold.

Baltimore is seeking a partner to operate its terminal and to share the cost of dredging a deeper channel.

Charleston's new Navy Base container terminal and adjacent planned intermodal rail facilities for CSX railroad will take advantage of Charleston's east coast "closest to the sea buoy" terminal location with channel improvements to achieve a depth of 55-feet at a cost substantially less than the Port of Savannah.

Savannah, planned port improvements and the new terminal facilities proposed in Jasper County will focus on Panama Canal traffic diversions.

Other ports from Melford International Terminal, north of Halifax to Houston also hope to get a piece of the post-2014 action. If the Panama Canal Authority's expectations are on target, several of them will have a legitimate chance — not for 12,600-TEU behemoths, but for smaller vessels currently too large to transit the existing canal.

Conclusion:

To compete with these aggressive East Coast container port proposals, Louisiana and particularly a new terminal in Plaquemines Parish will need to develop competitive infrastructure and marketing strategies to captured Louisiana's unique access to the U.S. hinterland.

Other Competitive Information and Data

The North American container market is dominated by trade with Asia. In 2006, 35% of all container imports to the East and Gulf ports originated in North Asia. By 2025, the Asian share is expected to reach 56% of all containers.

Despite West Coast's geographical advantage and market dominance, opportunities will arise for Gulf Ports. This is particularly true for containers destined for Midwest markets because of:

- Rising costs
- Transit times related to:
  - Port and inland transportation congestion
  - Capacity constraints
  - Uncertain labor conditions

The Gulf Ports are able to provide less expensive inland transportation and faster transit times to the industrial Midwest. The ports will participate in the growth of container trade based on an increased market share of Asian cargo and the expansion of the Panama Canal capacity.

Projected growth rates support expanded container terminal capacity. In the U.S. Gulf and East Coast Ports there are a large number of container terminals being planned by U.S. Gulf Coast and East Coast Ports and are under construction. Additionally, national retailers are planning and constructing major distribution hubs adjacent to or in close proximity to these new container terminals. Of 12 competitive Ports examined, Houston ($4.6 billion) and Tampa ($1.6) billion are planning the highest dollar investment for long-term capital improvements. The Texas Transportation Institute estimates that container volumes in the Gulf will grow at an annual rate of 13% over next 10 years.

These developments are precursors to a long-term shift in the transpacific trades from intermodal transport via the West Coast ports to all water routes through the Panama Canal.[29]

"While the Gulf region's larger ports such as Houston and Tampa still handle Ro-Ro cargo, industry executives believe <u>smaller ports</u> will soon have a monopoly on the trade. Once the Panama Canal is widened and containerized cargo begins to pour into Gulf Ports, smaller ports such as Galveston will see increased demand for Ro-Ro cargo."

Conclusion:

There is opportunity to divert West Coast cargo to the U.S. Gulf Coast Ports. This is contrary to a recent Louisiana report. Our conclusions are supported by the following facts:

1. ***With improved distribution infrastructure and supply chain networks, Louisiana is capable of competitively serving Midwest markets - the 10 hinterland States of the Mississippi River system.***

2. ***A major developing Transportation Research Board report indicates a noteworthy preference by Beneficial Cargo Owners for Gulf Coast distribution and value added service locations.***

3. ***Specific origin and destination commodity traffic originating from or destined to the Louisiana hinterland markets.***

4. ***A reported 30% savings by shippers using all-water services via the Panama Canal.***

5. ***Avoidance of the continuing high cost West Coast Gateway Ports.***

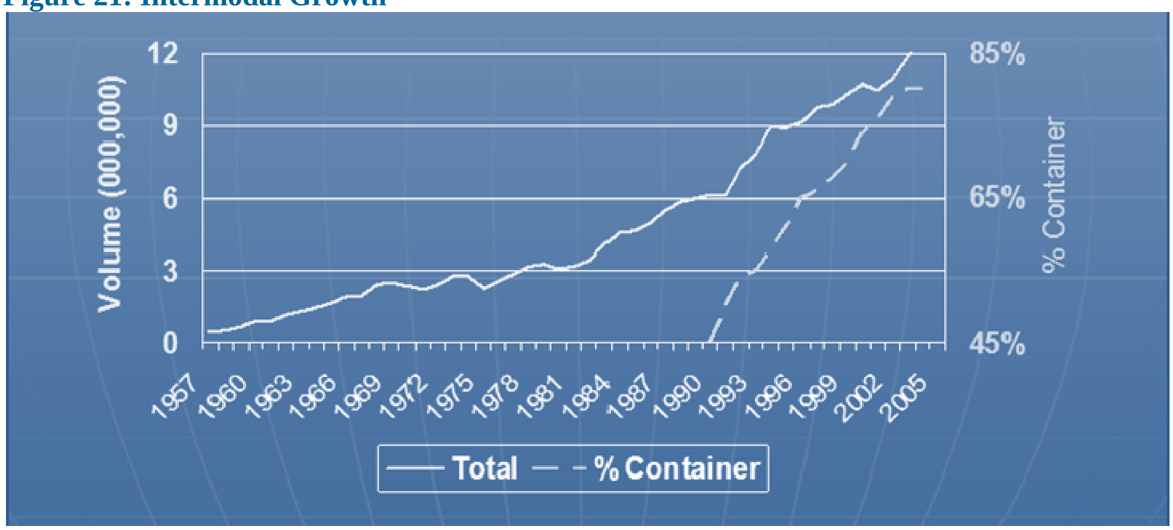
6. ***Avoidance of further west coast intermodal rate increases.***

7. ***Avoidance of west coast labor instability (2002 ILWU slowdown).***

8. ***A recent Port of New Orleans report suggests a potential for growth in U.S. Gulf Coast Ports as a result of Asian traffic.***

Modal Preference - Railroads / Intermodal

Figure 21: Intermodal Growth[30]



Intermodal growth has been significant and is now in excess of 12 million units per year. Container traffic has significantly increased and is now upwards of 80% of all intermodal volume. This includes containers used in international cargo as well as domestic containers (Figure 21).

Port related warehouses, inland ports, intermodal sites and overweight corridor buildings will be the winners - Any way to cut costs or to minimize the drayage costs.

Close in cross docking operations will also be the shipping winners, ports that are close to ramps will become more popular

Small ports that are not committed to intermodal growth will be losers, those without one or two committed railroads will suffer

Remote (Port) areas trying to promote growth will have a difficult time growing without an intermodal hub, interstate access, cheap land and abundant labor.

Railroads vs. Trucking Costs [31]

Norbridge consultant Dean Wise made an important observation about the future of freight transportation in a conference call with investors in January 2009. His basic point, one with long-term implications for U.S. freight movement, is that the cost of moving goods will become increasingly cheaper for railroads while, for truckers, it will only become more expensive. "The basic gap between rail and truck in cost per ton-mile is going to continue to widen over the next 20 years," Wise said. The reason is a fundamental reality in freight transport today: The list of productivity improvements available to railroads is "a mile long," he said, while the options available to truckers are highly limited, not only making long-term gains for their industry difficult to envision, but preventing them from beating back several forces currently conspiring to worsen their cost-competitiveness.

West Coast

Western railroads still are investing heavily in intermodal services connected to the ports. BNSF, Union Pacific, Canadian National and Canadian Pacific railroads operate a total of nearly 200 stack trains a week from West Coast ports to the mid-continent. This is far more than eastern railroads can muster.

BNSF is just 38 miles from completing the double-tracking of its 2,200-mile transcontinental route from Southern California to Chicago. The railroad also is expanding its Memphis logistics hub and seeking permits for another at Kansas City. BNSF also is working to develop a large intermodal rail terminal four miles from the Los Angeles-Long Beach ports.

Union Pacific is double-tracking its main intermodal route, the Sunset Corridor from Southern California to El Paso, Texas, and is stepping up development of a big intermodal rail hub at Joliet, Ill., near Chicago.

Canadian National (CN) has developed a thriving route for intermodal shipments from Prince Rupert, a British Columbia port that opened three years ago, to Chicago.

After years of pricing their intermodal services as add-on business, western railroads now view international containers as a core service, and have raised rates to support continued investment.

Steve Branscum, group vice president, consumer products, at BNSF, said he doesn’t expect the West Coast’s share of Asian container imports to drop much below the 70% they’ve enjoyed in recent years. He said railroads will defend their intermodal investments with competitive pricing.

East Coast

Intermodal rail infrastructure is rapidly developing at East Coast ports.

Eastern railroads, however, are anticipating a larger impact from the Panama Canal and are scaling up their own intermodal capabilities.

Norfolk Southern's Heartland Corridor project, a public-private initiative, would eliminate 29 obstructions to stack trains between Norfolk, VA., and Columbus, Ohio, giving the railroad the opportunity to run intermodal trains from the Port of Hampton Roads to a key distribution hub.

Associated with Norfolk Southern's connectivity strategy to the western railroads is the NS proposal for the Meridian Speedway improvements including 40 miles new track and centralized train control. This affords Plaquemines Parish the additional connectivity to western railroads from the east bank of the Mississippi River.

Crescent Corridor

NS plans for the project to expand its entire network from the Northeast to the Southeast U.S. It is expected that the majority of cargo along the corridor would be intermodal. The improvements are projected to remove over hundreds of thousands of truckloads from the interstate highways. This would reduce traffic congestion and help the environment by removing trucks from long-haul transport.

The corridor is 1,400 miles (2,300 km) long and 28 new trains daily would be expected to go into service along with improvements to rail yards along the corridor. NS has proposed sharing the costs with federal and state agencies in a public-private partnership. The overall project cost estimate is $2.5 billion as of 2009. NS plans to expand and upgrade existing rail lines along the corridor to accommodate fast freight trains and also purchase new locomotives and freight cars, and build new terminals.

2010 Capital Investments

For 2010 the railroads plan to continue to invest capital:

- CP plans to spend between $680 and $730 million on capital programs, including $585 to renew track infrastructure.
- NS budgeted $1.44 billion for capital expenditures vs. $1.30 in 2009, and $1.56 in 2008. The budget includes $706 million for roadway work.
- CN plans to invest $1.4 billion in capital programs, a slight increase over 2009 capital spending. More than $1 billion will be spent on track infrastructure.
- CSX budgeted $1.7 billion, or which 70% will be spent on infrastructure maintenance.
- Union Pacific plans to spend $2.5 billion, the same amount as 2009.
- BNSF budgeted $2.4 billion, $240 million less than last year, since they plan to acquire fewer new locomotives.

Emerging Opportunities for Louisiana and Plaquemines Parish

CenterPoint - KCS Intermodal Center

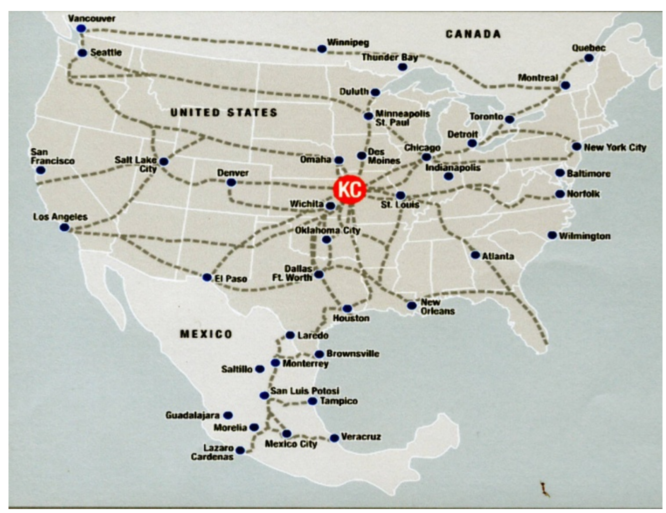
The CenterPoint Properties and the Kansas City Southern Railway Company partnered together to develop a large 1,340-acre intermodal logistics center in Kansas City, Missouri. The Center opened in March 2008. This state-of-the-art inland port facility offers the newest and fastest inland route to the heartland of North America.

This 970-acre Industrial Park contains a 370-acre Intermodal Facility that has the capacity to be one of the largest intermodal freight gateways in the Midwest with 11,340 feet of main track. The Industrial Park has more than 5 million square feet of build-to-suit advanced distribution centers ranging from 100,000 SF up to over 1 million SF.

The Center has full interchange highway access at U.S. 71 and direct proximity to Interstates 29, 35, 70, 435, 470 and 635. It provides single day truck access to nearly every major Midwest City, and is located within a 2 day drive to 78% of the U.S. population

The rail route to the CenterPoint - KCS Intermodal Center provides shippers an alternative to avoid west coast port congestion via Mexico's new West Coast port development, Lazaro Cardenas. (Figure 22) This new Port is quickly becoming a major gateway for U.S. imports from Asia & South America. At full build-out, capacity at the Port will exceed 2,000,000 TEUs annually. The Port accepts ships carrying 12,000 containers per vessel. The Port of Lazaro Cardenas will be the deepest natural port in Mexico. The KCS owns and indirectly operates Kansas City Southern de México in the central and northeastern states of México. This rail link serves the new Port.

Figure 22: KCS System Maps



The Future

The marine transportation system[32]

There is a growing concern that the U.S. existing Marine Transportation System may not be able to meet the anticipated growth in international trade, and the many challenges associated with that growth - from financing badly needed new infrastructure improvements across the different modes of transportation to dealing with environmental concerns.

It appears that the North American trading partners (Canada, Mexico, and Panama) are preparing for the forecasted trade growth. These governments realize that marine infrastructure improvements are vitally important to their economies. They each have significant projects underway, or under preliminary development to accommodate growth.

Mexico is developing the Punta Colonet container port and rail line corridor to the U.S. The port will accommodate 8 million TEUs, and accommodate the largest container ships afloat.
Their other port, the Port of Lázaro Cárdenas, handled 160,000 TEUs in 2005 but is expanding to a capacity of 2.2 million TEUs annually.

Canada's Asia-Pacific Gateway and Corridor Initiative will provide 5 to 8 million TEUs of port capacity and be the deepest ship channel available in North America. The Pacific gateway is a $600 million investment, and on the Atlantic side, Canada also has a new $400 million investment.

Panama has the major Canal expansion underway that will double the canal's capacity and allow more traffic.

Plus, new water routes are planned through the **Suez Canal**, and there is a potential of opening an **Arctic sea route**.

All of the above proposals will provide shippers with greatly expanded alternatives for moving cargo - opportunities that extend beyond the U.S. port system.

Port congestion creates a major opportunity for Louisiana

The U.S. gateway ports (typically located in populous corridors) face serious capacity expansion challenges - such as congestion, community, environmental and competing land uses. Small and medium sized ports are therefore becoming the key to help solve the U.S. trade needs.

Port congestion can also be relieved by utilizing the unused inland waterway capacity on the U.S. Waterways System. Road and rail congestion cost an estimated $200 billion annually, and that will continue to grow. But there are thousands of miles of unused capacity in the waterways. The waterways are also more energy efficient and environmentally friendly.

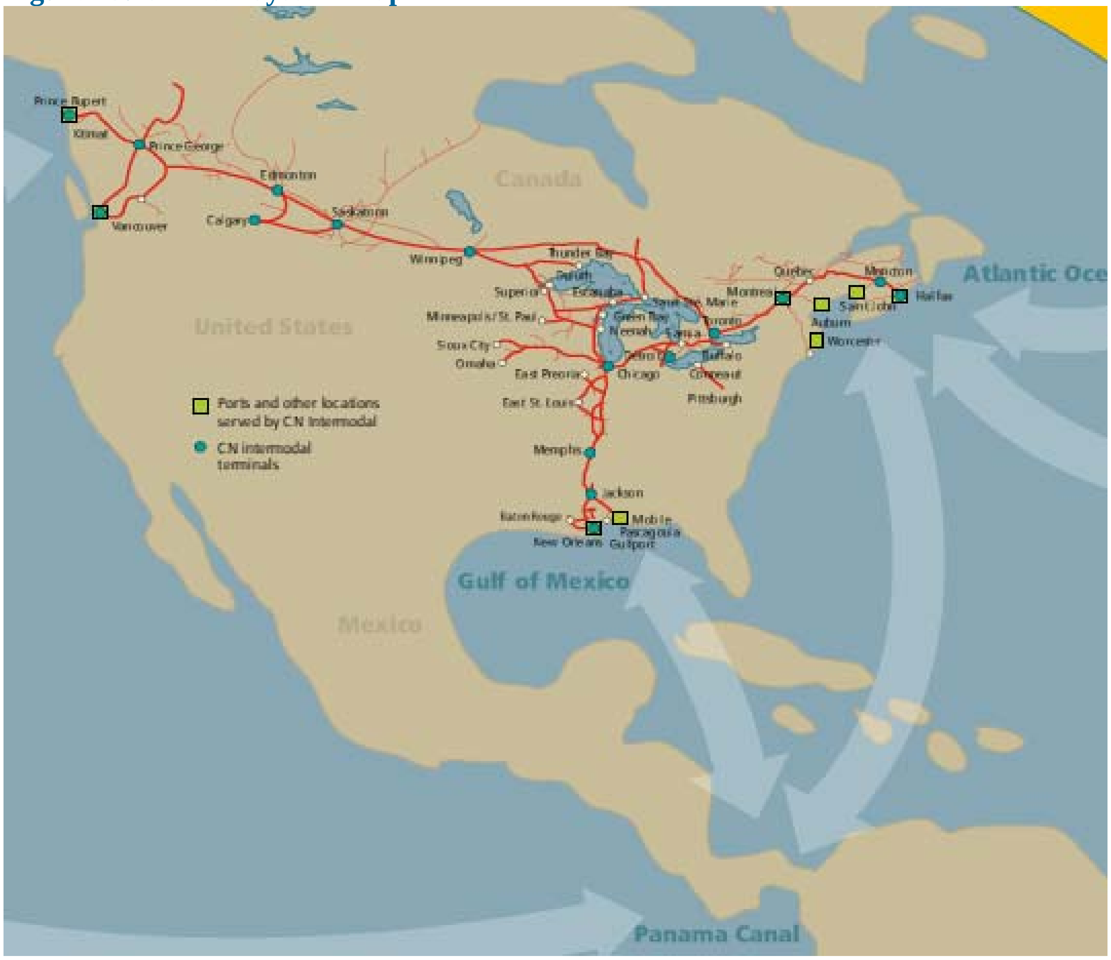
There are on average, currently 10,500 trucks per day per mile on the interstate system. By 2035 this is projected to more than double when there will be 22,700 trucks, with the most heavily used portions on the system seeing upwards of 50,000 trucks per day per mile. The vast system of America's Marine Highway of more than 25,000 miles of coastal and Intracoastal waterways already moves about 1.4 billion tons of freight annually. But this represents only about 2% of the U.S. freight. The EU currently moves about 40% of its domestic freight by water. The U.S. Government is establishing a framework to expand the use of America's Marine Highway, and Louisiana can take the lead.

Louisiana is advantaged by having access to six Class I railroads and the opportunity to take advantage of the CN Network.

The CN Railroad is a major New Orleans link --- providing an opportunity for the Port area to provide direct rail service to 14 states as well as Canada (Figure 23).

CN is the only Class 1 railroad to cross the continent from east-west and north-south – linking the Atlantic, Pacific and Gulf coasts. They are able to offer a full slate of shipping services and opportunities to the New Orleans Port. CN is also the only transcontinental railroad to link New Orleans with both the west coast (Vancouver) and the east coast (Halifax) of Canada. Also through a series of interline agreements, co-production arrangements and routing protocols, CN's customers have access to all three North American Free Trade Agreement (NAFTA) nations. In addition the Railroad operates an integrated network of more than one milling square feet of warehouse space and more than 90 distribution centers strategically located across North America.

Figure 23: CN Rail System Map



Conclusion:

Competitive intermodal rail services are essential to the future of a Plaquemines Parish Container Port. To be competitive, the terminal will require efficient marine rail transfer and the ability to interface effectively with Class I railroads, including beltline and regional rail systems while leveraging the north-south Class I rail network.

Container and Intermodal Future Growth Forecast

As forecasted by the Maritime Administration National Advisory Council:

> *"Container volume is expected to more than double in the next 20 years, and nearly all non bulk cargo will be containerized. Ports must plan now to ensure that they have the people, training, technology, transportation, assets, and the infrastructure to provide efficient and reliable transportation services. Solutions must be flexible to accommodate changes that will inevitable occurred."*

A Seaport bulletin in 2009 stated:

> *"For the longer term, this is the 80% scenario:"*
>
> *"The governments and financial institutions of the world resolve the outstanding financial issues in 2009 and 2010 and the real economy of the world responds to fiscal stimulus. In this case we expect the world container trade to grow somewhat in 2010 (perhaps 5%) and to continue to grow in subsequent years similar to the past but a lower rates, perhaps 7% to 9% a year."*

A U.S. Maritime Report states:

> *"Projected growth in the U.S. economy and historic trends at U.S. ports suggests that port container traffic will double by 2020 and triple by 2030. This may occur even if the average annual rate of growth in container traffic falls from the 195-2006 average of 6.4% ... to 5%. Even if the growth rate falls to 4%, container traffic could still more than double by 2030."*

Conclusion:

There are major concerns for the capability of the Marine Transportation System to meet future cargo demands for inland transport. Major port gateways in congested urban corridors create an opportunity for Louisiana to provide unimpeded alternatives for niche cargoes destined for the Midwest.

Using the Mississippi River as a strategic highway and changing U.S. Midwest supply chain distribution networks will achieve better logistics reliability, lower transportation costs and greater market share for the potential Plaquemines Parish Port.

Container Growth Forecast for the Port of New Orleans

Two Key trading partners of the New Orleans Port --- Brazil and China -- are projected to have an expanding GDP and trade in the next 10 years.

Brazil

New Orleans has a definite opportunity to expand its trade with Brazil as well as other Latin American Countries. Even though Brazil's GDP growth is not projected to be as strong as China's, the opportunities are still great. If New Orleans does not aggressively pursue Brazil's (and other Latin American Countries) expanding trade, other competitive Gulf ports will.

A recent Journal of Commerce:

> *"Brazil could be the next China if it can surmount the many challenges standing in the way of its development."*
> *"Brazil is a rising star, and the next 5 years will prove it (Ed Bastin)"*
> *"A new deep-water multipurpose port will be built in the next 3 years."*
> *"Despite the challenges, projects in Brazil present irresistible opportunities .... And if the $285 billion in project investment were not enough, the 2014 World Cup Games and the 2016 Olympic Games will dangle another pot of gold."*

A 2010 outlook from the Alabama State Port Authority:

> *"I expect our (2010) recovery will be fueled by stepped-up industrial activity in key trade centers, such as China, Brazil, Korea and the EU."*

The BRAC and GNO Trade Study for Southeast Louisiana:

> *"Trade with Latin America and Mexico presents a sizeable opportunity with over 141 million metric tons of containerized and non-containerized freight coming through competing ports." "Latin America's growth in trade has exceeded that of Asia, Western Europe, and North America in recent years." "A detailed go-to-market strategy focused on Latin America and Mexico will identify opportunities for increased freight volumes."*

Brazil's GDP growth as forecasted by TD Economics:

> 1990 to 1999 1.7%
> 2000 to 2009: 3.3%
> 2010 to 2019 3.9%
> 2020 to 2029 3.7%.

The United States' Trade with Brazil:

- Brazil's trade with the U.S. has growth 5 times more than its GDP (16% vs. 3.3%)
- Brazil's GDP forecasted growth will have a positive impact on New Orleans containerized trade with Brazil.

Forecast assumptions:

- Brazil's total U.S. dollar trade is forecasted to be 3 times faster than its forecasted GDP growth ... verses a historic rate of 5 times
- The Port of New Orleans can maintain at least a 6% share of Brazil's trade (Table 18)

Table 18: New Orleans Historic Share of Brazil's U.S. Trade

2003	2004	2005	2006	2007	2008	2009
6%	5%	5%	5%	5%	6%	9%

An 8% share volume is also realistic based on the Port's 2009 share and a focused marketing effort towards Brazil (Table 19).

Table 19: Brazil's Trade Growth will Drive New Orleans Containerized Volume

Containerized Vessel U.S. Dollar trade in millions							
	2003	2004	2005	2006	2007	2008	2009 Est.
Total Brazil Trade with U.S.	10,822	12,972	14,881	16,933	17,915	19,519	13,791
Annual Growth		20%	15%	14%	6%	9%	-29%
Growth 2008 vs. 2003						80%	
5 year av. Annual trade growth						16%	
Brazil's annual GDP historic growth rate						3.3%	

China

The growth potential for trade with China is also large.

The Parsons Brinckerhoff Port of New Orleans study states:

> *"Container volumes at East and Gulf Coast ports will benefit from the expansion of the Panama Canal, continuing a shift of Northeast Asia-US containers from West Coast ports. Through the development and implementation of a marketing program geared towards Northeast Asia, Parsons Brinckerhoff believes the Port of New Orleans can capture service along this trade lane"*

A TD Economics analysis:

> *"China will not be able to sustain the 10% GDP growth rate it has seen the last two decades and will instead decelerate to something closer to a 7.5^% annual growth rate. But this is still 3 percentage points faster than the 4.5% pace of growth we expect for the global economy as a whole."*

China's GP growth:

1990 to 1999 10.0%
2000 to 2009: 9.8%
2010 to 2019 9.2%
2020 to 2029 7.9%

With the expansion of the Panama Canal, the following analysis assume that the Port of New Orleans will be able to gradually ramp up its volume with China and obtain a 0.2% share of China's containerized dollar trade by 2020.

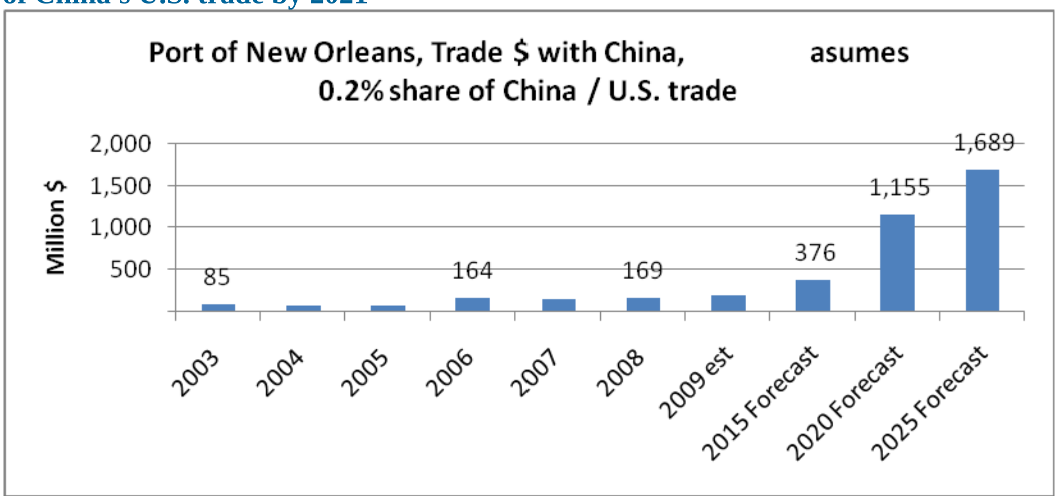
Forecast assumptions:

- China's containerized trade forecast is based on its trade with the U.S. growing at the same rate as its GDP is forecasted to grow ... historically China's trade has grown at a rate of 1.7 times its GDP growth (2003 to 2008)
- New Orleans forecasted share of China's U.S. Containerized dollar trade will reach 0.20% by the year 2020 (Table 20)

Table 20: New Orleans forecasted share of China's U.S. Containerized dollar trade

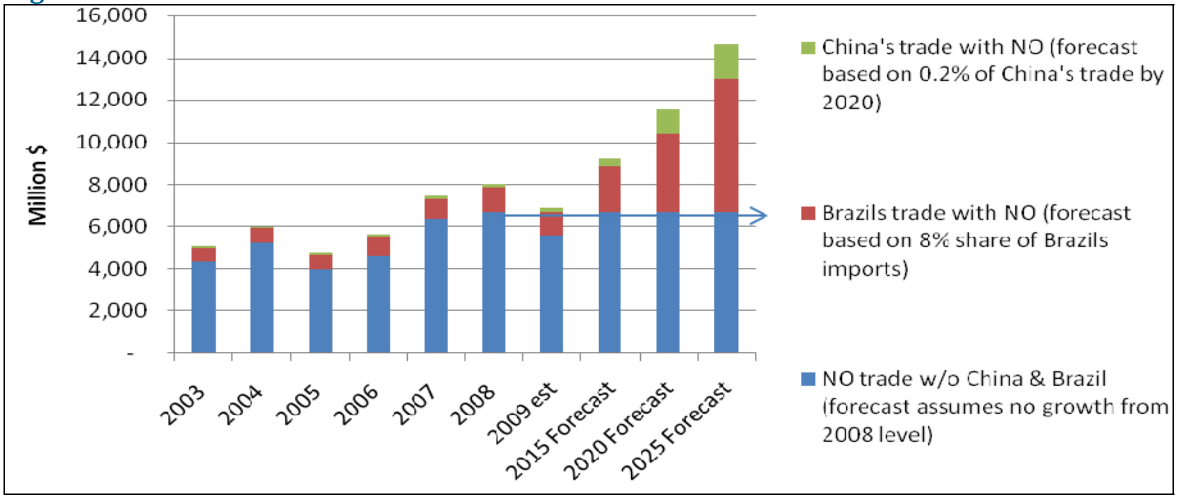
2003 actual	2004 actual	2005 actual	2006 actual	2007 actual	2008 actual	2009 est.	2015 Forecast	2020 Forecast
0.07%	0.05%	0.04%	0.08%	0.06%	0.07%	0.09%	0.10%	0.20%

Figure 24: Port of New Orleans, Containerized Trade Dollars with China... assumes a 0.2% share of China's U.S. trade by 2021



In summary with just two countries the Port of New Orleans (dollar) containerized growth potential is strong as demonstrated in Figures 24 and 25. The potential growth between 2008 and 2025 is almost 7 billion in containerized trade, an 83% increase. This increase assumes no trade growth, from 2008, with the Ports other trading partners.

Figure 25: New Orleans Trade with and without Brazil and China



In summary with just two countries the Port of New Orleans (dollar) containerized growth potential is big. The potential growth between 2008 and 2025 is almost $13,400 million in containerized trade, a 167% increase. This increase assumes no trade growth, from 2008, with the Port's other trading partners.

A Port of New Orleans Containerized Vessel Dollar Forecast:

Assume that both World and U.S. GDP growth will resume, and that GDP growth will have a positive impact on trade, and increased containerization
The following forecast for the Port of New Orleans is based on the assumption that the Port's containerized vessel dollar shipments (per the USA trade on line data) will only increase by ½ the rate of the period 2004 to 2008.

(Note: the 2009 total year dollar value is based on 2009 November YTD actual and an estimate for December)

Plaquemines Parish Port Potential Market Share Capture

Based on current container cargo growth rates in excess of 8% for the US Gulf Coast and the apparent opportunity for the Southeast Louisiana Port Region in concert with the emerging growth of the Midwest US Heartland consumption zone and competitive port market region, Plaquemines Parish has the potential to capture a significant portion of the total excess trade beyond the forecast growth for the Port of New Orleans at long-term growth rate of one percent.

Figure 26: Vessel dollar containerized import growth rate

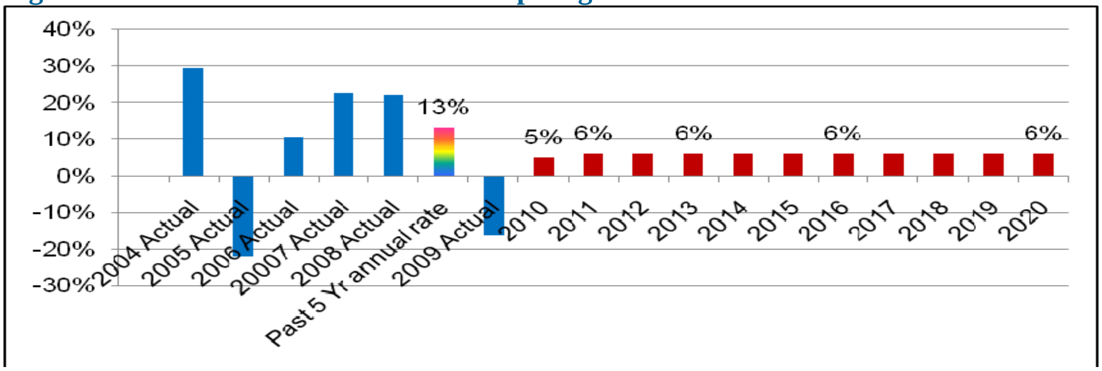
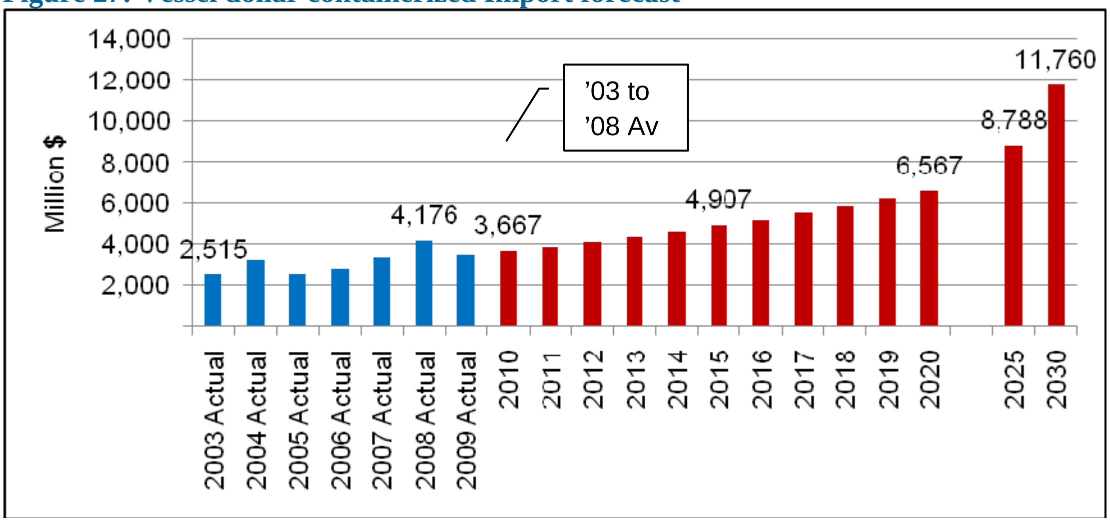


Figure 27: Vessel dollar containerized Import forecast



Based on a 6% growth rate as shown in Figure 26, the Port's dollar imports would grow by almost 60% between 2008 and 2020. By 2025 the imports would more than double from the 2008 level (Figure 27).

Figure 28: Vessel Dollar containerized export growth rate

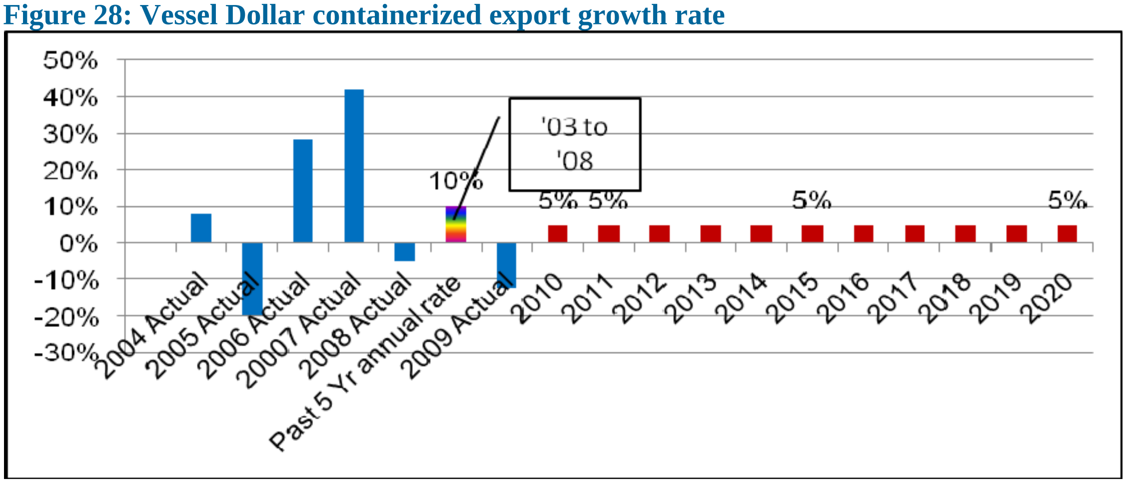
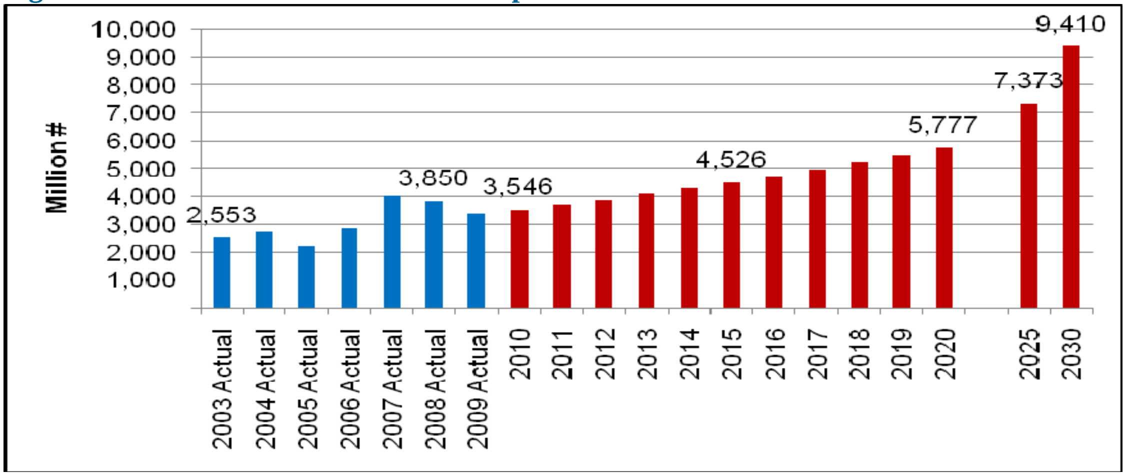


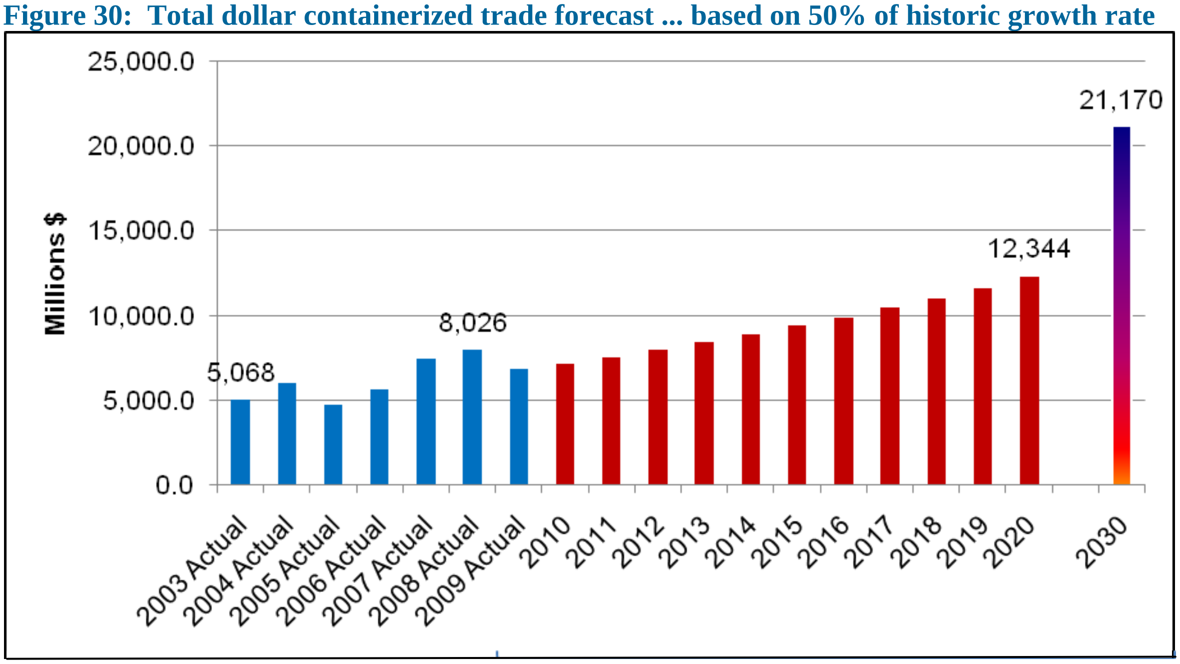
Figure 29: Vessel dollar containerized export forecast



Based on a 5% growth rate (Figure 28) the Port's container export dollars will grow by almost 50% between 2008 and 2020. By 2030 the export dollars would more than double (+144%) shown in Figure 29.

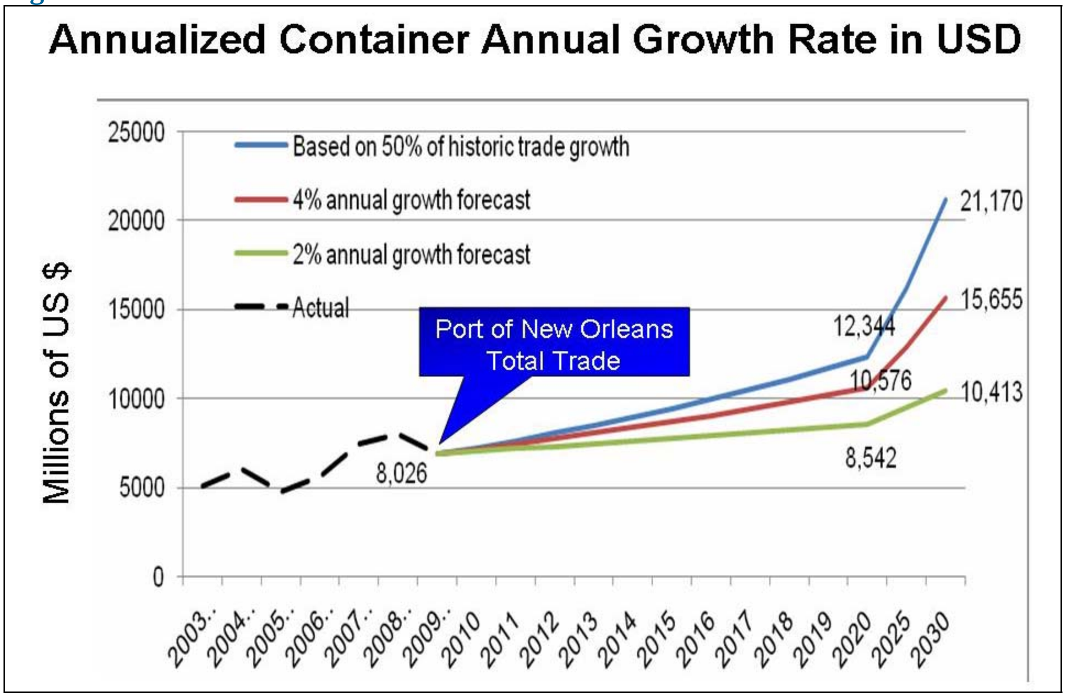
Based on the above assumption that the Port of New Orleans dollar container trade will grow at 50% of the historic rate, the Port's total container trade in 2020 will grow by over 50% from 2008, and by 2030 more than double as seen in Figure 30.

Figure 30: Total dollar containerized trade forecast ... based on 50% of historic growth rate



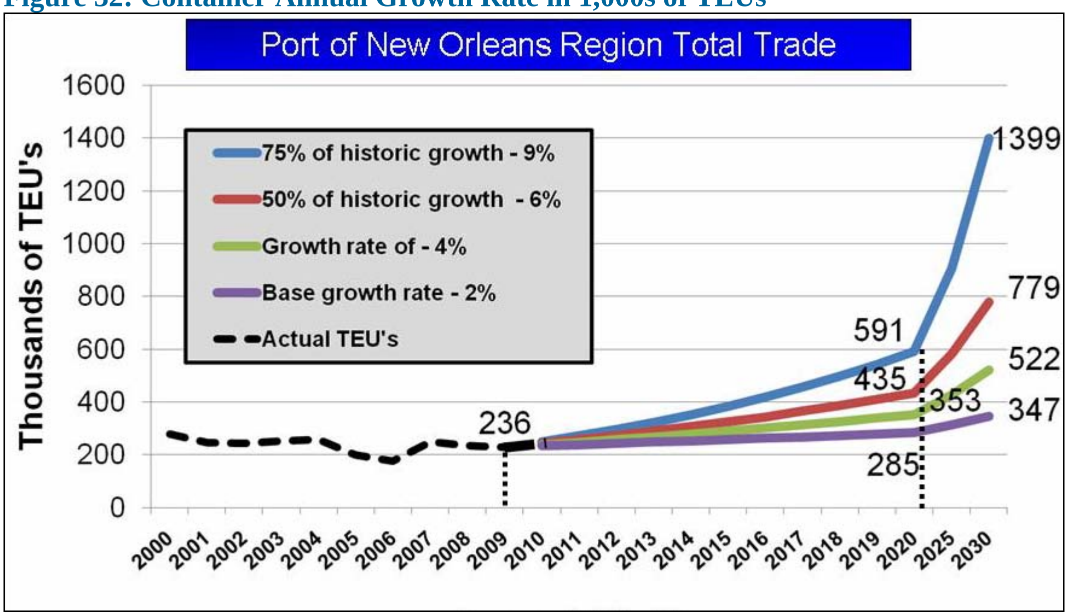
Even if the Port of New Orleans annualized containerized annual growth rate was 4%, or a very conservative 2%, total container trade dollars will still continue to grow.

Figure 31: Total dollar containerized trade forecast three-scenario[33]



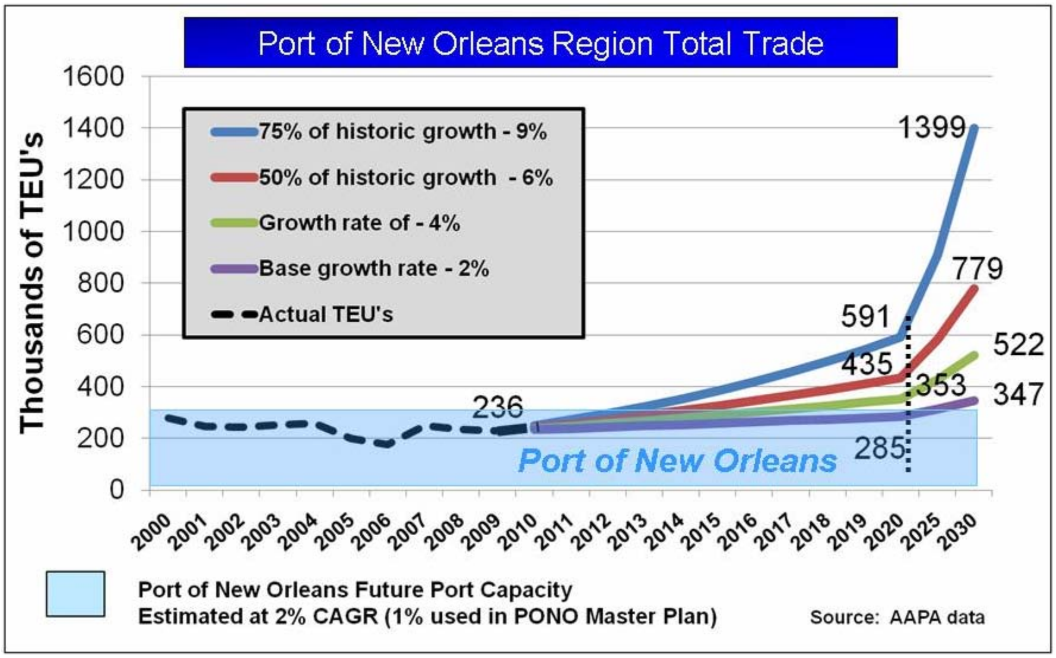
The chart above (Figure 31) projects the Port of New Orleans growth to 2030 using a conservative 50% of historic trade growth for the Port. This shows that growth will continue to occur in Southern Louisiana. The chart below (Figure 32) converts project volume to TEUs incorporating a projected 75% growth. Even using this modest approach, projected growth in TEUs for Southern Louisiana is considerable.

Figure 32: Container Annual Growth Rate in 1,000s of TEUs[34]



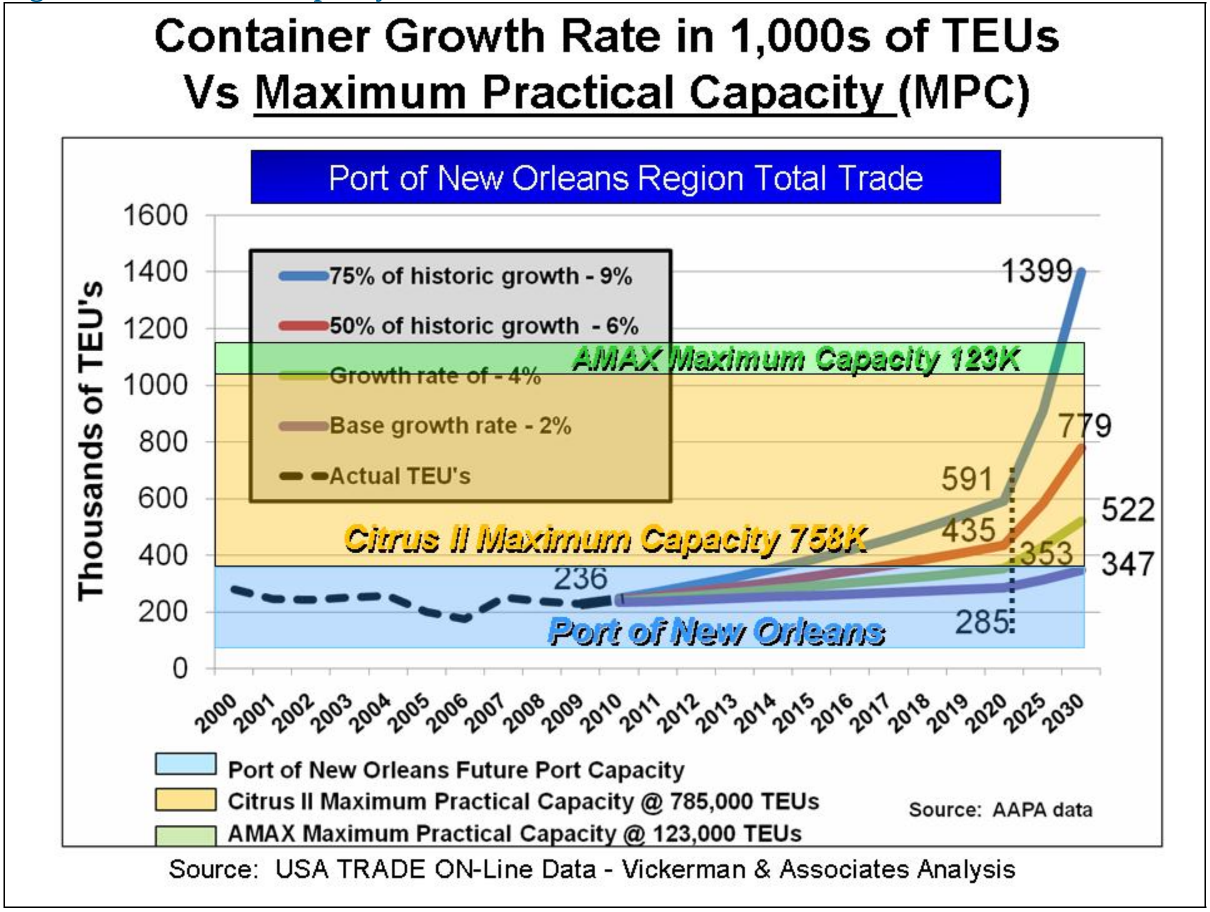
The value of this exercise is recognized by looking at the Port of New Orleans' published Port future capacity estimates. Looking at the 50% and 75% estimates of annual growth in TEUs (Figure 33) it is clear that Port Trade within 2-3 years will exceed the ability of the Port of New Orleans to facilitate that trade even at their planned expansion rates. Therefore there will be a need for additional infrastructure.

Figure 33: Container Annual Growth Rate in 1,000's TEUs with Port of New Orleans' Capacity at a 2% Growth Rate[35]



Conceptual planning estimates for capacities at potential sites, notably Amax and Citrus II locations, make it evident that there will still be surplus demand (Figure 34). Keep in mind that these projections are conservative compared to historical growth rates of the Port of New Orleans. If growth resumes at historic levels (Panama Canal expansion) then that demand will be even greater.

Figure 34: Maximum Capacity Estimates for the Port of New Orleans, Amax and Citrus II



Conclusion:

The Market Assessment suggests the recession is over, at least as it applies to world trade and shipping. The assessment also projects strong growth for Louisiana, Southern Louisiana and the Port of New Orleans. This bodes well for the attraction and growth of containerized shipping. Louisiana, Southern Louisiana and Plaquemines Parish are well situated to attract and distribute cargo to one of the fastest growing regions of the country - the Midwest and Southern states. The Southern Louisiana and Plaquemines Parish's locations, with targeted expansions and improved infrastructure, could service this growth. Build new facilities will enhance the competitive position of the entire region and excess capacity for additional Port development will remain.

Task 2 Figures and Tables

Figures

Tables

Footnotes

[1] NAICS category 27 includes the following material
"2701 Coal; Briquettes, Ovoids Etc. Mfr From Coal, 2702 Lignite, Agglomerated Or Not, Excluding Jet, 2707 Oils Etc From High Temp Coal Tar; Sim Aromatic Etc, 2708 Pitch & Pitch Coke From Coal Tar Or Other Min Tars, 2709 Crude Oil From Petroleum And Bituminous Minerals, 2710 Oil (not Crude) From Petrol & Bitum Mineral Etc., 2711 Petroleum Gases & Other Gaseous Hydrocarbons, 2712 Petroleum Jelly; Mineral
Waxes & Similar Products, 2713 Petroleum Coke, Petroleum Bitumen & Other Residues, 2714 Bitumen & Asphalt, Natural; Shale & Tar Sands Etc., 2715 Bit Mix Fr Nat Asph, Nat Bit,pet Bit,min Tar Or Pt, and 2716 Electrical Energy"
[2] TD Economics
[3] TD Economics 12/17/2009
[4] IMF October 2009
[5]IMF and TD Economics; Forecasts as of December 2009
[6] Forecast by TD Economics as of December 2009; Source IMF
[7] U.S. Department of Transportation based on U.S. Department of Commerce Data
[8] Global Insights, Inc, 2009
[9] Bureau of Economic Analysis
[10] TD Economic Forecast 12/17/2009
[11] U.S. Department of Transportation based on U.S. Department of Commerce Data
[12] USA Trade on Line Data
[13] US Maritime Administration, January 2009
[14] Drewry, October 2009
[15] Maritime Administration
[16] U.S. Public Port Development Expenditure Report, February 2009
[17] USA Trade on Line Data
[18] U.S. Department of Commerce Data and USA Trade Online
[19] US Department of Commerce
[20] USA Trade on Line Data
[21] USA Trade on Line Data
[22] Association of American Railroads, March 2009
[23] AAPA Data
[24] AAPA Data; USA Trade On-Line
[25] USA Trade on Line Data
[26] AAPA Data
[27] Majority of information sourced from The Journal of Commerce 2009 publications, and the Journal of Commerce website
[28] 2009 Port of Manatee Master Plan
[29] Seaport Bulletin March 2009
[30] MYSNAC Educational Team - Department of Commerce
[31] Journal of Commerce January 2009
[32] America's Ports and Intermodal Transportation System, January 2009
[33] USA TRADE ON-Line Data – Vickerman & Associates Analysis
[34] AAPA Data
[35] USA Trade On-Line Data – Vickerman & Associates Analysis

Task 3: Facility Assessment

Table of Contents

Task 3: Facility Assessment

Introduction:

The intent of this Task is to assess all identified potential Port site locations and any accompanying facilities on those sites. These Port locations were determined through a review of past Port Studies, Parish documents and studies, and relevant State Studies. The primary list of sites included Citrus I, Citrus II, TECO, Magnolia, Amax, Sea Point, Louisiana International Gulf Transfer Terminal (LIGTT), Millennium Sites, Venice, Bender Shipyard, and the Norfolk Southern Property (see Figure 1).

Facility Locations and General Conditions

One of the first steps was to eliminate certain Port site locations due to on-going activities to develop those locations. These sites have characteristics that limit their consideration as potential sites for a new port. Among these situations are locations with; development teams in place, Boards charged with their development and/or the lack of availability of the property. Magnolia, Sea Point, and the Louisiana International Gulf Transfer Terminal (LIGTT) meet those criteria and were thus removed from further consideration in this Master Plan. To some extent, the Millennium sites overlap the sites proposed in this report. The identified properties recommended herein are the one's considered by Trident to be the most viable. The October 2008 Plaquemines Parish Report on "Potential Sites for Plaquemines Ports and Airport Facilities" was helpful in identifying potential sites. The TECO site mentioned in that Report was considered. However, after many unsuccessful attempts to determine the availability of the property, the site has been eliminated from further review. Initially, Trident reviewed potential Port locations by river and land access site tours and by the use of aerial photography. The initial discussions on Citrus indicated that it was possible that Citrus I might be close to being sold. It became clear that the property was also close to the Kinder Morgan IMT Facility. This circumstance would require trains to travel through the Port facility to continue access to the IMT. Upon further analysis, Trident determined that Citrus II would better serve the siting of a Port facility than Citrus I.

Figure 1: Port Locus Map

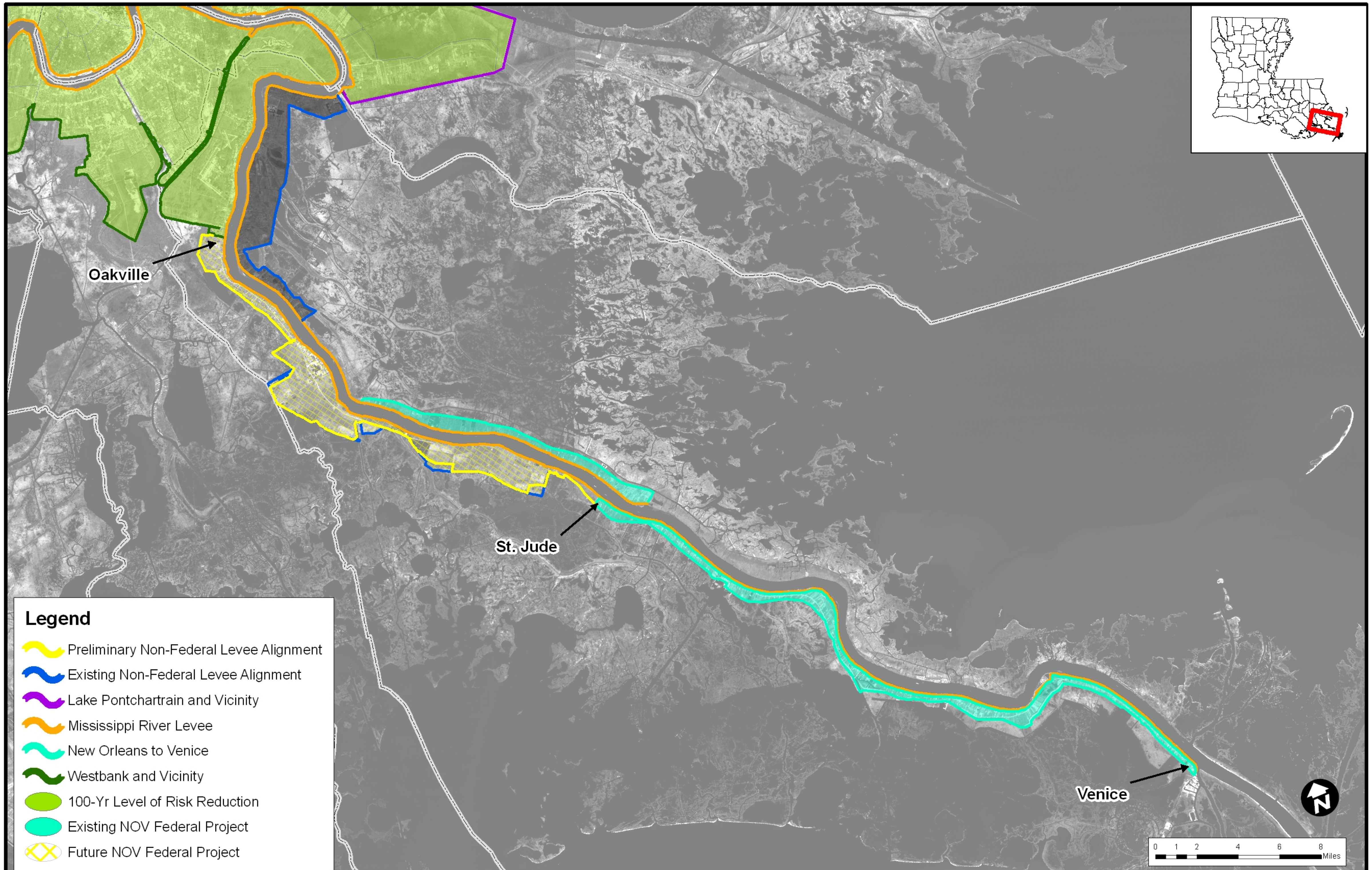
The sites carried forward for our review are: Citrus II, Amax, Venice, Bender Shipyard, and the Norfolk Southern Property. For our purposes, Trident labeled Citrus II as a West Shore location; Amax, Bender Shipyard, and the Norfolk Southern property as East Shore locations; and Venice as a Southern location. The assessments conducted in this Task 3 are specifically for the five aforementioned properties.
Facility Locations and General Conditions

The following section is a summary of the five port facilities that were examined for the Plaquemines Parish Port Strategic Master Development Plan. The information presented here was collected during Trident's site visits, through interviews with individual port staff and local freight transportation industry professionals. The findings from each site visit are described herein and provide the baseline for evaluating available land and existing infrastructure in support of future port development being considered in association with this project. The summary sheets contain a review of the following Subtasks:

- 3.3 Geotechnical Conditions
- 3.4 Topographic Review
- 3.5 Hydrographic
- 3.6 Stormwater
- 3.7 Terminal Circulation and Access
- 3.8 Highway and Rail Access
- 3.9 Waterside Access
- 3.10 Utility Infrastructure

The Army Corps of Engineers made available the proposed Levee development mapping (Figure 2) and this is of particular importance to determine the impact of proposed federal government initiatives to protect potential site locations. This is of particular importance to any potential location on the west side of the Mississippi River, as the creation and/or restoration of the back levees will determine whether any development is possible and is a reasonable investment risk. This will be true for all west side sites will also be a factor when considering the extension of rail service to any potential site.

Figure 2: Proposed Levee Alignments for Plaquemines Parish by the Army Corps of Engineers



Amax

Table 1: Amax Site Review

Name	Amax Metals Recovery Facility
Acreage	387 acres
Current Use/Former Use	252 acres former metals recovery facility, 135 acres of undeveloped land
Adjacent Properties	North – Agricultural, South – Large Tract Residential, East – Undeveloped, West – Mississippi River

USGS topographical maps indicate a nearly level landscape with stormwater runoff flowing generally toward the east and Highway 39. Adjacent roadside ditches and on-site drainage ditches periodically interrupt this drainage pattern. The property is occupied by abandoned buildings and abandoned building pads, on-terminal road and rail infrastructure, overgrown vegetation and trees along the perimeter. The average elevation on the property is 7.5 feet with an average levee height of 19.6 feet

Table 2: Riverfront Characteristics

River Mile Marker Location	76.5
River Frontage (in feet)	5,275
Reported Channel Depth (in feet)	45
Reported Channel Width (in feet)	750
Revetment	Poydras
Aids to Navigation	Dock lights. See description below.
Navigational Obstructions	Belle Chase Ferry downstream, underwater cables between Port Nickel Dock and Amax Refinery Dock
Anchorages	Lower Twelve Mile Point Anchorage upstream and Belle Chasse Anchorage downstream
Batture	Wooded with concrete paver protection on levee

Figure 3: Amax – Navigational Aids

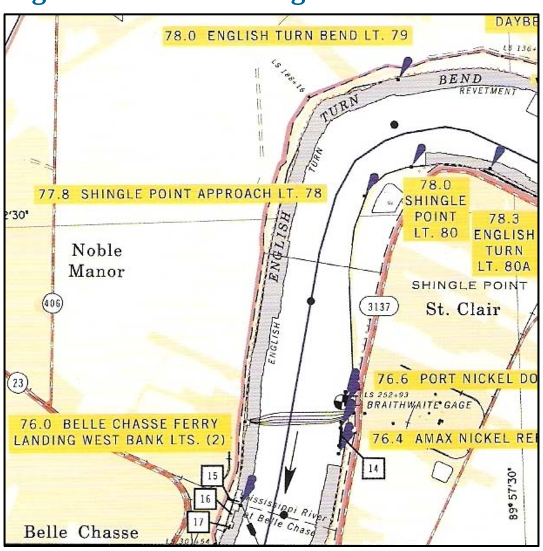
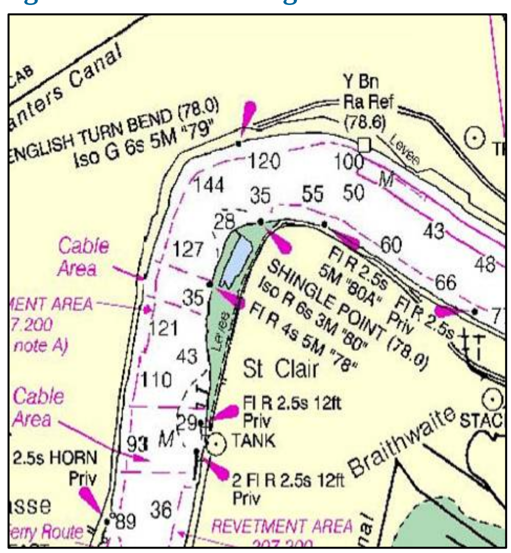


Figure 4: Amax – Navigational Conditions



NOAA navigational charts (Figures 3 & 4) and MNSA navigational aid maps indicate adequate depths for deep draft vessel transit, with a reported safe navigational draft of 45 feet. Two-way vessel traffic is also permitted. The river is approximately 2,600 feet in width from bank to bank. Vessel pilotage is provided by the Associated Branch Pilots and the Crescent River Pilots' Association. The properties river frontage is located just downstream of English Turn, a severe turn to the east for up-river bound vessels.

Table 3: Site Statistics

Pier or Wharf	**Port Nickel Dock (Liquids Terminal)**
Type and Configuration	U-shaped liquid bulk dock. Steel pile supported, steel frame wharf with timber deck catwalk and steel frame support for product piping (Figure 5). Wharf is accessed by 15’ wide timber pile supported timber walkway on upriver pier. Down river pier is timber pile supported timber frame pier for product piping.
Length (effective berthing length) and Width	450’ x 15’
Fender System and Navigation Lighting	Timber pile fenders. Red lights (3) on dolphins
Vessel Utilities Available	None. Utilities disconnected at batcher (Figure 6)
Cargo Handling Equipment	2X10” product pipes, 2 river water intake
Condition	Inoperable
Other structures (i.e. bulkheads, slipways and etc.)	Cable crossing immediately downstream. Mooring dolphins up and downstream connect to main pier structure by steel pile, steel frame supported, timber deck catwalks
Pier or Wharf	Amax Nickel Refinery Dock (Bulk Terminal)
Type and Configuration	L-shaped bulk dock. Concrete deck on steel pile, steel frame supported pier.
Length and Width	740’ x 50’
Fender System and Navigation Lighting	Timber pile fenders. Flashing red lights (4) on dock with 2.5 second interval
Vessel Utilities Available	None. Utilities disconnected at batcher
Cargo Handling Equipment	None
Condition	N/A
Other structures (i.e. bulkheads, slipways and etc.)	Cable crossing immediately upstream. Mooring dolphins up and downstream connect to main dock structure by steel pile, steel frame supported steel deck catwalks

Figure 5: Amax – Access Pier Steel Piling

Figure 6: Amax – Pier Utility Connections

Table 4: Landslide Infrastructure Characteristics

Local Road Access	English Turn Road (LA Hwy 3137) & LA Hwy 39
Turn Lanes	None
Vertical Clearance to Interstate	15’2” to I-10 E, 15’6” to I-10 W
Horizontal Clearance to Interstate	Two Lane Highways (+12’ lane widths)
Maximum Allowable Gross Weight	80,000 lbs
Expressway/Interstate Access	Interstate 10 via LA Hwy 39
Distance in Miles	17 miles to I-10 East (Paris Road) and 20 miles to I-10 West (LA 39)

The Amax property is currently accessed from landside by a state highway system and one railroad. This roadway system is in good condition and provides adequate access to the regional interstate system. Interstate 10 is most efficiently accessed by traveling north on LA 39, to LA 46 and 47, as shown in Figure 7.

Figure 7: Amax - Expressway/Interstate Access

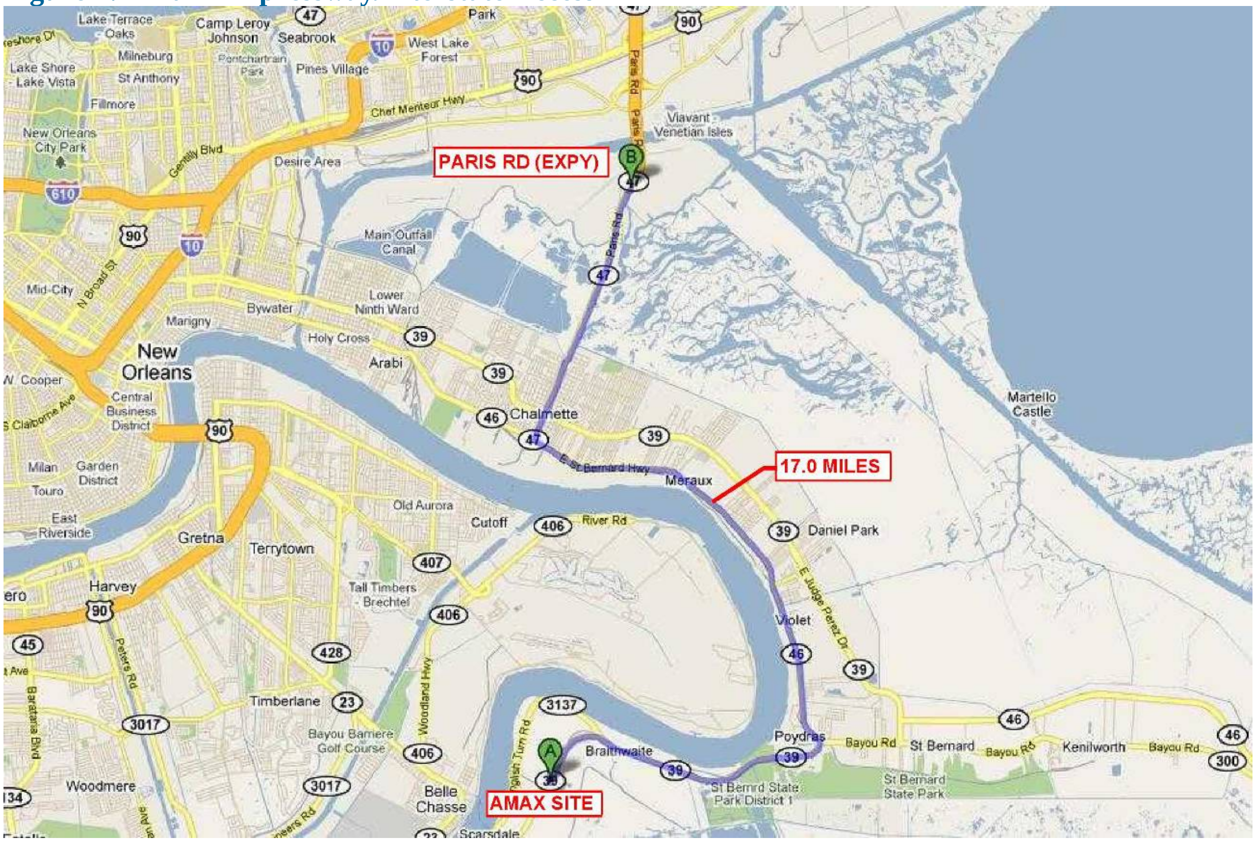


Table 5: Transportation Access

Local Rail Access	Terminus of Norfolk Southern Corporation's Louisiana Southern line. Closest rail service is to Stolthaven Refinery
Access Track (Spur)	Enters thru northeast corner of property
Condition	Facility spur track is in good condition, road bed and ties in operational condition, not used, derailers present, access gate closed and locked
On-site Rail	Considerable trackage on property, out-of-service
Track Configuration	See map for existing rail trackage
Condition	Poor condition and partially removed
Access to Mainline	Louisiana Southern line to NOLA Terminal Line at Roslin Junction
Distance to Mainline (in miles)	19 miles to Norfolk Southern Oliver Yard and mainline

Rail access is provided via the Norfolk Southern Corporation's Louisiana Southern Line that currently terminates at the site. Norfolk Southern existing rail service terminates at the Stolthaven Refinery. The nearest interchange yard is the Oliver Yard, approximately 19 track miles from the Amax property, as shown in the Figure 8 below. Figures 9 & 10 show rail on site.

Figure 8: Amax - Mainline Rail Access

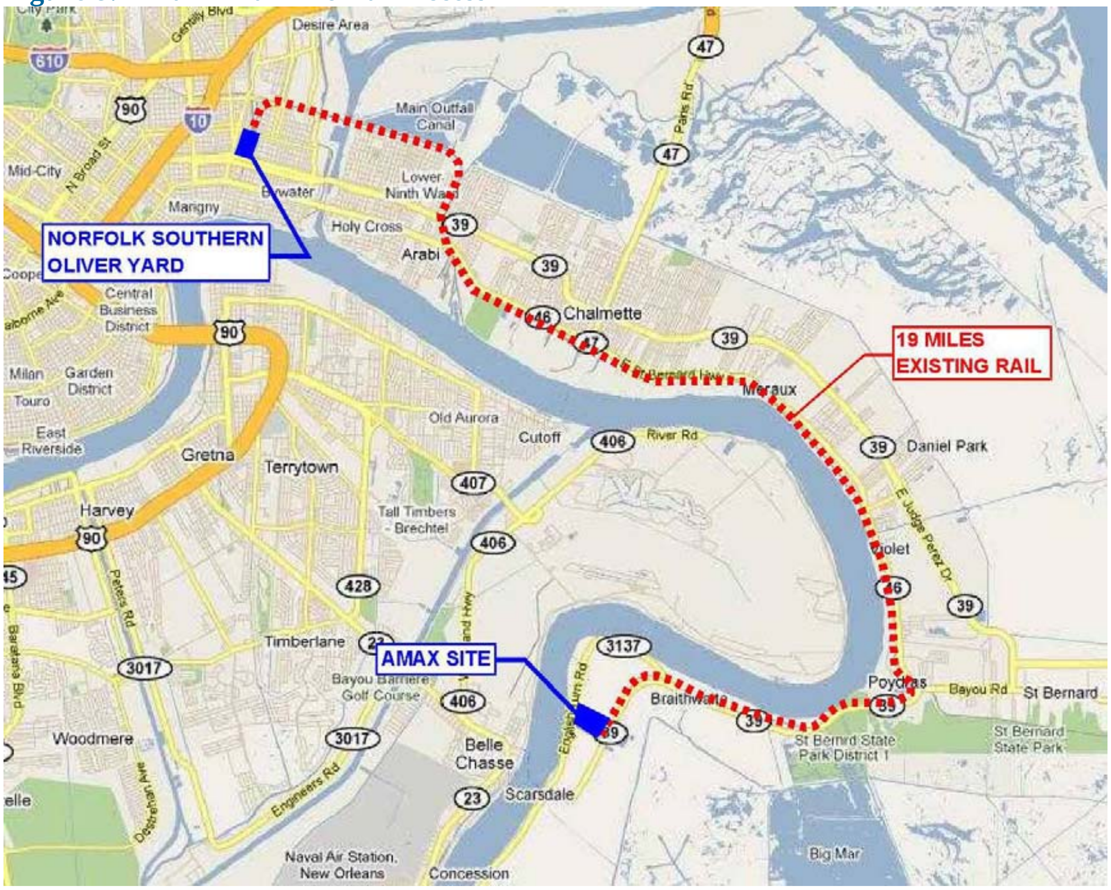


Figure 9: Amax - Manual Switch

Figure 10: Amax – Rail Car Weight Station

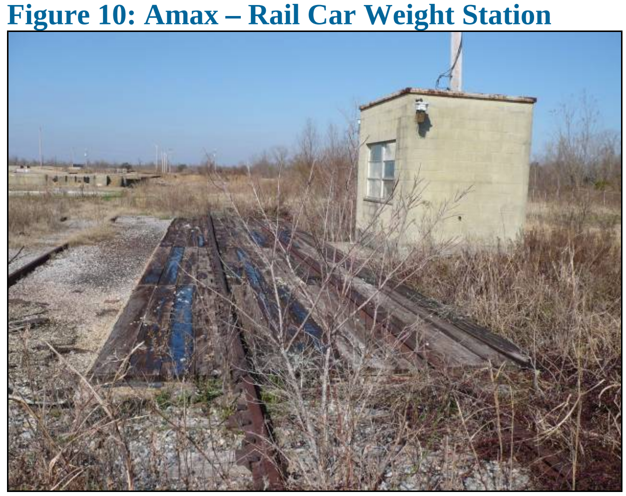


Table 6: Building and Utility Characteristics

Existing Buildings/ Structures	Figures 11 – 14
Number of Existing Principal Structures	Four
Structure No. 1	
Building Area	28,000 sf
Construction Type	Pre-engineered, heavy steel frame
Actual Age / Year of Construction	52 years / 1958
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Corrugated transite siding
Roof	Corrugated transite
Eave Ceiling Height	+30’
Condition	Fair
Notes	Office facilities located on east side. Warehouse has heavy electrical service; 3 one ton gantry cranes; one 7.5 ton overhead crane
Structure No. 2	
Building Area	11,000 sf
Construction Type	Pre-engineered, heavy steel frame
Actual Age / Year of Construction	52 years / 1958
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Concrete Block
Roof	Corrugated transite
Eave Ceiling Height	15’
Condition	Fair
Notes	Shop/office area at north end; secured storage at southwest corner
Structure No. 3	
Building Area	25,000 sf
Construction Type	Pre-engineered, heavy steel frame
Actual Age / Year of Construction	20 years / 1990
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Lower Half – Concrete; Upper Half – Corrugated metal
Roof	Corrugated Metal
Eave Ceiling Height	10’
Condition	Poor
Notes	Single access opening on south side
Structure No. 4	
Building Area	3,000 sf
Construction Type	Light-duty, pre-engineered, heavy steel frame
Actual Age / Year of Construction	52 years / 1958
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Corrugated metal

Roof	Corrugated Metal
Eave Ceiling Height	16’
Condition	Poor
Notes	

Figure 11: Amax – Building No. 3

Figure 12: Amax – Building No. 1 and 2

Figure 13: Amax – Building No. 3 Steel Truss

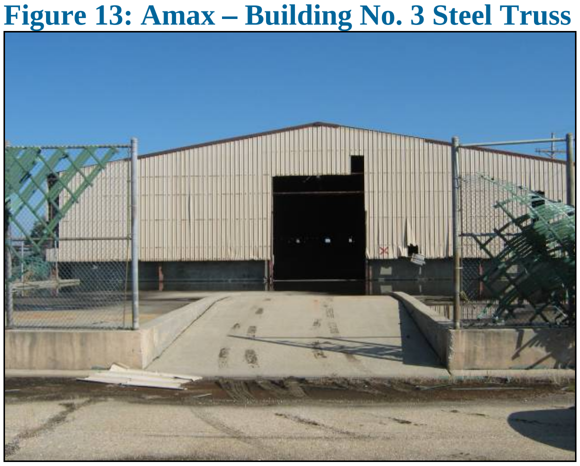


Figure 14: Amax – Building No. 4

Table 7: Utility Infrastructure

Water Utility Infrastructure	
Potable Water Supply	Municipal water available – Braithwaite water tower adjacent to site at SW corner
Notes	Existing raw water intake from Mississippi River in disrepair; water treatment facility in significant disrepair and non-operational
Fire Protection	Fire Protection Water Loop with indicating valves and fire hydrants throughout site (fire pumps are no longer in service at onsite water treatment plant) Figure 16.
Sanitary Waste Infrastructure	
Sanitary Sewer Service	None
Notes	Onsite sewage disposal/treatment lagoons have been filled and are non-operational; two sewage pump stations remain on-site and appear to be intact and serviceable
Electric Utility Infrastructure	Figure 15
Electric Service Location	Available on site
Notes	Entergy substation adjacent to site
Natural Gas Utility Infrastructure	
Natural Gas Supply Location	English Turn Road (LA Hwy 3137) frontage
Size	3-inch

Figure 15: Amax – Electrical Service

Figure 16: Amax – Fire Hydrant

From Trident's site visits and data collected from the Plaquemines Parish Department of Economic Development and Tourism it was determined that the Amax property has adequate municipal drinking water and fire protection, electricity and telecommunications services.

Geotechnical Conditions

The geotechnical information contained within the study is derived from Soil Survey information available from the Natural Resource Conservation Service. The data has been certified by the USDA-NRCS (Figure 17)as of August 4, 2009. Soils' surveys contain information that highlights soil limitations that affect various land use planning and provides general properties of the soils in the survey areas. Soils surveys provide general information and should be supplemented with detailed investigations when used for engineering applications.

The soils' surveys assist in identifying limitations of different soil types for specific development uses. Limitation ratings identified as not limited indicate that the soil has features that are very favorable for the specified use. Somewhat limited indicates that the soil has features that are moderately favorable and that the limitation can be overcome or minimized by special planning, design or installation. Very limited indicates that the soil has features that are unfavorable for the specified use and that major soil reclamation, special design or expensive installation procedures are typically necessary to overcome the limitations.

Table 8 Soil Classification

USDA-NRCS Soils Data	
Predominant Soil Types	Cancienne silt loam (Cm), Cancienne silty clay loam (Co), Carville silt loam (Ct), Schriever clay (Sk)

Figure 17: Amax - USDA-NRCS Soils Map

Table 9: Suitability and Limitations for Use

Small Commercial Buildings				
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Shrink-swell
Co	Cancienne silty clay loam	Somewhat limited	Cancienne (95%)	Shrink-swell
Ct	Carville silt loam	Not limited	Carville (90%)	
CV	Carvile, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Flooding Shrink-swell Depth to saturated zone
Sk	Schriever clay	Very limited	Cancienne (30%)	Shrink-swell Depth to saturated zone Flooding
Ub	Urban land	Not rated		

Table 10: Local Road and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Shrink-swell
Co	Cancienne silty clay loam	Somewhat limited	Cancienne (95%)	Shrink-swell
Ct	Carville silt loam	Not limited	Carville (90%)	
CV	Carvile, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Shrink-swell Flooding Depth to saturated zone
Sk	Schriever clay	Very limited	Cancienne (30%)	Shrink-swell Depth to saturated zone Flooding
Ub	Urban land	Not rated		

Table 11: Shallow Excavations

Map unit symbol	Map unit name	Rating	Component name (percent)	reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Depth to saturated zone Cutbanks cave
Co	Cancienne silty clay loam	Somewhat limited	Cancienne (95%)	Depth to saturated zone Cutbanks cave
Ct	Carville silt loam	Somewhat limited	Carville (90%)	Depth to saturated zone Cutbanks cave
CV	Carvile, Cancienne and Schriever soils, frequently flooded	Somewhat limited to Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Depth to saturated zone Flooding Cutbanks cave
Sk	Schriever clay	Very limited	Cancienne (30%)	Depth to saturated zone Too clayey Cutbanks cave
Ub	Urban land	Not rated		

Table 12: Engineering Properties

Map unit symbol	Map unit name	Depth (Inches)	USDA texture	Classification		Liquid Limit (%)	Plasticity Index
				Unified	AASHTO		
Cm	Cancienne silt loam						
	Cancienne	0-8	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		8-38	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		38-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
Co	Cancienne silty clay loam	0-4	Silty clay loam	CL	A-6,A-7-6	38-57	19-28
		4-30	Silt loam, Silty clay loam, loam	CL	A-6,A-7-6	26-51	9-28
		30-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
Ct	Carville silt loam	0-4	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		4-28	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		28-60	Silt loam	CL-ML	A-4	0-31	NP-12
CV	Carville, Cancienne and Schriever soils,						

	frequently flooded						
	Carville	0-8	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		8-30	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		30-60	Silt loam	CL-ML	A-4	0-31	NP-12
	Cancienne	0-11	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		11-21	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		21-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
	Schriever	0-10	Silt loam	CL, CL-ML, ML	A-6	21-45	6-18
		10-43	Clay	CH	A-7-5, A-7-6	68-105	44-68
		43-60	Clay, Silty clay loam, silt loam	CH, CL	A-6,A-7-5 A-7-6	37-95	11-50
Sk	Schriever clay	0-4	Clay	CH, CL	A-7-5, A-7-6	46-86	29-45
		4-40	Clay	CH	A-7-5, A-7-6	68-105	44-68
		40-65	Clay, Silty clay loam, silt loam	CH, CL	A-6,A-7-5 A-7-6	32-85	11-50

The soil survey data shows that the underlying soils on the Amax property are generally somewhat limited to very limited for supporting small commercial buildings, local roads and streets, shallow excavations and embankments, all land use activities expected of a port development. The primary limitations of the soils on the subject sites are flooding, shrink-swell and depth to saturated zone. All of these limitations is to be expected in the areas adjacent to the Mississippi River and are common to nearly all the soils in the survey area. As evidenced by the many industries along both banks of the river, the soils can typically be worked and reclaimed to provide adequate support for the desired land use. Engineering the sites to drain the water and moisture control during excavation and embankment activities can help improve the soil properties and reduce their limitations for the intended uses.

Environmental Review of Amax

Location and Area:

The Amax site is located on the east side of the Mississippi River with virtually all of the property between the Mississippi River Flood Protection Levee/LA 3137 and the back flood protection levee along the Forty-Arpent Canal see Figure 25.

Soil Types:

Approximately 719 acres of soils are located within the project area, including 312 acres of the following hydric soils: 1) Allemands muck (Ae), 2) Clovelly muck (CE), 3) Carville, Cancienne, Shriever frequently flooded (CV), 4) Harahan clay (Ha), 5) Schriever clay (Sk) and 6) Westwego clay (Ww) (Figure 23).

Flood Zones:

The property contains two flood zones: 1) Zone A6 – Areas of 100-year flood and 2) Zone B – Areas between limits of 100-year flood and 500-year flood. This data is from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders.

Oil and Gas Wells:

Two plugged and abandoned dry holes are located within the project area (Figure 26).

Oil and Gas Fields:

None

Petroleum Pipelines:

A natural gas pipeline is located on the site.

Land Use & Habitats:

The project area is comprised of the following land uses: 1) Forested (414 acres), 2) Scrub/Shrub (41 acres), 3) Agriculture/pasture (6 acres), 4) Developed (189 acres and Water (69 acres) see Figure .22

Wetlands:

According to NWI data, the project area contains the following wetlands: 1) Freshwater pond (10 acres), 2) Riverine (15 acres), 3) Freshwater Forested/Shrub wetland (46 acres) and 4) Lake (36 acres). All efforts to avoid wetlands will be conducted. If construction impacts the wetlands the associated mitigation costs will be determined that that point. It is currently believed that the wetlands can be totally avoided however see Figure 24.

Oyster Leases and Public Grounds:

None

State and Federal Parks:

None

Wildlife Refuges and Management Areas:

None

Cultural Resources:

One site is identified but will remain undisclosed for state compliance.

Native American Lands:

None

Threatened & Endangered Species:

None

Hazardous Materials & Waste Sites:

Amax Metals Recovery Inc. is located on the site and is listed as a LQG. The site is a TRIS reporter of industrial inorganic chemicals. Corrective actions were listed for this facility, but the facility is currently in compliance. This means that the site is under containment and isolation of the contaminant however any use of this site will require greater evaluation of the location of hazardous materials, their type of contaminant, any transmissibility of the waste and implications for building anything on site. No specific information has been rendered by the owner of the site or by regulatory authorities therefore full identification of potential liability or complication for construction impact remain unknown. It is possible that the waste location might be able to be avoided.

Flood Protection Levees & Elevation:

The site is protected by the Mississippi River flood protection levee and the back protection levee along the Forty-Arpent Canal, see Figures 19 – 21.

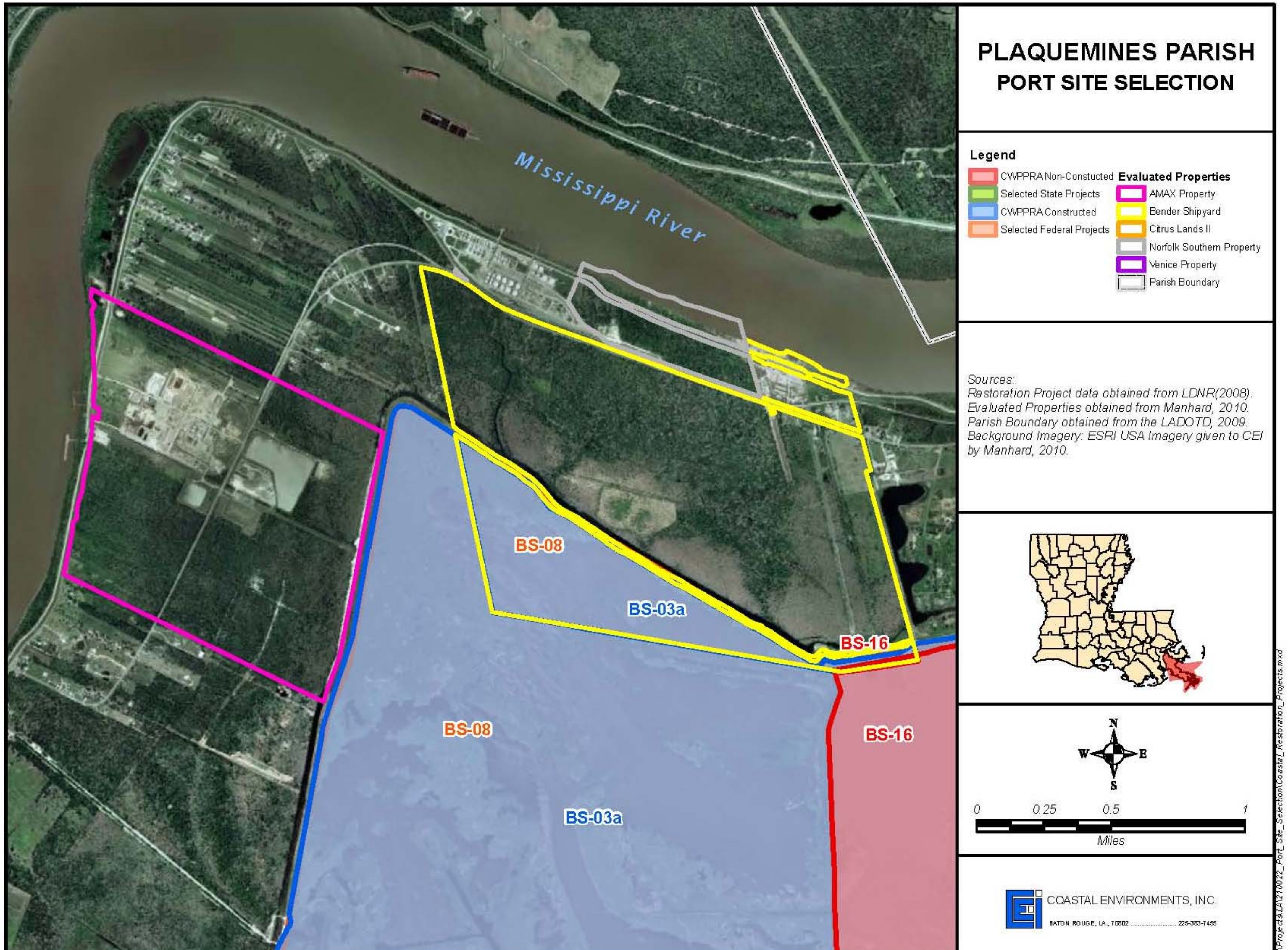
Stormwater Management

Most of the sites evaluated in this document have “grandfathered” stormwater management practices in place. This site has land sloping towards the back levee where water runoff is collected and pumps are utilized to remove the water to the outside of the levee. Any new construction or rehabilitation would require a new stormwater management application and subsequent approval.

Coastal Restoration & Flood Protection Projects:

There is no coastal restoration project located on the Amax site (Figure 18). There are no projects adjacent to Amax.

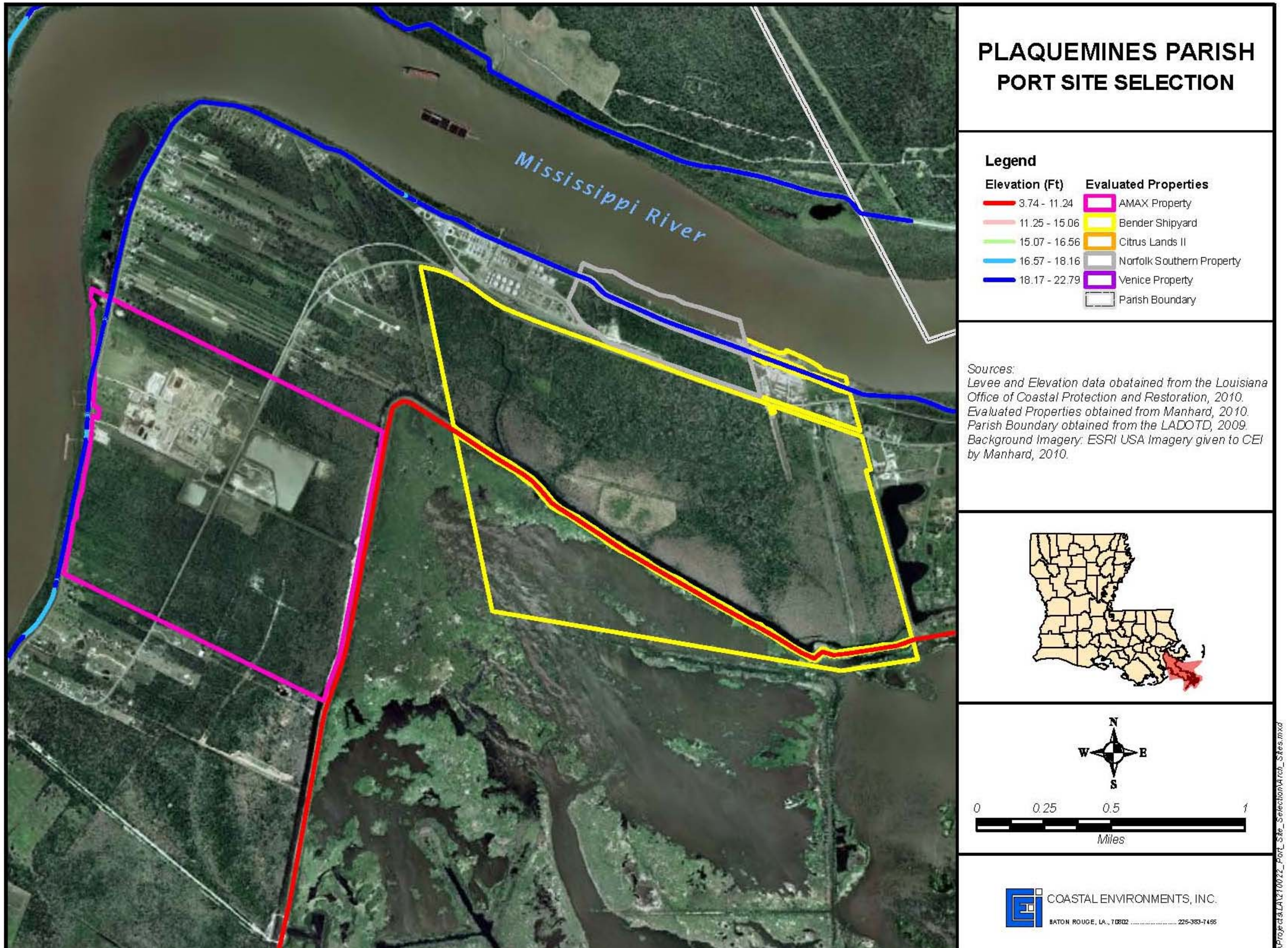
Figure 18: Coastal Restoration Projects



CWPPRA: Coastal Wetlands Planning, Protection and Restoration Act (also known as the Breaux Act from a former LA Senator who got the program passed by Congress to give funds to LA for coastal restoration with Louisiana providing a match.)

State Projects: Projects funded through the State Coastal Protection and Restoration (CPR) Trust Fund established by Louisiana Revised Statute (LA-R.S.) 49-214. This fund is largely supported by mineral revenues and severance taxes on oil and gas production on state lands. (Draft Fiscal Year 2011 Annual Plan, Integrated Ecosystem Restoration and Hurricane Protection in Coastal Louisiana, January 2010) by Office of Coastal Protection and Restoration, Coastal Protection and Restoration Authority of Louisiana; available on Web site).

Figure 19: Amax Levee Heights



The range of levee heights shown on the maps is proposed and their location, construction type and constructed elevation are currently under review. More specific details would have to be obtained as the project planning or EIS process gets underway. The reference for the restoration projects and levees is in the Draft Fiscal Year 2011 - Annual Plan (January 2010), by Office of Coastal Protection and Restoration

Figure 20: Amax Levee Type

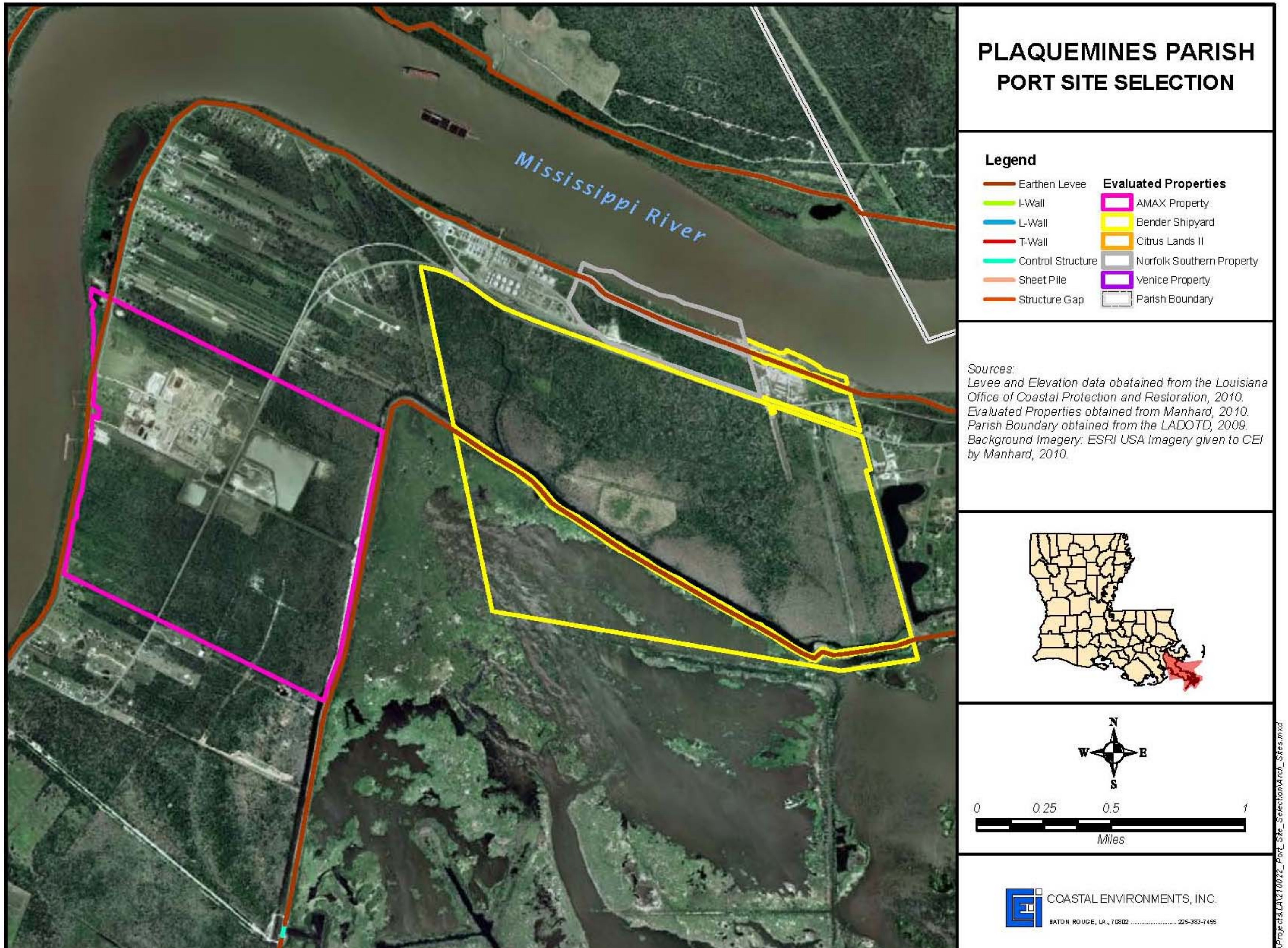
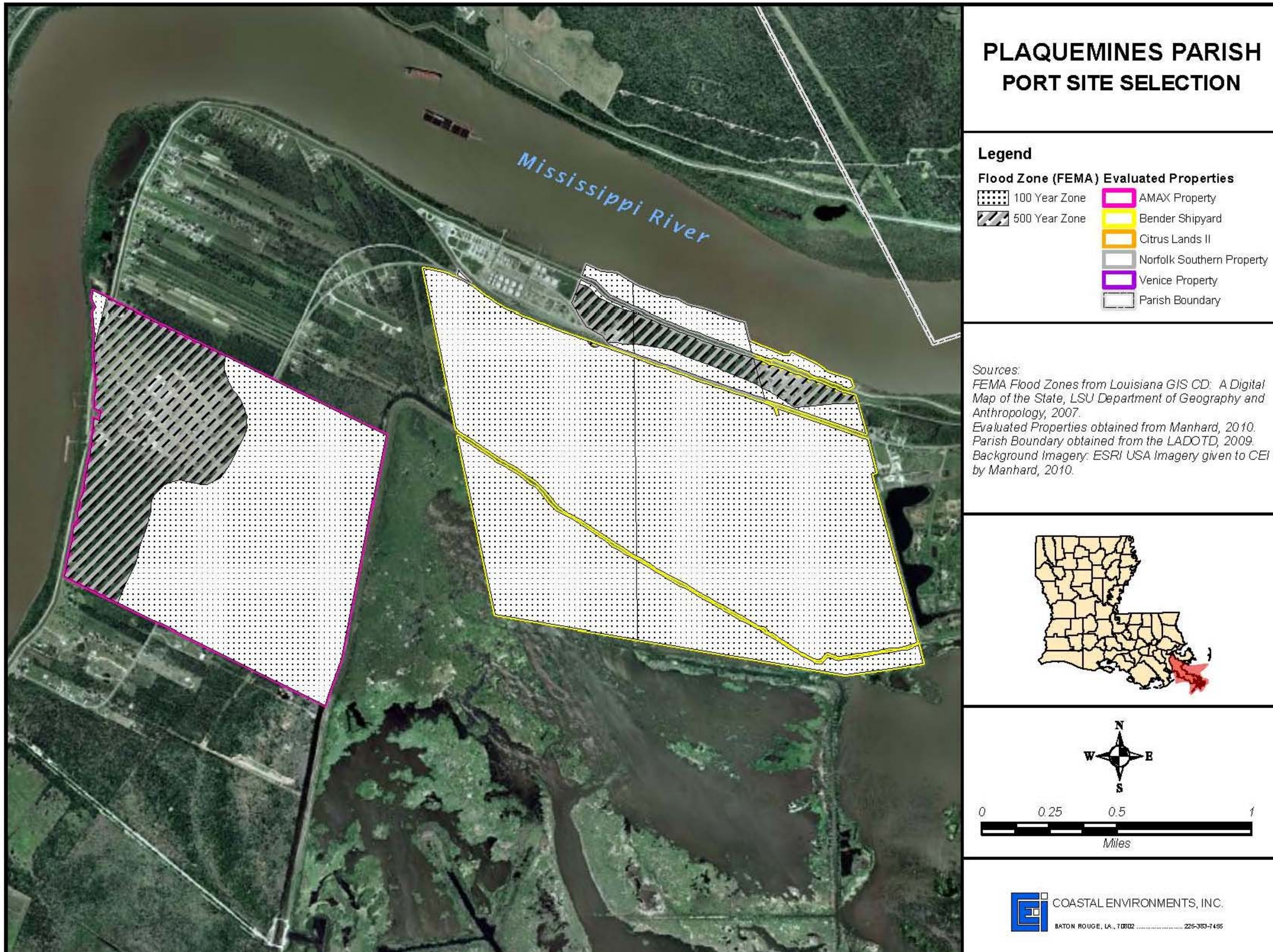


Figure 21: Amax Flood Zones



100-year flood: The flood having a 1% or greater annual probability of occurring
500-year flood: The flood having a 0.2% or greater annual probability of occurring.

Figure 22: Amax Land Cover

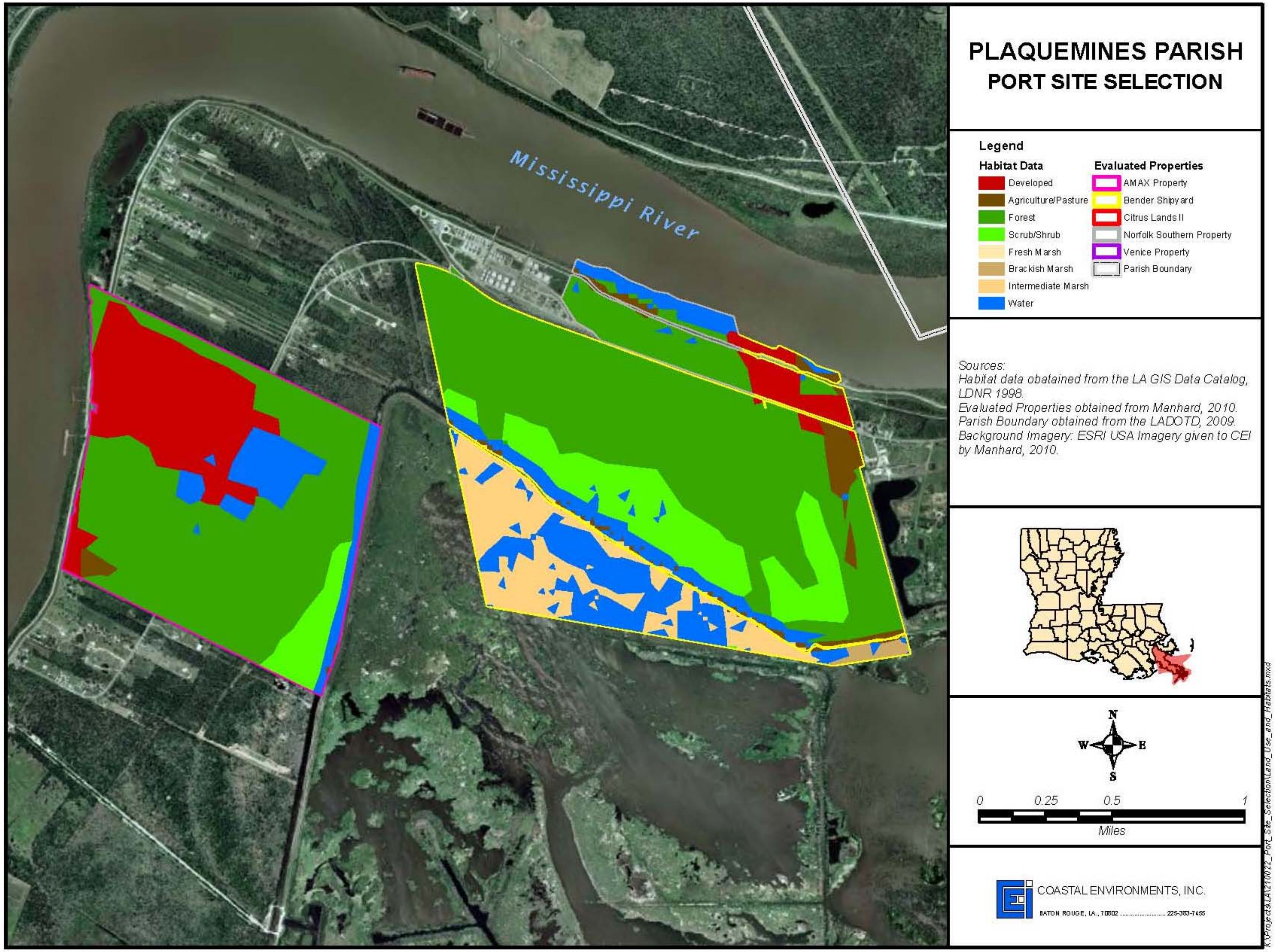


Figure 23: Amax Soil Mapping

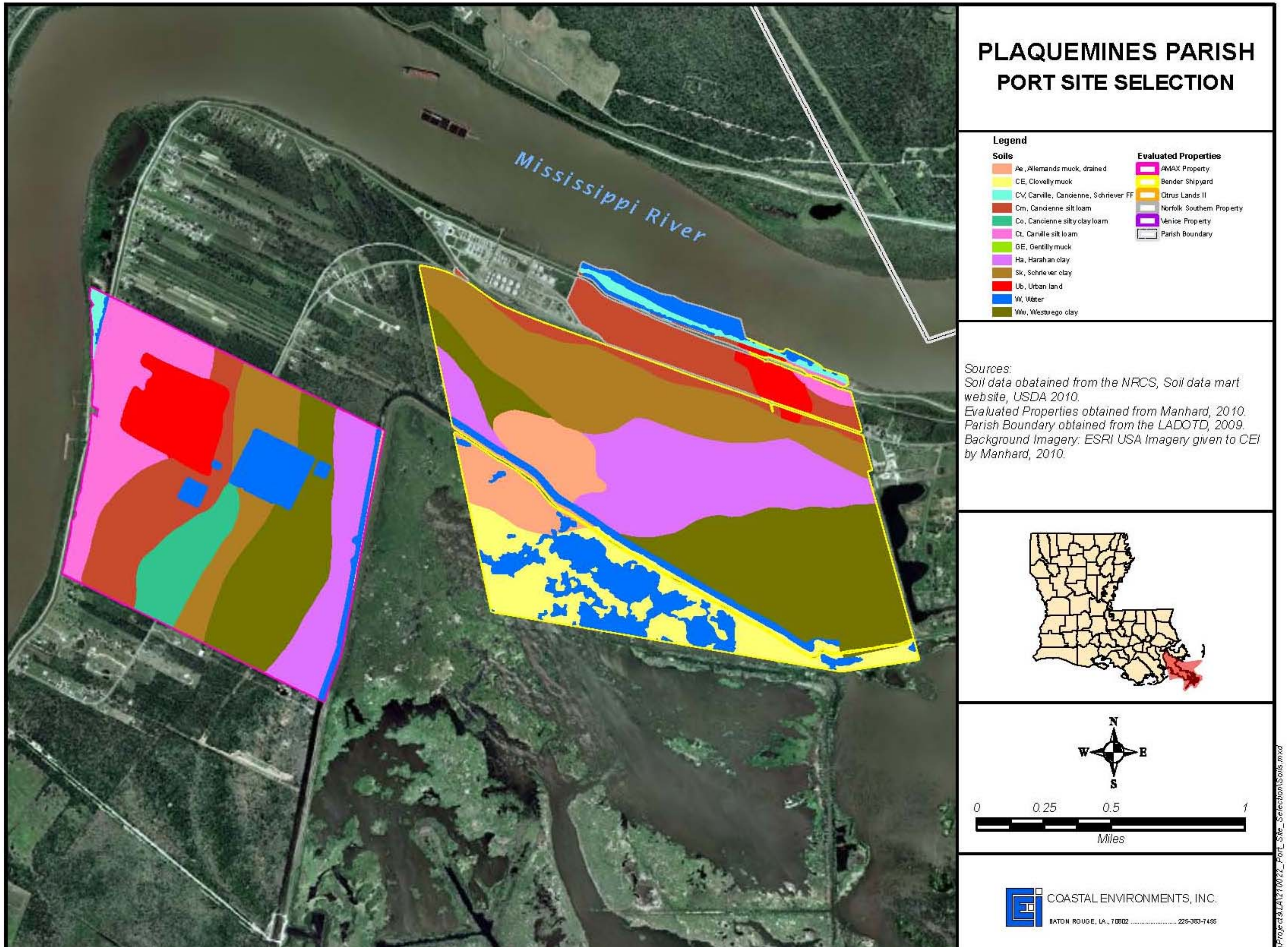


Figure 24: Amax Wetlands

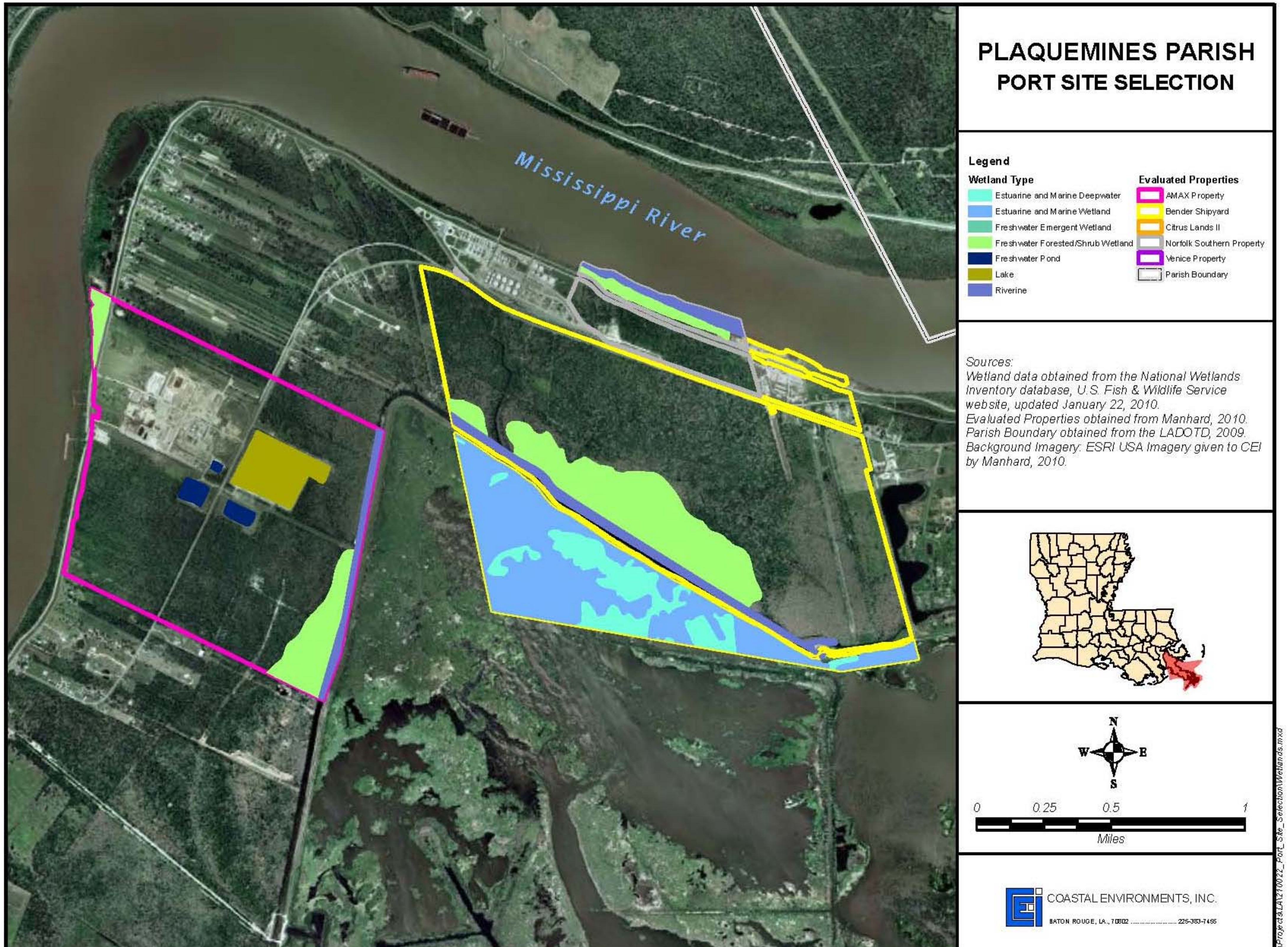


Figure 25: Amax Road Access

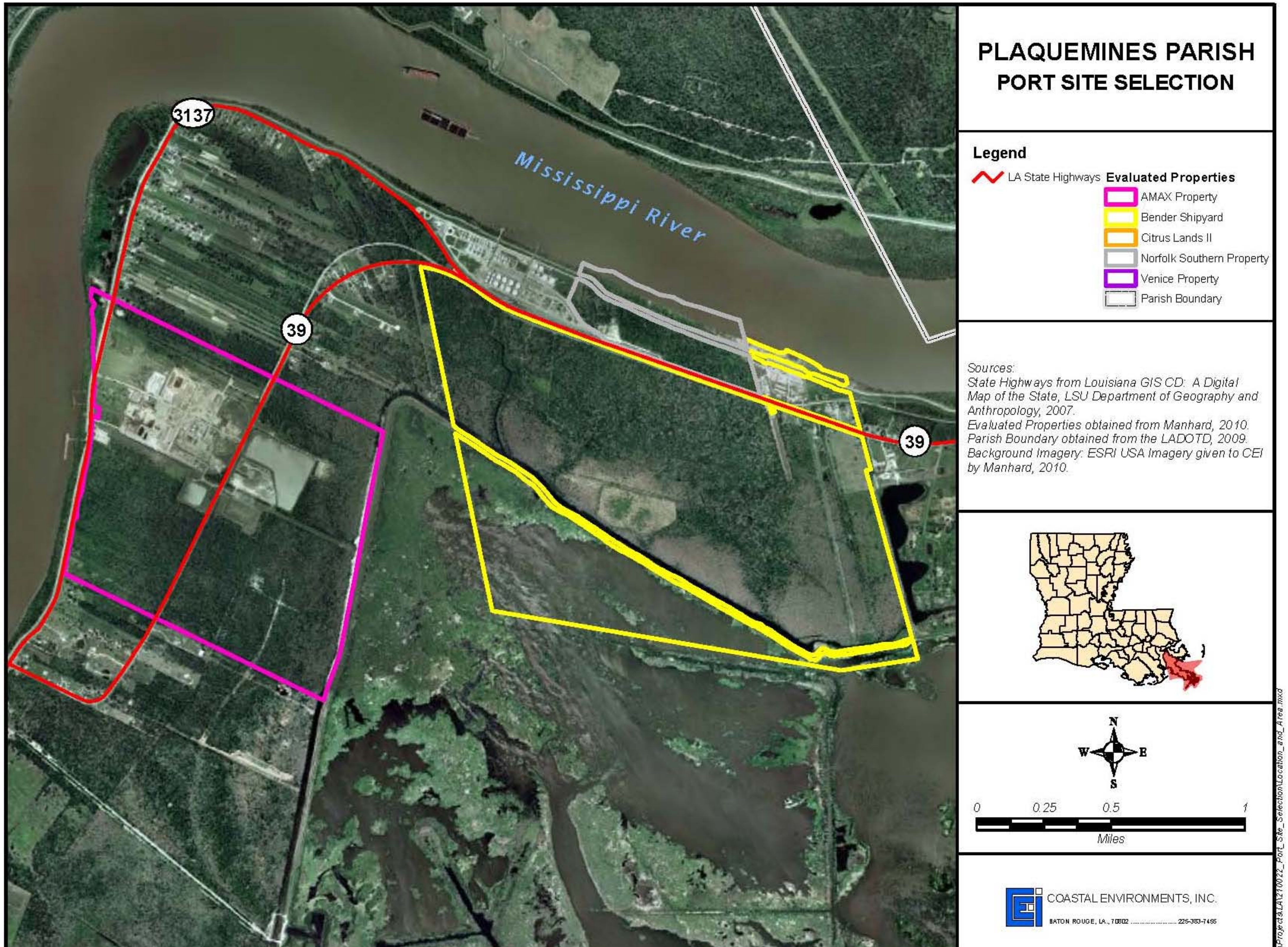
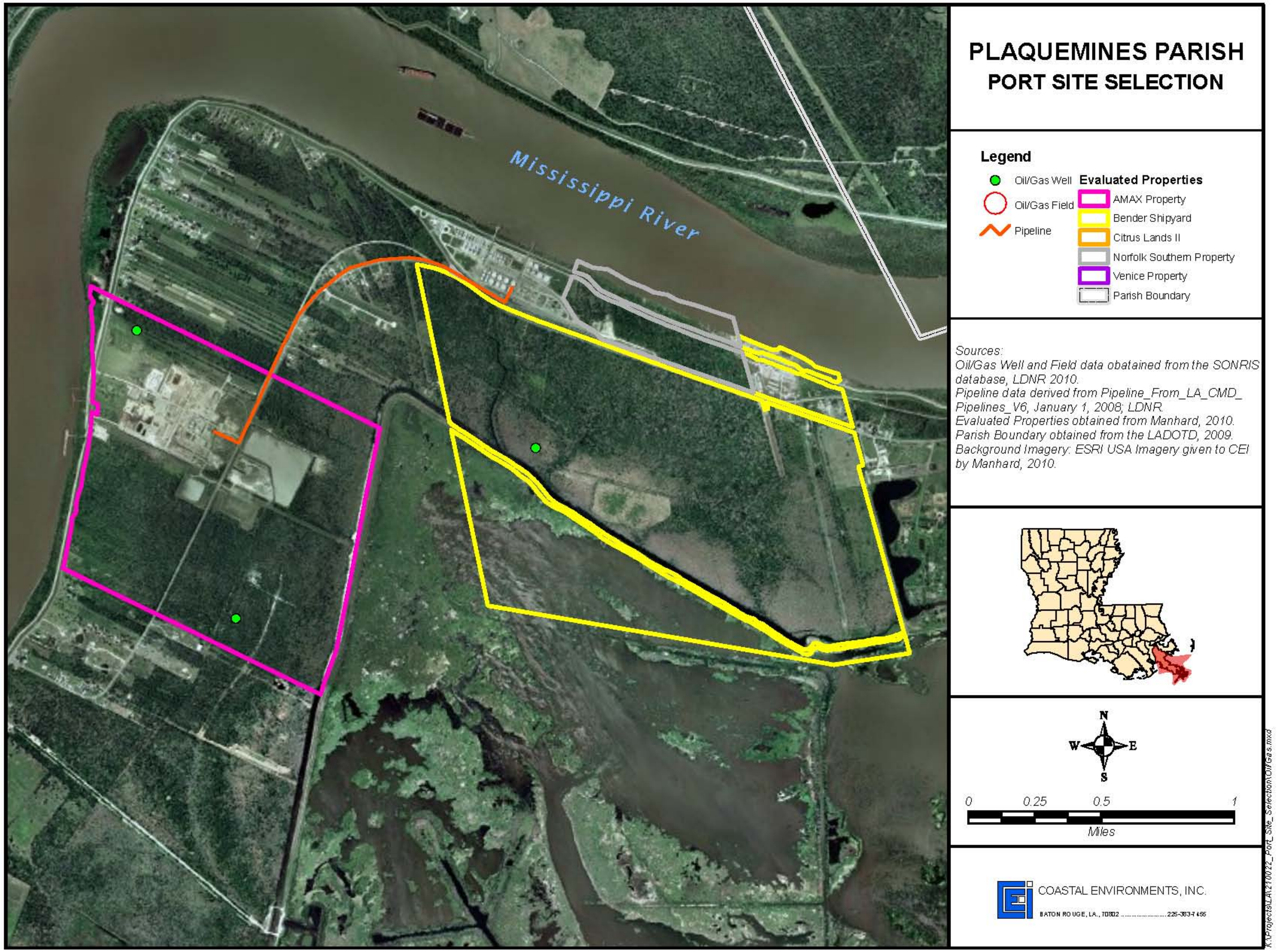


Figure 26: Amax Oil & Gas



Norfolk Southern (NS) Property

Table 13: Site Survey listing

Name	Norfolk Southern (NS) Property
Location	Braithwaite
Acreage	96
Current Use/Former Use	Currently unused, forested
Adjacent Properties	North – Mississippi River, South – Undeveloped, forested, East – Former Bender Shipyard, West – Stolthaven Refinery

USGS topographical maps indicate a nearly level landscape with stormwater runoff flowing generally toward the south and Highway 39. Adjacent roadside ditches and on-site drainage ditches periodically interrupt this drainage pattern. The property is overgrown with vegetation and trees. The average elevation on the property is 5.6 feet with an average levee elevation of 20.6 feet.

Table 14: Riverfront Characteristics

River Mile Marker Location	80
River Frontage (in feet)	2,700
Reported Channel Depth (in feet)	45
Reported Channel Width (in feet)	750
Revetment	Poydras
Aids to Navigation	None
Navigational Obstructions	Abandoned barge
Anchorages	Lower 12 Mile Point Anchorage opposite shore
Batture	Wooded with concrete paver protection on levee
Pier or Wharf	None

NOAA navigational charts and MNSA (see Figures 27 & 28) navigational aid maps indicate adequate depths for deep draft vessel transit, with a reported safe navigational draft of 45 feet. Two-way vessel traffic is also permitted. The river is approximately 2,200 feet in width from bank to bank. Vessel pilotage is provided by the Associated Branch Pilots and the Crescent River Pilots' Association. The properties river frontage is located along a relatively straight section of the river, upstream from Shingle Point and downstream from Twelve Mile Point (Figures 31-34).

Figure 27: NS – Navigational Aids

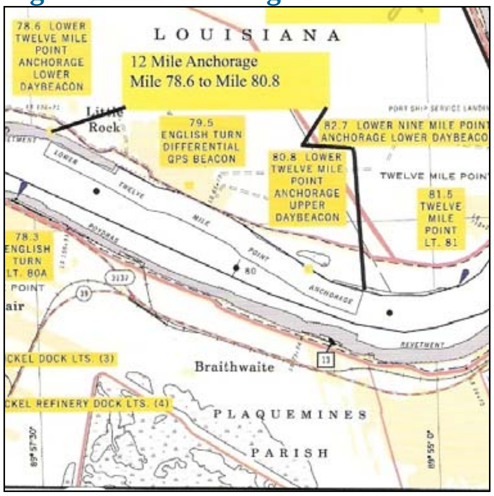


Figure 28: NS – Navigational Conditions

Table 15: Landslide Infrastructure Characteristics

Local Road Access	LA Hwy 39
Turn Lanes	None
Vertical Clearance to Interstate	15’2” to I-10 E, 15’6” to I-10 W
Horizontal Clearance to Interstate	Two Lane Highways (+12’ lane widths)
Maximum Allowable Gross Weight	80,000 lbs
Expressway/Interstate Access	Interstate 10 via LA Hwy 39
Distance in Miles	16 miles to I-10 East (Paris Road) and 17 miles to I-10 West (LA 39)

The NS property is currently accessed from landside by a state highway system and one railroad. This roadway system is in good condition and provides adequate access to the regional interstate system. Interstate 10 is most efficiently accessed by traveling north on LA 39, to LA 46 and LA 47, as shown in the Figure 29.

Figure 29: NS – Expressway/Interstate Access

Rail access is provided via the Norfolk Southern Corporation's Louisiana Southern Line that currently transits the southern boundary of the site. NS existing rail service terminates at the Stolthaven Refinery. The nearest interchange yard is the Oliver Yard, approximately 16 track miles from the NS property, as shown in Table 16.

Table 16: Transportation Access

Local Rail Access	None, existing NS Louisiana Southern Line to Stolthaven Refinery runs parallel to LA Hwy 39 (Figure 30)
Access Track (Spur)	None
Condition	N/A
On-site Rail	None
Access to Mainline	Louisiana Southern line to NOLA Terminal Line at Roslin Junction and Oliver Yard
Distance to Mainline (in miles)	17.5 miles to Norfolk Southern Oliver Yard and mainline

Figure 30: NS – Mainline Rail Access

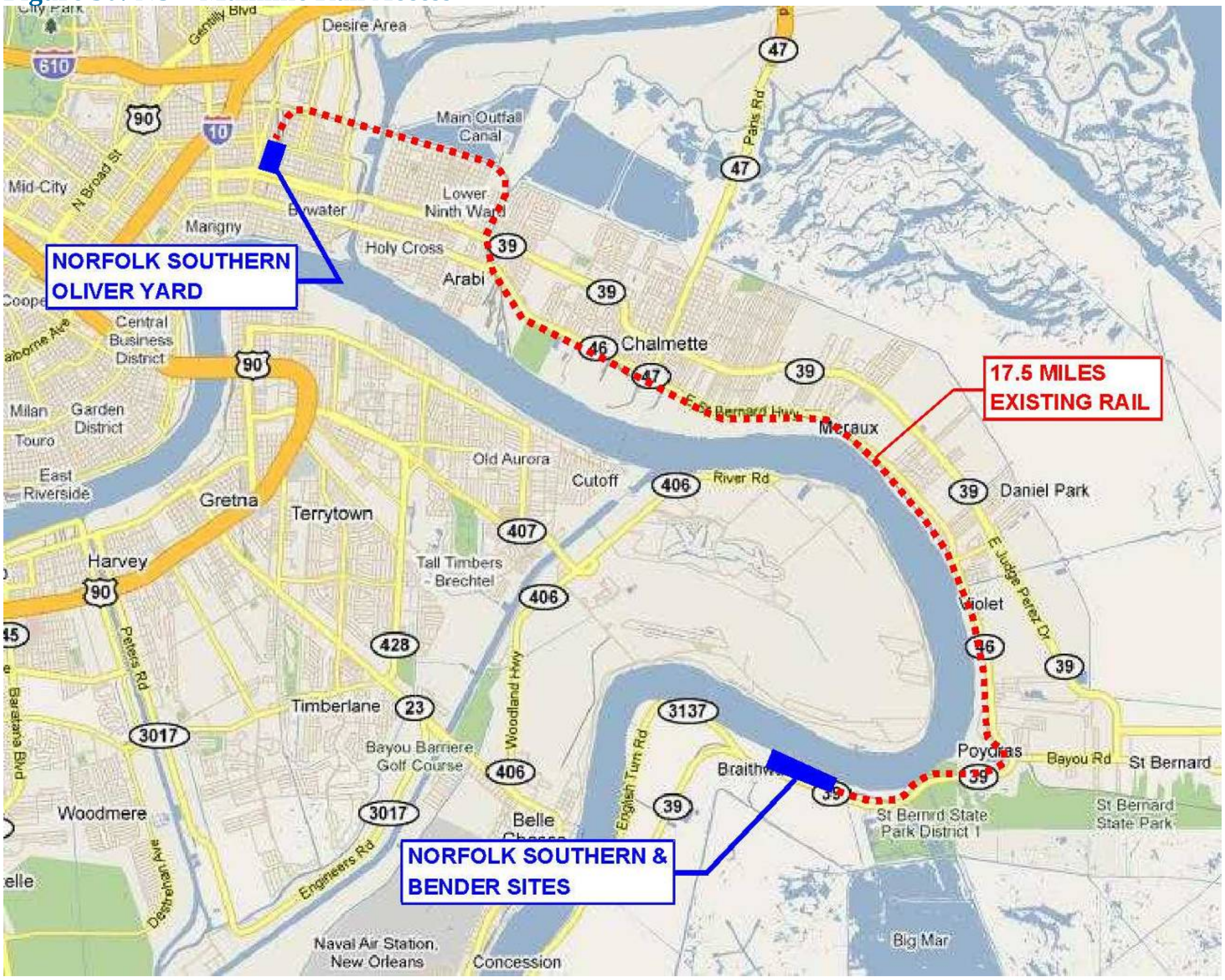


Figure 31: NS – Stolthaven Gate

Figure 32: NS – Abandoned Barge

Figure 33: NS – Batture Looking Upriver

Figure 34: NS – Levee and Backlands

From Trident's site visits and data collected from the Plaquemines Parish Department of Economic Development and Tourism it was determined that adequate municipal drinking water and fire protection, electricity and telecommunications services can be provided.

Table 17: Utility Infrastructure

Existing Buildings/ Structures	
Number of Existing Principal Structures	None
Water Utility Infrastructure	
Potable Water Supply	Municipal water available along LA Hwy 39
Notes	
Fire Protection	Available along LA Hwy 39
Sanitary Waste Infrastructure	
Sanitary Sewer Service	None
Notes	
Electric Utility Infrastructure	
Electric Service Location	Available along LA Hwy 39
Notes	
Natural Gas Utility Infrastructure	
Natural Gas Supply Location	Unknown
Size	
Notes	

Table 18: Geotechnical Conditions

USDA-NRCS Soils Data	
Predominant Soil Types	Cancienne silt loam (Cm), Carville silt loam (Ct), Carville, Cancienne and Schriever soils, frequently flooded (CV)

Figure 35: NS – USDA-NRCS Soils Map

Table 19: Suitability and Limitations for Use

Small Commercial Buildings				
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat Limited	Cancienne (90%)	Shrink-swell
CV	Carville, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (90%) Cancienne (30%) Schriever (20%)	Flooding Depth to saturated zone Shrink-swell

Table 20: Local Roads and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Shrink-swell
CV	Carville, Cancienne and Schriever soils	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Flooding Shrink-swell Depth to saturated zone
Shallow Excavations				
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Depth to saturated zone Cutbanks cave
CV	Carville, Cancienne and Schriever soils	Somewhat limited to Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Depth to saturated zone Flooding Cutbanks cave Too clayey

Table 21: Engineering Properties

Map unit symbol	Map unit name	Depth (Inches)	USDA texture	Classification		Liquid Limit (%)	Plasticity Index
				Unified	AASHTO		
Cm	Cancienne silt loam						
	Cancienne	0-8	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		8-38	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		38-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
CV	Carville, Cancienne and Schriever soils						
	Carville	0-8	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		8-30	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		30-60	Silt loam	CL-ML	A-4	0-31	NP-12
	Cancienne	0-11	Silt loam	CL, CL-	A-6	25-45	4-18

				ML, ML			
		11-21	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		21-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
	Schriever	0-10	Silt loam	CL, CL-ML, ML	A-6	21-45	6-18
		10-43	Clay	CH	A-7-5, A-7-6	68-105	44-68
		43-60	Clay, Silty clay loam, silt loam	CH, CL	A-6,A-7-5 A-7-6	37-95	11-50

The soil survey data shows that the underlying soils on the NS property are generally somewhat limited to very limited for supporting small commercial buildings, local roads and streets, shallow excavations and embankments, all land use activities expected of a port development. The primary limitations of the soils on the subject sites are flooding, shrink-swell and depth to saturated zone. All of these limitations are to be expected in the areas adjacent to the Mississippi River and are common to nearly all the soils in the survey area. As evidenced by the many industries along both banks of the river, the soils can typically be worked and reclaimed to provide adequate support for the desired land use. Engineering the sites to drain the water and moisture control during excavation and embankment activities can help improve the soil properties and reduce their limitations for the intended uses.

Environmental review of Norfolk Southern (NS) Property

The mapping provided for Amax also covers the Norfolk Southern and Bender Shipyard properties (see pages 15 - 25 of this document).

Location and Area:

This site is located between LA 39 and the Mississippi River and is divided longitudinally by the Mississippi River Flood Protection Levee.

Soil Types:

Approximately 96 acres of soils are located within the project area, including 12 acres of the following hydric soils: 1) Carville, 2) Cancienne, 3) Shriever frequently flooded (CV), Schriever clay (SK).

Flood Zones:

This site is almost equally divided between Zone A6 (areas of 100-year flood) and Zone B (areas between limits of 100-year flood and 500-year flood). This data is from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders.

Oil and Gas Wells:

None.

Oil and Gas Fields:

None.

Petroleum Pipelines:

None.

Land Use & Habitats:

The project area is comprised of the following land uses: 1) Forested (69 acres), 2) Agriculture/pasture (4 acres); 3) Developed (2 acres) and 4) Water (22 acres)

Wetlands:

According to NWI data, the project area contains the following wetlands: 1) Riverine (14 acres) and 2) Freshwater Forested/Shrub wetland (12 acres).

Oyster Leases and Public Grounds:

None

State and Federal Parks:

None

Wildlife Refuges and Management Areas:

None

Cultural Resources:

There are two sites identified but will remain undisclosed in compliance with State requirements.

Native American Lands:

None

Threatened & Endangered Species:

None

Hazardous Materials & Waste Sites:

Three permitted facilities are located within the project site; however, none of the facilities poses a threat regarding hazardous materials or wastes.

Flood Protection Levees & Elevation:

The Mississippi River flood protection protects this site from Mississippi River Flooding.

Stormwater Management

This site has a "grandfathered stormwater management practice in place. This site has land sloping towards the back levee where water runoff is collected and pumps are utilized to remove the water to the outside of the levee. Any new construction or rehabilitation would require a new stormwater management application and subsequent approval.

Coastal Restoration & Flood Protection Projects:

There are no coastal restoration projects located on this site.

Bender Shipyard

Table 22: Site Survey Listing

Name	Bender Shipyard
Location	Braithwaite
Acreage	1,066
Current Use/Former Use	Former Shipyard
Adjacent Properties	North – Mississippi River, South – Undeveloped, forested, East Unknown –, West – Norfolk Southern Property

USGS topographical maps indicate a nearly level landscape with stormwater runoff flowing generally toward the south and Highway 39. Adjacent roadside ditches and on-site drainage ditches periodically interrupt this drainage pattern. The property is occupied by abandoned buildings, overgrown vegetation, and some trees with low scrub. The average elevation on the property is 5.6 feet with an average levee elevation of 20.6 feet.

Table 23: Riverfront Characteristics

River Mile Marker Location	80.7
River Frontage (in feet)	2,250
Reported Channel Depth (in feet)	45
Reported Channel Width (in feet)	750
Revetment	Poydras
Aids to Navigation	None
Navigational Obstructions	Abandoned barges and submerged structures
Anchorages	Lower Twelve Mile Point Anchorage opposite shore
Batture	Littered with debris and concrete paver protection on levee
Pier or Wharf	None
Other structures (i.e. bulkheads, slipways and etc.)	Abandoned concrete slipways

NOAA navigational charts and MNSA navigational aid maps (Figures 36 & 37) indicate adequate depths for deep draft vessel transit, with a reported safe navigational draft of 45 feet. Two-way vessel traffic is also permitted. The river is approximately 2,000 feet in width from bank to bank. Vessel pilotage is provided by the Associated Branch Pilots and the Crescent River Pilots' Association. The properties river frontage is located along the up-bound approach to Twelve Mile Point, a severe turn to the north for up-bound vessels (Figures 38-41).

Figure 36: Bender Shipyard – Navigational Aids

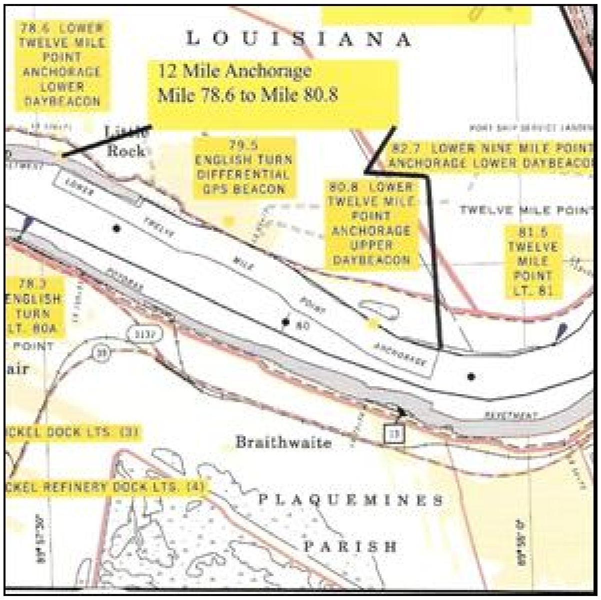


Figure 37: Bender Shipyard – Navigational Conditions

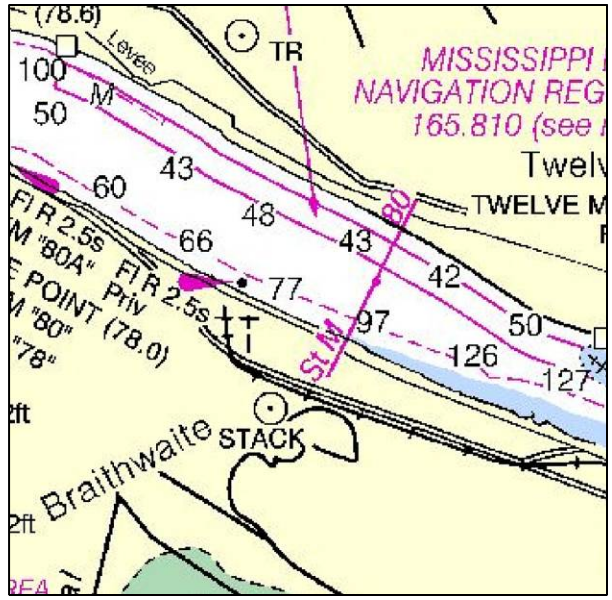


Figure 38: Bender Shipyard – Upstream Levee and Batture

Figure 39: Bender Shipyard – Abandoned Slipways

Figure 40: Bender Shipyard – Downstream Levee and Batture

Figure 41: Bender Shipyard – Abandoned Slipways

Table 24: Landslide Infrastructure Characteristics

Local Road Access	Highway 39
Turn Lanes	None
Vertical Clearance to Interstate	15’2” to I-10 E, 15’6” to I-10 W
Horizontal Clearance to Interstate	Two Lane Highways (+12’ lane widths)
Maximum Allowable Gross Weight	80,000 lbs
Interstate Access	Interstate 10 via LA Hwy 39
Distance in Miles	16 miles to I-10 East (Paris Road) and 17 miles to I-10 West (LA 39)

The Bender Shipyard property is currently accessed from landside by a state highway system and one railroad. This roadway system is in good condition and provides adequate access to the regional interstate system. Interstate 10 is most efficiently accessed by traveling north on LA 39, to LA 46 and 47, as shown in the Figure 42 below.

Figure 42: Bender Shipyard Property Expressway/Interstate Access

Rail access is provided via the Norfolk Southern Corporation's Louisiana Southern Line that currently transits the southern boundary of the site. Norfolk Southern existing rail service terminates at the Stolthaven Refinery. The nearest interchange yard is the Oliver Yard, approximately 16 track miles from the Bender property, as shown in the Table 25 below and Figures 43 – 45.

Table 25: Transportation Access

Local Rail Access	None, existing Norfolk Southern LS (Louisiana Southern) Line to Stolthaven Refinery abuts southeast property boundary
Access Track (Spur)	None
Condition	N/A
On-site Rail	None
Access to Mainline	Louisiana Southern line to NOLA Terminal Line at Roslin Junction and Oliver Yard
Distance to Mainline (in miles)	17.5 miles to Norfolk Southern Oliver Yard and mainline

Figure 43: Bender Shipyard Property Mainline Rail Access

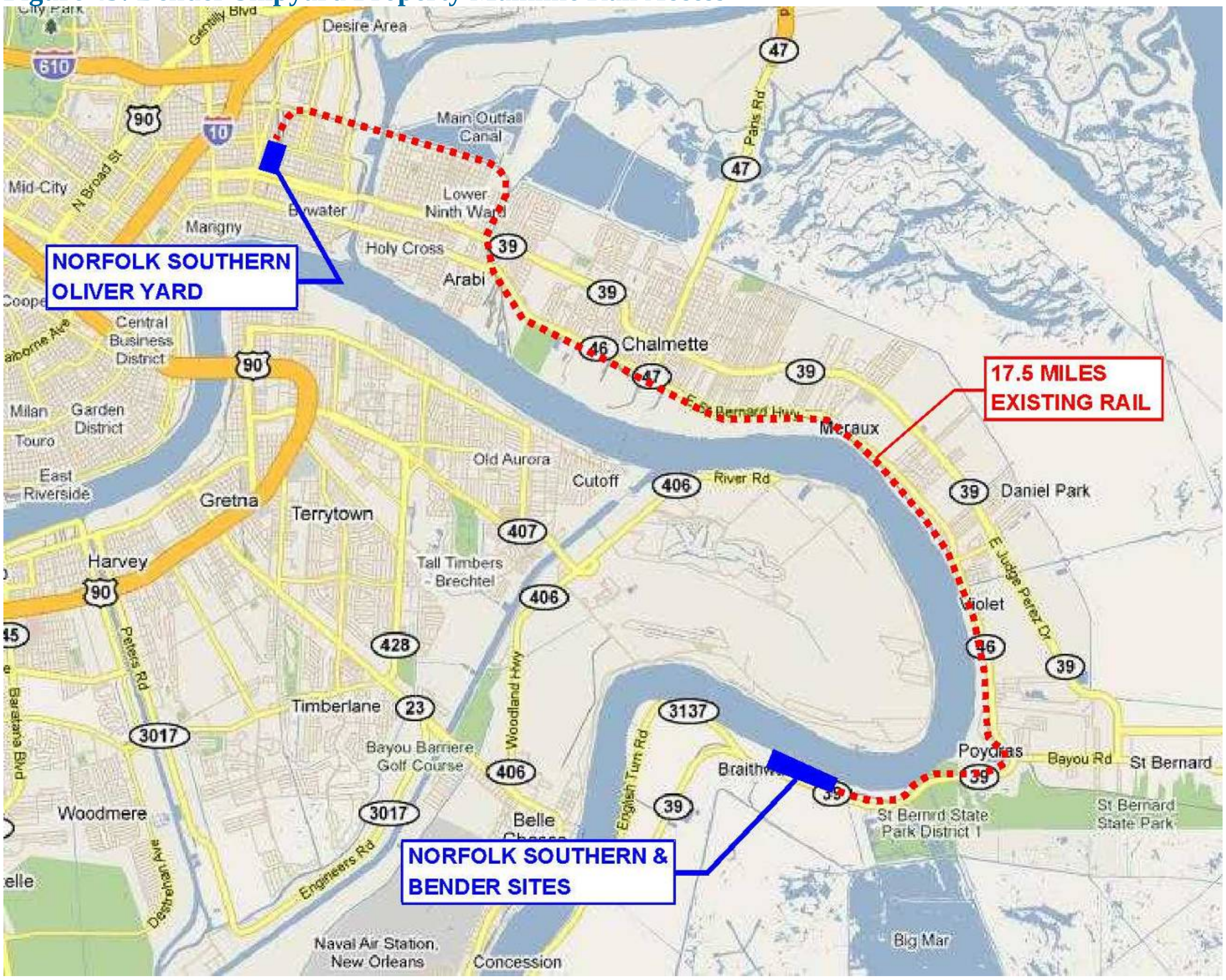


Figure 44: Bender Shipyard – NS Louisiana Southern Rail Line Approach

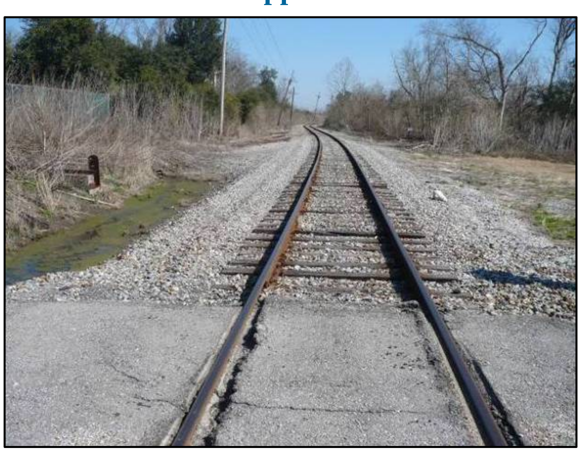


Figure 45: Bender Shipyard – NS Louisiana Southern Rail Line to Stolthaven

Table 26: Building and Utility Characteristics

Existing Buildings/ Structures	Figures 46 - 49
Number of Existing Principal Structures	Five
Structure No. 1	
Building Area	24,000 sf remaining
Construction Type	Pre-engineered, heavy steel frame
Actual Age / Year of Construction	unknown
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Corrugated metal siding
Roof	Corrugated metal
Eave Ceiling Height	
Notes	Heavily damaged, significant section of roof and exterior missing, appears that it may be undergoing demolition/metal salvage operations
Structure No. 2	
Building Area	10,000 sf remaining
Construction Type	Pre-engineered, heavy steel frame
Actual Age / Year of Construction	unknown
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Corrugated metal siding
Roof	Corrugated metal
Eave Ceiling Height	
Notes	Heavily damaged, significant section of roof and exterior missing, appears that it may be undergoing demolition/metal salvage operations
Structure No. 3	
Building Area	5,000 sf
Construction Type	Pre-engineered, light steel frame
Actual Age / Year of Construction	Unknown
No. of Stories	One
Foundation	Reinforced Concrete Slab
Exterior Walls	Corrugated metal siding
Roof	Corrugated
Eave Ceiling Height	
Notes	Machine shop/work area, Heavily damaged
Structure No. 4	
Building Area	10,000 sf
Construction Type	Pre-engineered, steel frame
Actual Age / Year of Construction	Unknown
No. of Stories	Two
Foundation	Reinforced Concrete Slab
Exterior Walls	Corrugated metal siding
Roof	Corrugated
Eave Ceiling Height	10’
Notes	Office-type facility, fair condition

Structure No. 5	
Building Area	5,000 sf
Construction Type	Timber
Actual Age / Year of Construction	Unknown
No. of Stories	Two
Foundation	Reinforced Concrete Slab
Exterior Walls	Timber siding
Roof	Timber shingles
Eave Ceiling Height	
Notes	Office-type facility, Severely damaged, Collapsed roof

Figure 46: Bender Shipyard – Structure No. 1

Figure 47: Bender Shipyard – Structure No. 4

Figure 48: Bender Shipyard – Structure No. 3

Figure 49: Bender Shipyard – Structure No. 5

Table 27: Utility Infrastructure

Water Utility Infrastructure	Figures 50 & 51
Potable Water Supply	Municipal water available along LA Hwy 39
Notes	
Fire Protection	None Observed. Available along LA Hwy 39
Sanitary Waste Infrastructure	
Sanitary Sewer Service	None Observed
Notes	
Electric Utility Infrastructure	
Electric Service Location	Available at site
Notes	
Natural Gas Utility Infrastructure	
Natural Gas Supply Location	Unknown
Size	
Notes	

Figure 50: Bender Shipyard – Electric Transformer

Figure 51: Bender Shipyard – Abandoned Truck Scale

From Trident's site visits and data collected from the Plaquemines Parish Department of Economic Development and Tourism it was determined that adequate municipal drinking water and fire protection, electricity and telecommunications services can be provided to the Bender Shipyard property.

Table 28: Geotechnical Conditions

USDA-NRCS Soils Data	
Predominant Soil Types	Cancienne silt loam (Cm), Carville silt loam (Ct), Carville, Cancienne and Schriever soils, frequently flooded (CV)

Figure 52: Bender Shipyard - USDA-NRCS Soils Map

The soil survey data (Figure 52) shows that the underlying soils on the Bender Shipyard property are generally somewhat limited to very limited for supporting small commercial buildings, local roads and streets, shallow excavations and embankments, all land use activities expected of a port development. The primary limitations of the soils on the subject sites are flooding, shrink-swell and depth to saturated zone. All of these limitations is to be expected in the areas adjacent to the Mississippi River and are common to nearly all the soils in the survey area. As evidenced by the many industries along both banks of the river, the soils can typically be worked and reclaimed to provide adequate support for the desired land use. Engineering the sites to drain the water and moisture control during excavation and embankment activities can help improve the soil properties and reduce their limitations for the intended uses.

Table 29: Suitability and Limitations for Land Use

Small Commercial Buildings				
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat Limited	Cancienne (90%)	Shrink-swell
Ct	Carville silt loam	Not limited	Carville (90%)	
CV	Carville, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (90%) Cancienne (30%) Schriever (20%)	Flooding Depth to saturated zone Shrink-swell
Ub	Urban land	Not rated		

Table 30: Local Roads and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Skrink-swell
Ct	Carville silt loam	Not limited	Carville (90%)	
CV	Carville, Cancienne and Schriever soils	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Flooding Shrink-swell Depth to saturated zone
Ub	Urban land	Not rated		

Table 31: Shallow Excavations

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Depth to saturated zone Cutbanks cave
Ct	Carville silt loam	Somewhat limited	Carville (90%)	Depth to saturated zone Cutbanks cave
CV	Carville, Cancienne and Schriever soils	Somewhat limited to Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Depth to saturated zone Flooding Cutbanks cave Too clayey
Ub	Urban land	Not rated		

Table 32: Engineering Properties

Map unit symbol	Map unit name	Depth (Inches)	USDA texture	Classification		Liquid Limit (%)	Plasticity Index
				Unified	AASHTO		
Cm	Cancienne silt loam						
	Cancienne	0-8	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		8-38	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		38-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
Ct	Carville silt loam						
	Carville	0-4	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		4-28	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		28-60	Silt loam	CL-ML	A-4	0-31	NP-12
CV	Carville, Cancienne and Schriever soils						
	Carville	0-8	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		8-30	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		30-60	Silt loam	CL-ML	A-4	0-31	NP-12
	Cancienne	0-11	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		11-21	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		21-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
	Schriever	0-10	Silt loam	CL, CL-ML, ML	A-6	21-45	6-18
		10-43	Clay	CH	A-7-5, A-7-6	68-105	44-68
		43-60	Clay, Silty clay loam, silt loam	CH, CL	A-6,A-7-5 A-7-6	37-95	11-50

Environmental review of Bender Shipyard Property

The mapping provided for Amax also covers the Bender Shipyard property and should be reviewed in the Amax Environmental Mapping section (see pages 15-25 of this document).

Location and Area:

This site is bordered on the north by LA 39, the Norfolk Southern Property and the Mississippi River and extends south past the Forty-Arpent Canal and back flood protection levee.

Soil Types:

Approximately 1,068 acres of soils are located within the project area, including 898 acres of the following hydric soils: 1) Allemands muck (Ae), 2) Clovelly muck (CE), 3) Carville, Cancienne, Shriever frequently flooded (CV), 4) Harahan clay (Ha), 5) Schriever clay (Sk) and 6) Westwego clay (Ww).

Flood Zones:

The flood zones located on this site include: Zone A6 – Areas of 100-year flood and Zone B – Areas between limits of 100-year flood and 500-year flood. This data is from maps published in 1985 and does not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders.

Oil and Gas Wells:

One plugged and abandoned dry hole is located within the project area.

Oil and Gas Fields:

None

Petroleum Pipelines:

None

Land Use & Habitats:

The project area is comprised of the following land cover: 1) Intermediate marsh (142 acres), 2) Brackish marsh (8 acres), 3) Forested (537 acres), 4) Scrub/Shrub (169 acres), 5) Agriculture/pasture (33 acres), 6) Developed (34 acres), and 7) Water (44 acres).

Wetlands:

According to NWI data, the project area contains the following wetlands: 1(Estuarine and marine deepwater (70 acres), 2) Estuarine and marine wetland (174 acres), 3) Riverine (31 acres) and 4) Freshwater Forested/Shrub wetland (123 acres).

Oyster Leases and Public Grounds:

None

State and Federal Parks:

None

Wildlife Refuges and Management Areas:

None

Cultural Resources:

There are nine sites on this property considered as a resource and they will remain undisclosed in compliance with State requirements.

Native American Lands:

None

Threatened & Endangered Species:

None

Hazardous Materials & Waste Sites:

No permitted facilities or other known information regarding hazardous materials or waste are located within the project area.

Flood Protection Levees & Elevation:

A portion of the site is protected from flooding by the Mississippi River Protection Levee and a back protection levee located along the Forty-Arpent Canal. The final design and elevation of these protection levees is currently under review.

Stormwater Management

This site has a grandfathered stormwater management practice in place. This site has land sloping towards the back levee where water runoff is collected and pumps are utilized to remove the water to the outside of the levee. Any new construction or rehabilitation would require a new stormwater management application and subsequent approval.

Coastal Restoration & Flood Protection Projects:

The southernmost portion of the site, below the back protection levee is within a CWPPRA project (the Caernarvon Freshwater Diversion and Caernarvon Diversion Outfall Management).

Citrus II

Table 33: Site Survey Listing

Name	Citrus Port Site part of Citrus II
Location	Deer Range to Point Celeste
Acreage	2,900
Current Use/Former Use	Currently unused, forested/agriculture
Adjacent Properties	North – Mississippi River, South – Undeveloped, bayou, East – Agriculture/Residential, West – Agriculture/Residential/Undeveloped

USGS topographical maps indicate a nearly level landscape with stormwater runoff flowing generally toward the west and Highway 23. The site is wooded with low tree and scrub. The average elevation on the property is 1.5 feet with an average levee elevation of 16.6 feet.

Table 34: Riverfront Characteristics

River Mile Marker Location	53-56, 58-59
River Frontage	Over 4 miles
Reported Channel Depth (in feet)	45
Reported Channel Width (in feet)	750
Revetment	Junior
Aids to Navigation	Deer Range Light, green isophase at 6 second intervals; Davant Anchorage Upper and Lower daybeacon; Point Celeste Light, green flashing at 6 second intervals
Navigational Obstructions	Barges fleeted and vessels anchored at Point Celeste and Davant anchorages
Anchorages	Magnolia Anchorage upstream and Point Celeste Anchorage downstream, Davant Anchorage opposite shore
Batture	Wooded with concrete paver protection on levee
Pier or Wharf	None

NOAA navigational charts and MNSA navigational aid maps (Figures 53 – 55) indicate adequate depths for deep draft vessel transit, with a reported safe navigational draft of 45 feet. Two-way vessel traffic is also permitted. The river is approximately 2,500 feet in width from bank to bank. Vessel pilotage is provided by the Associated Branch Pilots and the Crescent River Pilots' Association. The properties river frontage is located along a relatively straight stretch of the river, between Deer Range and Point Celeste.

Army Corp of Engineers Proposed Levee Alignments are shown below and in Figure 59

Citrus II Levees

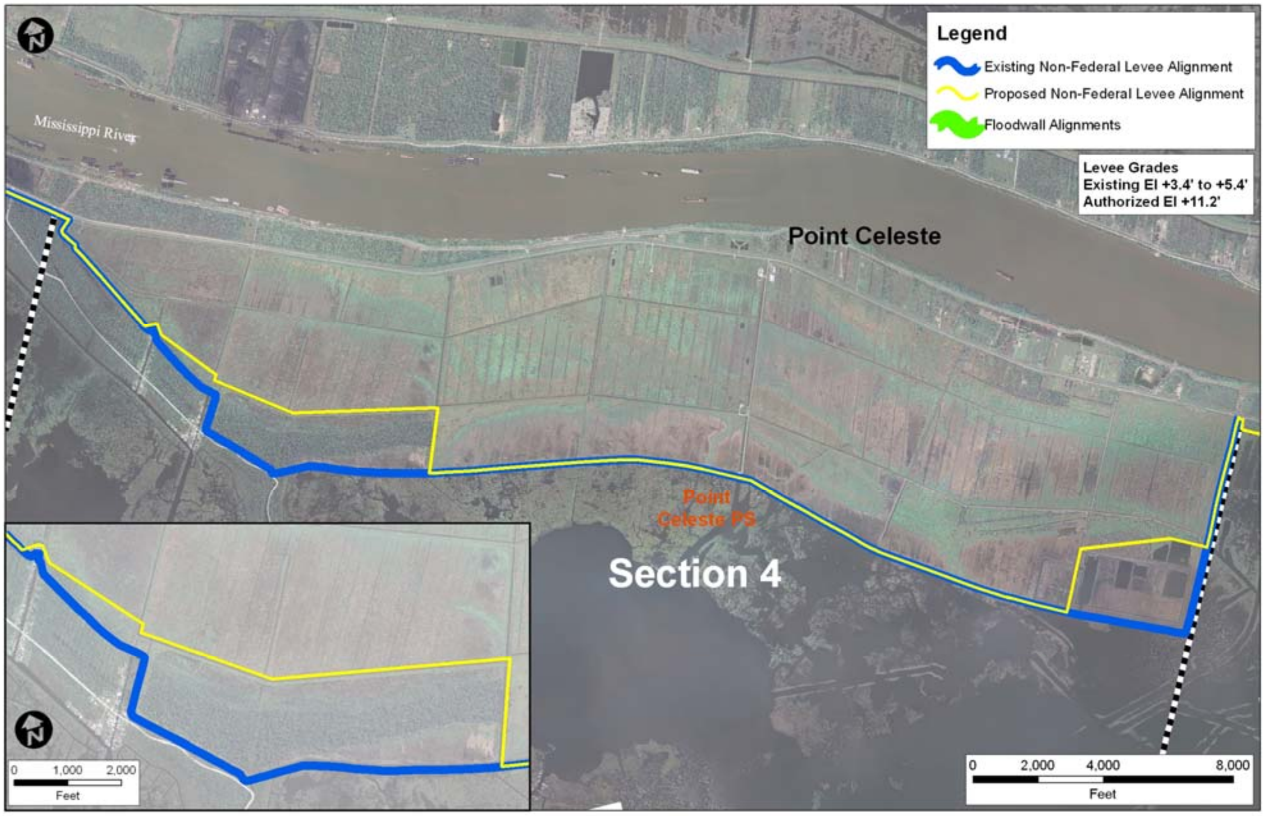


Figure 53: Citrus Port Site – Navigational Aids/North

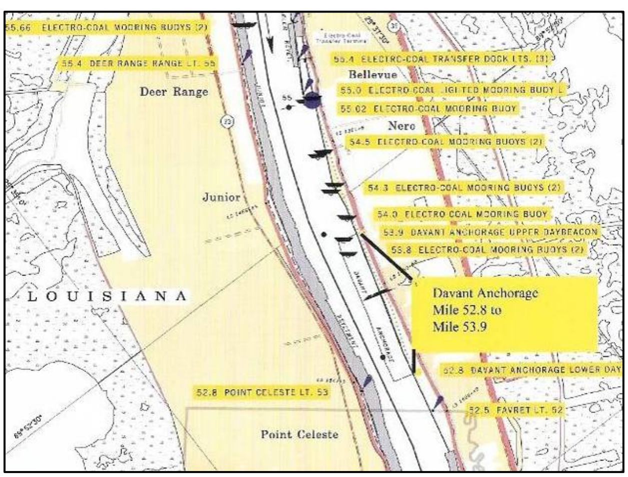


Figure 54: Citrus Port Site – Navigational Aids/South

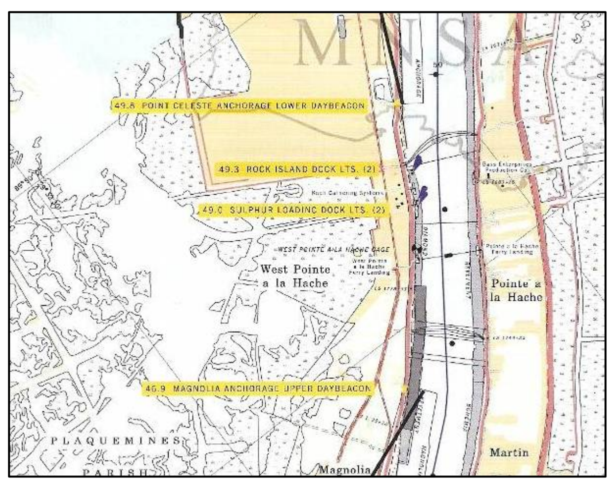


Figure 55: Citrus Port Site – Navigational Conditions

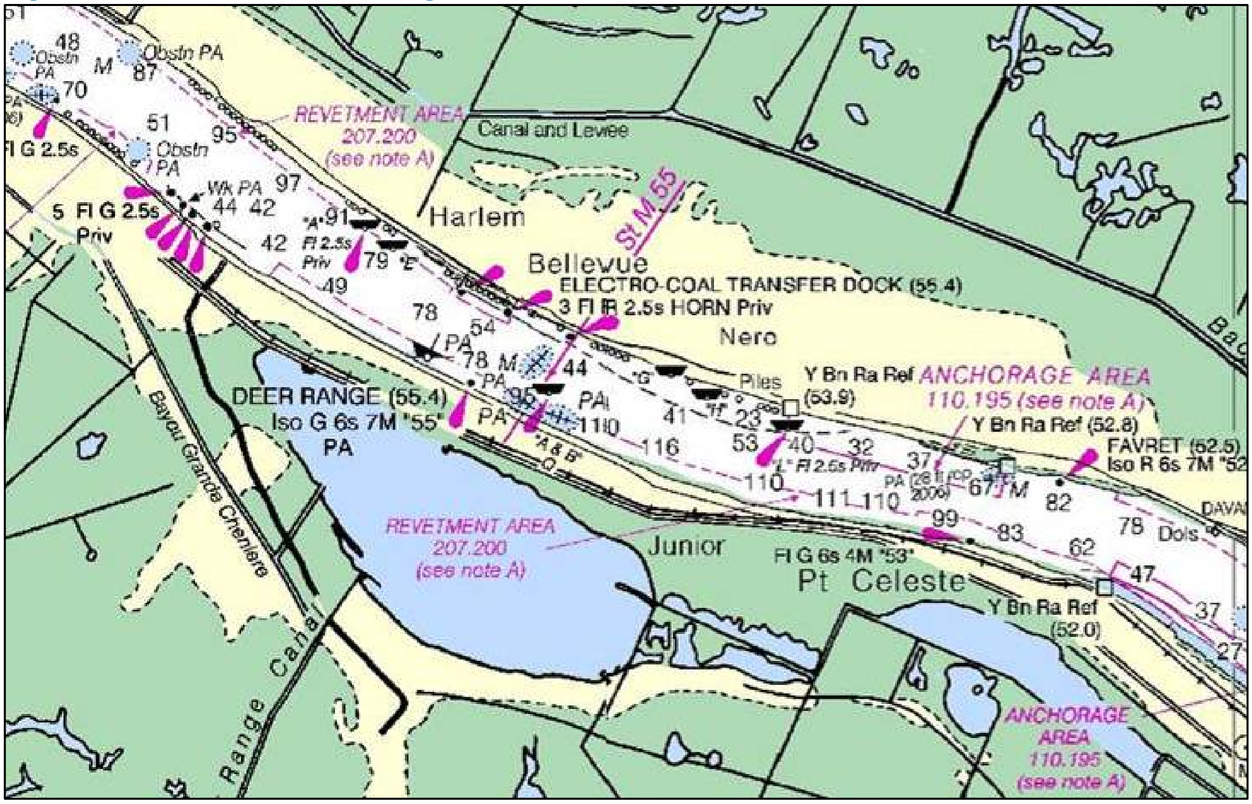


Table 35: Landslide Infrastructure Characteristics

Local Road Access	Belle Chase Highway - LA Hwy 23
Turn Lanes	No turn lanes, but there are median breaks
Vertical Clearance to Interstate	15’6”
Horizontal Clearance to Interstate	Four lane divided highway (+24’ pavement width)
Maximum Allowable Gross Weight	80,000 lbs
Interstate Access	Interstate 10 via LA Hwy 23
Distance in Miles	32 miles to I-10 (US 90)

The Citrus’ port site property is currently accessed from landside by a state highway system. This roadway system is in good condition and provides adequate access to the regional interstate system. Interstate 10 is most efficiently accessed by traveling north on LA 23 and LA 90, as shown in the Figure 56 below.

Figure 56: Citrus Port Site Property Expressway-Interstate Access

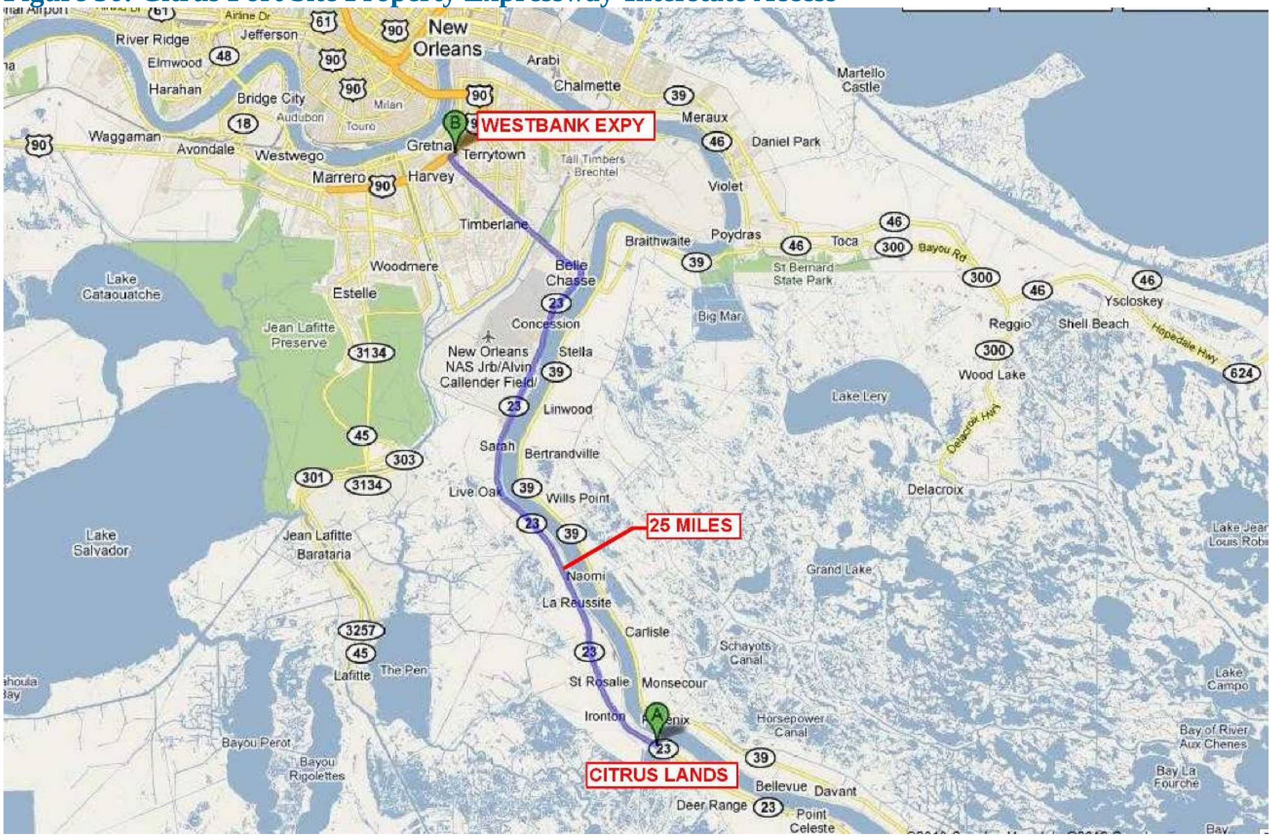


Table 36: Transportation Access

Local Rail Access	None, nearest rail terminates approximately 7 miles to the north at the Chevron Oronite Terminal
Distance to Mainline (in miles)	24 miles from Chevron Oronite Terminal to Union Pacific Gouldsboro Yard and mainline

Rail access is provided via the New Orleans and Gulf Coast Railroad that currently terminates north of the site in Myrtle Grove. The New Orleans and Gulf Coast Railroad operates between Myrtle Grove and the UP interchange yard in Gouldsboro/Avondale. The interchange yard in Avondale is approximately 30 track miles from the Citrus port site property, as shown in the Figure 57 below. A minimum of three to five miles of new track would be required to access the Citrus port site (see Figure 58).

As stated in Task 3, the restoration and/or creation of back levees not only allows for the development of suitable lands for development on the west side of the Mississippi River in Plaquemines Parish, but also supports the potential relocation and extension of rail service to any site. If Citrus II is to realize its full potential as a Port facility it is paramount that rail service be provided to that site. The Rio Grande & Pacific has a relocation plan to by-pass Belle Chasse and reconnect with their right-of-way south of the Naval Air Station. If a Port is to be developed they then want to extend their right-of-way. The NOPB has also published their interest in extending rail service to a west side location on the River Port facility running parallel to the back levees and entering the Port from the west. Both the Rio Grande and the NOPB have interest in establishing yard services required as part of their extended service.

It is important to note that both the Rio Grande & Pacific and the NOPB have stated that a firm commitment from authorities (the Parish, the private sector or a partnership between the Parish and a private sector), to develop a Port on the west side of the River would be needed for them to start to develop their plans for engineering and financing a major extension of service. Without such a commitment from the Parish or private sector, the likelihood of securing full rail service would be doubtful since it would likely involve federal and state funding as well. This would hold true for any location on the west side of the River that needs rail service below the end of the present rail line.

Figure 57: Citrus Port Site Main line Rail Access

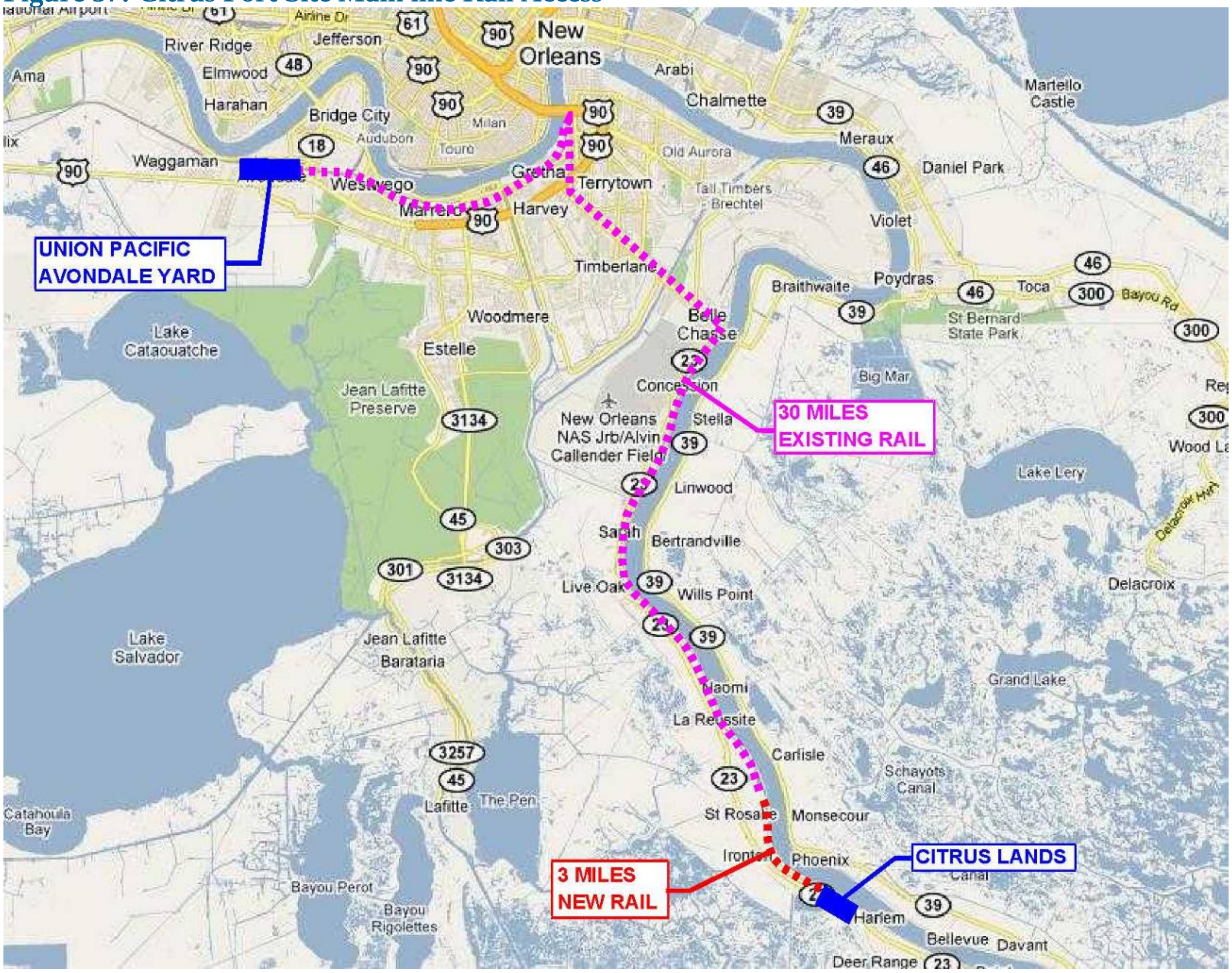


Figure 58: Citrus Port Site – Abandoned Rail Right-Of-Way

Figure 59: Citrus Port Site – Levee and Batcher

Table 37: Building and Utility Characteristics

Existing Buildings/ Structures	
Number of Existing Principal Structures	None
Water Utility Infrastructure	
Potable Water Supply	Municipal water available along south/west side of Belle Chase Highway (LA Hwy 23)
Notes	
Fire Protection	None on site, fire hydrants along LA Hwy 23
Sanitary Waste Infrastructure	
Sanitary Sewer Service	None
Notes	
Electric Utility Infrastructure	
Electric Service Location	New power lines along south/west side of Belle Chase Highway (LA Hwy 23)
Notes	
Natural Gas Utility Infrastructure	
Natural Gas Supply Location	Unknown
Size	
Notes	

From Trident's site visits and data collected from the Plaquemines Parish Department of Economic Development and Tourism the Citrus port site property has adequate municipal drinking water and fire protection, electricity and telecommunications services.

Table 38: Geotechnical Conditions

USDA-NRCS Soils Data	Figures 60 & 61
Predominant Soil Types	Cancienne silt loam (Cm), Cancienne silty clay loam (Co), Carville, Cancienne and Schriever soils, frequently flooded (CV), Gentilly muck (GE), Harahan clay (Ha), Schriever clay (Sk), Westwego clay (Ww)

Figure 60: Citrus Port Site - USDA-NRCS Soils Map (North)

Figure 61: Citrus Port Site - USDA-NRCS Soils Map (South)

Table 39: Suitability and Limitations for Use

Small Commercial Buildings				
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat Limited	Cancienne (90%)	Shrink-swell
Co	Cancienne silty clay loam	Somewhat limited	Cancienne (95%)	Shrink-swell
CV	Carville, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Flooding Depth to saturated zone Shrink-swell
GE	Gentilly muck	Very limited	Gentilly (80%)	Ponding Flooding Depth to saturated zone Shrink-swell
Ha	Harahan clay	Very limited	Harahan (90%)	Flooding Shrink-swell Depth to saturated zone
Sk	Schriever clay	Very limited	Schriever (90%)	Flooding Depth to saturated zone Shrink-swell
Ww	Westwego clay	Very limited	Westwego (95%)	Flooding Organic matter content Shrink-swell Subsidence Depth to saturated zone

Table 40: Local Roads and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Shrink-swell
Co	Cancienne silty clay loam	Somewhat limited	Cancienne (95%)	Shrink-swell
CV	Carville, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Shrink-swell Flooding Depth to saturated zone
GE	Gentilly muck	Very limited	Gentilly (80%)	Shrink-swell Ponding Depth to saturated zone Flooding Low strength
Ha	Harahan clay	Very limited	Harahan (90%)	Shrink-swell Flooding

				Depth to saturated zone
Sk	Schriever clay	Very limited	Schriever (90%)	Shrink-swell Depth to saturated zone Flooding
Ww	Westwego clay	Very limited	Westwego (95%)	Shrink-swell Subsidence Flooding Depth to saturated zone

Table 41: Shallow Excavations

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
Cm	Cancienne silt loam	Somewhat limited	Cancienne (90%)	Depth to saturated zone Cutbanks cave
Co	Cancienne silty clay loam	Somewhat limited	Cancienne (95%)	Depth to saturated zone Cutbanks cave
CV	Carville, Cancienne and Schriever soils, frequently flooded	Somewhat limited to Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Depth to saturated zone Flooding Cutbanks cave Too clayey
GE	Gentilly muck	Very limited	Gentilly (80%)	Ponding Depth to saturated zone Too clayey Flooding Cutbanks cave
Ha	Harahan clay	Very limited	Harahan (90%)	Depth to saturated zone Too clayey Cutbanks cave
Sk	Schriever clay	Very limited	Schriever (90%)	Depth to saturated zone Too clayey Cutbanks cave
Ww	Westwego clay	Very limited	Westwego (95%)	Depth to saturated zone Too clayey Organic matter content

Table 42: Engineering Properties

Map unit symbol	Map unit name	Depth (Inches)	USDA texture	Classification		Liquid Limit (%)	Plasticity Index
				Unified	AASHTO		
Cm	Cancienne silt loam						
	Cancienne	0-8	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		8-38	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		38-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
Co	Cancienne silty clay loam						
	Cancienne	0-4	Silty clay loam	CL	A-6, A-7-6	38-57	19-28
		4-30	Silty loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		30-60	Stratified very fine sandy loam to silty clay loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
CV	Carville, Cancienne and Schriever soils						
	Carville	0-8	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		8-30	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		30-60	Silt loam	CL-ML	A-4	0-31	NP-12
	Cancienne	0-11	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		11-21	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		21-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
	Schriever	0-10	Silt loam	CL, CL-ML, ML	A-6	21-45	6-18
		10-43	Clay	CH	A-7-5, A-7-6	68-105	44-68
		43-60	Clay, Silty clay loam, silt loam	CH, CL	A-6,A-7-5 A-7-6	37-95	11-50
GE	Gentilly						

	muck						
	Gentilly	0-10	Muck	PT	A-8	---	---
		10-24	Clay, Silty clay, mucky clay	CH	A-7-6	63-112	43-67
		24-60	Clay, Silty clay	CH	A-7-5	68-125	44-70
Ha	Harahan clay						
	Harahan	0-5	Clay	CH, MH, OH	A-7-5, A-7-6, A-8	64-151	36-66
		5-22	Clay, Silty clay	CH, MH	A-7-5, A-7-6	60-90	35-50
		22-32	Clay, Silty clay, mucky clay	CH, MH, OH	A-7-5, A-7-6, A-8	60-90	35-50
		32-75	Clay, Silty clay, mucky clay	CH, MH, OH	A-7-5, A-7-6, A-8	60-90	35-50
Sk	Schriever clay						
	Schriever	0-4	Clay	CH, CL	A-7-5, A-7-6	46-86	29-45
		4-40	Clay	CH	A-7-5, A-7-6	68-105	44-68
		40-65	Clay, Silty clay loam, silt loam	CH, CL	A-6, A-7-5, A-7-6	32-85	11-50
Ww	Westwego clay						
	Westwego	0-31	Clay	OH	A-7-5, A-8	62-141	36-64
		31-49	Muck, Peat	PT	A-8	67-94	44-66
		49-62	Clay, Mucky clay	CH	A-7-5, A-8	68-108	44-72

The soil survey data shows that the underlying soils on the Citrus port site property are generally somewhat limited to very limited for supporting small commercial buildings, local roads and streets, shallow excavations and embankments, all land use activities expected of a port development. The primary limitations of the soils on the subject sites are flooding, shrink-swell and depth to saturated zone. All of these limitations is to be expected in the areas adjacent to the Mississippi River and are common to nearly all the soils in the survey area. As evidenced by the many industries along both banks of the river, the soils can typically be worked and reclaimed to provide adequate support for the desired land use. Engineering the sites to drain the water and moisture control during excavation and embankment activities can help improve the soil properties and reduce their limitations for the intended uses.

Environmental Review of Citrus II Property

Location and Area:

Citrus II is a large, irregular shaped property located on the west side of the Mississippi River.

Soil Types:

Approximately 3,344 acres of soils are located within the project area, including 2,157 acres of the following hydric soils: 1) Clovelly muck (CE), 2) Carville, Cancienne, Shriever frequently flooded (CV), 3) Harahan clay (Ha), 4) Schriever clay (Sk), and 5) Westwego clay (Ww) see Figure 67.

Flood Zones:

The area contains one flood zone, Zone A3 – Areas of 100-year flood. These data are from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders (Figure 65).

Oil and Gas Wells:

Two plugged and abandoned dry holes are located within the project area (Figure 69)

Oil and Gas Fields:

None

Petroleum Pipelines:

There are seven (7) pipelines with the project area. Four of the pipelines convey water and three contain unspecified product.

Land Use & Habitats:

The project area is comprised of the following land uses: 1) Fresh marsh (149 acres), 2) Brackish marsh (7 acres), 3) Forested (11 acres), 4) Scrub/Shrub (274 acres), 5) Agriculture/pasture (2,029 acres), 6) Developed (15 acres) and 7) Water (268 acres). See Figure 66.

Wetlands:

According to NWI data, the project area contains the following wetlands: 1) Estuarine and marine deepwater (41 acres), 2) Freshwater emergent (158 acres), 3) Estuarine and marine wetland (107 acres), 4) Riverine (3 acres), 5) Freshwater Forested/Shrub wetland (565 acres) and 6) Freshwater pond (5 acres). All efforts to avoid wetlands will be conducted. If construction impacts the wetlands the associated mitigation costs will be determined that that point. It is currently believed that the wetlands can be totally avoided however (Figure 68).

Oyster Leases and Public Grounds:

None

State and Federal Parks:

None

Wildlife Refuges and Management Areas:

None

Cultural Resources:

There is one site on the property which will remain undisclosed in compliance with the State requirements.

Native American Lands:

None

Threatened & Endangered Species:

None

Hazardous Materials & Waste Sites:

None

Flood Protection Levees & Elevation:

Portions of the Citrus II property are within flood protection levees. The type, location and elevation of these levees are being reviewed with regard to upgrading. The US Army Corps of engineers has plans to start building replacement levees in the 2012-13 construction seasons. See Figures 63 & 64.

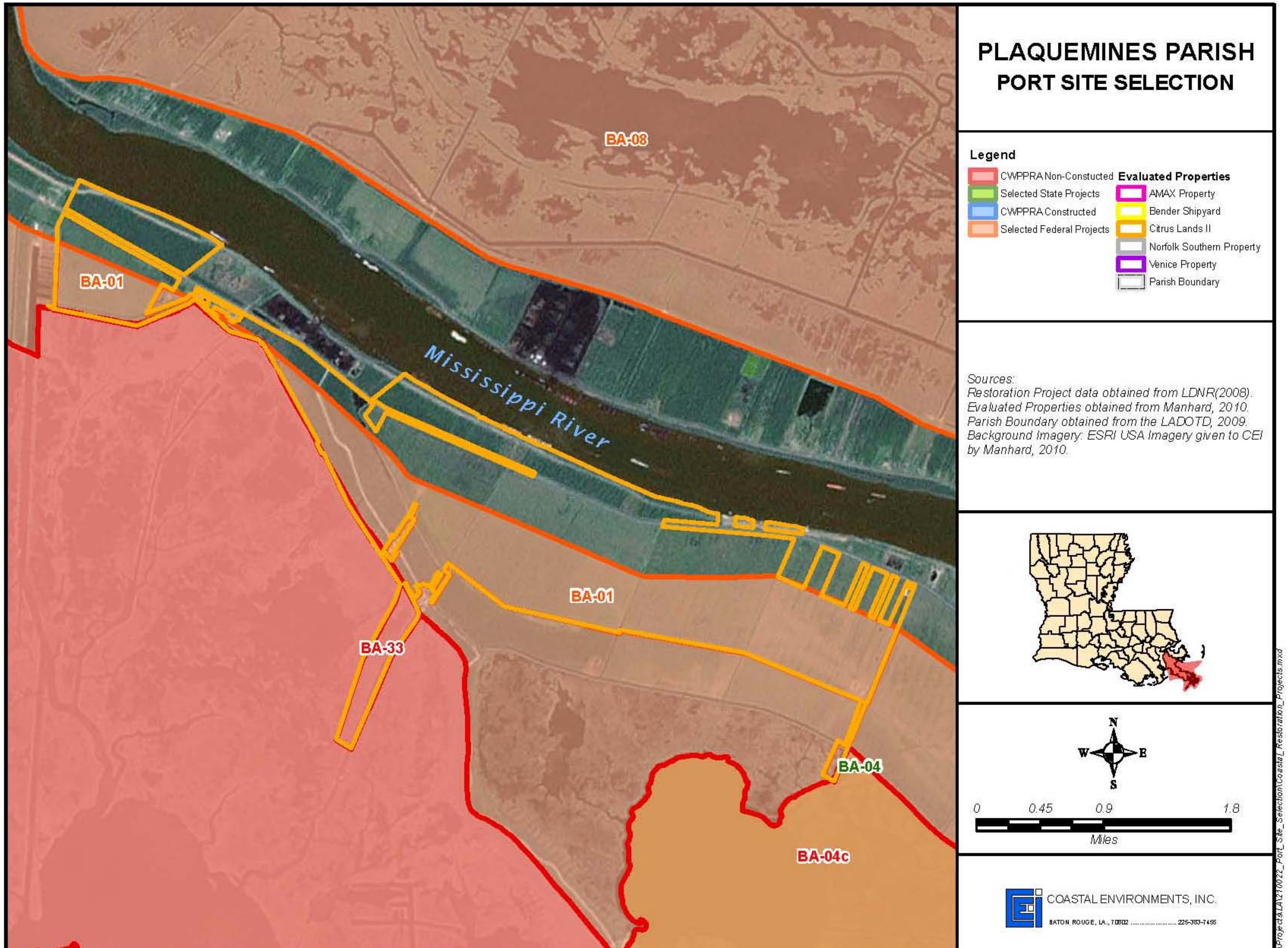
Stormwater Management

This site has a grandfathered stormwater management practice in place. This site has land sloping towards the back levee where water runoff is collected and pumps are utilized to remove the water to the outside of the levee. There are three such pumping locations at Citrus II however due to pending UASACOE pending Levee development and suspension of Citrus's levee protection measures these sites are inadequate for current use. Any new construction or rehabilitation would require a new stormwater management application and subsequent approval.

Coastal Restoration & Flood Protection Projects:

Portions of the backside of this property is within several government authorized coastal restoration projects: 1) BA-01 (Davis Pond Diversion), 2) BA-33 (Delta Building Diversion at Myrtle Grove), 3) BA-04 (West Pointe a la Hache Siphon Diversion) and 4) BA-04c (West Pointe a la Hache Outfall Management) see Figure 62.

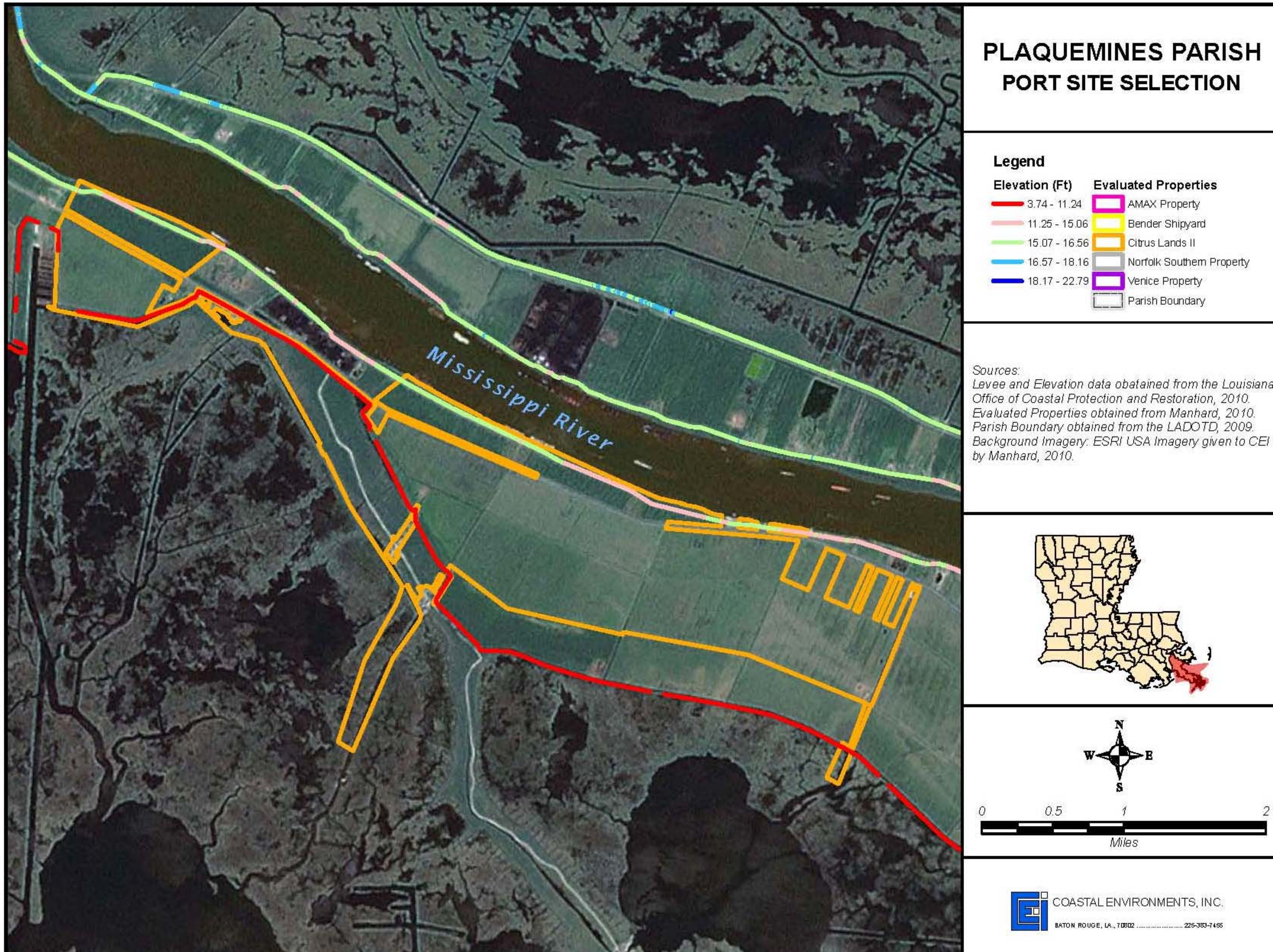
Figure 62: Coastal Restoration Projects



CWPPRA: Coastal Wetlands Planning, Protection and Restoration Act (also known as the Breaux Act from a former LA Senator who got the program passed by Congress to give funds to LA for coastal restoration with Louisiana providing a match.)

State Projects: Projects funded through the State Coastal Protection and Restoration (CPR) Trust Fund established by Louisiana Revised Statute (LA-R.S.) 49-214. This fund is largely supported by mineral revenues and severance taxes on oil and gas production on state lands. (Draft Fiscal Year 2011 Annual Plan, Integrated Ecosystem Restoration and Hurricane Protection in Coastal Louisiana, January 2010) by Office of Coastal Protection and Restoration, Coastal Protection and Restoration Authority of Louisiana; available on Web site).

Figure 63: Citrus II Levee Heights



The range of levee heights shown on the maps is proposed and their location, construction type and constructed elevation are currently under review. More specific details would have to be obtained as the project planning or EIS process gets underway. The reference for the restoration projects and levees is the Draft Fiscal Year 2011 Annual Plan January 2010, by Office of Coastal Protection and Restoration.

Figure 64: Citrus II Levee Type

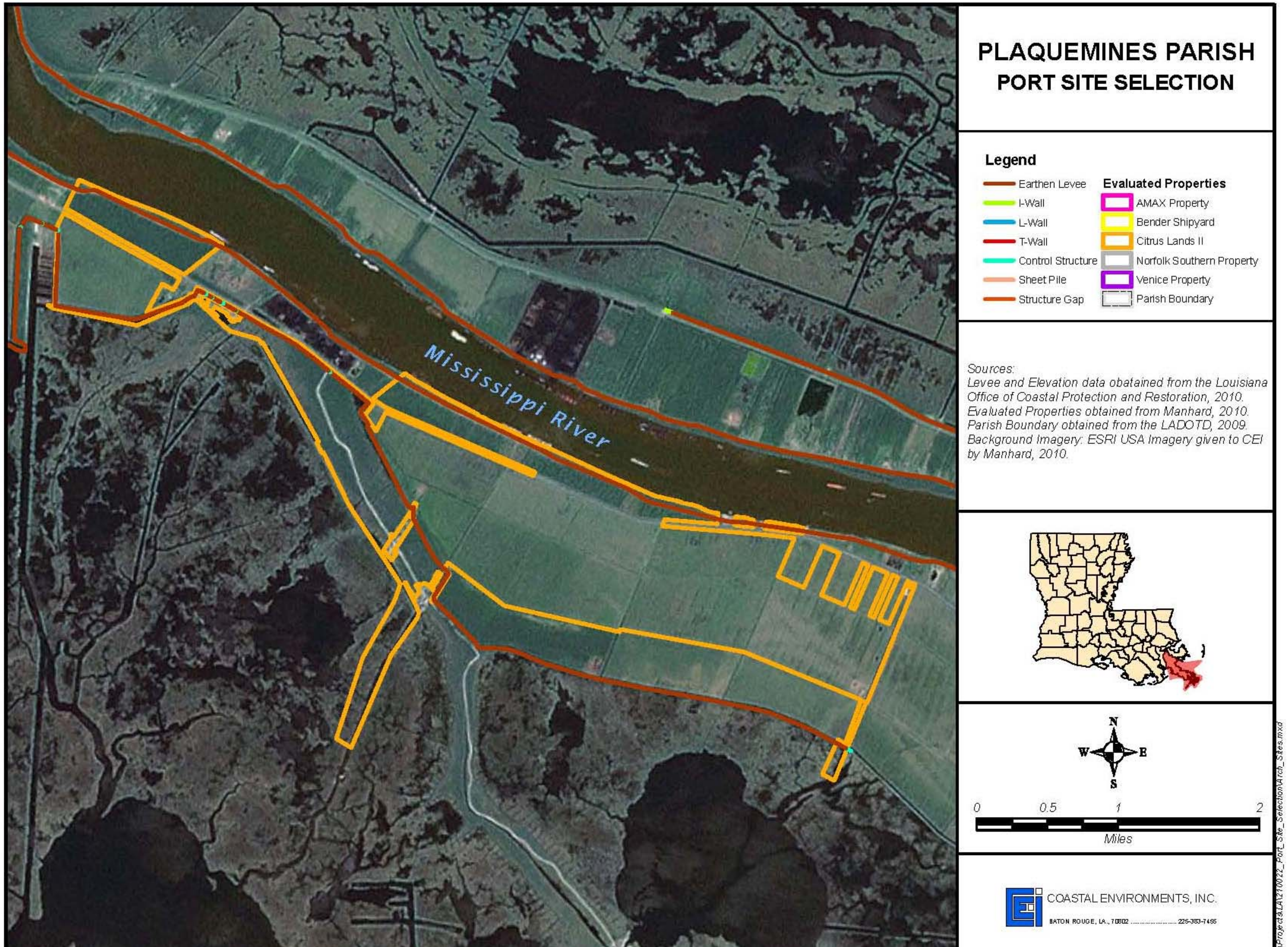
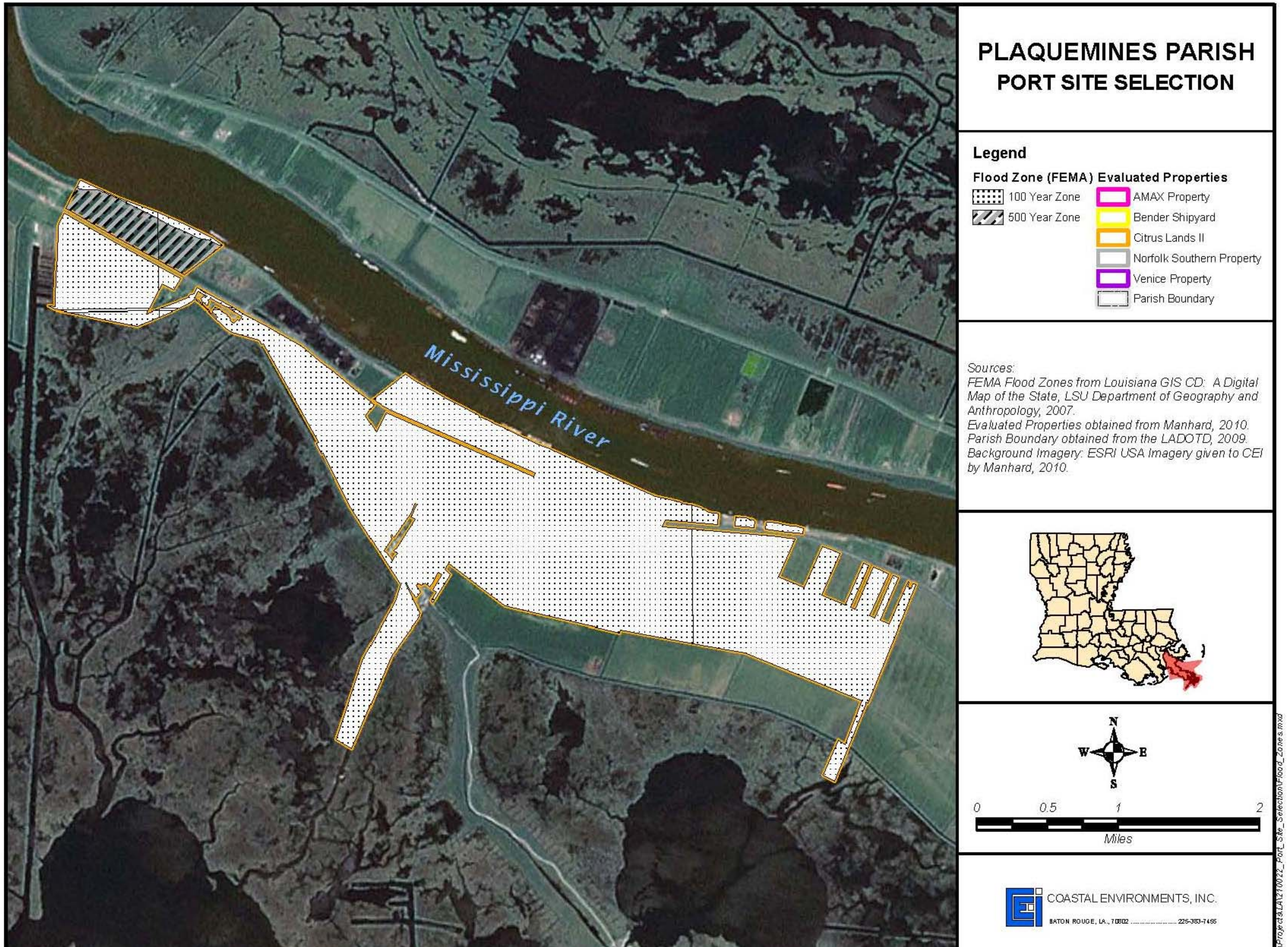


Figure 65: Citrus II Flood Zones



100-year flood: The flood having a 1% or greater annual probability of occurring
500-year flood: The flood having a 0.2% or greater annual probability of occurring.

Figure 66: Citrus II Land Cover

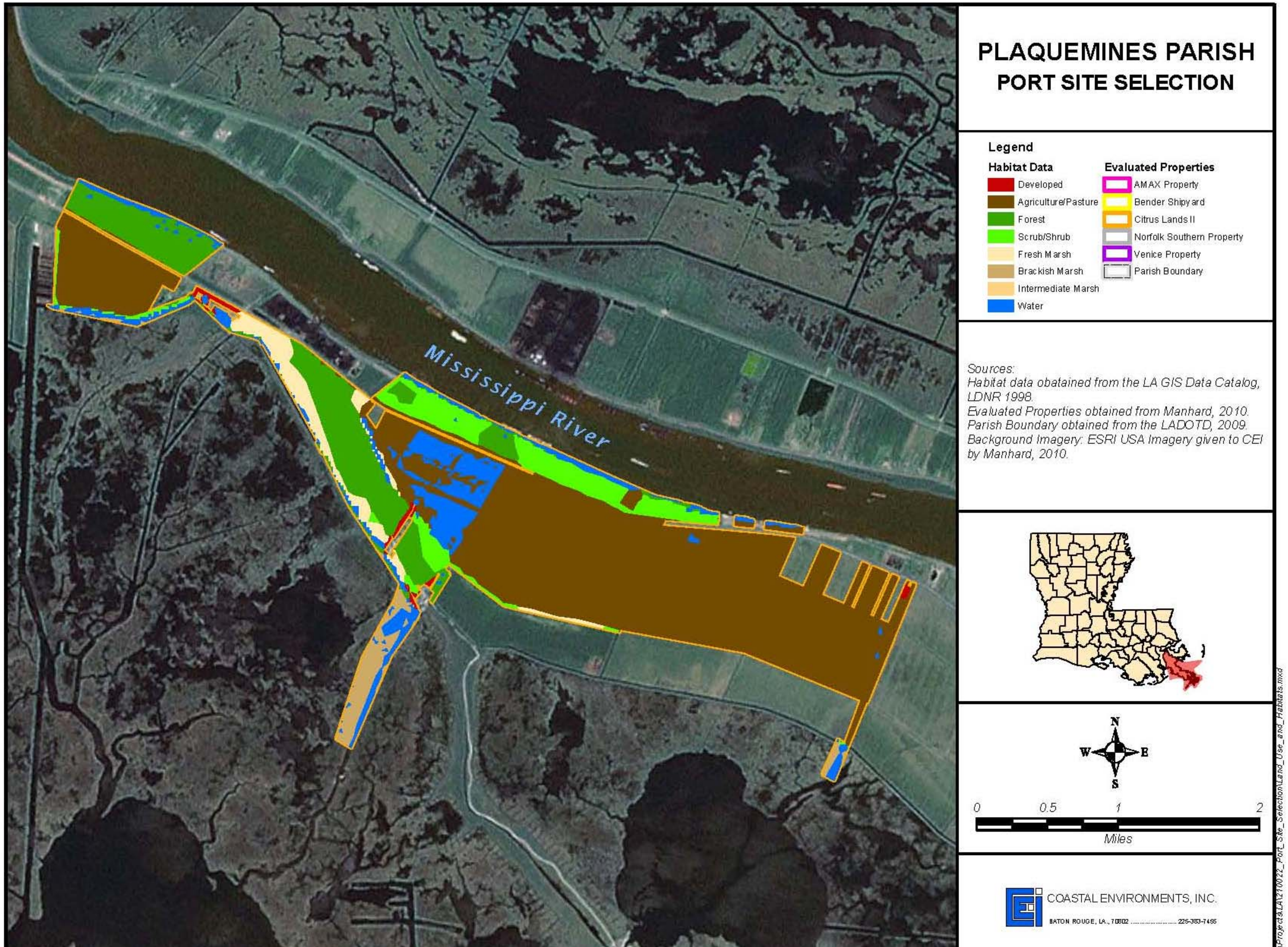


Figure 67: Citrus II Soils Mapping

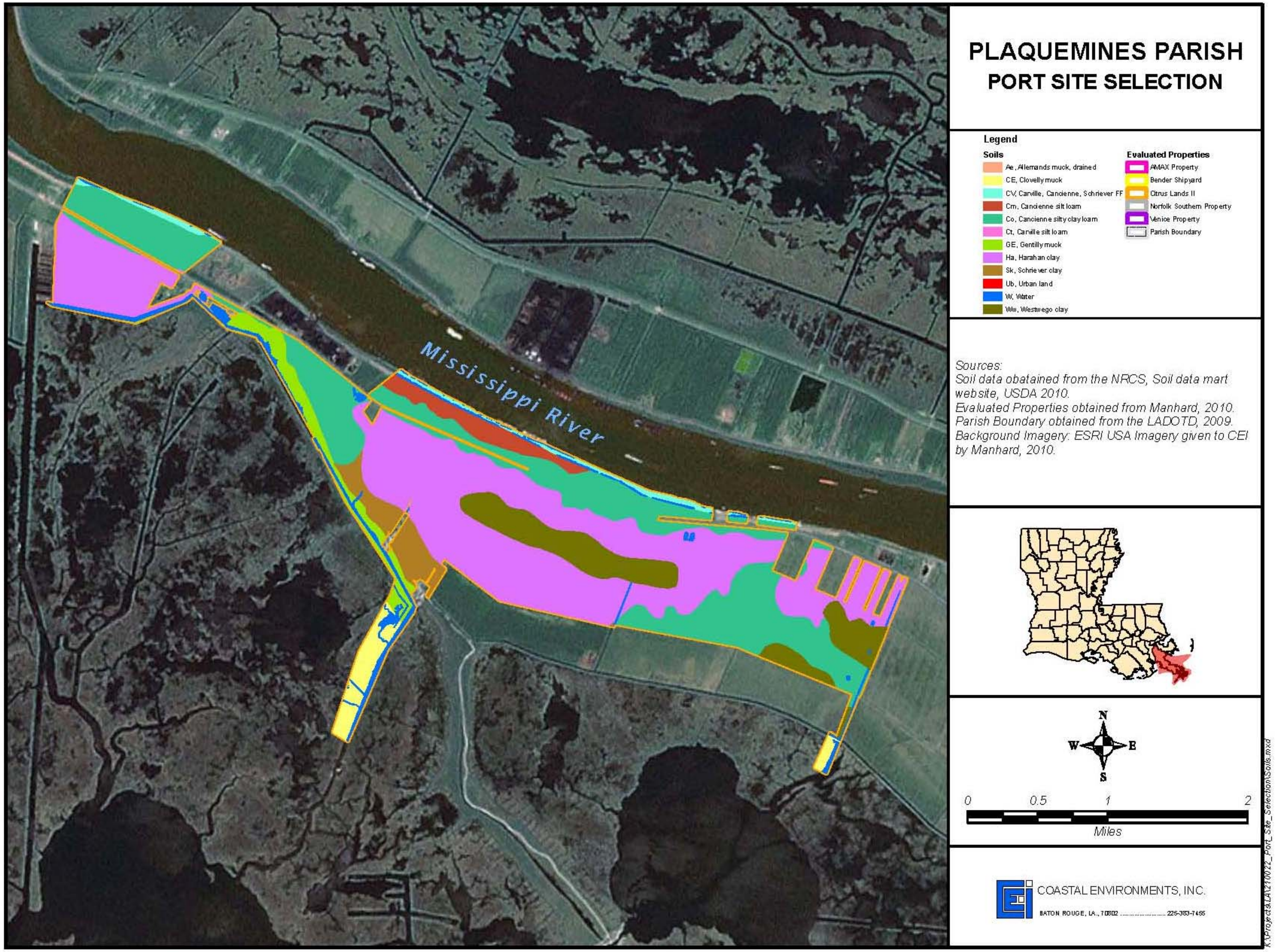


Figure 68: Citrus II Wetlands

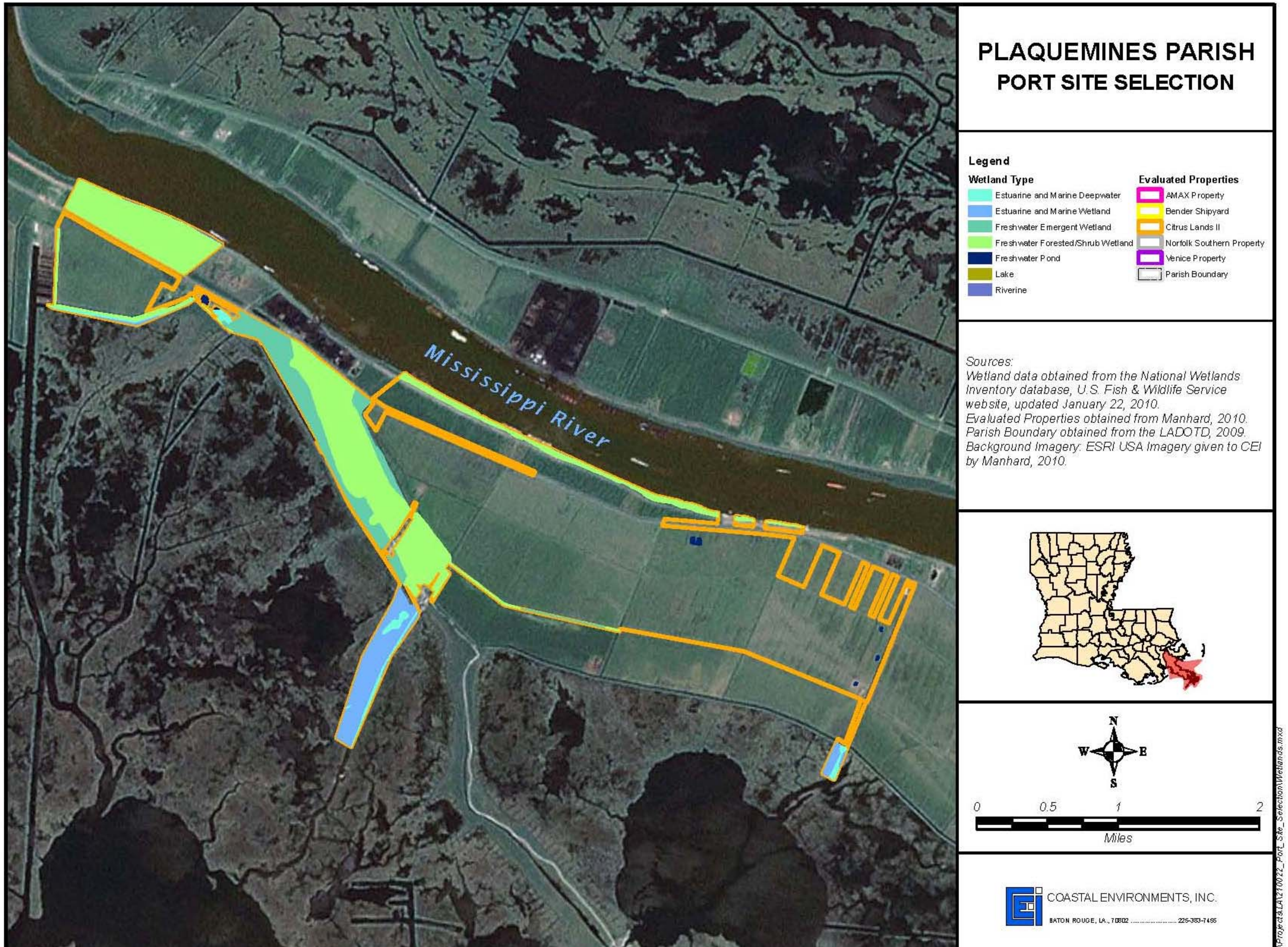


Figure 69: Citrus II Oil & Gas

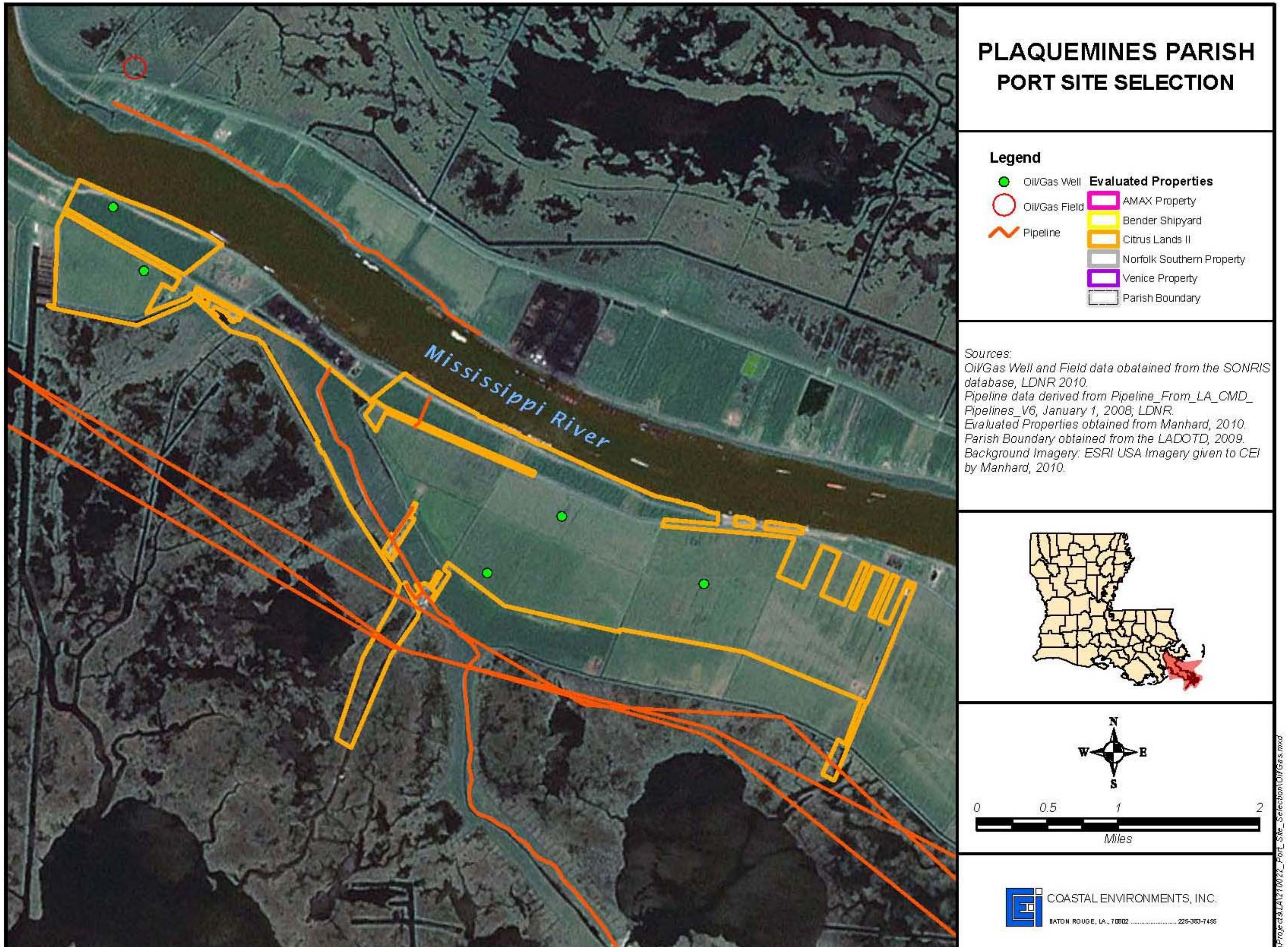


Table 43: Venice Port Location

Name	Venice Port Site
Location	Venice, North tip of Jaquines Island
Acreage	226
Current Use/Former Use	Currently unused, forested
Adjacent Properties	North – Mississippi River, South – Undeveloped, bayou, East – Mississippi River, West – Existing Venice port developments

USGS topographical maps indicate a nearly level landscape with stormwater runoff flowing generally toward the west and Grand Pass. The site is wooded with low tree and scrub. The average elevation on the property is 1.5 feet with an average levee elevation of 4.6 feet. There is no engineered levee along the Mississippi River here, only natural levee barriers.

Table 44: Riverfront Characteristics

River Mile Marker Location	10
River Frontage (in feet)	8,000+ on Mississippi River, 6,000+ on Grand Pass
Reported Channel Depth (in feet)	45
Reported Channel Width (in feet)	750
Revetment	Below Venice
Aids to Navigation	Jump Light, green flashing at 6 second intervals; Upper Venice Anchorage Lower Daybeacon; Lower Venice Anchorage Upper Daybeacon
Navigational Obstructions	None reported
Anchorages	Upper and Lower Venice Anchorage, opposite shore of Mississippi
Batture	None
Pier or Wharf	None

NOAA navigational charts and MNSA navigational aid maps (Figures 70 & 71) indicate adequate depths for deep draft vessel transit, with a reported safe navigational draft of 45 feet. Two-way vessel traffic is also permitted. The river is approximately 3,200 feet in width from bank to bank. Vessel pilotage is provided by the Associated Branch Pilots and the Crescent River Pilots' Association. The properties river frontage is located along a relatively straight stretch of the river, on the bank immediately opposite Lower Venice Anchorage.

Figure 70: Venice Port Site – Navigational Aids

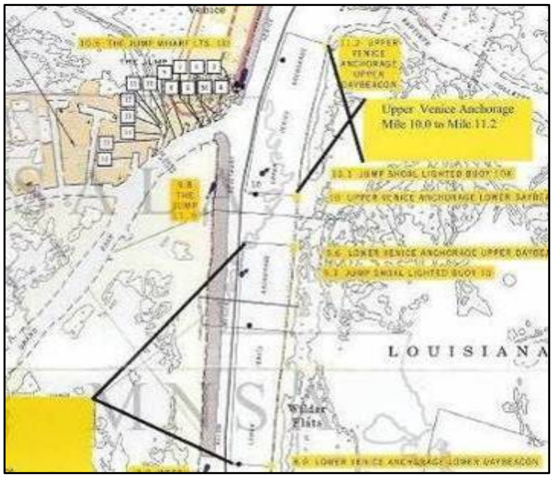


Figure 71: Venice Port Site – Navigational Conditions

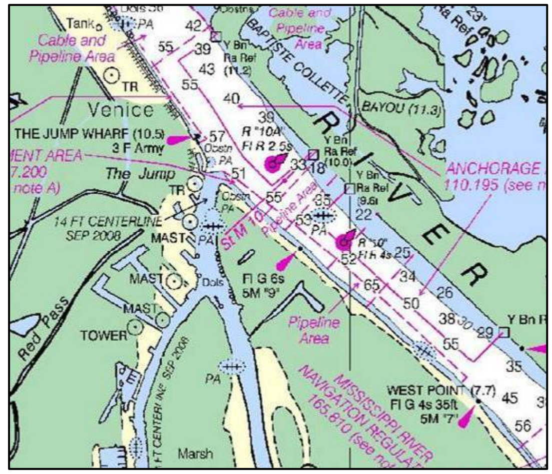


Table 45: Landslide Infrastructure Characteristics

Local Road Access	LA Highway 23 across Grand Pass
Turn Lanes	None, no access
Vertical Clearance to Interstate	15’6”
Horizontal Clearance to Interstate	Four lane divided highway (+24’ pavement width)
Maximum Allowable Gross Weight	80,000 lbs
Interstate Access	Interstate 10 via LA Hwy 23
Distance in Miles	72 miles to I-10 (US 90)

There is no current road access to Jaquines Island (see Figures 74 & 75). The local roadway system is in good condition and provides adequate access to the regional interstate system. Interstate 10 is most efficiently accessed by traveling north on LA 23 and LA 90, as shown in the Figure 72 below.

Figure 72: Venice Property Expressway/Interstate Access

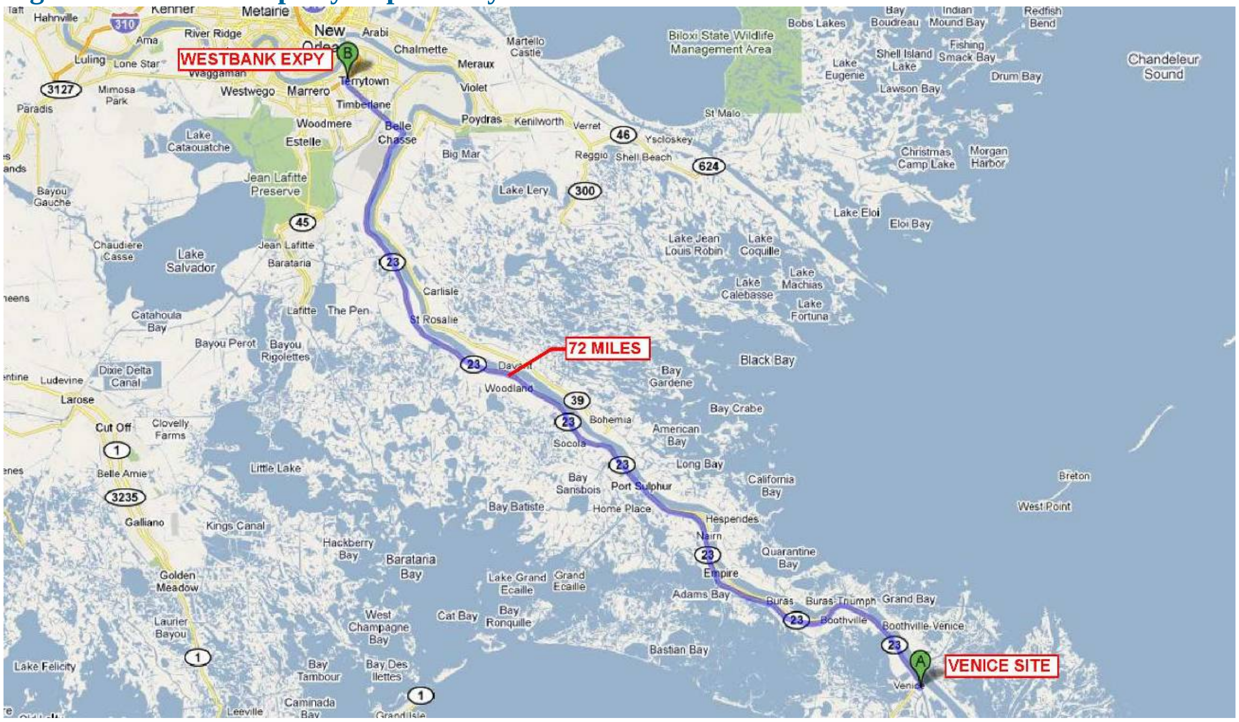


Table 46: Transportation Access

Local Rail Access	None, nearest rail terminates approximately 51 miles to the north at the Chevron Oronite Terminal
Distance to Mainline (in miles)	24 miles from Chevron Oronite Terminal to Union Pacific Avondale/Gouldsboro Yard and mainline

Rail access is provided via the New Orleans and Gulf Coast Railroad that currently terminates approximately 51 miles north of the site in Myrtle Grove. The New Orleans and Gulf Coast Railroad operates between Myrtle Grove and the UP interchange yard in Avondale/Gouldsboro. The interchange yard in Avondale is approximately 81 miles from the Venice property, as shown in the Figure 73 below. A minimum of approximately 51 miles of new track would be required to directly access the Venice port site, as well as an elevated crossing of the Empire Channel/Lock and an elevated crossing of Grand Pass in Venice. Any extension of rail is unlikely to extend to Venice due to cost and environmental concerns.

Figure 73: Venice Property Mainline Rail Access

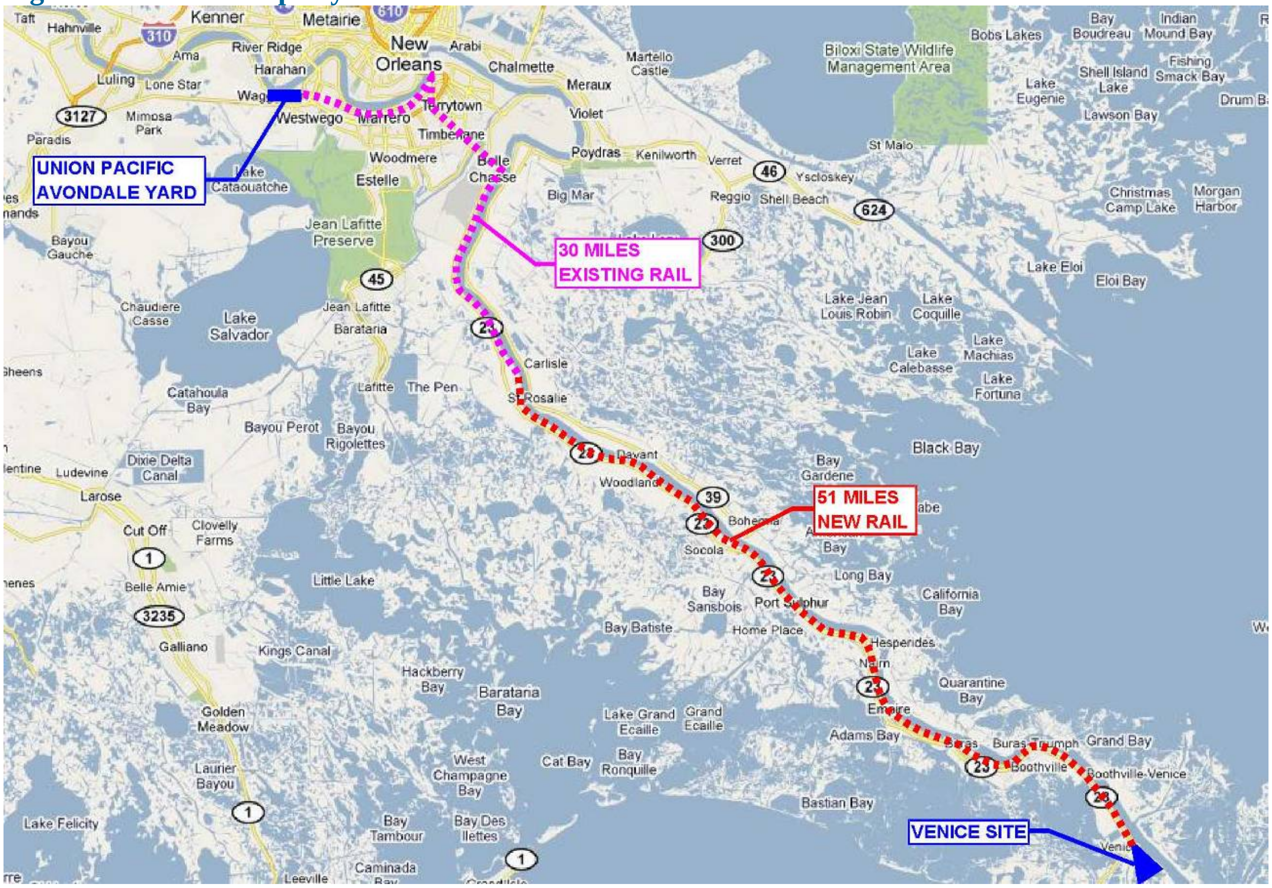


Figure 74: Venice Port Site – North Tip of Jaquines Island

Figure 75: Venice Port Site – Shore of Jaquines Island along Grand Pass

Table 47: Building and Utility Characteristics

Existing Buildings/ Structures	
Number of Existing Principal Structures	None
Water Utility Infrastructure	
Potable Water Supply	None
Notes	Municipal water available at existing Venice port facilities
Fire Protection	None
Sanitary Waste Infrastructure	
Sanitary Sewer Service	None
Notes	
Electric Utility Infrastructure	
Electric Service Location	None
Notes	Available north of Grand Pass at existing Venice port facilities
Natural Gas Utility Infrastructure	
Natural Gas Supply Location	None
Size	
Notes	

From Trident's site visit to the Venice property it was determined that the site has no municipal drinking water and fire protection, electricity and telecommunications services.

Table 48: Geotechnical Conditions

USDA-NRCS Soils Data	Figure 76
Predominant Soil Types	Balize and Larose soils (BA), Carville, Cancienne and Schriever soils, frequently flooded (CV),

Figure 76: Venice Port site - USDA-NRCS Soils Map

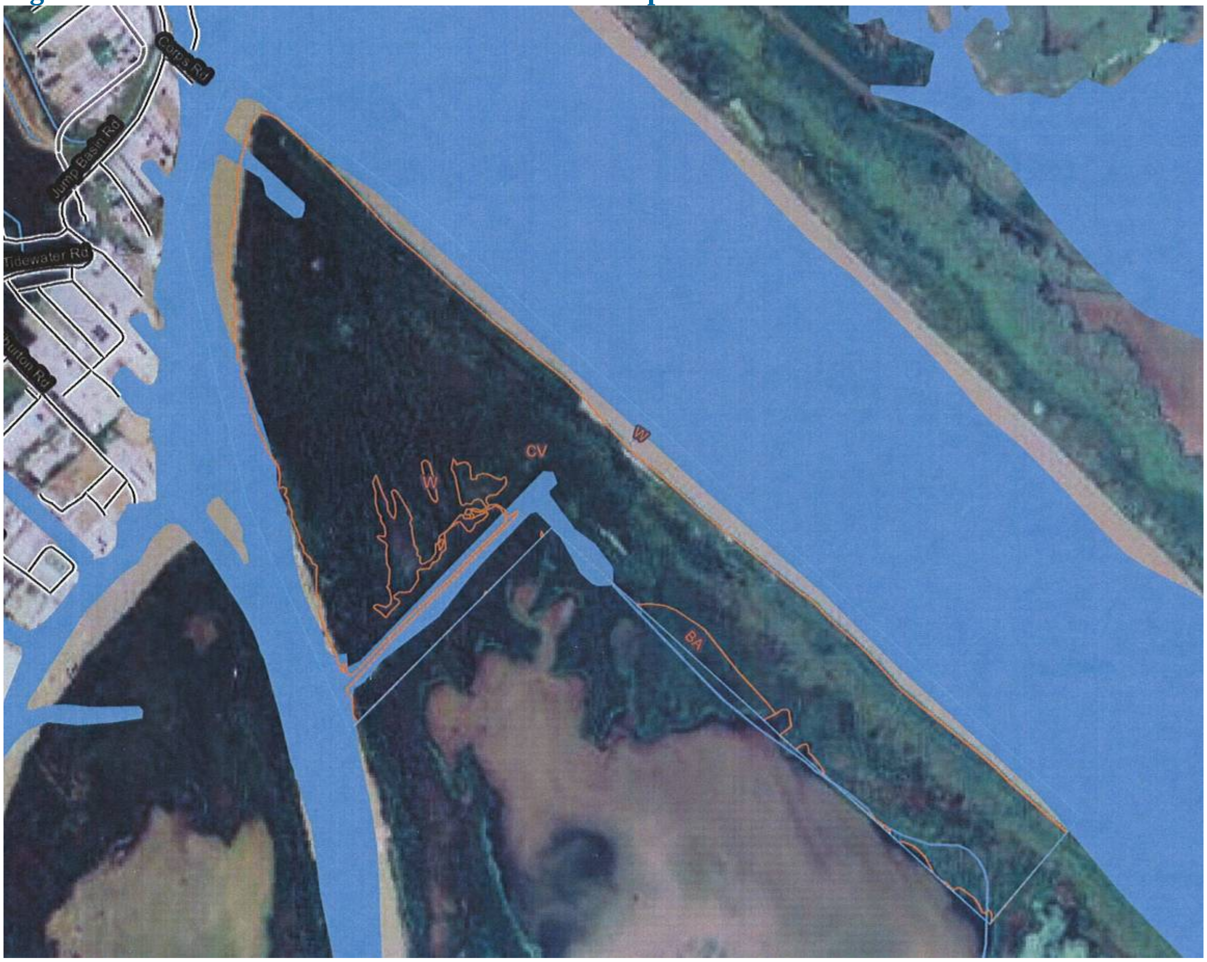


Table 49: Suitability and Limitations for Use

Small Commercial Buildings				
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
BA	Balize and Larose soils	Very limited	Balize (50%) Larose (30%)	Ponding Flooding Depth to saturation zone
CV	Carville, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Flooding Depth to saturated zone Shrink-swell

Table 50: Local Roads and Streets

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
BA	Balize and Larose soils	Very limited	Balize (50%) Larose (30%)	Ponding Depth to saturated zone Flooding Low strength
CV	Carville, Cancienne and Schriever soils, frequently flooded	Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Shrink-swell Flooding Depth to saturated zone

Table 51: Shallow Excavations

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons
BA	Balize and Larose soils	Very limited	Balize (50%) Larose (30%)	Ponding Depth to saturated zone Flooding Cutbanks cave Organic matter content Too clayey
CV	Carville, Cancienne and Schriever soils, frequently flooded	Somewhat limited to Very limited	Carville (40%) Cancienne (30%) Schriever (20%)	Depth to saturated zone Flooding Cutbanks cave Too clayey

Table 52: Engineering Properties

Map unit symbol	Map unit name	Depth (Inches)	USDA texture	Classification		Liquid Limit (%)	Plasticity Index
				Unified	AASHTO		
BA	Balize and Larose soils						
	Balize	0-8	Silt loam	CL-ML, CL, ML, OH	A-6, A-7-5	29-89	5-17
		8-38	Silty clay loam, Silt loam, mucky silty clay loam	CL, CL-ML	A-4, A-6, A-7-6	24-68	4-27
		38-66	Silt loam, Silty clay loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6, A-7-6	20-60	6-20
	Larose	0-6	Muck	PT	A-8	---	---
		6-17	Mucky clay, Clay, silty clay	CH, OH	A-7-5	64-127	35-53
		17-60	Clay, Silty clay, mucky clay	OH	A-7-5	64-127	35-53
CV	Carville, Cancienne and Schriever soils						
	Carville	0-8	Silt loam	CL-ML, ML	A-4	0-35	NP-12
		8-30	Very fine sandy loam, Silt loam, loam	CL-ML, ML	A-4	0-31	NP-12
		30-60	Silt loam	CL-ML	A-4	0-31	NP-12
	Cancienne	0-11	Silt loam	CL, CL-ML, ML	A-6	25-45	4-18
		11-21	Silt loam, Silty clay loam, loam	CL	A-6, A-7-6	26-51	9-28
		21-60	Stratified very fine sandy loam to silty clay	CL, CL-ML, ML	A-4, A-6, A-7-6	25-49	4-28
	Schriever	0-10	Silt loam	CL, CL-ML, ML	A-6	21-45	6-18
		10-43	Clay	CH	A-7-5, A-7-6	68-105	44-68
		43-60	Clay, Silty clay loam, silt loam	CH, CL	A-6,A-7-5 A-7-6	37-95	11-50

The soil survey data shows that the underlying soils on the Venice property are generally very poor primarily due to the fact that it is not protected by levees and is frequently flooded. The property may be in its ability for supporting small commercial buildings, local roads and streets, shallow excavations and embankments, all land use activities expected of a port development. The primary limitations of the soils on the subject sites are flooding, shrink-swell and depth to saturated zone. All of these limitations is to be expected in the areas adjacent to the Mississippi River and are common to nearly all the soils in the survey area. As evidenced by the many industries along both banks of the river, the soils can typically be worked and reclaimed to provide adequate support for the desired land use. Engineering the sites to drain the water and moisture control during excavation and embankment activities can help improve the soil properties and reduce their limitations for the intended uses.

Environmental review of the Proposed Venice Property

Location and Area:

The Venice site is located on Grand Pass near its diversion from the main Mississippi River channel.

Soil Types:

Approximately 227 acres of soils are located within the project area, including 213 acres of the following hydric soils: 1) Carville and 2) Cancienne, Shriever frequently flooded (CV) see Figure 82.

Flood Zones:

The flood zone for this site is listed as V21 - areas of 100-year coastal flood with velocity (wave action). These data are from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders see Figure 80.

Oil and Gas Wells:

Four plugged and abandoned dry holes are located within the project area (Figure 84).

Oil and Gas Fields:

None

Petroleum Pipelines:

No petroleum pipelines are located within the project area; however, a natural gas pipeline is located on the project area.

Land Use & Habitats:

The project area is comprised of the following land cover: 1) Forested (179 acres) and 2) Water (47 acres) see Figure 81.

Wetlands:

According to NWI data, the project area contains the following wetlands: 1) Freshwater Forested/Shrub wetland (204 acres), 2) Freshwater pond (16 acres), 3) Riverine (2 acres) and 4) Freshwater emergent wetland (5 acres) see Figure 83.

Oyster Leases and Public Grounds:

None

State and Federal Parks:

None

Wildlife Refuges and Management Areas:

None

Cultural Resources:

There is one known site which will remain undisclosed in compliance with State requirements.

Native American Lands:

None

Threatened & Endangered Species:

None

Hazardous Materials & Waste Sites:

No permitted facilities or other known information regarding hazardous materials or waste are located within the project area.

Flood Protection Levees & Elevation:

There are no flood protection levees around the Venice property. See Figures 78 & 79.

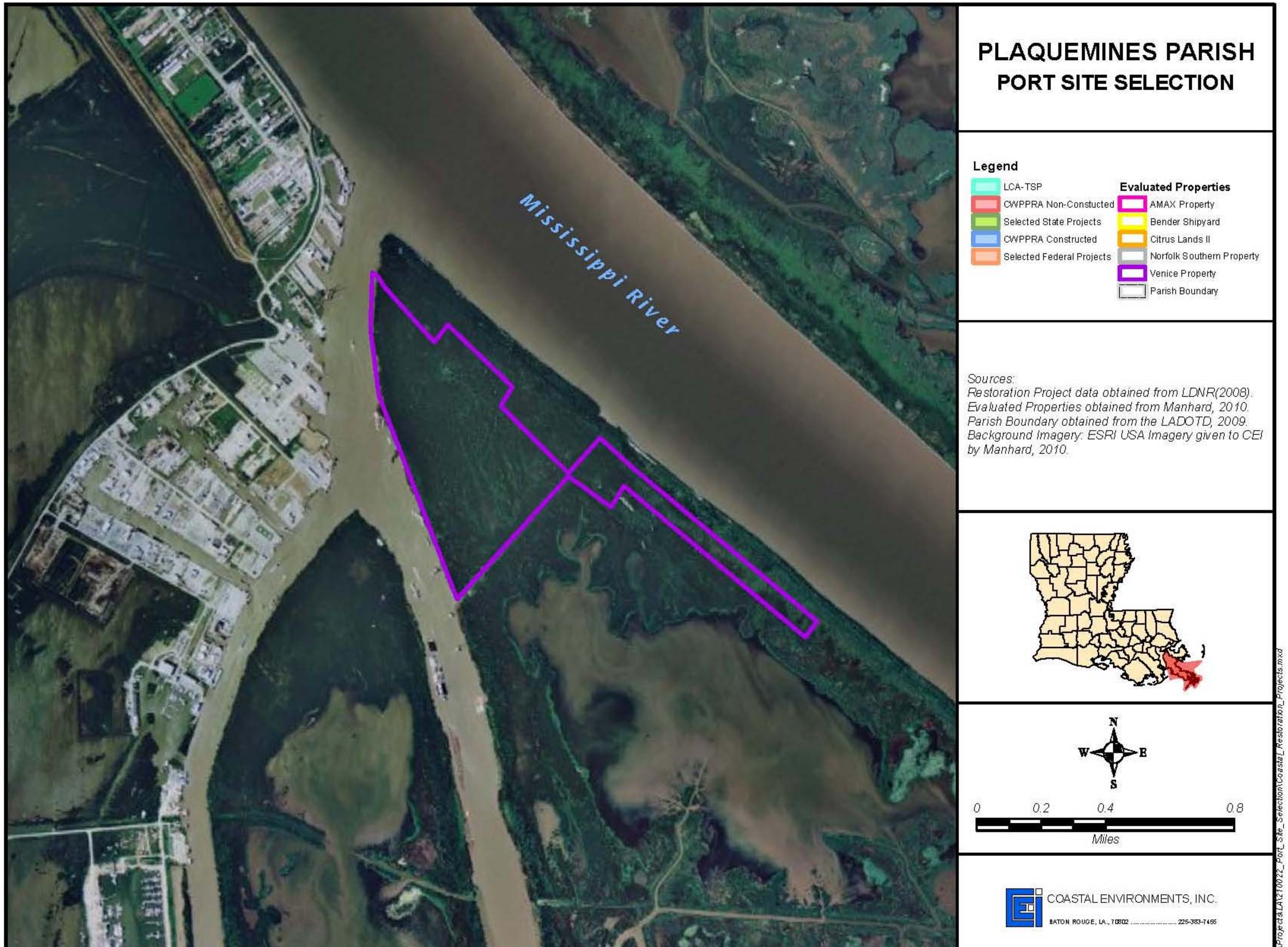
Stormwater Management

The Port proper site has grandfathered stormwater management practice in place and the site on new location has no current practice since it is undeveloped. Any development at either location will require the development of a new stormwater management program for the chosen site.

Coastal Restoration & Flood Protection Projects:

There are no coastal restoration or flood protection projects affecting the Venice property (Figure 77)

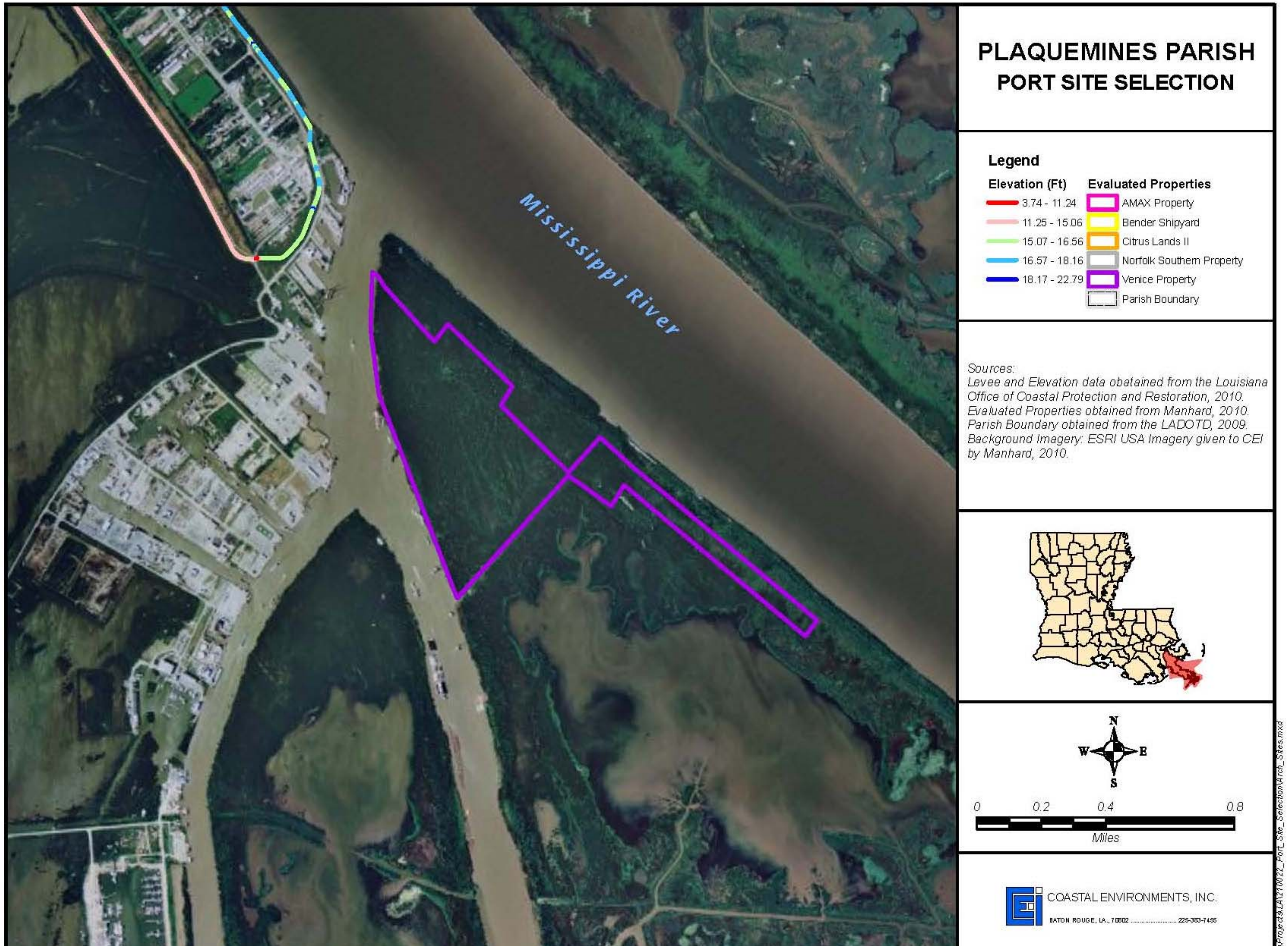
Figure 77: Coastal Restoration Projects



CWPPRA: Coastal Wetlands Planning, Protection and Restoration Act (also known as the Breaux Act from a former LA Senator who got the program passed by Congress to give funds to LA for coastal restoration with Louisiana providing a match.)

State Projects: Projects funded through the State Coastal Protection and Restoration (CPR) Trust Fund established by Louisiana Revised Statute (LA-R.S.) 49-214. This fund is largely supported by mineral revenues and severance taxes on oil and gas production on state lands. (Draft Fiscal Year 2011 Annual Plan, Integrated Ecosystem Restoration and Hurricane Protection in Coastal Louisiana, January 2010) by Office of Coastal Protection and Restoration, Coastal Protection and Restoration Authority of Louisiana; available on Web site).

Figure 78: Venice Levee Heights



The range of levee heights shown on the maps is proposed and their location, construction type and constructed elevation are currently under review. More specific details would have to be obtained as the project planning or EIS process gets underway. The reference for the restoration projects and levees is the Draft Fiscal Year 2011 Annual Plan January 2010, by Office of Coastal Protection and Restoration.

Figure 79: Venice Levee Type

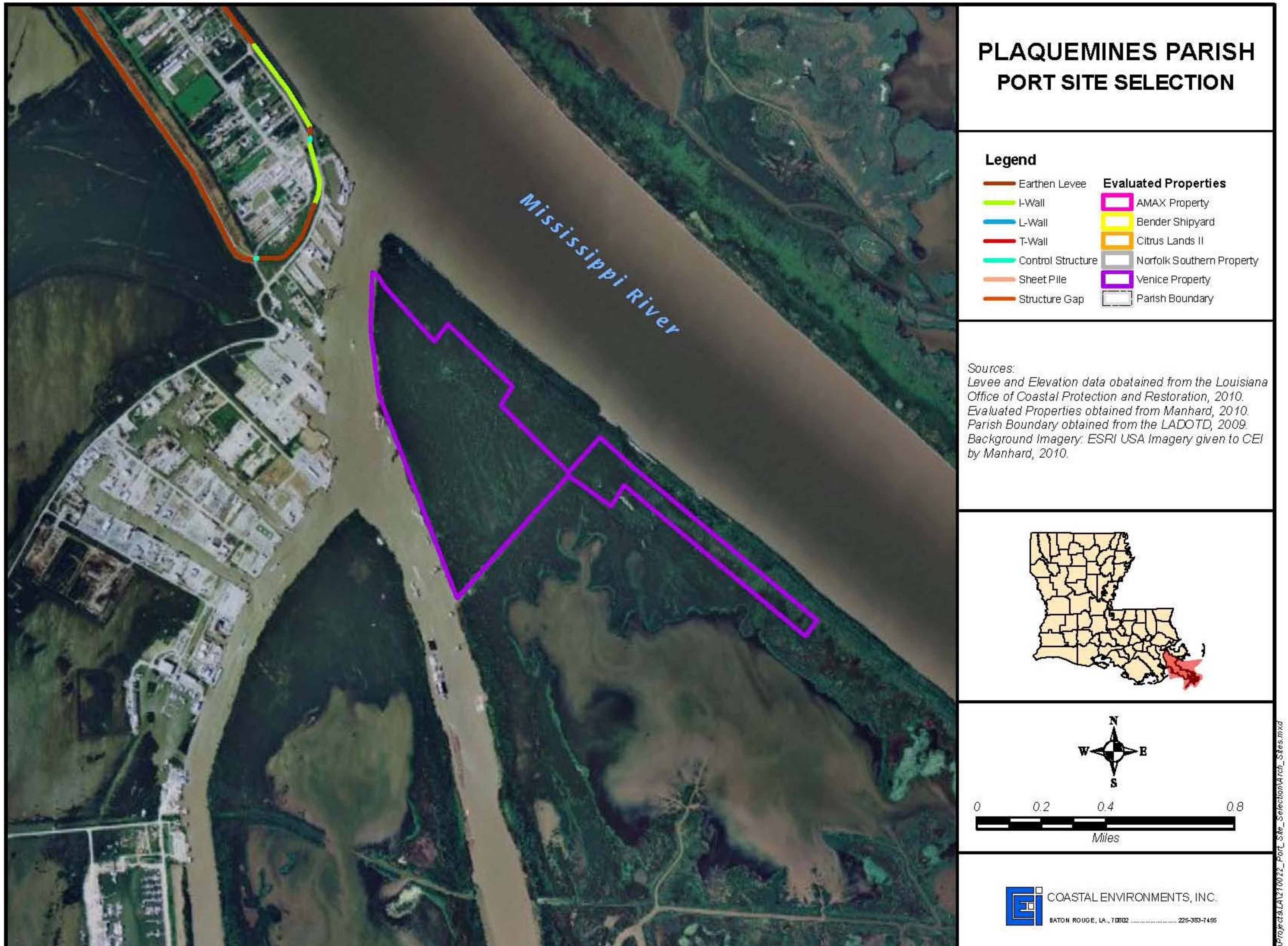
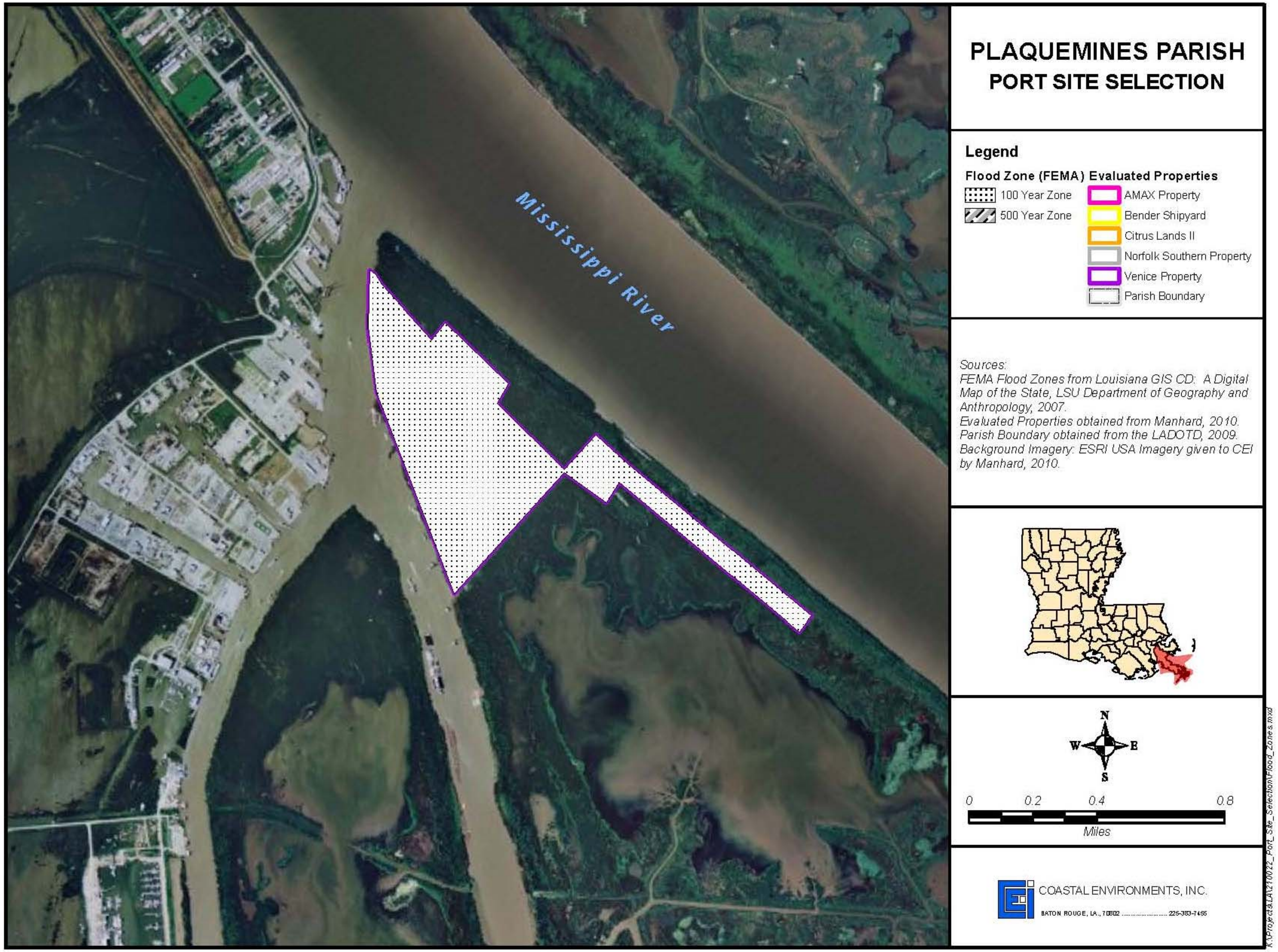


Figure 80: Venice Flood Zones



100-year flood: The flood having a 1% or greater annual probability of occurring
500-year flood: The flood having a 0.2% or greater annual probability of occurring.

Figure 81: Venice Land Cover

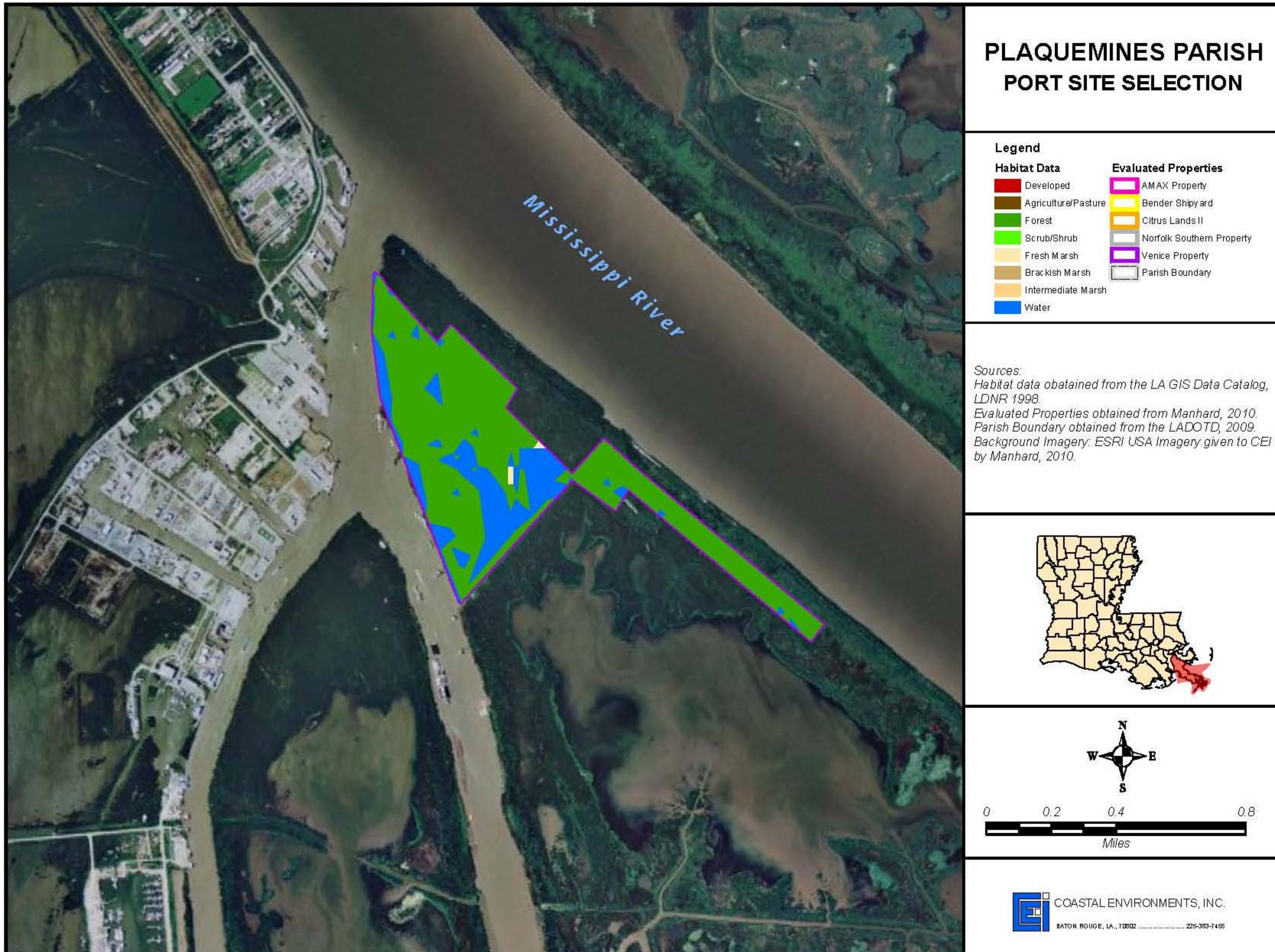


Figure 82: Venice Soils Mapping

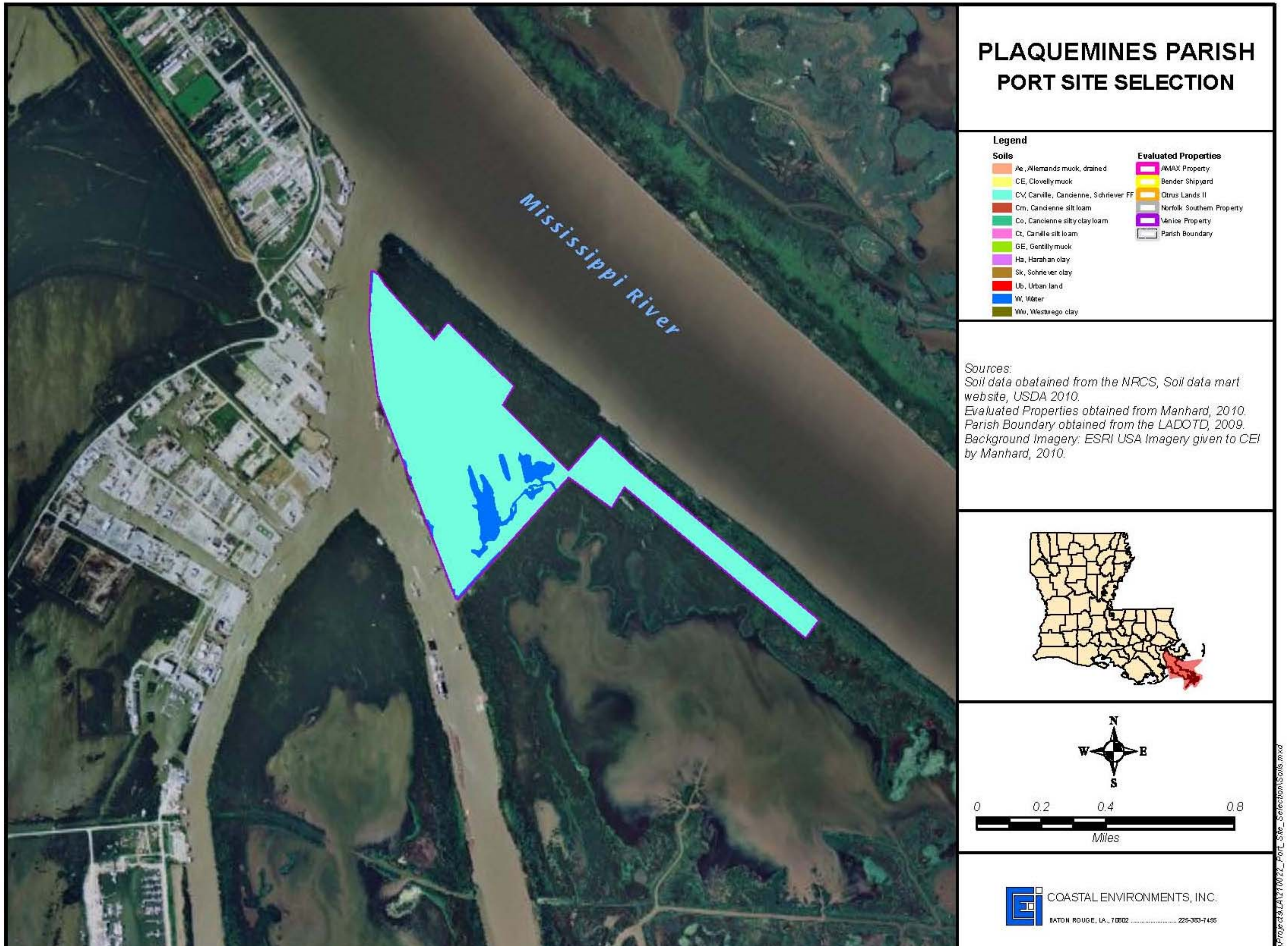


Figure 83: Venice Wetlands

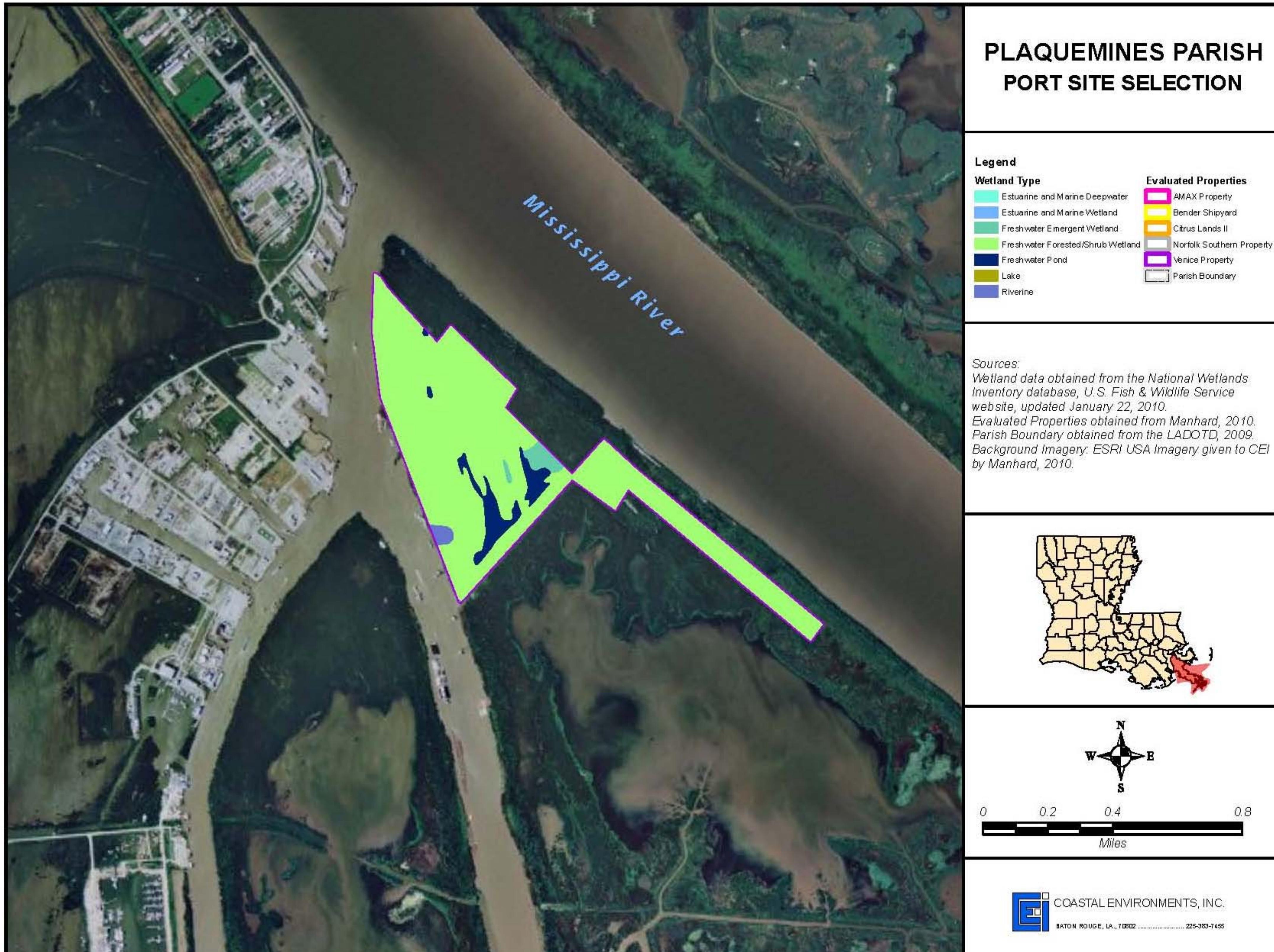
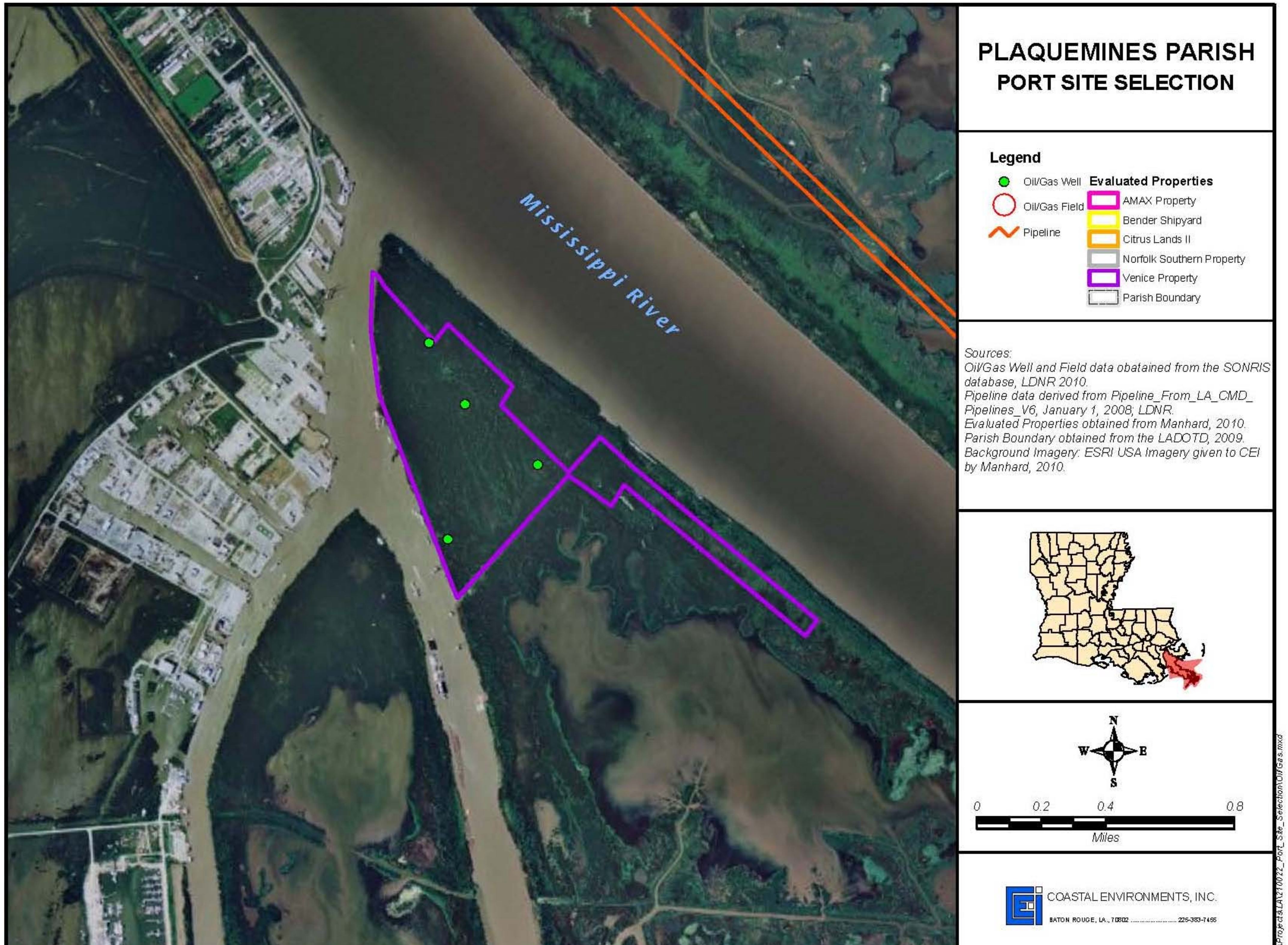


Figure 84: Venice Oil & Gas



Amax and Citrus port site "order of magnitude" throughput capacity analysis

The Amax and Citrus port selection sites were subjected to an "order of magnitude" throughput capacity analysis and evaluation by Trident. This analysis was to broadly determine if the proposed port terminal sites had sufficient land side acreage and linear waterfront dimensions to accommodate the anticipated cargo operational types from an industry standard modular operational perspective.

The potential port sites were all evaluated for stand alone terminal operational modules using the following terminal types:

- Container Operations,
- Intermodal Rail Operations,
- Break bulk Operations
- Neo-Bulk Operations
- Dray Bulk Operations
- Project Cargo Operations

Both the Amax and Citrus Potential Port Sites have sufficient site acreages and linear waterfront dimensions such that the potential port development sites will not be limited for use as operational port sites for the operations described above. A more extensive description of throughput Capacity Analysis is located in Task 4.

Regulatory Framework and Overview

Regulatory requirements vary by state for applicable State permits however Federal permitting is uniform nationwide with slight differences in interpretation as it applies to different climates, habitats, flora and fauna, types of soils and ground water conditions. The following is a listing of potential permits possibly required in building a Port facility in Plaquemines Parish.

Permits

Construction of port facilities will require Federal, state, and/or local regulatory authorizations, such as permits, licenses, and other forms of approval. Examples of federal regulatory authorizations include, but are not limited to:

- Section 10 permits from US Army Corps of Engineers, New Orleans Districts, for proposed wharves, covered moorings, pilings, and other structures in navigable waterways
- Section 404 permits, General Permits, and Nationwide Permits from the US Army Corps of Engineers, New Orleans District for actions that involve dredging and filling of wetlands
- Section 9 permits from the US Coast Guard for bridges that cross navigable waterways (should any such projects be planned for expansion of port facilities over navigable waterways)
- Federal consistency for projects in the Louisiana Coastal Zone that use federal funds. All of Plaquemines Parish is within the Louisiana Coastal Zone.

Examples of state regulatory authorizations include, but are not limited to:

- Coastal Use Permits from the Louisiana Department of Marine Resources for activities that impact wetlands under their jurisdiction
- Section 401 permits or Water Quality Certifications from the Louisiana Department of Environmental Quality
- National Pollutant Discharge Elimination System (NPDES) Permits from the Louisiana Department of Environmental Quality.

Examples of local regulatory authorizations required from the Parish include, but are not limited to:

- Subdivision approvals
- Building permits
- Flood zone permits including the acquisition of elevation certificates
- Zoning and/or Building Code variances
- Compliance with Plaquemines Parish Master Plan under development
- Business Licenses

Other Federal and State Regulations

National Environmental Policy Act (NEPA) of 1969 established a national policy of environmental protection that required federal agencies to assess environmental impacts of proposed projects, to consider alternatives to them, and to identify ways of reducing the impacts of projects. Large projects with potentially significant impacts were required to file an Environmental Impact Statement (EIS), identifying sensitive areas or resources potentially impacted. Smaller projects required more limited studies termed Environmental Assessments (EA). In regard to cultural resources, steps for complying with NEPA are similar to those for complying with Sec. 106 of the NHPA. In most cases the agency or organization proposing the project will complete the Sec. 106 process and include results in an EIS or EA. The principal differences between the requirements of NEPA and NHPA lie in NEPA's requirements for public review and comment and consideration of alternatives.

Fish and Wildlife Coordination Act requires the USFWS to coordinate with the state agency responsible for fish and wildlife resources when a project affects streams or other water bodies in such a way that water will be impounded, diverted, channel deepened or otherwise controlled or modified for any purpose (except area < 10 ac or land management activities by federal agency for federal lands under its jurisdiction (16 USC 661-667(d).

Wild and Scenic Rivers Act delegates authority to the Sec. of the Interior, (NPS and USFWS) and the Sec. of Agriculture (US Forest Ser. [USFS]) and state governors and other federal agencies to coordinate with the agency having management or program responsibility for a particular river. The Act is intended to preserve and protect wild and scenic rivers and immediate environments for benefit of present and future generations. Projects must be evaluated to determine if they affect designated and potential wild, scenic and recreational rivers and/or immediate environments and if so, actions must be identified to mitigate impacts.

Flood Plain Management, Executive Order 11988 (as amend. by EO 12148) applies to all federally aided buildings, structures, roads or facilities that encroach upon or affect the base floodplain. It is intended to make federally funded actions avoid the long-and short-term adverse impacts associated with occupancy and modification of floodplains, and to restore and preserve natural and beneficial values served by floodplains. Environmental documents must assess the flood hazards of the proposed action in coordination with FEMA and state and local agencies and make specific finding in the final environmental document.

Protection of the Wetlands Act under Executive Order 11990 requires avoidance of direct or indirect support of new construction in wetlands where there is a practicable alternative. Proposed actions must evaluate and mitigate impacts and a specific finding is required in the final environmental document.

Marine Protection Research and Sanctuaries Act of 1972 (as amended) is designed to regulate dumping of materials into US ocean waters and applies to actions involving transportation to and dumping into the open sea. Such actions must be coordinated with EPA, or Corps for actions involving dredged material, and require permits.

Water Bank Act is intended to preserve, restore and improve wetlands of the US through establishment of agreements with landowners and operators of wetlands located in important migratory and waterfowl nesting and breeding areas. Federally funded actions significantly affecting lands covered by the Act must be evaluated and proposed actions must be mitigated through coordination with the USFWS, EPA, Corps, NMFS, Natural Resources Conservation Ser. (NRCS) and appropriate state agencies.

Coastal Zone Management Act is designed to preserve, protect, develop and where possible restore and enhance resources of the coastal zone. Federally funded actions significantly affecting state and local areas with federally approved coastal zone programs must comply with Federal consistency regulations and approved state plans. Actions affecting these areas must be coordinated with the state coastal zone management agency and the US Department of Commerce (USDC), Office of Coastal Zone Management.

Clean Water Act (CWA) is intended to restore and maintain chemical, physical, and biological integrity of waters of the US through prevention, reduction, and elimination of pollution. Any action that discharges a pollutant into waters of the US must comply with this act through acquisition of permits or certifications. Sec. 404 of the CWA requires a permit from the Corps, or appropriate state agency for actions in designated coastal zones, and appropriate mitigation for unavoidable impacts prior to dredging or deposition of material into wetlands and waters of the US. Other types of discharges require Sec. 402 permits from the EPA or appropriate state agency. Sec. 401 requires a Water Quality Certification from the state water resource agency. Sec. 319 requires that all projects be consistent with the State's non-point source pollution management program.

Endangered Species Act of 1973 (as amended) is intended to conserve species of fish, wildlife and plants that are facing extinction and is applicable to proposed actions that may jeopardize the continued existence of such endangered and/or threatened species or result in destruction or modification of habitat critical to their existence. Proposed actions require consultation with USFWS and NMFS in order to avoid detrimental impacts.

Wilderness Act is intended to preserve and protect wilderness areas in their natural condition for use and enjoyment by present and future generations.

Coastal Barriers Resource Act (as amended) is designed to minimize loss of human life, wasteful expenditures of Federal funds, and damage to fish, wildlife and natural resources by prohibiting federally funded/supported development in designated coastal barrier resources systems. Projects require coordination/consultation with FEMA and USFWS.

Farmland Protection Policy Act of 1981 is intended to minimize impacts on farmland and maximize compatibility with state and local farmland programs and policies. Federally funded projects taking right-of-way from farmland must be evaluated in regard to severity of impact and environmental considerations. Actions require early coordination with NRCS.

Resource Conservation and Recovery Act (RCRA) is intended to protect human health and environment. Federally funded projects that take rights-of-way containing hazardous waste must be evaluated with regard to mitigation options and remedial actions must be coordinated with the EPA and appropriate state agencies.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is designed to provide for liability, compensation, cleanup and emergency response for hazardous substances released into the environment and cleanup of inactive hazardous waste disposal sites. Proposed Federally funded projects must be evaluated for the possibility of hazardous materials to avoid the site through selection of an alternative location or have site cleaned up by responsible party prior to construction. The Environmental Site Assessment Phase 1 identifies potential for hazardous materials and is done in coordination with EPA and appropriate state agencies.

Department of Transportation (DOT) Regulations: Section 4(f) of DOT's Act of 1966, (FHWA) allows the Sec. of DOT to approve projects requiring use of publicly owned land or public park, recreation area, or wildlife/waterfowl refuge, or land of an historic site of national, state, or local significance (as determined by officials having jurisdiction over the park, recreation area, refuge, or site) only if there is no feasible and prudent alternative to the use and project includes all possible planning to minimize harm.

National Historic Preservation Act (NHPA) of 1966 is the single most important piece of legislation in the federal historic preservation program. A major provision is creation of the National Register of Historic Places, a listing of buildings, structures, sites and objects important in American history and culture. The act established a review process (Sec. 106 process) for federally funded, assisted, or permitted projects requiring federal agencies to consider possible impacts of projects on historic properties. The act also provides for creation of a program of matching grants to states to assist in establishing state historic preservation programs, conducting surveys identifying historic properties, and preserving or acquiring historic properties. The act provides for appointment of a State Historic Preservation Officer (SHPO) to administer the state's program. The act created the Advisory Council on Historic Preservation, a federal agency charged with advising the President and Congress on matters of historic preservation and commenting on federal projects that may affect historic properties. The Advisory Council issued regulations to implement portions of the act.

The Historic Sites Act (HSA) of 1935 declared that it was "a national policy to preserve for public use historic sites, buildings, and objects of national significance." It authorized the National Park Service (NPS) to establish the Historic American Buildings Survey (HABS) to collect and preserve drawings, photographs, and other data on historic sites. The HABS program continues to be an important part of the federal preservation program. The Historic Sites Act also directed the NPS to make a survey of nationally significant sites that resulted in the Registry of National Historic Landmarks, another program that continues today.

Archeological and Historic Preservation Act (AHPA) of 1974, also known as the Moss-Bennett Act, was based on the Reservoir Salvage Act of 1960. It differs from the NHPA in that it is not concerned with planning in order to preserve historic properties, but with the recovery of information from them before they are destroyed. The act requires federal agencies to notify the Sec. of the Interior when a project would result in the loss of significant archaeological or historical data. The agency is then authorized to spend up to 1% of project funds for recovery of data from the property.

Archaeological Resources Protection Act (ARPA) of 1979 was drafted after a series of court challenges to the Antiquities Act of 1906 resulted in a ruling that portions of it were vague. At the request of archaeologists and federal agencies, Congress passed the ARPA. It substituted the term "archaeological resources" for "antiquities," strengthened the penalties for disturbing archaeological sites or trafficking in artifacts, established a system of permits and standards for excavations on federal lands, and extended protection to tribal lands as well as public lands.

Abandoned Shipwreck Act (ASA) was passed by Congress in 1987 after a series of widely publicized lawsuits concerning ownership of shipwrecks during the 1970s and 1980s. By this act the federal government first claimed ownership of abandoned shipwrecks in state waters and then transferred ownership to respective states.

Native American Graves Protection and Repatriation Act (NAGPRA) (Public Law 101-601) was signed into law on Nov. 16, 1990 and the NPS implements the act for the Sec. of the Interior. This law is essentially a piece of civil rights legislation designed to ensure that the common law provision known as "the right to repose," guaranteeing burial with dignity, applies to Native Americans. NAGPRA requires repatriation of human remains, associated funerary objects, unassociated funerary objects, sacred objects and items of cultural patrimony. All agencies and museums receiving federal funds (except the Smithsonian Institution) are subject to the act. The act establishes two sets of procedures; one deals with the intentional excavation or inadvertent discovery of Native American burials, and the other addresses the handling of Native American human and cultural remains once they are in the possession of a federally funded entity.

The act states that intentional excavation of Native American burials on property under federal control requires an ARPA permit and proven prior consultation with appropriate Native American organizations. The NAGPRA defines "appropriate" Native American groups as direct lineal descendants, tribe on whose land burials were discovered, tribe with closest cultural affiliation with remains or objects, or tribe which occupied the land where burials are located. The inadvertent discovery of Native American burials requires immediate (within 24 hrs) notification of responsible federal agency and appropriate Native American groups. Activity must cease in the burial vicinity and burials must be protected for 30 days until the federal agency and Native American groups agree on a plan of action.

Curation Requirements The regulations regarding curation of archaeological collections for federal agencies are set forth in 36 CFR Part 79. These regulations specify the responsibilities of the agency and the standards required of curation facilities.

State Laws Pertinent to Cultural Resources In most states, cultural resources laws apply mainly to state lands and water bottoms. For example, a Louisiana law referred to as the Archaeological Resources Act, Chapter. 13 of Title 41 of the LA Rev. Statutes, was originally passed in 1974. It establishes the LA Archaeological Survey and Antiquities Comm. to advise the director of the Div. of Archaeology on matters dealing with sites on state property. The commission's main function is issuance of permits required for any excavation of an archaeological site on state property. The act identifies who is qualified to conduct research and the minimum standards for research.

Preliminary Project Site Risk Assessment

In reviewing and analyzing the prior ten sites Trident performed the following preliminary risk assessment to assist in responding to the summary evaluation matrix. This matrix provides an overview of findings for each site in comparison with each other.

Property/Facility	AMAX	BENDER	CITRUS	LIGTT	MAGNOLIA	SEAPOINT	NS Property	SHIPYARD	TECO	VENICE
Risk										
Availability	X		X	U/D	U/D	U/D	X	X	N/K	X
Location	x		x	x	x	x	x	x	x	x
Road Access	x		x	NO	x	x	x	x	x	x
Rail Access	x		NO	NO	NO	NO	x	x	NO	NO
Potential Rail Access	N/A		x	NO	x	NO	N/A	N/A	x	No
Water Access	x		x	x	x	x	x	x	x	x
Water Frontage	x		x	x	x	x	x	x	x	x
Water Depth	x		x	x	x	x	x	x	x	x
Water Currents	x		x	x	x	x	x	x	x	x
Navigational Issues	x		x	x	x	x	x	x	x	x
Competing Uses	x		x	U/D	U/D	U/D	x	x	N/K	x
Available Acreage	x		x	x	x	x	x	x	x	x
Restrictions	x		x	x	x	x	x	x	x	x
Levee Protection	x		Committed	NO	?	?	x	x		no
Dredging Required	Y		NO	NO	?	?	NO	Y	?	Y
Soils	Hydric	Hydric	Hydric	NA	NA	NA	Hydric	NA	NA	Hydric
Development Potential										
Environmental Impacts	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Environmental Mitigation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Permitting Issues	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Existing Infrastructure										
Cost										
Value										
Insurability										
Flood Zone	100/500	100/500	100-old data	NA	NA	NA	100/500	NA	NA	100-old data
Oil&Gas Wells	2 Dry	1 Dry	2 Dry	NA	NA	NA	NO	NA	NA	4 Abandoned
Oil&Gas fields	NO	NO	NO	NA	NA	NA	NO	NA	NA	NO
Pipelines	Y	NO	Y	NA	NA	NA	NO	NA	NA	NO
Wetlands	Y	Y	Y	NA	NA	NA	Y	NA	NA	Y
Oyster Leases	NO	NO	NO	NA	NA	NA	NO	NA	NA	NO
Public Lands/Parks	NO	NO	NO	NA	NA	NA	NO	NA	NA	NO
Cultural Resources	Y	Y	Y	NA	NA	NA	Y	NA	NA	Y
Native American	NO	NO	NO	NA	NA	NA	NO	NA	NA	NO
Threatened & Endangered	NO	NO	NO	NA	NA	NA	NO	NA	NA	NO
HazMat/Waste	Y-Pending	NO	NO	NA	NA	NA	3-permited	NA	NA	NO
Levee Protection	Y	Y-Urev	Y-Wconst	NA	NA	NA	Y-Urev	NA	NA	NO
Coastal Restoration Proj	NO	Y	Y	NA	NA	NA	NO	NA	NA	NO
Wildlife Refuge/Manage	NO	NO	NO	NA	NA	NA	NO	NA	NA	NO

- NA NOT APPLICABLE BECAUSE SITE WAS ELIMINATED FROM CONSIDERATION
- 100 is 100 year storm which has a 1% risk factor
- 500 is 500 year storm which has a .2% risk factor
- 2-Dry etc is two Dry plugged wells 4-abandoned is simply that 4 abandoned wells
- Y- pending means that there are known HAZMAT/WASTE sites and they are being reviewed for what should be done

- 3-permitted means that there are 3 known and permitted sites and pose no problem or risk
- Y-Urev means yes levee protection is in place but it is under review for added protection however there is no current commitment for $ or construction
- Y-Wconst means that there is current protection and there is a program in place to rebuild the levees to new heights and the program has $ and is committed to a construction schedule

Conclusion

The preceding table helped to short list the sites that would be extensively reviewed and compared for selection. This process considered the original ten (10) potential sites and reduced this list to five properties, namely Amax, Norfolk Southern, Bender Shipyard, Citrus II and Venice. In Task I Trident identified the evaluation matrix that would be employed for assessment of the properties. These properties are evaluated below.

Table 53: Site Comparison Evaluation Matrix

No.	Evaluation Criteria	Weight	AMAX	CITRUS II	VENICE	BENDER	NS PROPERTY
1	Flexibility	8.00	8.00	9.00	8.00	6.00	4.00
2	Expandability	8.00	8.00	9.00	7.00	6.00	5.00
3	Environmentally Responsive	9.00	6.00	8.00	6.00	3.00	4.00
4	Berth & Water/Navigational Access	10.00	8.00	9.00	7.00	6.00	7.00
5	Rail Efficiency Access (Potential)	10.00	9.00	9.00	0.00	9.00	8.00
6	Truck Efficiency Access	8.00	7.00	8.00	4.00	7.00	7.00
7	Terminal Functional Adjacency	5.00	8.00	9.00	9.00	8.00	7.00
8	Marketability	5.00	8.00	9.00	9.00	7.00	6.00
9	Conducive to Security	5.00	9.00	9.00	9.00	9.00	9.00
10	Cost Effective Construction	7.00	9.00	8.00	7.00	7.00	8.00
11	Market Driven	10.00	10.00	10.00	8.00	5.00	5.00
12	On Terminal Traffic Flow	6.00	7.00	8.00	7.00	5.00	5.00
13	Responsive to Technology	6.00	8.00	8.00	8.00	8.00	8.00
	Maximum Possible Score	970.00					
	Alternative Raw Performance Score (Sum of All Raw Scores)		105.00	113.00	89.00	86.00	83.00
	Weighted Score (Individual Criteria Weight x Raw Score)		644.00	690.00	508.00	620.00	630.00
	Percent of Max Possible Score		66.39%	71.13%	52.37%	63.92%	64.95%

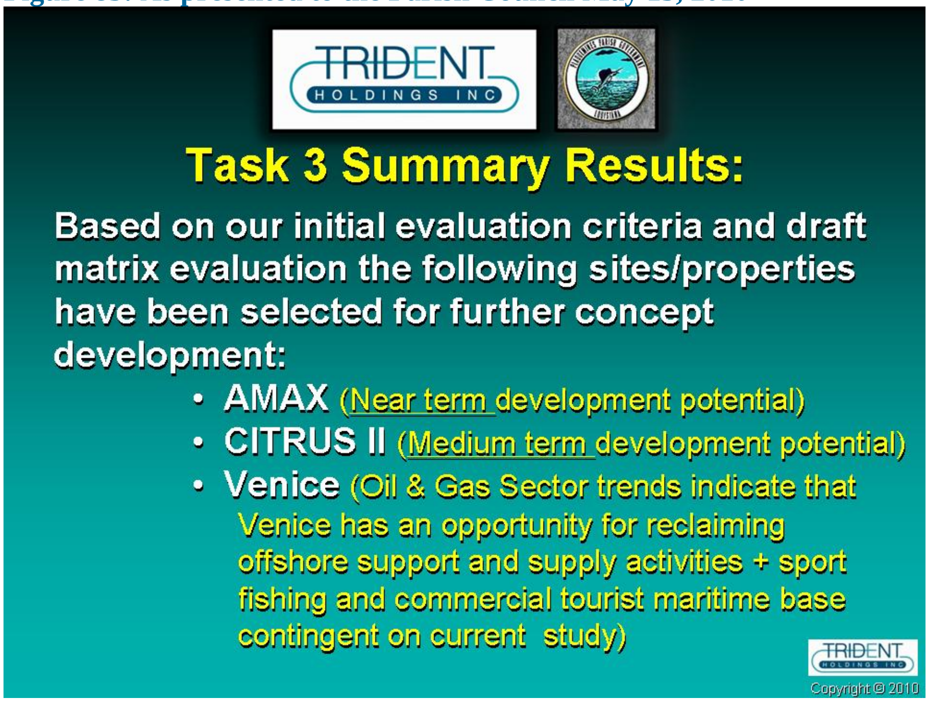
Based on these findings Citrus II received the highest ranking, Amax was second, Norfolk Southern ranked third, Bender Shipyard fourth and Venice fifth.

The final sites selected to receive further consideration in the study are Citrus II, Amax and Venice. Citrus II is considered to have the highest potential for development because of its size, location and potential to attract container traffic. It is considered to have mid-term development potential needed to extend and relocate rail road access.

Amax is considered to be the most immediately available site due to its immediate access to road and rail infrastructure. Trident consensus is that Amax can likely be developed in 1-3 years, Citrus II could take 5-10 years depending on the interest by the state, Parish governments and by the railroads providing service to the sites.

Venice was chosen despite having the lowest score. Citrus II, Amax, Bender Shipyard and the Norfolk Southern properties were all viewed as typical Port locations for possible container, bulk and break bulk facilities. Venice on the other hand represents a different opportunity for off-shore oil service, sports fishing, eco-tourism and, most recently, as a Federal and State oil-spill response center, coordinating all activities related to the recent Horizon disaster and subsequent containment and cleanup.

Figure 85: As presented to the Parish Council May 13, 2010



Task 3 Figures & Tables

Figures

Tables

Task 4 – Master Plan Land and Water Use Requirements

Table of Contents

Task 4 – Master Plan Land and Water Use Requirements

Introduction

Task 4 for the Plaquemines Parish Port Master Plan analyzes and evaluates the land and water use requirements for consideration in the recommended Master Plan and draws conclusions regarding the land and water use requirements for the final Master Plan recommended Alternatives. The Master Plan Alternatives are presented in Task 7 and have incorporated the findings and recommendations in this Task.

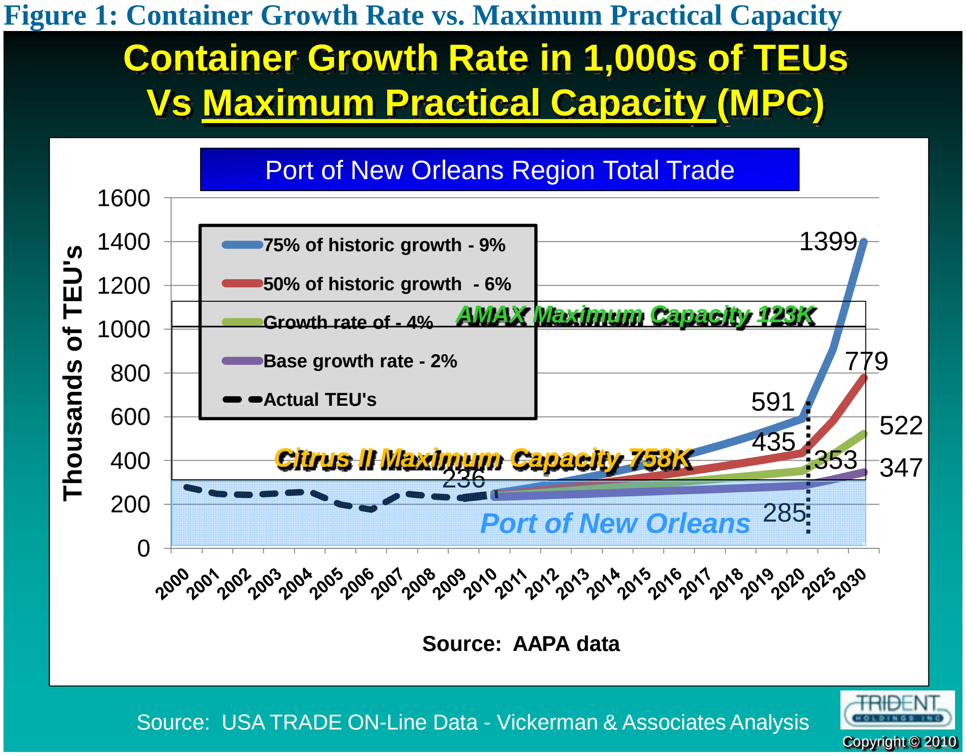
Task 4 is organized into the following areas:

- Future Terminal Needs
- Idealized Terminal Modules
- Terminal Transportation Operations
- Waterside Access Requirements

Future Terminal Needs

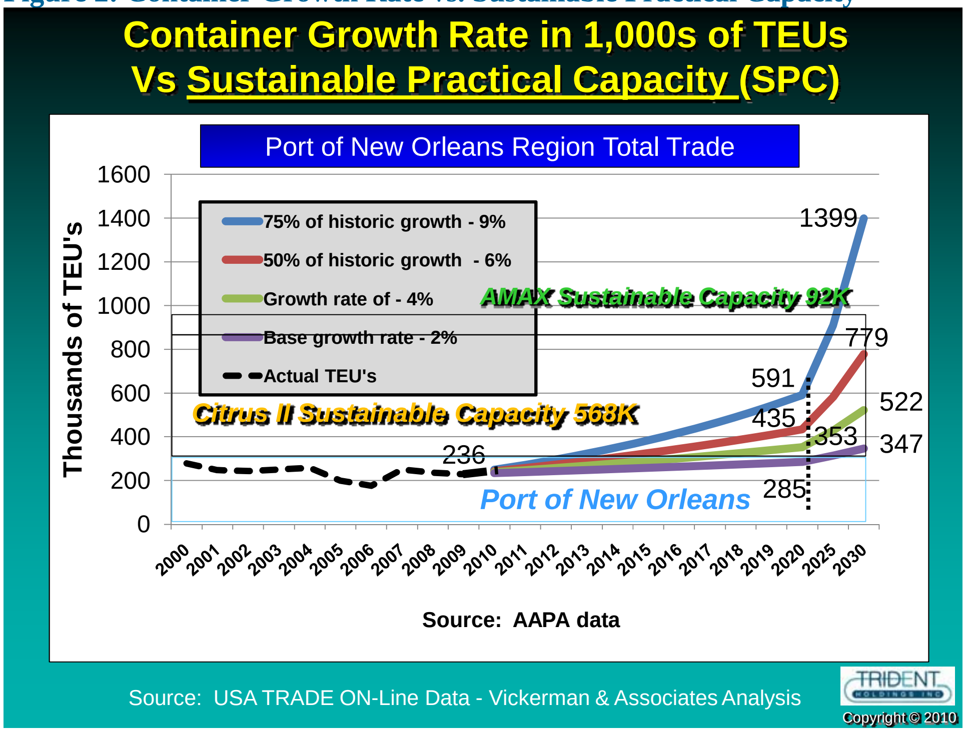
As identified, analyzed and presented to the Plaquemines Parish Council, the Market Assessment for Plaquemines clearly substantiated that future growth in trade and market demand for infrastructure that services that trade in the Gulf Coast Region particularly for South Louisiana will exceed the expected capacity of the Port of New Orleans including the potential development of Port facilities at both the Amax and Citrus II sites (see Figure 1).

Figure 1: Container Growth Rate vs. Maximum Practical Capacity



The trade levels shown on the chart above are less than the historic growth rates for the region and demonstrate that excess demand will go unmet even with the Port of New Orleans operating at capacity clearly identifying the need for new Port development. Ports however do not operate at maximum capacity but rather at sustainable capacity which is approximately 75% of maximum. Figure 2 shows that operating at sustainable capacity for the Port of New Orleans and two new Port facilities at Amax and Citrus II will leave an even greater gap in unmet demand for additional Port growth demonstrating that continued growth in Plaquemines Parish is needed.

Figure 2: Container Growth Rate vs. Sustainable Practical Capacity



Maritime & Intermodal Terminal Master Plan Background and Planning Philosophy

The master planning process began with a review of all public documents pertaining to port and intermodal terminal development in Plaquemines Parish and the US Gulf Coast region identified in Tasks 1, 2 and 3. This section, Task 4 builds on the previous analysis, conclusions and recommendations.

The Comprehensive Port Development Master Plan for Plaquemines Parish is, in effect, a “road map” for proactive port development consistent with the Plaquemines Parish mission and vision statements.

The overarching philosophy of the Comprehensive Port Development Master Plan for Plaquemines Parish focused on providing market-driven solutions and related potential to the port and intermodal development alternatives for the Parish’s riverfront lands. Following the effort to establish the markets, the focus was then on potential development sites and alternatives that satisfied the defined market conditions while maximizing Plaquemines Parish economic development benefits and return on investment.

The planning approach used proven and sophisticated methodologies and proprietary tools to aid the development and design process. Included among these tools was a “computer terminal throughput static spreadsheet” to analyze site design for cargo throughput and optimized traffic flow.

In all cases, a system-wide approach for analyzing and evaluating the various sites and strategies was used.

Strategic Port Master Planning as a Business Planning Tool

Port master planning must anticipate cargo growth and must make provision for a site to expand and efficiently manage that growth. The Plaquemines Parish Comprehensive Port Development Master Plan alternatives involved analysis of current operations (minimal), terminal capacity analysis, forecast growth needs and land-use plans fully integrating terminals, roadways, rail and other infrastructure into an alternative recommendation.

Strategic business planning (assessment, development, and implementation) should not be a one-shot event; rather it should be viewed as an ongoing process which must adapt to changes both external and internal to the organization. The identification of alternatives is but a beginning for the Parish and Port management and should be routinely reviewed and updated.

The two guiding principles of the Plaquemines Parish Master Plan Alternatives were:

- That the Plaquemines Parish Port Master Plan be flexible, and
- The Plaquemines Parish Port Master Plan is a market driven road map for Plaquemines Parish, utilizing long term business planning to create a sustainable and durable port development solution.

The Plaquemines Parish Master Plan Alternative methodology included assessing vision and mission statements as conveyed to Trident by the Parish Council and staff, and identifying and evaluating current and forecast business opportunities.

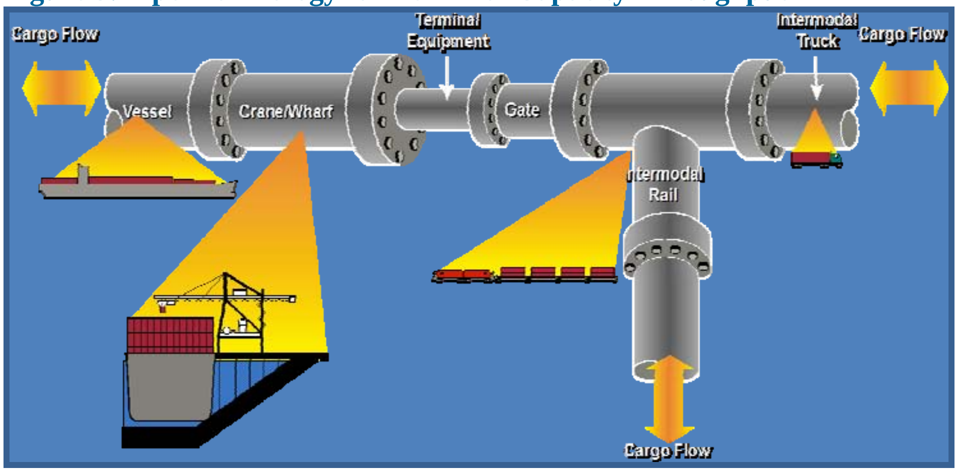
Recognizing Port and Intermodal Terminal Constraints

A key element of the master planning process is separation of the Port and intermodal terminal into various components and a throughput capacity assessment for each component. This way, design alternatives can be tested to optimize cargo throughput.

Utilizing the capacity modeling approach more fully described below in Figure 3, Trident was able to properly size the various components. Recognizing constraints on the Port (e.g., vessel size, navigation limits, turning needs, limited land and reliance on a limited number of commodities) is as important as recognizing new opportunities.

Marine & Intermodal Terminal Throughput Capacity Modeling Approach

Figure 3: Pipeline Analogy for Terminal Capacity Throughput



The origins of the Port Terminal Throughput Capacity Analysis used for each Terminal Module developed in Task 4 and for the Recommended Master Plan Terminal Alternatives presented in Task 7 can be traced back to the 1986 publication, **"Improving Productivity in U.S. Marine Container Terminals"** produced by the National Research Council and published by the National Academy Press. This publication was prepared under the guidance of the U.S. Maritime Administration (MARAD) and developed the basic methodology for determining wharf, storage and gate productivity.

The capacity model used in the Plaquemines Parish Master Plan was initially developed in 1987, by Vickerman Zachary Miller Inc. (VZM), under contract to the Ports of Los Angeles and Long Beach developed the "2020 Operations, Facilities and Infrastructure Plan" that quantified for the first time, the terminal capacity for each of the San Pedro Bay marine terminals. This effort resulted in a spreadsheet model in *Lotus 123* format that used the assumptions developed by MARAD for the earlier publications.

The terminal capacity method for calculating container terminal throughput capacity and estimating maximum practical throughput capability for marine/intermodal terminals utilizes an industrial engineering; operational research approach follows the VZM approach. The model architecture can be modified, when appropriate, to suit specific terminal requirements and was developed for the following purposes:

- to identify the need for additional terminals or expansion of existing ones,
- to identify current physical and operational constraints on maximum terminal throughput capability,
- to create a "balanced" terminal with efficient operations, and
- to evaluate various productivity measures that utilize improved technologies for handling, transferring and storing containerized cargo.

The model evaluates six terminal components for containerized cargo. Other cargo model types have also been developed, including breakbulk, neo-bulk, liquid bulk and dry bulk. The six container terminal components are:

1) Vessel and berth activities
2) Ship-to-apron transfer
3) Apron-to-storage transfer
4) Storage yard dwell
5) Inland transfer
6) Gate processing

It may be helpful to conceptualize the six model components as valves in an analogous pipeline (please refer to the diagram on the previous page), where each component is capable of constricting the flow (of cargo) within the pipeline. Obviously, if one valve constricts the pipeline, the entire system is affected. For example, if gate processing is shown to be the most constricting element, gate operations will be evaluated and improvements made so that the gate is properly sized with respect to the rest of the system.

The VZM approach for capacity modeling of modern marine terminals is now used by many port terminals and port industry consultants including Manhard Consulting and Vickerman & Associates to determine the maximum practical capacity and the maximum sustainable port terminal cargo throughput capacity.

The port capacities modeling spreadsheets and model explanatory notes for the Plaquemines Parish Master Plan are located in the Port Master Plan Appendix for Task 4. These capacity models represent and depict the computer output for each component of the port throughput capacity for the recommended Master Plan Alternatives presented in Task 7.

The five terminal capacity spreadsheets represent the following port facility models. Each of the terminal modules identifies the appropriate terminal module capacity in this task.

- Container Port Model – Amax Omni Terminal
- Container Port Model – Citrus II Container Terminal
- Break Bulk and Neo Bulk Port Model – Amax Omni Terminal
- Dry Bulk (Grain) Model – Amax Omni Terminal
- Dry Bulk (Coal) Model – Amax Coal Terminal Concept Plan

Terminal Capacity Analysis – Maximum Practical Capacity (MPC) – Sustainable Practical Capacity (SPC)

Trident utilized the Marine & Intermodal Terminal computer capacity analysis computer model to determine each Master Plan Alternatives Maximum Practical Capacity (MPC) and each cargo handling type envisioned in each Master Plan Alternative.

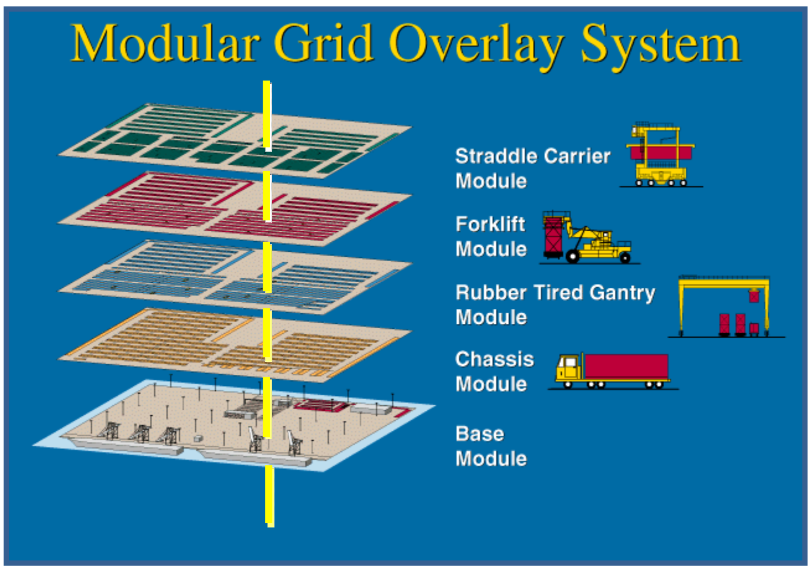
Each capacity model calculates an estimate of the MPC for each cargo operating type. The MPC is the high end of a realistic operating scenario. Since MPC represents the peak end of a realistic operating scenario and sustained operation at this level for a significant period of time is generally unreasonable and typically unsafe. Past experience has shown that a more reasonable estimate of sustained practical capacity is approximately 75% of the MPC and is referred to as the Sustainable Practical Capacity (SPC). However for ease in alternative comparison only MPC estimates are used in the following terminal capacity analysis.

The models are subdivided into six components, and a throughput capacity for each component is identified. This allows for design refinements to be tested and balanced for efficient throughput flow.

Modular Operating Grid Overlay System Tool – Future Terminal Equipment Flexibility

Developed in the late 1980s, the Modular Grid Overlay System (MGOS) is a process used for equipment and infrastructure planning for marine and Intermodal terminals that permits an assessment of the use of terminal operating equipment which could be used in the future without impacting existing infrastructure and the need to reconfigure the terminal.

Figure 4: Modular Grid Overlay System



Though typically applied during the preliminary engineering phase of port development, the MGOS (Figure 4) was used for the Plaquemines Parish Master Plan alternatives analysis. The MGOS and further analysis should be reapplied and is recommended when more detailed engineering design is authorized for this project.

The MGOS determines the correct geometry for terminal layout and for all terminal assets (buildings, light standards, fire hydrants, electrical substations, security equipment, and refrigeration equipment) that will permit future equipment use without having to significantly modify terminal infrastructure.

Fundamentals of Marine Terminal Operational Layouts to Ensure Flexibility in Storage and Retrieval Systems

The type of equipment used in a terminal operation has great impact on the operational efficiency of the terminal. Several storage and retrieval systems should be evaluated from the perspective of service delivery and optimum land-use.

These systems include the following for container and intermodal operations:

1. All-chassis
2. Straddle-carrier
3. Forklift truck (FLT) side-pick/top lift
4. Rubber-tired gantry yard crane (RTG)
5. Rail-mounted traveling bridge cranes with overhead handling

6. Multiple-chassis trains
7. Combination of the above

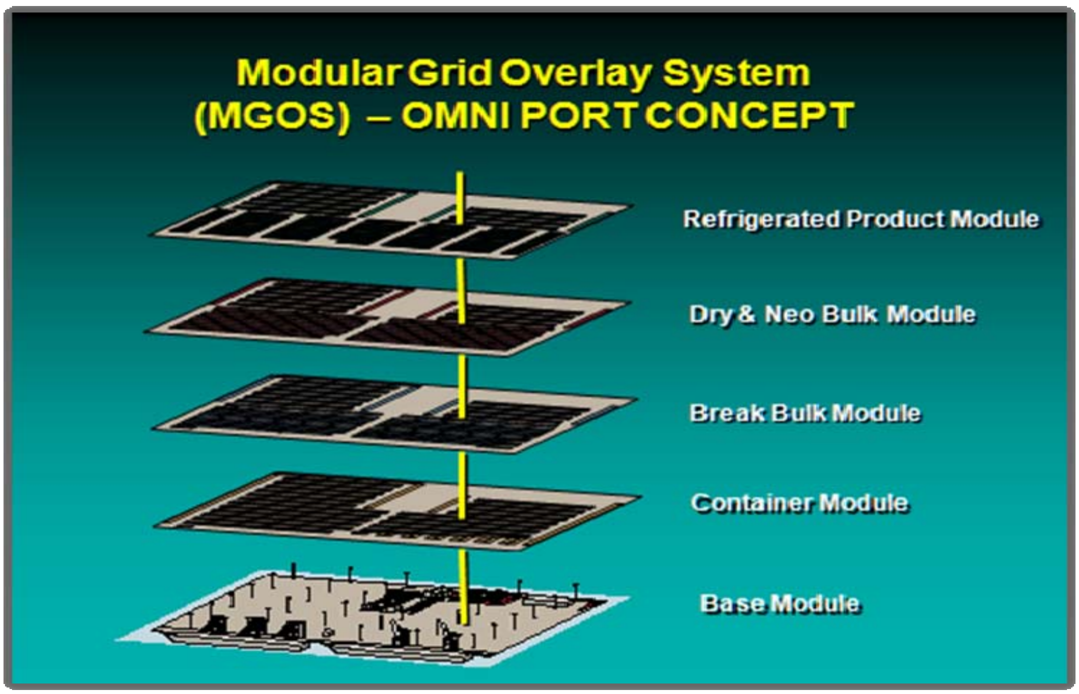
The final terminal design should identify an efficient mode of operation and enable the affordable conversion of the terminal to other modes. Flexibility for combining and interchanging operational modes must be emphasized.

Omni (Multi-Purpose) Terminal Concept Proposed for the Amax Site

Due to the uncertainty and potential magnitude of the maritime market and the potential cargoes available to the Plaquemines Parish East Bank property in the next twenty years (Design Year = 2030), a multi-purpose flexible terminal concept was adopted as the best model for the design of the Omni Terminal.

The Omni Terminal concept (see Figure 5) permits Plaquemines Parish to take advantage of a wider market potential through the Amax property site than would be afforded by the construction of a single-focused facility.

Figure 5: Omni Port Multi-Purpose Operational and Market Concept



The Omni Terminal specifically targets the following cargo types:

- Dry and refrigerated container cargo
- Intermodal rail containers
- Break Bulk cargo
- Dry Bulk cargo (possibly grain and coal)
- Various types of Project Cargo

Other cargo may include:

- Roll On/Roll Off (RO/RO) cargo
- Automobile and truck units shipped by Car and Truck Carriers (PCTC)

The Omni terminal is a two-berth Panamax vessel terminal. This two-berth terminal will utilize the existing 510 ft. wharf as a staging area for barge and smaller vessels. A proposed new wharf quay will access the property using multiple access ramps, creating a one continuous structure.

The Omni Terminal "open storage" and paved area will be designed to stack and store containers three high and will adhere to highway truck loading criteria (HS2044 ASSHTO Criteria) over the entire storage area to ensure maximum flexibility.

Please note that the Omni Terminal concept is only applied to the Amax property site and is specifically not applied to the Citrus II property site.

Berth Occupancy Analysis and Terminal Access Requirements

Included in the access requirements for each proposed marine terminal was the evaluation of potential berth occupancy. The following provides an overview of the berth occupancy considerations used by Trident.

Berth Occupancy Analysis is a tool used in port planning to investigate the utilization of a Port's berth(s) without consideration to other non-vessel operations that exist on Port facilities (i.e. storage, gate activities, etc.). This analysis concentrates solely on vessel characteristics such as length-over-all (LOA), beam, tonnage capacity, mooring and service time in order to determine the efficiency of the existing berth(s) and evaluate necessary improvements in the Port's wharf infrastructure.

Berth Occupancy Principles Defined: Graphic or Computer Analysis

Berth occupancy analysis is considered in the initial terminal planning and can be as simple as an evaluation or graphic depiction of the utilization of a Port's berth by vessel type or, in more complex situations, a computer analysis how berthing activities can best be done. Whichever method is used, the model will calculate and compare the following two values:

MPBO - Maximum Practical Berth Occupancy is the percentage of berth occupancy that a berth or series of berths can be utilized while sustaining no more than a 5% average waiting time for a berth. All of the Plaquemines Parish sites considered this approach.

BERTH UTILIZATION - Berth Utilization is the ratio of berth availability (hours of operation X total berth length) to berth occupancy (vessel time at berth X length occupied).
MPBO and Berth Utilization are two calculations of "Berth Occupancy" that are easily compared to one another. While the MPBO is a constant value (straight line) throughout a sample year, Berth Utilization is calculated each day. In addition, a weekly and monthly average of the Berth Utilization can be compared to the MPBO.

MPBO Data Requirements

- Number of Berths
- Vessel Scheduling
- Vessel Types and Capacities (by cargo)

Berth Utilization Data Requirements

The following variables are used to calculate the Berth Utilization percentage:

- Vessel LOA
- Vessel Width(beam)
- Time and Day of Arrival
- Time and Day of Departure

Existing vessel call data is used to calculate the daily Berth Utilization. As previously stated, Berth Utilization can be summarized as the ratio of the time that a vessel occupies a berth during a given day by the percent of berth length that is occupied. Daily Berth Utilization can be calculated using the following formula:

BERTH UTILIZATION (General Formula) =

$$\frac{\text{(Time at Berth)}}{\text{(Time Berth is Available)}} \times \frac{\text{(LOA + Tie Down)}}{\text{(Berth Length Available)}}$$

Terminal Module Development

Based on analysis of facilities for both physical and operational characteristics and the application of appropriate world standards, terminal modules were developed as tools to assist with the creation of master plan development alternatives. These modules will identify footprints for each terminal type. An estimated throughput capacity for each module will be determined. By using this method, together with a needs assessment, long-term land needs will be accurately portrayed in the master plan layouts. Each module will include infrastructure and various development requirements such as: berth configuration, utility requirements, traffic projections, etc.

Six different development modules were used to estimate the acreage and infrastructure needs. These six modules include:

- Container Terminal
- Break Bulk/General Cargo Terminal
- Dry Bulk Terminal
- Ro/Ro Terminal
- Omni Terminal
- Intermodal Rail Yard

The infrastructure necessary for the efficient operation of each module and the associated land requirements for each were given consideration and design was to meet a specific need. These modules are used in the planning process to allow multiple alternatives to be considered and evaluated based on a uniform set of requirements and criteria. For this analysis, a general approach was taken with respect to land and infrastructure needs based on cargo types only, as specific industries and tenants have not yet been identified.

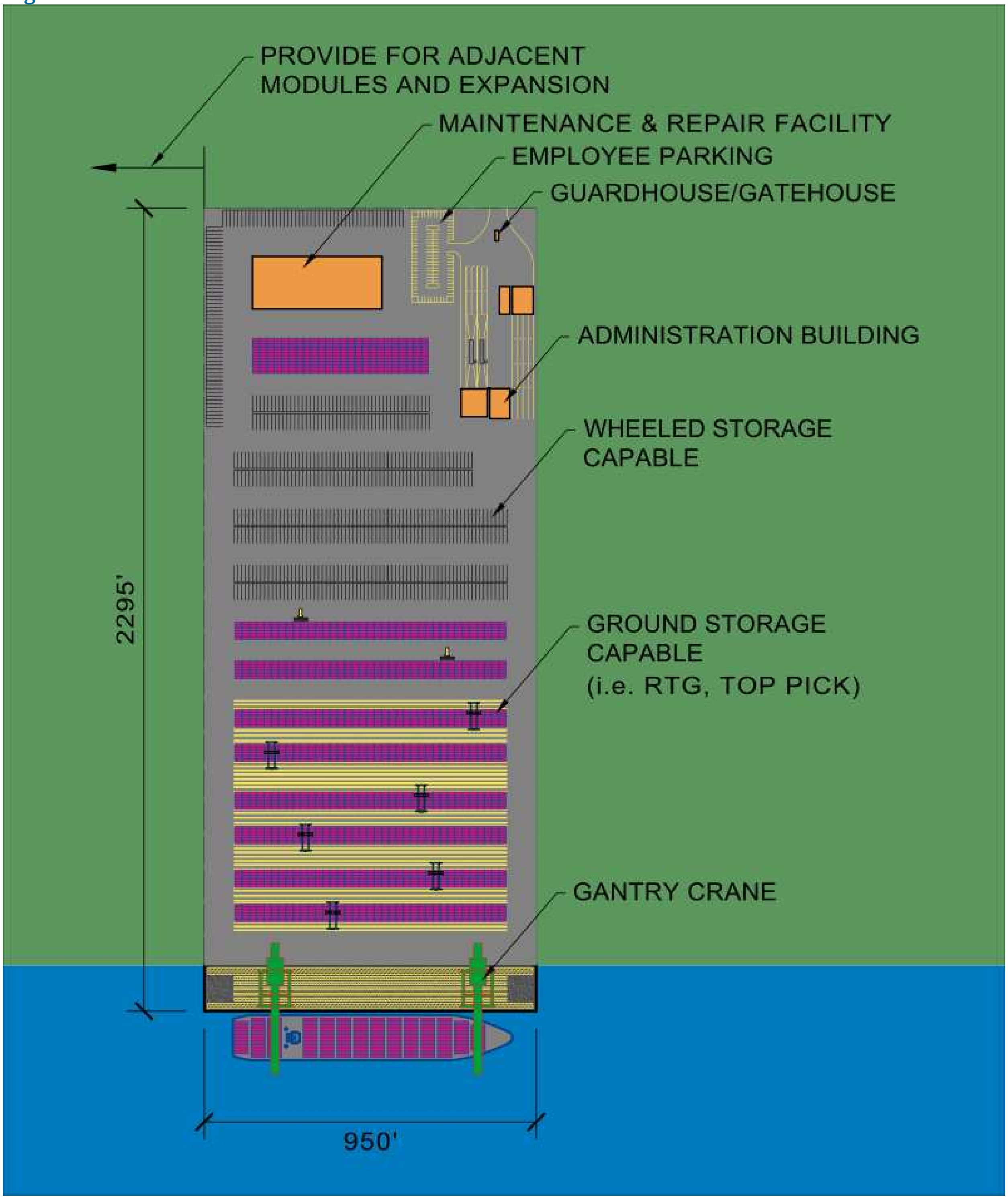
Each terminal module is described in detail.

Container Terminal

The container module (Figure 6) was sized to meet the demand of a typical West Gulf container terminal for a mid sized operation such as that found at the Port of New Orleans and the Port of Mobile. A 50-acre, one vessel berth module can be mirrored, for these purposes, to demonstrate a larger 100-acre facility. The characteristics of this module include:

- One 950-foot berth that can to accommodate vessels up to 850 feet LOA.
- Approximately 40 acres of storage area.
- A 7-lane split terminal gate for inbound and outbound trucks.
- A maintenance & repair facility (M & R).
- An Administration building and employee parking.
- An Annual throughput capacity of 225,000 TEUs

Figure 6: Container Terminal Module



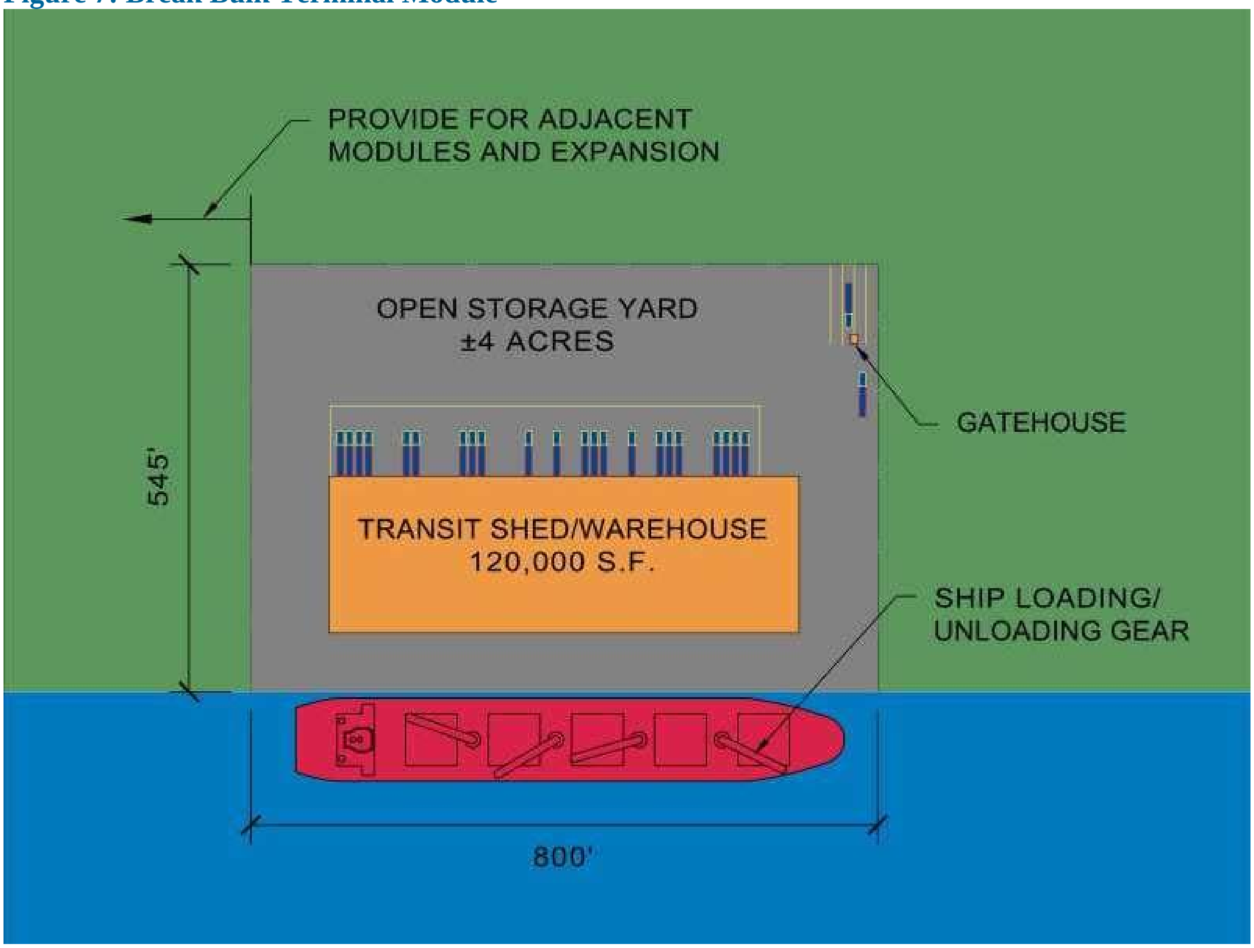
Break Bulk/General Cargo Module

The break bulk module (Figure 7) was developed to accommodate the typically sized covered or open storage area needed for break bulk operations found at regional Gulf Coast ports. The 10-acre module allows the flexibility to provide a large open or covered storage area. The primary characteristics of the break bulk module include:

- One 800-foot berth able to accommodate vessels up to 700 feet LOA.
- A 120,000 square foot transit shed/warehouse for storage of dry or refrigerated goods.
- Four acres of open storage area and a truck gate.
- An annual throughput capacity of 100,000 tons

This module's capacity varies depending on the type of commodity being handled (i.e. palletized vs. project cargo). Typically, a palletized operation handles a denser commodity that has less dwell time in the storage building than project cargo.

Figure 7: Break Bulk Terminal Module



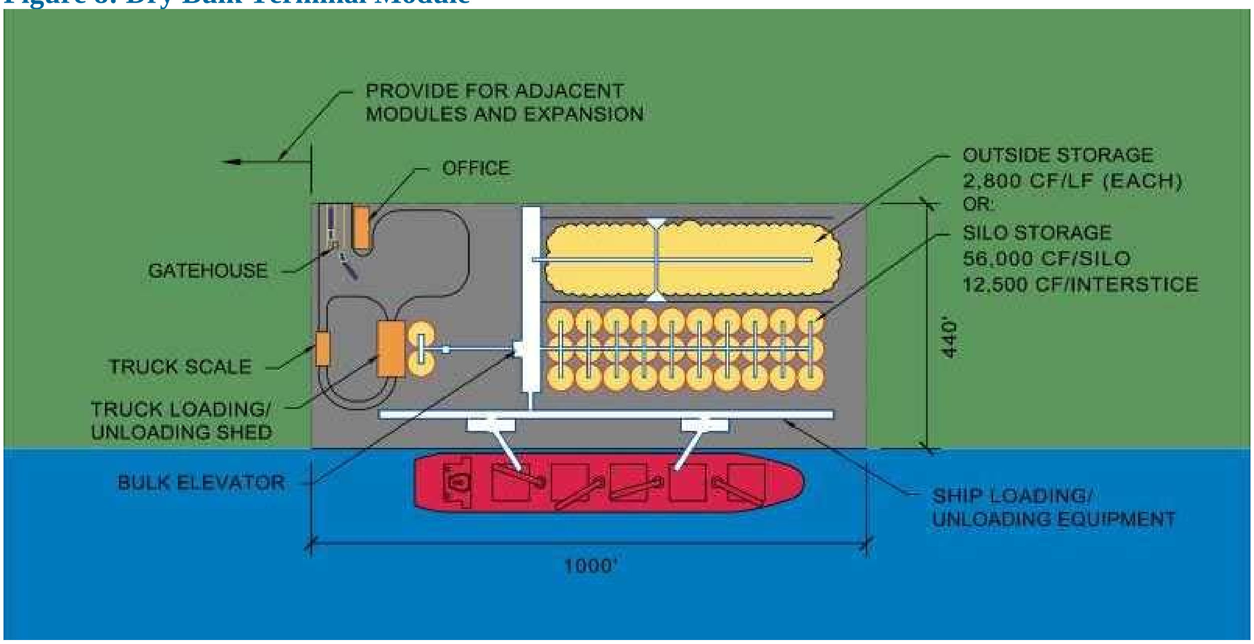
Dry Bulk Module

The dry bulk module (Figure 8) was developed to accommodate either open or silo storage.. This provides flexibility for dry bulk commodities such as grains that require covered storage. The total terminal footprint is 10 acres. The primary characteristics of the dry bulk module include:

- 1,000-foot berth able to accommodate vessels up to 900 feet LOA.
- Vessel loading/unloading equipment.
- Truck loading/unloading facility and a truck gate.
- Storage area for open or silo storage.
- Annual throughput capacity of 5 million tons

Depending on the storage mode and cargo type, this terminal module can provide varying capacity.

Figure 8: Dry Bulk Terminal Module



Ro/Ro Terminal Module

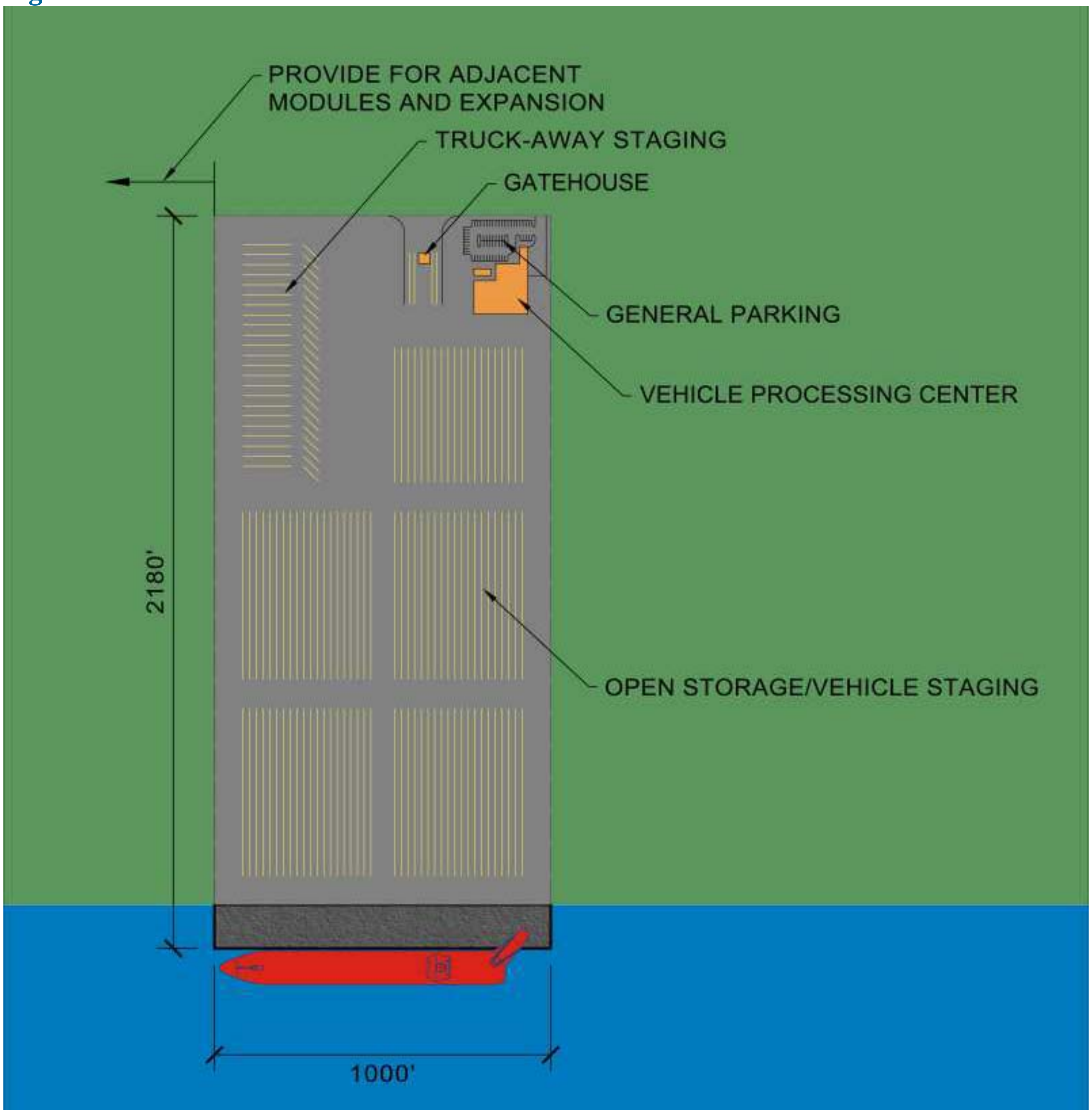
The ro/ro terminal module (Figure 9) is sized to accommodate one medium-sized vessel with automobile imports or exports, satisfy trucking requirements and provide access to the marine terminal for vessel loading or unloading. As value-added activities often take place at the auto terminal, a 40,000 square-foot vehicle processing center (VPC) is included to accommodate all value-added activities, such as de-waxing and cleaning, accessory additions, battery, fluids and lubricant inspections, administration, and employee requirements.

The total terminal footprint is 50 acres. The primary characteristics of the ro/ro module include:

- 1,000-foot berth able to accommodate vessels up to 900 feet LOA.
- 8 truck slots and control gate.
- 40,000 foot VPC.
- Annual throughput capacity of 100,000 units.

This module can be independent or combined with others to create a complex of ro/ro terminals - having common access and rail.

Figure 9: Ro/Ro Terminal Module

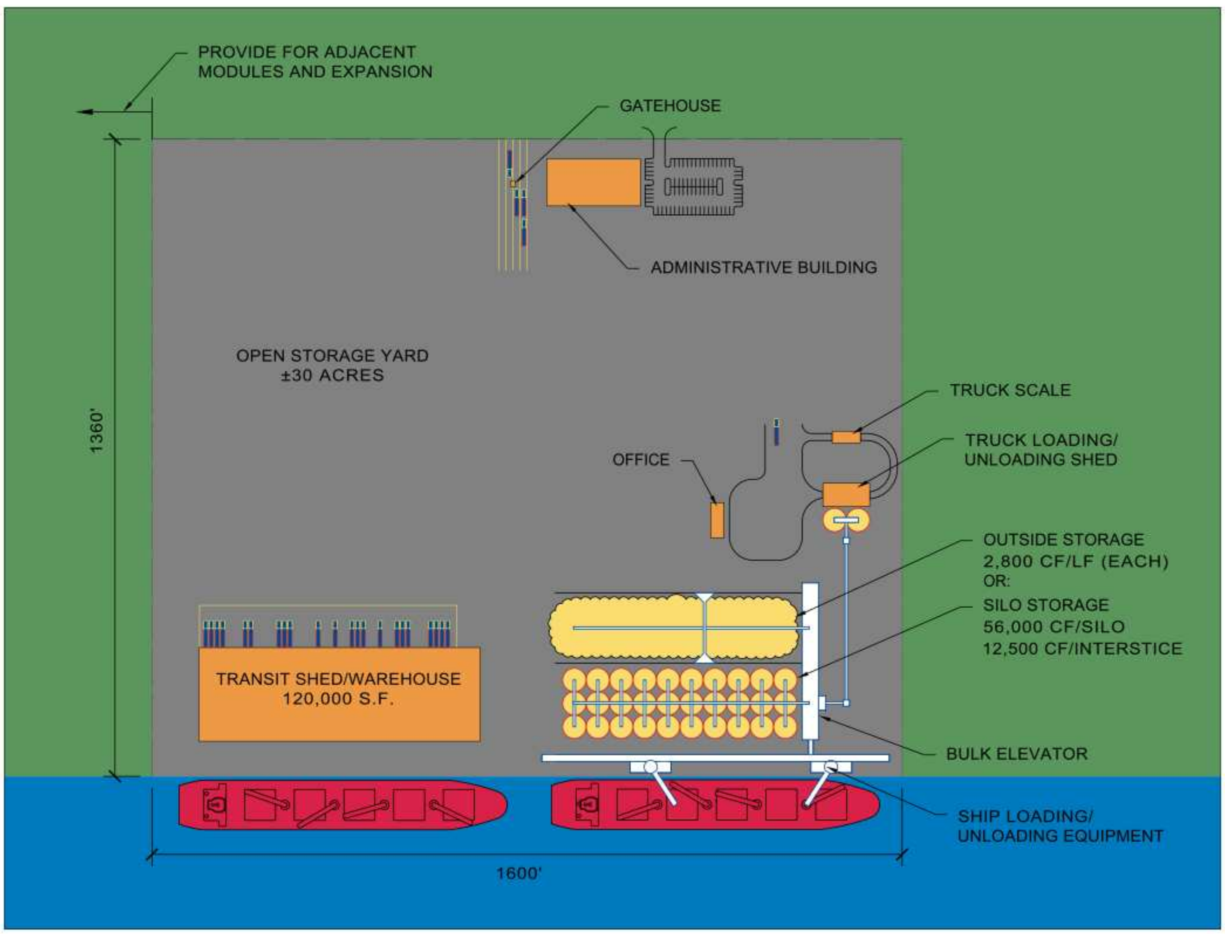


Omni Terminal Module

The Omni terminal module (Figure 10) is a terminal designed to accommodate a combination of cargoes, including containers. The module shown here has a berth length of 1,600 feet and totals 50 acres. It includes multiple components typical of omni cargo facilities such as the following:

- 2 berths totaling 1,600 feet in length.
- 30 acres of paved open storage.
- 120,000 square foot transit shed or warehouse.
- Terminal truck gate and administrative building.
- 10-acre dry bulk module.
- Annual throughput will vary depending on cargo type.

Figure 10: Omni Terminal Module



Intermodal Rail Terminal

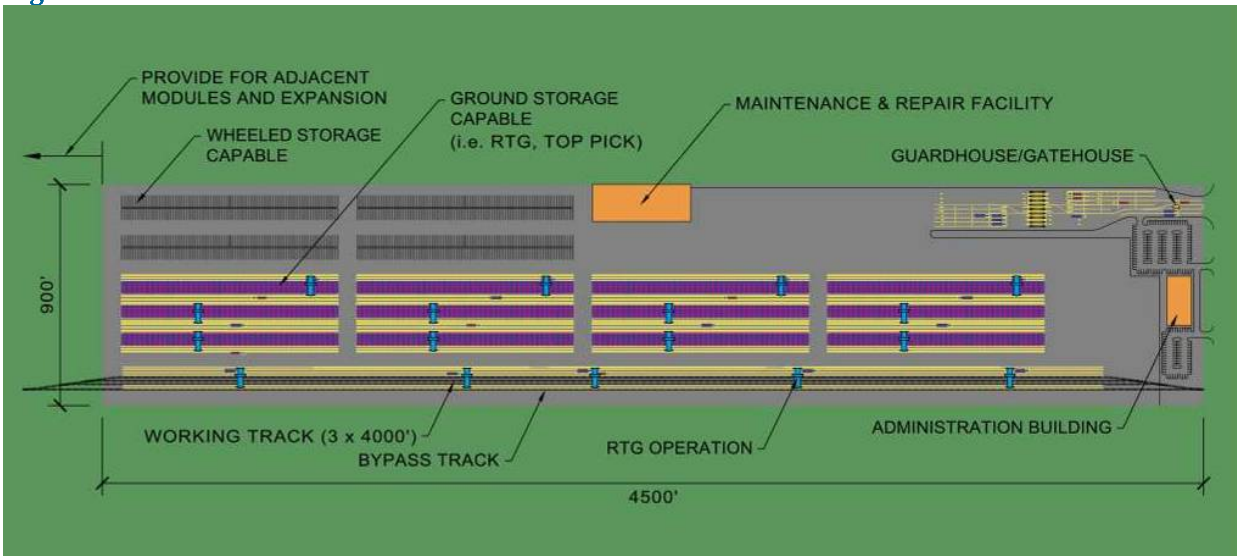
Intermodal rail transfer is an essential part of any marine cargo terminal. It provides lift capabilities for containerized cargo and accommodates other rail transfer. It is designed to provide maximum flexibility for diverse cargo handling.

The intermodal module (Figure 11) was designed to handle 12,000 feet of rail cars on three working tracks. The total module acreage is approximately 90 acres when developed as a stand-alone facility. The footprint can be less if this component is developed in conjunction with a marine terminal where other facilities can be shared. It also includes the following:

- Trackside container storage
- Terminal truck gate and documentation facilities
- Administration building
- Maintenance and repair building
- Rubber tire gantry cranes
- Annual throughput capacity of 450,000 TEU

Throughput capacity will vary based on operating mode.

Figure 11: Intermodal Terminal Module

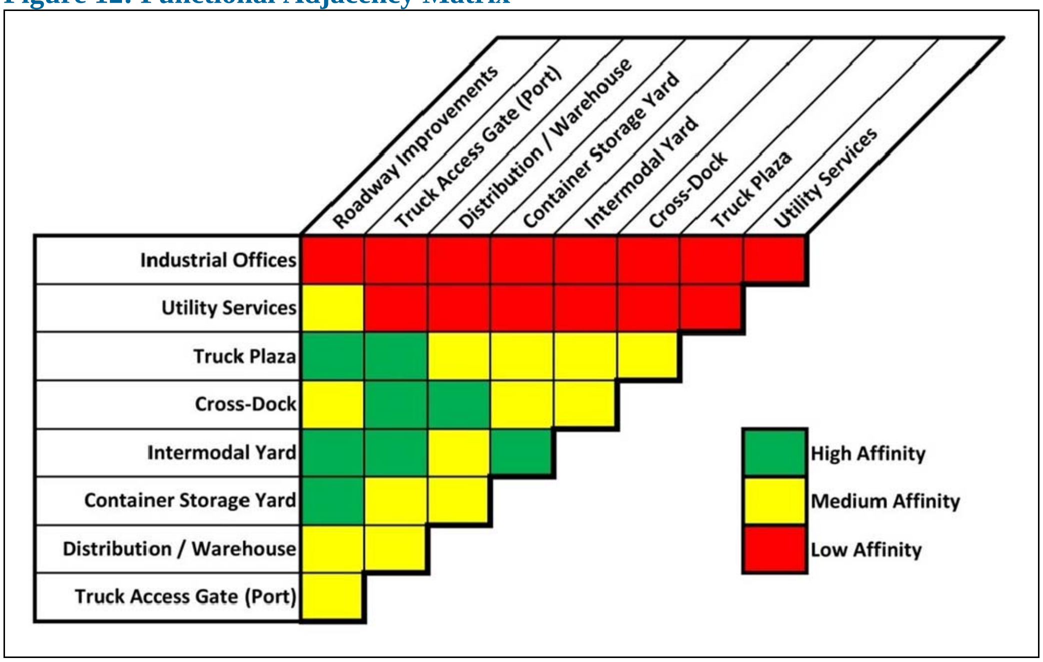


Terminal Transportation Operations

Terminal Transportation, Operations and Efficiencies

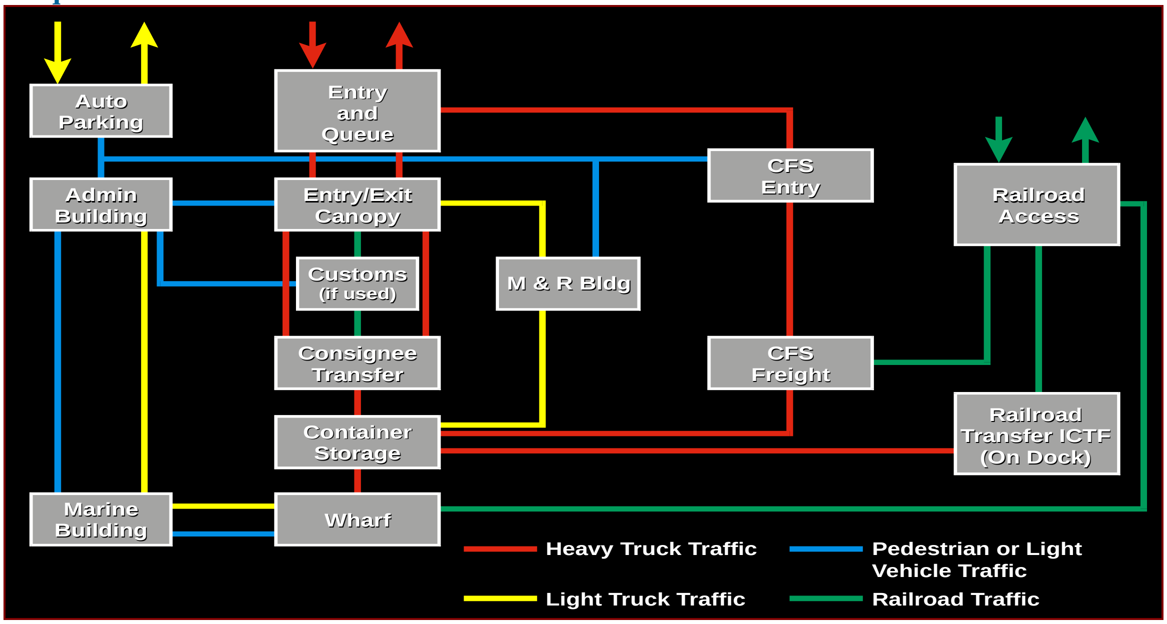
A Container and Intermodal Functional Adjacency Matrix approach for terminal planning was used to determine an idealized operational functional adjacency for the various required terminal activities. The matrix methodology included logistics warehousing and distribution functions fully integrated into the container and intermodal terminal planning, and operations to insure that maximum terminal throughput capability could be realized both for the container and intermodal terminal as well as the distribution and logistics park activities., The following **Functional Adjacency Matrix** (Figure 12) for an idealized container and intermodal terminal was prepared and the functional terminal relationships depicted form the recommended adjacency relationships for use in the Master Plan Alternatives developed in Task 7.

Figure 12: Functional Adjacency Matrix



The above matrix enabled an idealized Container & Intermodal Terminal Functional Relationship diagram to be developed, as shown in the relationship diagram below.

Figure 13: Idealized Container & Intermodal Terminal Functional Relationship Diagram for the Plaquemines Parish Master Plan



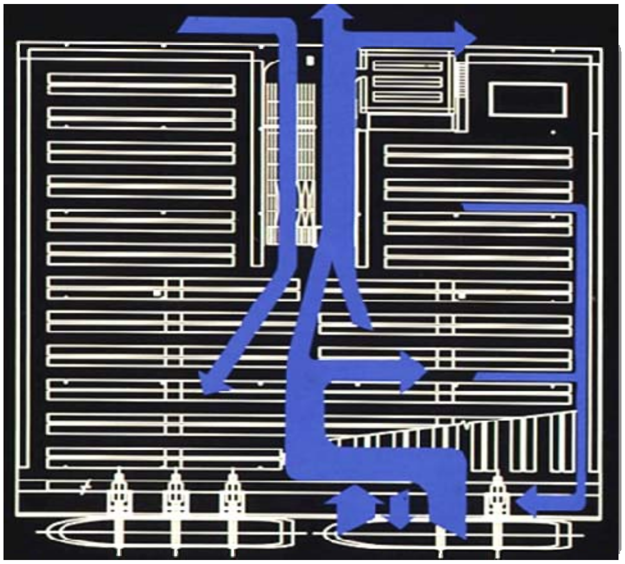
The above functional flow diagram attempts to minimize conflicts between various traffic flows within a state-of-the-art container and intermodal rail facility and focuses on safety and cargo throughput capacity and efficiency. The Container Freight Station (CFS) functions represent the adjacent distribution and logistics center activities.

Following the creation of an Idealized Container & Intermodal Terminal Functional Relationship diagram (Figure 13), conceptual terminal quantitative traffic flow diagrams were conceptually considered to check the practicality of future terminal traffic patterns against current Plaquemines Parish terminal land constraints and thus became the basis for the Plaquemines Parish Master Plan Alternative recommendations included in Task 7.

Maritime and Intermodal Terminal Traffic Circulation Analysis Approaches

Marine and Intermodal terminal planning must be made with a full understanding of the pragmatics of terminal operating equipment and technology and the realization that changes occur constantly in the terminal operations and considerable change is likely to occur in the ensuing years.

Figure 14: Hypothetical Container Terminal Traffic Flow



Trident used an approach to terminal planning that took into account a long term perspective and modeled the terminal in question 20 years out based on future cargo estimates and available market data (see earlier sections). Trident then worked to determine short term requirements. Accommodation for future growth is a critical component of any port master plan.

Schematic traffic flow diagrams (Figure 14) for the idealized terminal were used to place terminal functions for maximum optimization. These diagrams considered minimum conflict between various terminal functions and traffic patterns. Hence, the diagram below represents a container terminal traffic flow regime.

Hence, the above diagram represents a conceptual container terminal traffic flow regime.

When an idealized terminal traffic flow diagram has been established, quantitative terminal traffic flow patterns are estimated and circulation parameters are established to ensure that all areas of the terminal can accommodate the anticipated in- terminal "hustler", UTR (Utility Truck), or "bomb cart" traffic and produce the maximum practical terminal capacity.

The wharf quay apron and entry/exit gate areas are two of the most critical areas in a container terminal layout due to the high volume of traffic and the need for precise placement of containers and movement of those containers to and from vessels.

Waterside Access Requirements

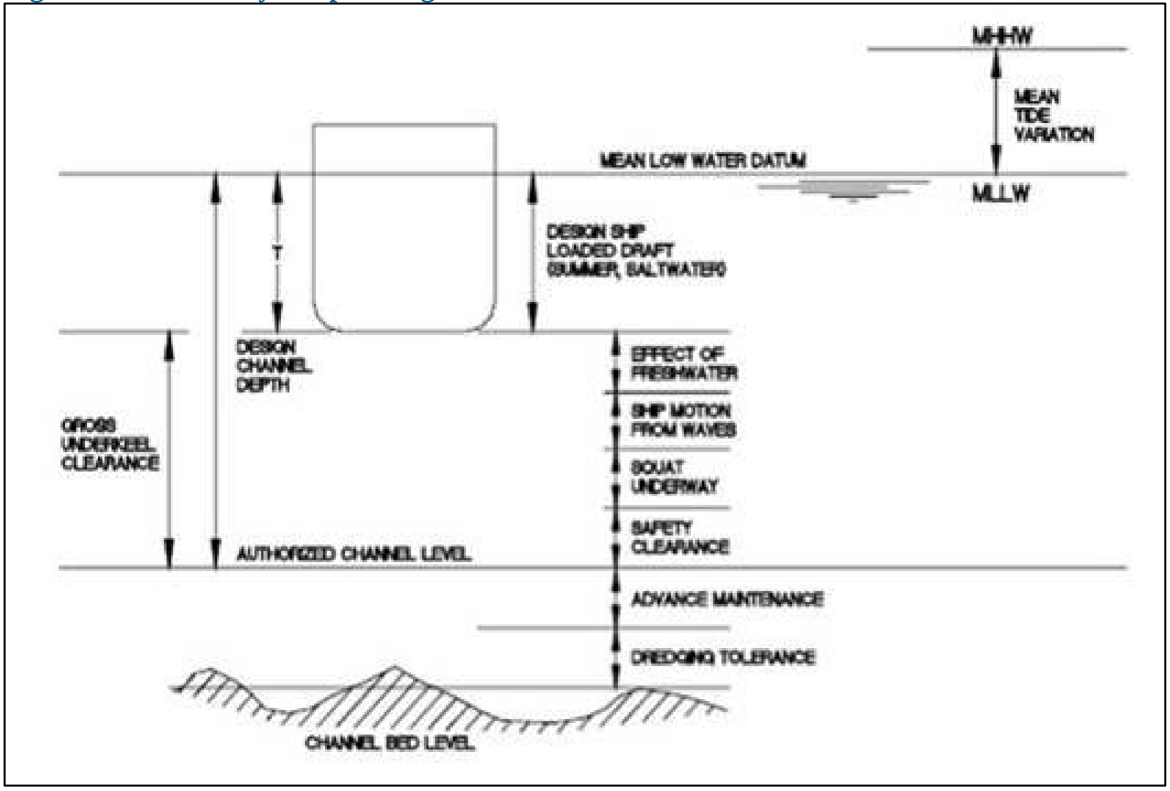
The Lower Mississippi River serving the sites identified in this study has 45 feet of draft and a channel width of 750 feet. The river is part of the Mississippi River Valley Corp District, maintained by the United States Army Corps of Engineers (CORPS).

The CORPS publish safe navigation standards for all commercially navigated waterways in the U.S. Based on CORPS standards for safe navigation; a recommended gross under keel clearance (Figure 15) is determined by adding the following factors:

- Effect of freshwater = 0'
- Ship motion from waves = 0.5'
- Squat underway = 0.5'
- Safety clearance = 2'
- Advance maintenance = 2'
- Dredging tolerance = 1'
- Gross under keel clearance = 6'

Based on this criterion, the maximum vessel draft used for this project is 39 feet.

Figure 15: U.S. Army Corp of Engineers Under keel Clearance Criteria



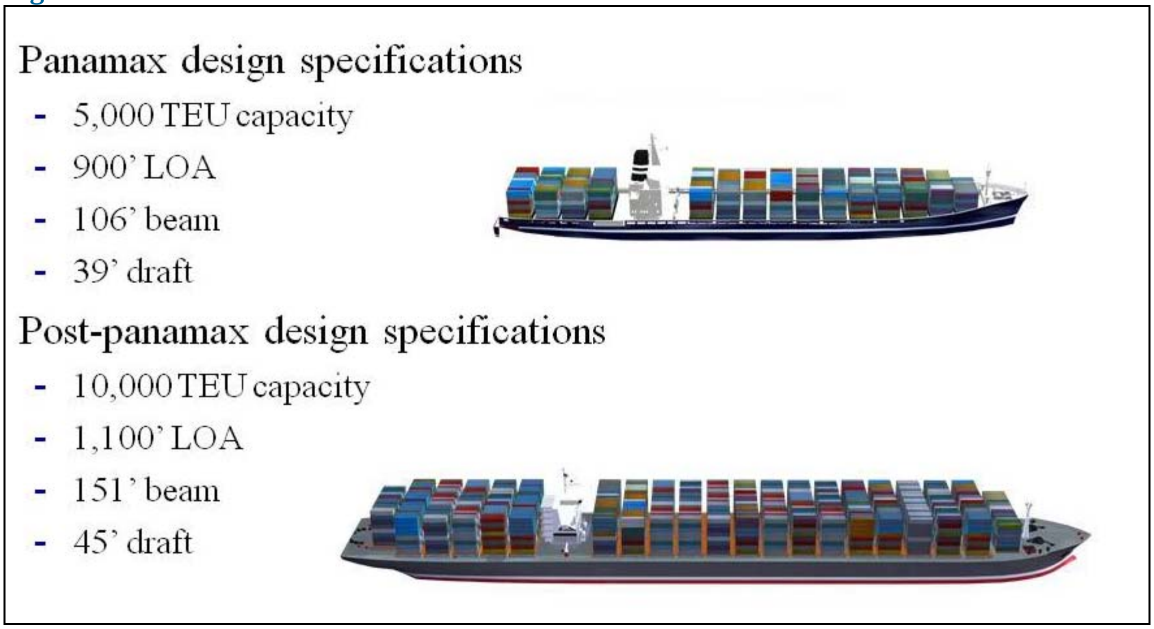
Channel width requirements for commercially navigable waterways are also published by the CORPS. For deep draft channels, such as the Mississippi River in Plaquemines Parish, required channel widths are based on the following factors:

- Traffic patterns (one-way versus two-way traffic)
- Vessel beam (width) and length
- Channel cross-section
- Speed and direction of current
- Quality and accuracy of navigational aids
- Variability of channel and currents

Design channel width as defined by the U.S. Army Corp of Engineers is the width measured at the bottom of the side slopes on each side of the channel at the design depth. For two-way channels an additional maneuvering lane and a ship-clearance lane dividing the two lanes of traffic are added.

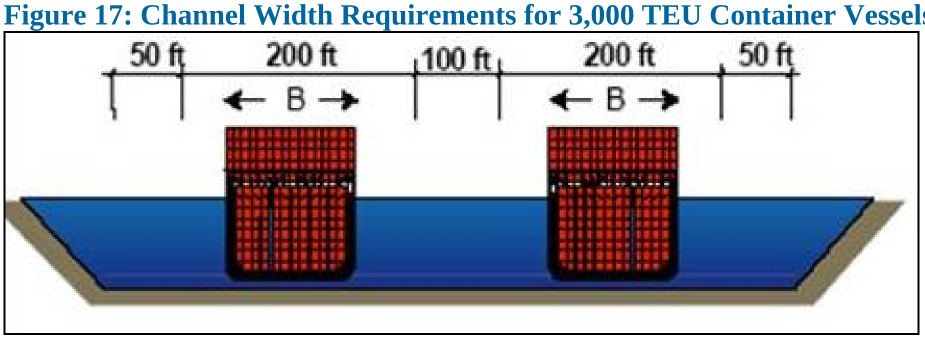
The beam used for this evaluation is that of container vessels of approximately 900 feet in length with a capacity of approximately 5,000 TEU. The average beam for container vessels of this size is 106 feet (see Figure 16).

Figure 16: Panamax and Post-Panamax Container Vessel Characteristics



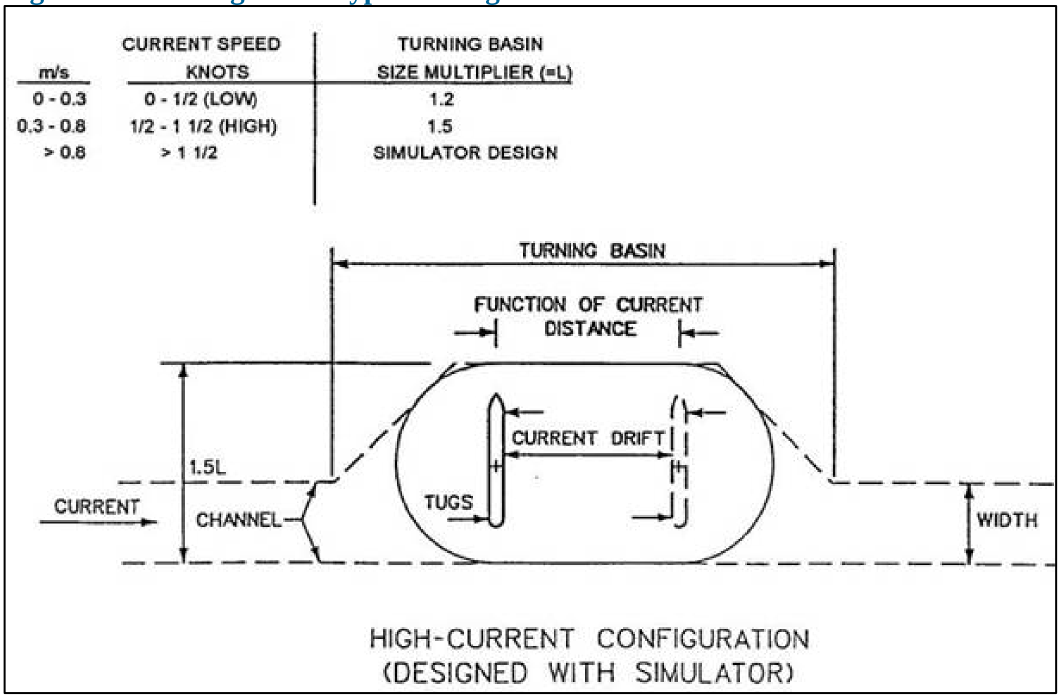
Therefore, the existing channel width of 750 feet associated with this section of the Mississippi River is sufficient for two container vessels of approximately 5,000 TEU to transit the channel, as illustrated in the Figure 17 below.

Figure 17: Channel Width Requirements for 3,000 TEU Container Vessels



Turning basins are typically required to enable vessels to reverse direction without having to navigate backwards for long distances. Turning basins provide the extra width required to safely turn vessels and are usually located upstream of port berths or interior access channels. Due to sufficient river width, there are no additional requirements for existing marine terminals along the Mississippi River in Plaquemines Parish.

Figure 18: Turning Basin Typical Design



The minimum turning basin size should allow a turning circle with a diameter of 1.5*L, where L is the design vessel length, as illustrated in the Figure 18 above. Turning difficulty increases when currents are present. The design vessel length being considered here is 900 feet, resulting in a turning circle diameter requirement of 1,350 feet. With an average current speed greater than 1.5 knots, the Army Corp of Engineers recommends a simulation study be performed to determine if there are turning basin requirements for any of the port development concepts being proposed in this analysis.

Conclusion

This task demonstrated the idealized Port concept layouts for potential Ports in Plaquemines Parish based on market assessments, operational considerations, land and water access requirements, typical sized vessels and their associated requirements to service these types of Port concepts. As presented they forecast potential idealized traffic volumes based on the sizing of the concepts. These idealized concepts will now be applied to remaining tasks in order to determine suitability of selected sites to accommodate these concepts and how transportation access will work in realizing these potentials. The traffic volumes (all modes) are idealized so that they represent an artificial higher volume than expected however can serve as a baseline statistic to assess transportation and trafficking impacts which are evaluated in Task 5.

Task 4 Figures

Task 5 – Intermodal Truck and Rail Access Analysis

Table of Contents

Task 5 – Intermodal Truck and Rail Access Analysis

Introduction

This Task assesses the transportation networks for the selected sites of Amax, Citrus II, and Venice from the perspective of railroad, roadway and barge traffic. This is accomplished by taking base assumptions of shipping volumes into each of the sites and estimating annualized and hourly volumes by each of the three (3) modes for distribution and then assessing the impacts these volumes will have on the existing and future planned transportation networks.

Operational Parameters

The total idealized throughput capacity analysis was developed in consideration of potential market share forecast and identified in Task 4 for each type of operation and site which then serve as a basis for the transportation analysis in Task 5. It is important to note that these are estimates of terminal throughput based on the selected Port sites, market potential, and probable modal split of inbound and outbound trade and as such are subject to refinement which occurs later in Task 7 where the capacity models are subject to more exact information on terminal sizing, operation, land potentialities and restrictions. Therefore the estimates utilized in Task 5 are derived estimates based solely on the Task 4 planning modules. The derived analysis estimates throughput for Amax to be 200,000 TEUs and for Citrus II to be 700,000 TEUs.

Based on the annual estimated throughput for each determined Port site, potential ship size calling on that Port site, type of commodity or number of TEUs/ship estimated Trident was able to determine annual flow, volumes likely per ship, estimated modal splits and by calculating Port operations, determine likely hourly volumes. The market, transportation network and social demographic analysis suggest the likely modal split for all import and exporting trade. This resultant analysis is shown in Tables 1-3.

Amax

Container traffic is estimated to be a maximum of 200,000 Twenty Foot Equivalents (TEUs) per year at this site. In the initial year of operation; the estimated traffic would be between 100,000 and 200,000 TEUs. The modal splits and the units transported at maximum estimates are as follows:

Table 1: Amax Omni Container Volumes

Amax Site		**200,000 TEUs Annually**	**TEUs per unit***	**Annual Units**	**Units**
	%	#			
Rail	50%	100,000	1.6	62,500	Articulated Railcar
Truck	25%	50,000	2.7	18,519	53' Truckload
Barge	25%	50,000	50	1,000	Barges

The modal split was determined partially on the type of trade that would utilize this site and in consideration for the origin and destination potentials of that trade. The fact that Norfolk Southern is the servicing railroad, the TEUs are expected to be attracted to their system. Truck volumes are expected to be confined by 8 hour transport range and barge attraction to this site is expected to be a competitive choice. The modal split therefore is an estimate based on discussions and interests of possible carriers, likely trade commodities, transportation network connections and population distribution. There has been an expression of some interest in Amax for barge distribution and as such the barge percentage reflects that interest.

Citrus Container traffic is forecast to be a maximum of 700,000 TEUs per year. The modal splits and units transport at that forecast are as follows:

Table 2: Citrus Container Traffic

Citrus Site		**700,000 TEUs Annually**	**TEUs per unit***	**Annual Units**	**Units**
	%	#			
Rail	75%	525,000	1.6	328,125	Articulated Railcar
Truck	20%	140,000	2.7	51,852	53' Truckload
Barge	5%	35,000	50	700	Barges

* TEUs per unit are based on industry standards. Actual TEUs per unit may vary but the 1.6 is a generally accepted conservative average used to determine the number of units per rail car.

As in the Amax estimates the modal split is calculated based on the likely attraction of types of trade and transportation network locations. Citrus II is located well below Amax and is designed to attract container vessels and turn them back to sea on a shorter timeframe then Ports further up river. The attention of this site is therefore focused on trade destined for travel beyond 500 miles and is therefore oriented to rail transport. Due to greater travel time for trucks from this location the percentage of truck volumes is slightly lower than that expected for Amax. Trident believes over time that barge usage will increase as the Port becomes more fully operational however the early modal split is conservatively estimated at 5% especially since the interest shown for this site doesn't yet reflect using a higher percent.

Peak Hour Truckloads

For the purpose of determining peak truck traffic the following chart shows the lifts per hour that translates into hourly truck trips for each site. The number of lifts predetermines the volumes that could possibly enter the transportation network within a given time period.

Table 3: Peak Hour Truckloads

	TEUs per ship	Max Loading	Actual Load	Lifts Per Hour	Hours to Unload	Containers per truckload	Truckloads Per Hour
Amax Site	4,000	75%	3,000	30	100	2	15
Citrus	6,000	75%	4,500	60	75	2	30

Table 3 contains estimates of potential maximum sized vessels which would frequent both the Amax and Citrus II sites. Amax is a more shallow location and further up river and would probably see a 4,000 TEU ship as its maximum size while Citrus II has a deeper approach and berthing. Given that Citrus II is located near mile marker 55 on the river it is more likely to attract larger vessels given the requirements of the ocean carriers for operations, lower costs and faster turnaround times. Citrus II is estimated to have up to 6,000 TEU vessels calling at its Port location. Trident through its Port operation and shipping knowledge has determined that these vessels for Amax and Citrus II would probably only be at a 75% load capacity upon each visit. The rest of the table is based on operation parameters and probable lifts per hour.

Transportation Corridor Improvement Recommendations and Capacity and Infrastructure Needs Assessment

Due to the overlapping nature of the subtasks, comments and analysis of rail, roadway and barge corridor improvements and assessment for the port development are included for each mode.

Rail

Based on information from Norfolk Southern (NS) and NOGC, their rail lines in the area are operating at below 10% capacity. There is sufficient capacity on both sides of the river to move the projected traffic to the various interchange yards and onto the systems of the six Class I freight railroads in New Orleans. However, increased traffic on both sides of the river may lead to other issues for the railroads. The existing rail infrastructure – track, ballast, ties and other components may require improvements in order to accommodate increased volumes from the port. Moreover, the many crossings on both sides of the river will need to be evaluated and possibly improved as part of port development. Since the railroads on both the East and West shores are operating at such low levels of current volume, less than 10% capacity, increased train movement with longer train sets will have the appearance of greatly increased activity. In reality both the East and West rail corridors with the development of Ports at Amax and Citrus II will still be operating within the rail capacity limits of both the NOGC and the Southern line. The railroad companies are within their operation rights and abilities to increase rail traffic to capacity without seeking additional permission. However both the Rio Grande and NS have stated that given increased traffic on those lines ROW improvements will be made to promote safe and efficient rail movement. More details on the crossings are addressed below.

There are rail improvements pending on the Huey P. Long Bridge that will make interchanges and freight movement within New Orleans more efficient.

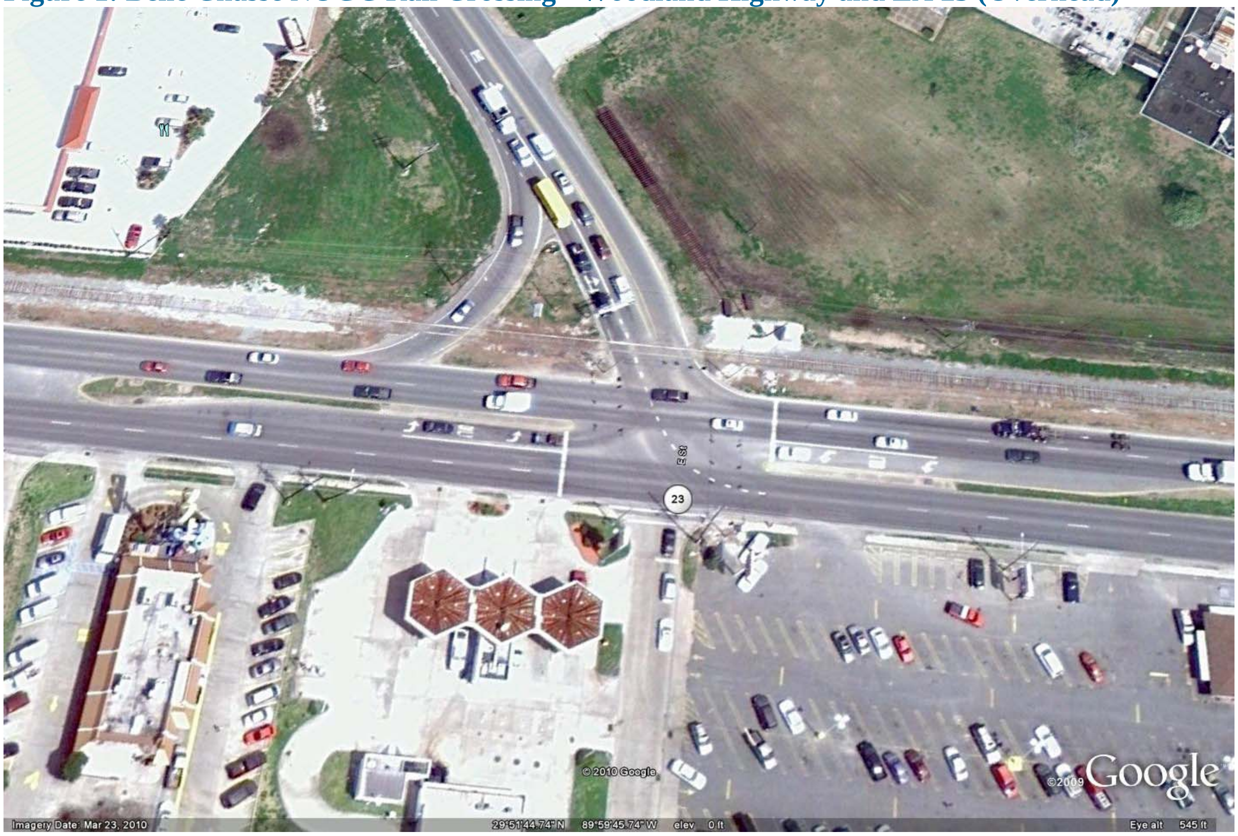
> **West Side** –The line on the west side of the river extending south to Myrtle Grove is owned and operated by New Orleans & Gulf Coast Railway Company (NOGC), a subsidiary of Rio Grande Pacific Company. The NOGC System Map is shown as part of Figures 10 & 12. NOGC connects directly with UP and BNSF and is capable of interchanging traffic with the other four Class I railroads (NS, CSX, KCS, CN) through the New Orleans Public Beltline (NOPB) in New Orleans. An NOPB System Map that shows the Class 1 connections from New Orleans throughout North America is shown as Figure 11. The proposed relocation of the NOGC is shown in Figure 10.
>
> The NOGC line is within 7 miles of the Citrus site. NOGC operates through Belle Chase and that line includes several major urban crossings that are of concern. There are plans to re-route the NOGC line to bypass Belle Chase which would eliminate approximately 200+ grade crossings.
>
> **East Side** – The line on the east side of the river is a combination of NS and the Southern Line railroad. These railroads serve the Amax, NS and Bender Shipyards' sites. This line terminates in

the NS Oliver Yard where interchanges can occur. Interchanges to the other Class 1 railroads in New Orleans are possible through various connections, including the NOPB.

Rail Crossings – West Side

There are numerous rail crossing challenges on the NOGC lines where they would access the Citrus site. An example of a busy crossing in Belle Chasse is shown below in Figure 1:

Figure 1: Belle Chasse NOGC Rail Crossing - Woodland Highway and LA 23 (Overhead)



The same intersection below is from street view in Figure 2.

Figure 2: Belle Chasse NOGC Rail Crossing - Woodland Highway and LA 23 (Street View)

Rio Grande Pacific Corporation, the owner of the NOGC, has proposed to relocate the NOGC line away from Belle Chasse by circumventing the Naval Air Station via the Harvey Channel and effectively eliminating over 200 grade crossings.

The New Orleans Public Belt (NOPB) has a proposal to expand the NOPB west of the NOGC to service Lower Plaquemines Parish by aligning the Right-of-Way (ROW) near the back levees.

Either proposal, if realized, could provide service to the proposed West Side Port at Citrus II. However, both are conceptual at this time, with no approvals and no funding identified. . The Rio Grande is presently working with the State and the Parish in an effort to secure funding to relocate the Belle Chasse portion of the NOGC

Rail Crossings – East Side

There are a similar number of crossings on the east side of the river, but fewer urban crossings. However, challenges exist here as well. For example, the LA 46/ LA 47 crossing in Chalmette as shown in Figures 3 and 4:

Figure 3: NS Rail Line – LA 46/ LA 47 – Chalmette – Aerial View

Figure 4: NS Rail Line – LA 46/ LA 47 – Chalmette – Street View; Rail Crossings – General

Length and frequency of trains, speed and nature of the crossings (private, rural or urban), design and existing conditions will all be factors in determining required improvements. A detailed analysis is beyond the scope of this project. Such a detailed crossing analysis would be required with development on the Citrus or Amax sites. While increased train traffic does affect roadway traffic and safety, the railroads are within their operating rights to increase their train volumes and train set lengths within the capacity limits of their current lines

Any sites selected for port development would be unique with their own crossing and access issues. The proposed site(s) would require full evaluation for US Department of Homeland Security regulations. Crossings utilized with these sites will meet all requirements for safety and security.

Highway

The two highways that serve the proposed development sites, LA 23 and LA 39, have sufficient capacity to accommodate the projected increase in truck traffic (estimated to be 51,852 truckloads per year on LA 23 and 18,519 truckloads per year on LA 39). Both routes would have adequate capacity based on the projected traffic, with the exception of the northern part of LA 23 beyond mile point 71 where an inadequate Level of Service, or LOS, currently exists.

LOS is a traffic engineering term that characterizes traffic flow graded on a scale from A to E, with "A" being the highest level of service and "F" being the lowest. For example, At LOS A, traffic moves unimpeded at desired speed with ample passing opportunities. At LOS F, traffic moves slowly, with volume exceeding the ability of the road to handle it at the desired speed and there are inadequate passing opportunities. LOS D is considered to be the lowest acceptable.

Roads are designed to function at the highest level possible with LOS D a worst-case scenario!

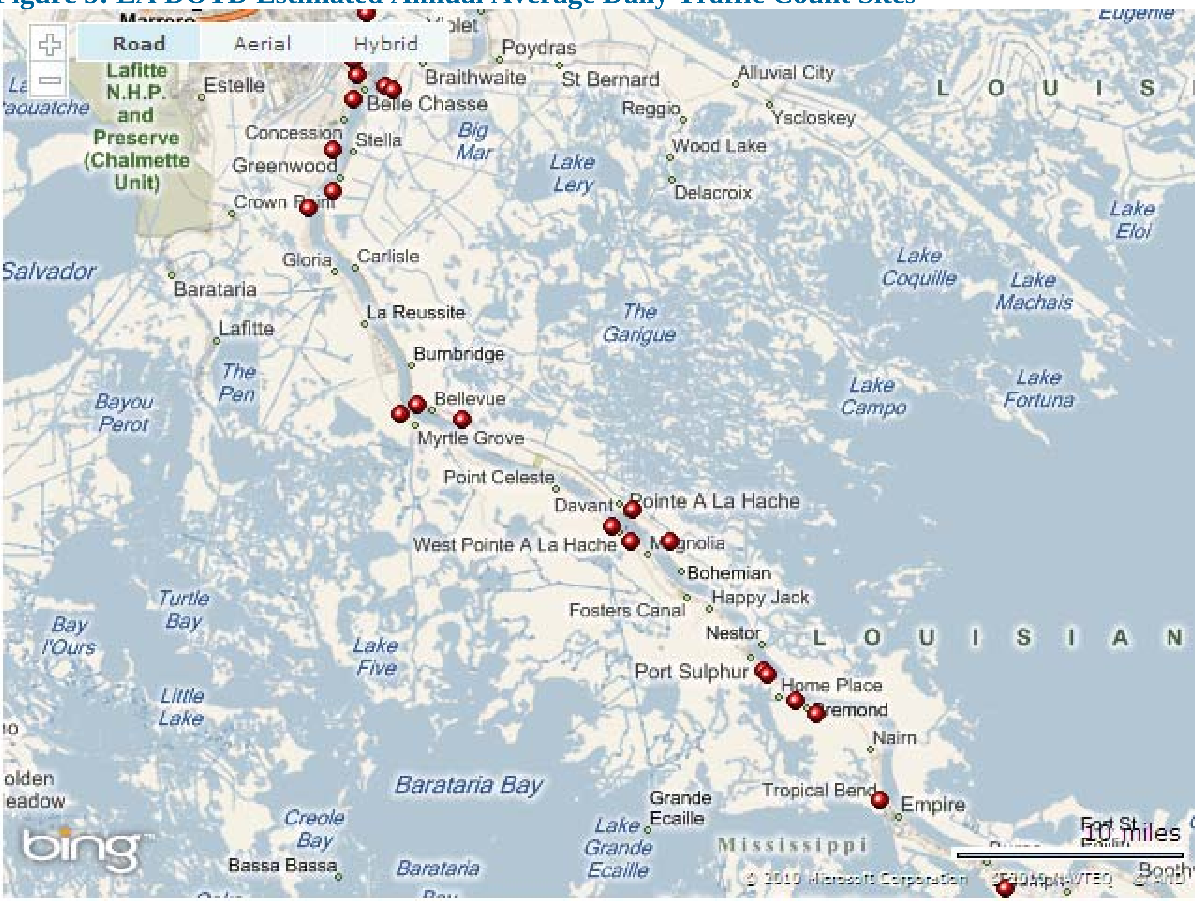
Average Daily Traffic (ADT) on the two Louisiana highways (23 and 39) have been compiled at various locations below from 1988 to 2009 and are shown in Table 4. Also shown is the number of lanes at specific mile points and the resulting Level of Service, LOS. Note: The ADT from one specific period compared to another may vary as a result of extenuating circumstances, such as pre- and post-Katrina.

Table 4: Average Daily Traffic on LA 23 and LA 39

ROUTE	MILE POINT	Average ADT	Lanes	Level of Service
LA0023	0.62	5094	2	B
LA0023	1.42	5797	2	B
LA0023	13.73	5315	2	B
LA0023	21.00	6311	2	B
LA0023	26.63	7094	2	B
LA0023	27.71	8028	2	B
LA0023	29.45	4712	2	B
LA0023	29.68	9073	4	A
LA0023	38.11	7353	4	A
LA0023	39.15	7510	4	A
LA0023	49.92	7967	4	A
LA0023	60.37	13076	4	A
LA0023	63.13	15370	4	B
LA0023	65.55	25074	4	D

LA0023	67.16	28091	4	D
LA0023	71.55	34757	4	E
LA0039	2.89	349	2	A
LA0039	5.11	495	2	A
LA0039	13.74	652	2	A
LA0039	15.85	1292	2	A
LA0039	26.30	2066	2	A
LA0039	31.84	2242	2	A

Figure 5: LA DOTD Estimated Annual Average Daily Traffic Count Sites[1]



Levels of Service and historical traffic data on LA 23 and LA 39 are included in the Appendix for Task 5. The LOS on LA 39 will not be negatively impacted by increased traffic from the Amax site to the Interstate system in New Orleans. Traffic count locations for LA 23 are shown in Figure 5.

LA 23

Additional truck traffic at peak periods on LA 23 generated by proposed development will generate up to 60 trips per hour. While additional traffic on already congested roads is not desirable, an additional 60 trips will represent a 1% increase in peak traffic volume.

For illustration purposes, an aerial photograph of LA 23 at mile point 71.55 is shown below in Figure 6:

Figure 6: LA 23 (Belle Chasse Highway) – Near Mile point 71.55 – (Intersection with Gretna Blvd.) Jefferson Parish

However, highway improvements are necessary and already planned for the LA 23 corridor. Three upgrades that will improve access to the Interstate system and improve levels of service within the corridor are in different stages of development. Brief descriptions of the three are listed below. These projects will assist in the development of the Port but are not essential to the Port's development. The truck volumes generated are relatively small and will enter the roadway network at varying times of the day and night and do not represent a constant flow of traffic and possibly not even one that affects Peak Hour movements. Our analysis reviewed at Peak Hour because that represents the likely worse case for analysis. If the projects below are built all trucks from Citrus II will be kept from entering Belle Chasse and will be kept from affecting traffic. If the projects are not built the truck volumes are slight and will probably have little influence on the LOS. If the Port project advances a more detailed traffic analysis should be conducted which is far beyond the scope of this study to presently assess.

1. Peters Road Extension[2]

Highway improvements are planned and necessary in the LA 23 corridor. There are three that will improve access to the Interstate system and improve levels of service within the corridor. As noted, the current estimate on increased highway traffic on LA 23 from the proposed port project is minimal. However, any contribution to a congested situation may be an impediment to the port's future. Therefore, the three projects in the corridor, if implemented, can mitigate most concerns about increased highway traffic. The three projects are different and in different stages of development. Brief descriptions are included below. The status of these projects will be a necessary part of future work on the port development project.

However, the completion of the Peters Road Extension project should be sufficient, from a highway service perspective, to allow for the full development of the port.

This project extends Peters Road to LA 23 south of NAS JRB, as indicated below in Figure 7.

In 2003, The New Orleans Regional Planning Commission (NORPC) and the Louisiana Department of Transportation and Development (LA DOTD) through the Crescent City Connection Division sponsored a Phase I Environmental Assessment (EA) to examine alternatives for extending Peters Road from Engineers Road (LA 3017) to Belle Chase Highway (LA 23) in Jefferson and Plaquemines Parishes. It included a crossing of the Gulf Intracoastal Waterway (GIWW). The study was completed in late 2004 and the project received a Finding of No Significant Impact (FONSI) from the lead federal agency, the Federal Highway Administration (FHWA) on November 9, 2004.

Since that time, the project has been included in the NORPC's Metropolitan Transportation Plan for the New Orleans Urbanized Area. Funding has been identified for portions of the project (New Orleans Urbanized Area Transportation Improvement Program (TIP) Fiscal Years 2009-2012, Page 23, FY 10 Peters Road Extension Phase I.) The project has progressed into final design under the sponsorship of the Plaquemines Parish Council.

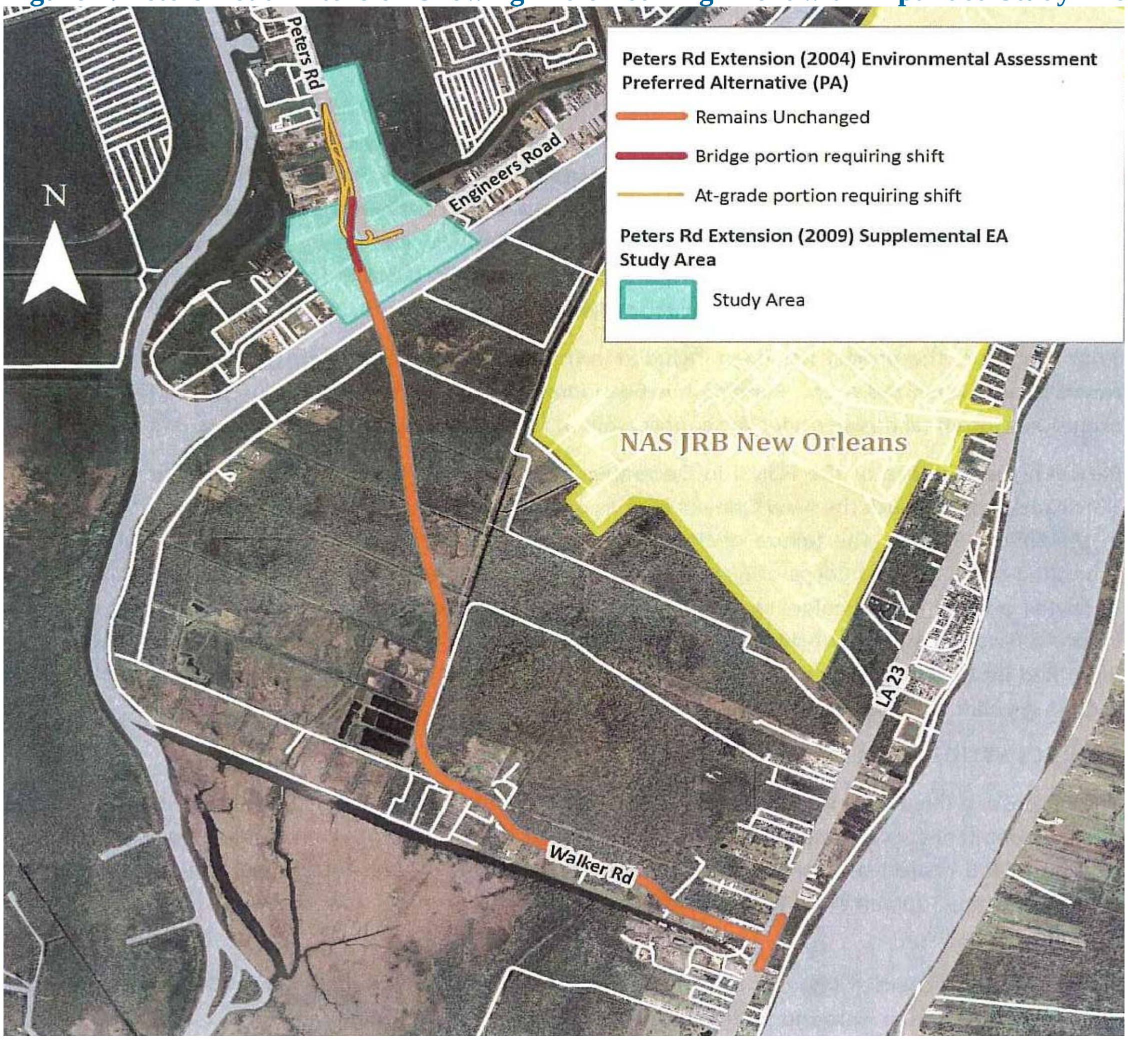
Between the issuance of the FONSI in December 2004 and the start of the final design of the work in 2007, Hurricane Katrina struck the New Orleans area as one of the most costly and devastating natural disasters in the United States. The failure of the flood protection system, including levees and floodwalls, has prompted the U.S. Army Corps of Engineers to reevaluate some of the floodwall designs. One planned floodwall, in particular, located adjacent to Peters Road, was redesigned from an I- wall to an inverted T-wall, requiring substantially more clear zone and necessitating the northern terminus of the Preferred Alternative (PA) identified by the Peters Road Extension EA to shift beyond that clear zone. The current project concept is shown as Figure 1, including the expanded study area.

The effect of the peters Road Extension will be to intercept traffic on LA 23 that is headed to Route 90 before it gets to the naval air station and Belle Chasse, thus reducing traffic on LA 23, improving its level of service.

When constructed, this project and the minimal increase in truck trips projected, will clearly allow traffic from the proposed port development sites on the western side of the river (Citrus) easier access to the interstate system, ultimately on to Interstate 10 in both directions.

As the Comprehensive Port Development Master Plan progresses, additional detailed and comprehensive traffic studies will be required for the development of Citrus II. Given that the final construction of the Citrus II Port could be 3-10 out, there should be sufficient time for the state and the LA DOTD to advance the Peters Road Extension which would accommodate all expected new traffic.

Figure 7: Peters Road Extension Showing Preferred Alignment with Expanded Study Area[3]



2. **Planned Improvement for Belle Chasse Highway (LA 23) between Terry Parkway and Engineers Road[4]**

This project will provide increased capacity within a 1.58-mile section of Belle Chasse Highway (LA 23). This section of state highway connects Terry Parkway and Engineers Road. This project will involve a number of improvements, as shown on Figure 7. These are:

- From approximately 150 feet north of Terry Parkway to Lapalco Boulevard
- From Lapalco Boulevard and to the Algiers Outfall Canal
- From the Algiers Outfall Canal to the Engineers Road intersection

The recommended improvements for the corridor include:

- A proposed 6-lane highway section from approximately 150 feet north of Terry Parkway to

Lapalco Boulevard

- A proposed 6-lane highway section from north of the Algiers Outfall Canal to the bridge approach at the ICWW in Plaquemines Parish.

The initial cost estimate for these improvements is $2.995 million. This includes costs for design, right-of-way acquisition, and construction.

This segment of LA 23 has a LOS E:

Table 5: Lapalco Boulevard LOS from 2001 to 2006

Year	ADT	LOS	Average Speed	Comment
2001	41380	E	13.7	
2003	35814	E	13.8	
2006	34540	E	14.4	Wall to Lapalco
2006	44940	E	13.5	Lopalco to GIWW

This segment has several intersections with inferior Levels of Service:

Table 6: LOS at key sections of LA23 during Peak periods

Intersection	AM Peak	PM Peak
	LOS	LOS
LA 23 at Engineers Rd	D	E
LA 23 at Sav-A-Center Driveway	D	E
LA 23 at Lapalco Blvd	F	F
LA 23 at Kmart Driveway	D	D
LA 23 at Terry Parkway	F	F

Planned improvements and resulting LOS:

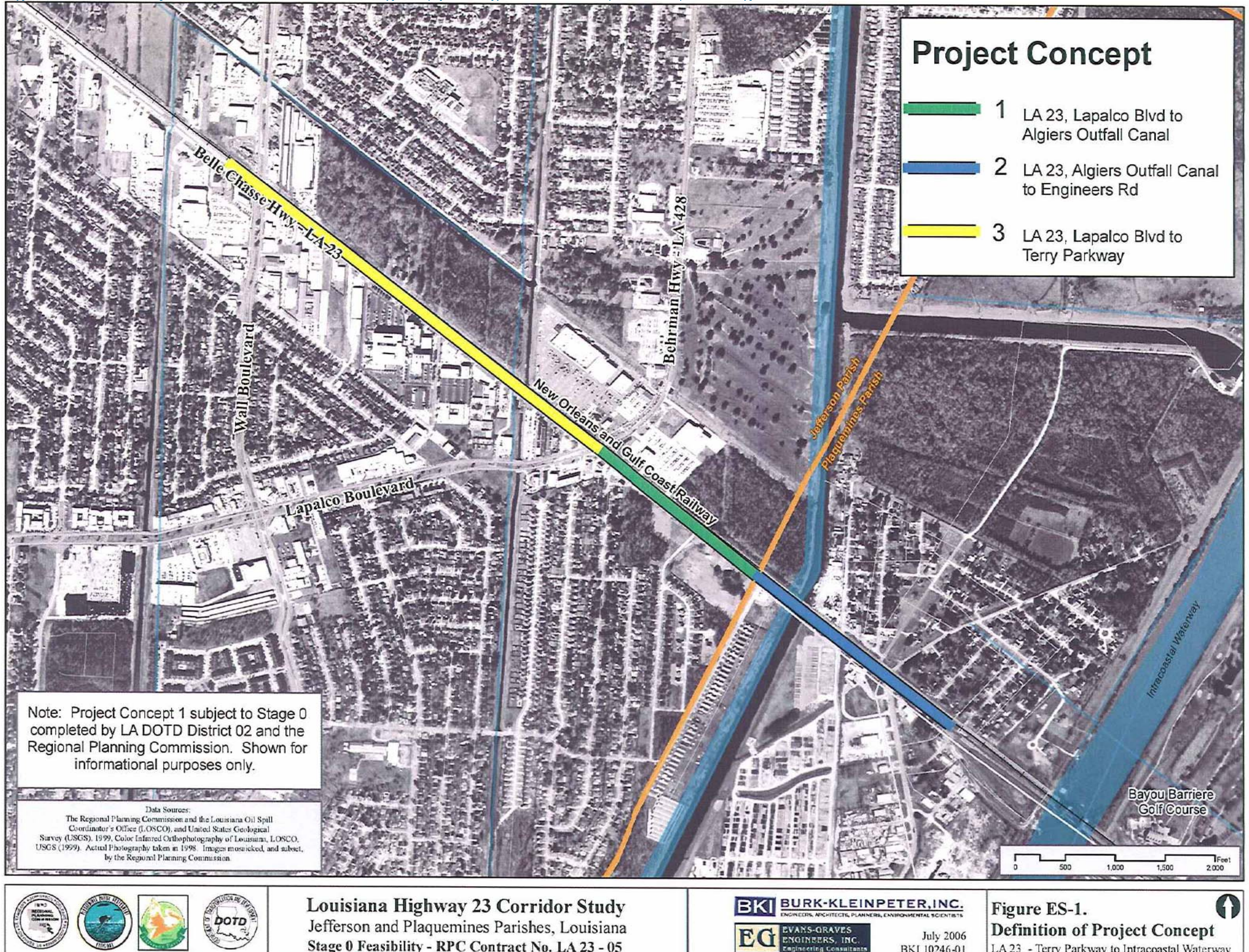
The proposed improvements for this corridor with the resulting Levels of Service are as follows.

Table 7: Proposed Roadway Improvements and resulting LOS

Intersection	Recommended Improvements	AM Peak	PM Peak
		LOS	LOS
LA 23 at Engineers Rd	Additional NB through lane on LA 23	C	D
LA 23 at Sav-A-Center Driveway	Additional NB/SB through lane on LA 23	A	B
LA 23 at Lapalco Blvd	Additional NB/SB through lane on LA 23	D	E
LA 23 at Kmart Driveway	Additional NB/SB through lane on LA 23	C	B
LA 23 at Terry Parkway	Additional NB/SB through lane on LA 23	A	D

According to NORPC, there is a commitment to funding this construction within the next three years. Construction will have the effect of improving the road and intersections that have the worst levels of service in the LA 23 corridor between the proposed port sites on the west shore of the river and the interstate system in the New Orleans area (see Figure 8).

Figure 8: Planned Improvement for Belle Chasse Highway (LA 23), Between Terry Parkway and Engineers Road



3. Belle Chasse Bridge and Tunnel Replacement Project[5]

On LA 23 there are one-way pairings of a bridge and tunnel over and under the Gulf Intracoastal Waterway (GIWW) in Belle Chasse. The tunnel is in poor condition. The bridge, with a moveable center span, is approximately 50 years old. There is a preliminary plan to remove both the bridge and tunnel and replace them with a new, 4-lane high span bridge that would require fewer movements to accommodate the traffic on the GIWW. An aerial photograph of the bridge/tunnel is shown below in Figure 9.

Figure 9: LA 23 Bridge/Tunnel, Belle Chasse

There is reference in the proposed New Orleans Regional Commission Transportation Improvement Plan (RPC TIP) for FY 10 for a Stage 1 Environmental Assessment for the project.

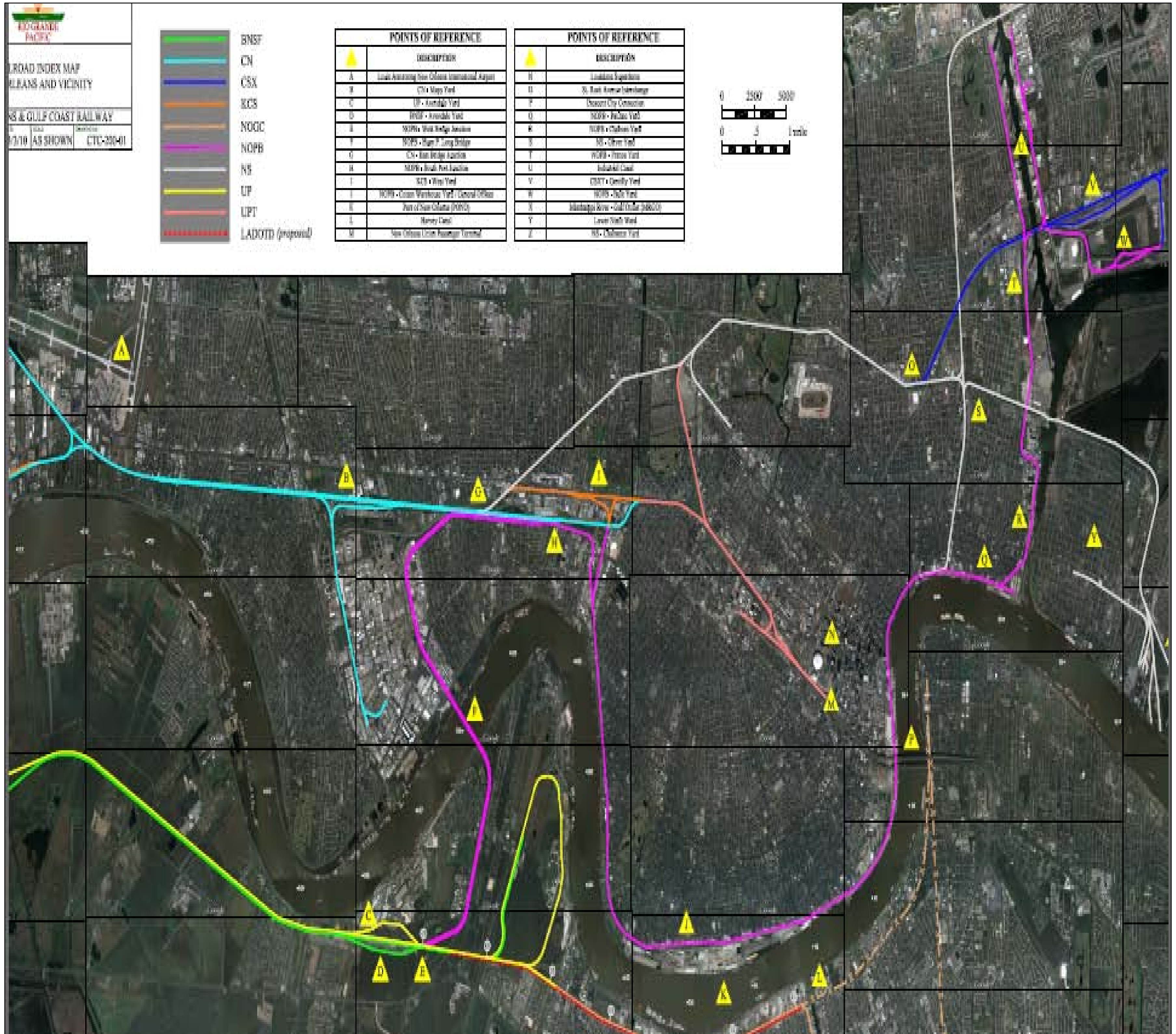
Proposed Rail Improvements

Proposed Rail Improvements include the relocation of the NOGC to significantly by-pass Belle Chasse and eliminate over 200 grade crossings. Figure 10 shows one of the proposed relocation concepts that the Rio Grande & Pacific is working on.

Figure 10: Proposed NOGC Relocation System Map (Proposed NOGC Relocation to Bypass Belle Chasse)

The Rio Grande & Pacific Railroad (parent company of the NOGC) has proposed to eliminate over 200 grade crossings in Belle Chasse by relocating its ROW. The Rio Grande has received the support of Plaquemines Parish and is in negotiations with the State and the LA DOTD to facilitate this plan. This relocation will support continued service to existing customers such as Chevron and the IMT. Therefore, the elimination of the grade crossings is in everyone's interest for safety and congestion reduction, with no negative impacts. When the relocation is complete, new and additional development opportunities will be realized.

Figure 11: NOPB Connections to Freight Lines Proposed NOGC Relocation to Bypass Belle Chasse



The NOPB connects to six (6) Class I Railroads, one of only two such situations in the United States, the other being at Chicago. The system map above indicates the connections to the six railroads and why this is viable infrastructure to connect a Plaquemines Port to markets throughout the Southern and Midwest states. A considerable advantage is the opportunity for direct access to Memphis, at competitive cost and speed. Memphis has become one of the largest and fastest growing Distribution Centers for the entire United States and also has quality connections to Canada and Mexico to take advantage of NAFTA (North America Free Trade Agreement).

Figure 12: Railroad System Map showing all the rail company connections and the NOPB

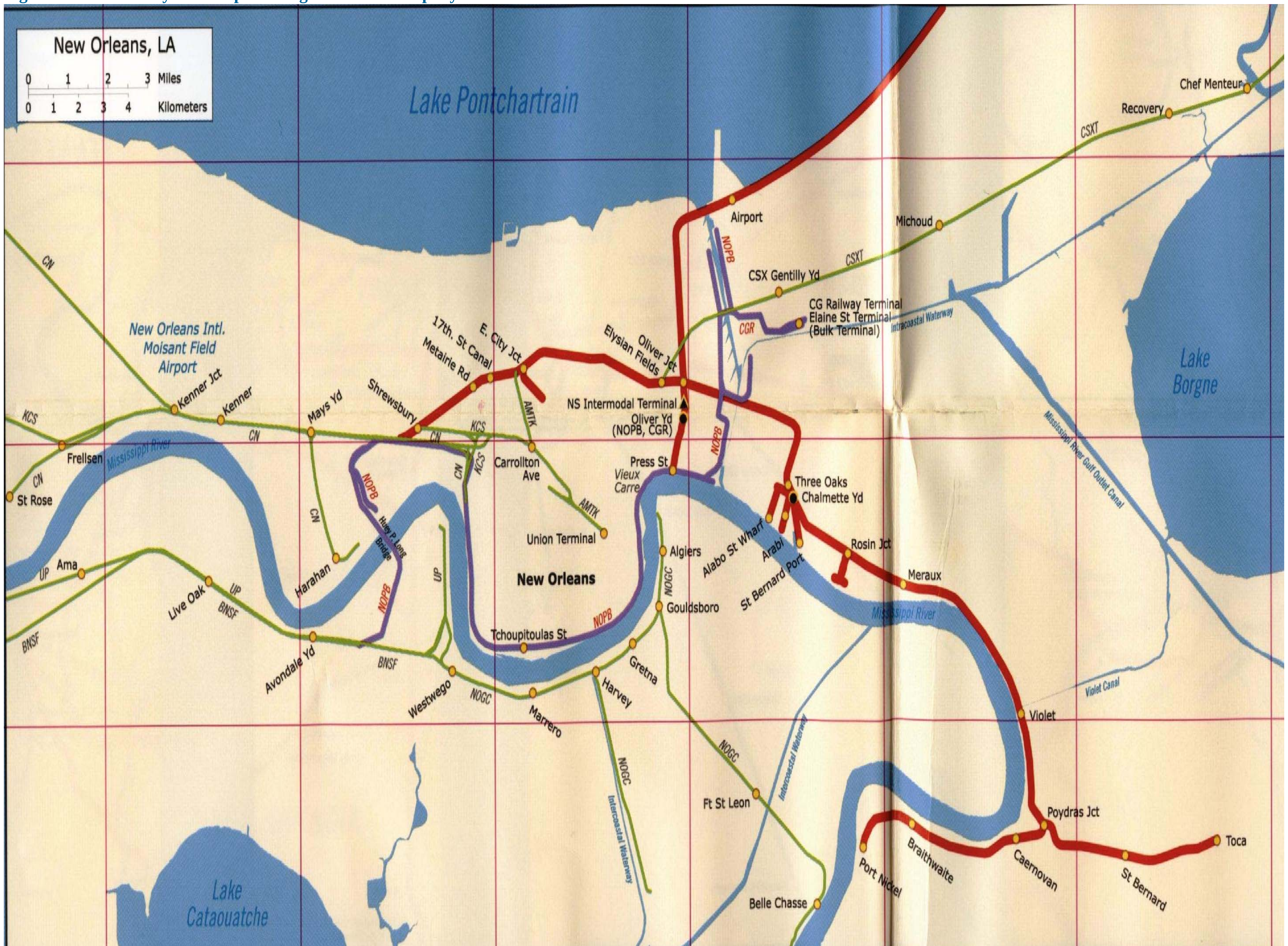
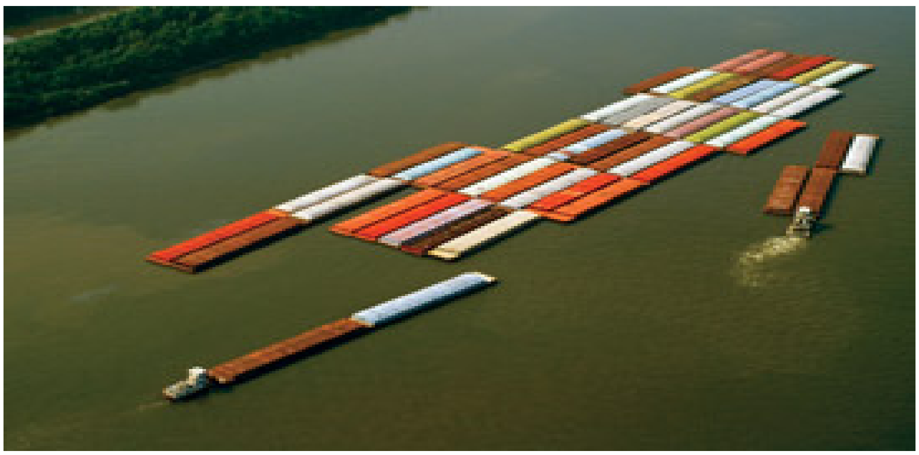


Figure 12 shows the location of not only the NOPB but also the NOGC and their respective system relationship to each other. The importance of this map to Plaquemines Parish and the Comprehensive Port Development Master Plan is that it shows the rail connectivity and ability to connect with all Class I Railroads in order to access their systems.

The NOPB has also stated that if a Port were to be built in lower Plaquemines, generally below the Naval Air Station, the NOPB would advance their concept of expanding their operating ROW from the Hughie Long Bridge along the Westside levees to wherever the new Port would be located. In earlier Port concepts that have looked at and examined over the years it is estimated that such an extension could cost several hundreds of million dollars with unknown environmental mitigation costs.

Inland Waterway System (IWWS)

There is sufficient capacity on the Mississippi River and its connected inland waterway system to accommodate increased barge traffic from any of the proposed port sites. The nature of the cargo and origins/destinations may affect the type of vessel but capacity will not be an issue, according to local maritime pilots. The Mississippi River has what could be considered travel lanes that are 6-8 lanes wide in certain parts of the River. There currently exists no present methodology to calculate capacity for barge traffic but it is the considered opinion of the Federal Government and River Pilot organizations that there exists considerable capacity beyond what the proposed locations at Amax and Citrus II could generate.



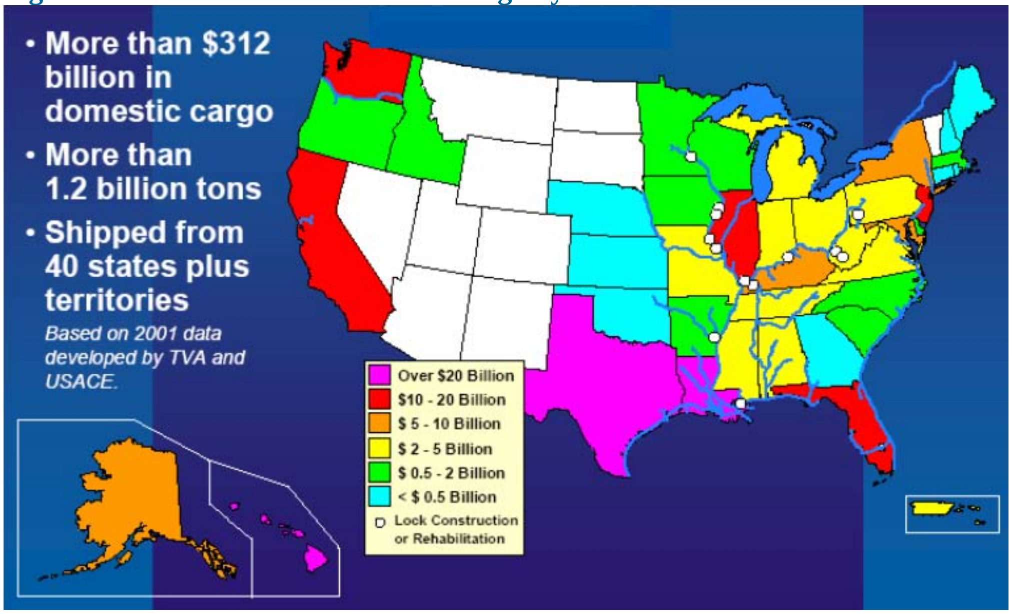
Published in December 2007 and amended in 2009 the U.S. Maritime Administration and the National Waterways Foundation prepared the report titled *"A Modal Comparison of Domestic Freight Transportation Effects on the General Public"*. The following excerpts of that report clearly delineate the advantages and capabilities of America's Inland Waterway System (IWWS). These characteristics and system efficiencies can be directly employed and integrated into the Plaquemines Parish Port Master Plan planned improvements.

The IWWS is a key element in the nation's transportation system. The IWWS includes approximately 12,000 miles of navigable waterways and 240 lock sites that incorporate 275 lock chambers. It handles shipments to/from 38 states each year. The system is part of a larger system referred to as "America's Marine Highways" which encompasses both deep draft and shallow draft shipping.

In 2005, inland waterways maintained by the U.S. Army Corps of Engineers (Corps) handled over 624 million tons of freight (274 billion ton-miles) valued at over $70 billion, resulting in an average transportation cost savings of $1 1/ton (as compared to other modes). This translates into more than $7 billion annually in transportation savings to America's economy. In 2003, barges moved 14% of intercity freight ton-miles for 3% of the freight bill. Virtually all American consumers benefit from these lower transportation costs.

Thirty-one states are served by the Mississippi River System and the Gulf Intracoastal Waterway. States on the Gulf Coast and throughout the Midwest and Ohio Valley especially depend on the inland and intracoastal waterways. Texas and Louisiana each ship over $10 billion worth of cargo annually, while Illinois, Pennsylvania, West Virginia, Kentucky, Mississippi, and Alabama, each ship between $2 billion and $10 billion annually. Over 60% of the nation's grain exports move by barge. The Inland Waterway System is the primary artery for more than half of the nation's grain and oilseed exports, for about 20% of the coal for utility plants, and for about 22% of domestic petroleum movements (see Figure 13).

Figure 13: The Value of the IWWS Cargo by State[6]



Barges have a higher cargo carrying capacity per unit than do typical trucks or railcars at substantially greater fuel efficiency. The following graphic illustrates the carrying capacity of a dry cargo barge in comparison with the rail and truck modes (Figures 14 & 15).

Figure 14: IWWS Dry Cargo Capacity Comparisons

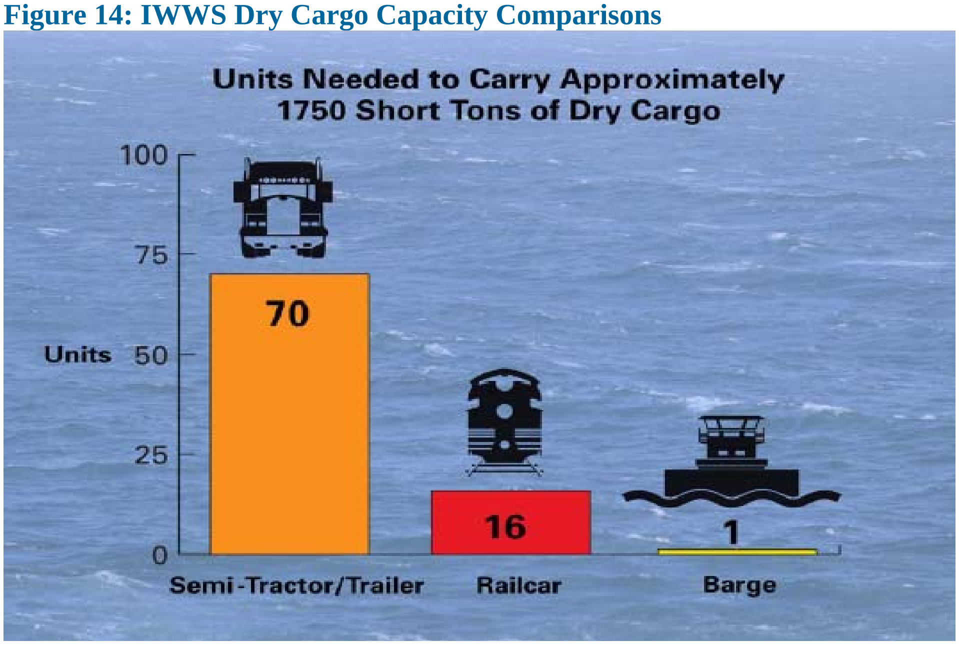
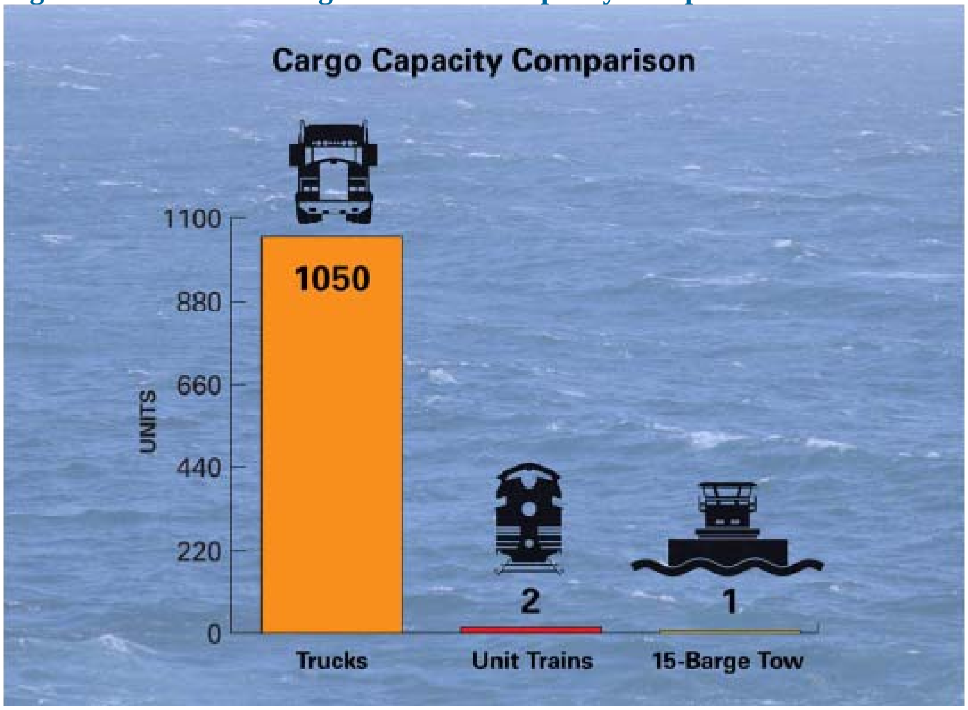


Figure 15: IWWS 15 Barge Tow Modal Capacity Comparisons



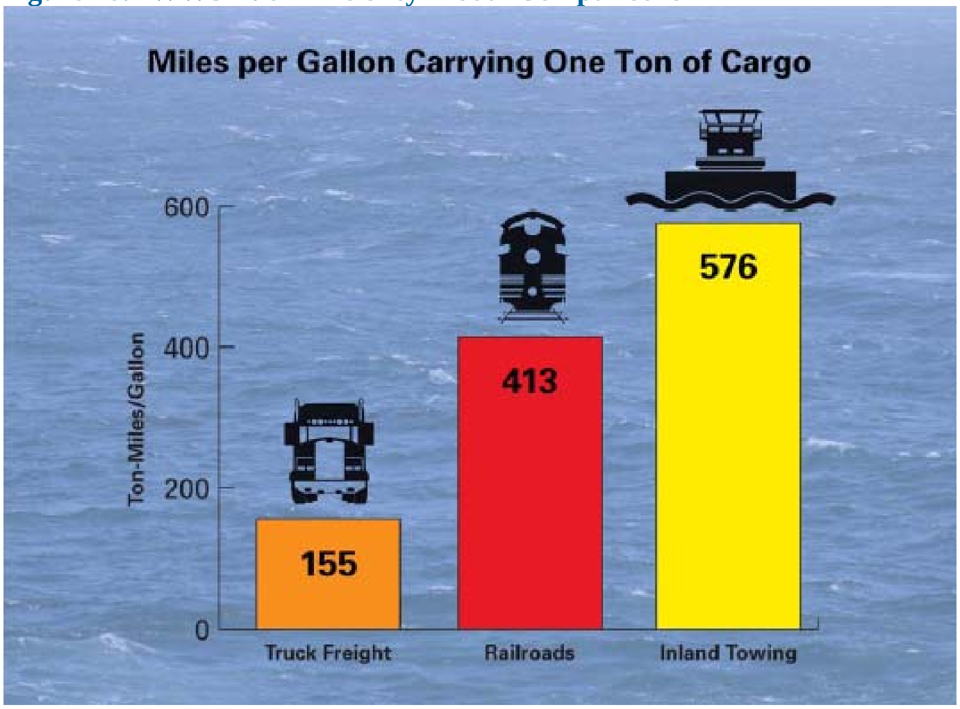
If the total 2007 domestic inland waterway tonnage (624 million tons) were loaded into the modal configurations indicated above at their maximum carrying capacity, and then the units were lined up end-to-end, the line of barges would extend more than 4,800 miles, the line of trains would extend 60,000 miles (2.4 times around the equator), and the line of trucks would extend 331,000 miles (13.3 times around the equator).

Table 8 and Figure 16 present the results of the fuel efficiency calculations on a national industry-wide basis in summary form.

Table 8: Summary of Fuel Efficiency

Mode	Ton-Miles/Gallon
Inland Towing	576
Western Railroads	413
Eastern Railroads	413
Truck	155

Figure 16: IWWS Fuel Efficiency Modal Comparisons



In summary the IWWS compares very favorably with all other modes of transport. The Mississippi River represents an untapped natural resource, a true waterborne strategic highway that can provide increased cargo logistical reliability at substantially lower cost and higher efficiency.

This mode of transport represents the greatest potential for Plaquemines Parish Port Master Plan improvements.

Intermodal Coordination

Trident met three times with the Louisiana Department of Transportation and Development (LA DOTD) and a number of telephone meetings. In addition, substantial communication was held with the Rio Grande (NOGC) and the New Orleans Public Beltline (NOPB). No meetings have taken place with truck or barge operators but Trident is confident there is sufficient capacity for the volumes used in this study. Trident met with marine pilots regarding barge traffic and has obtained navigation books with information to support our conclusions regarding barge capacity.

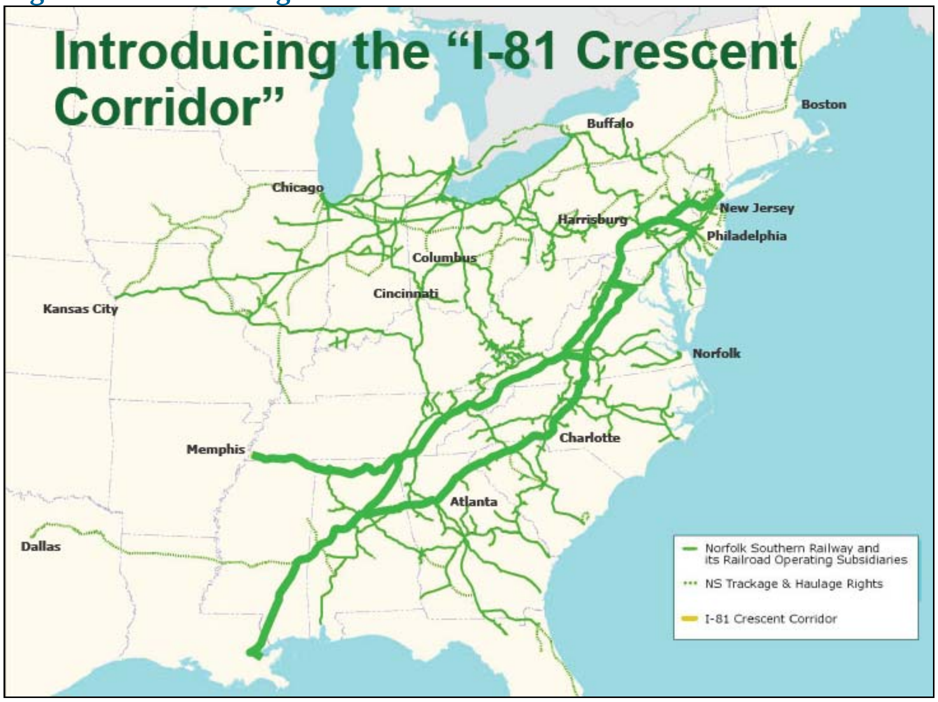
The necessary contacts and information required to make the recommendations for this Task have been carried out.

Trident met with Senior Management of the Norfolk Southern Railroad to discuss specific strategies for development of the Amax site and to determine any interest in trade development. These discussions focused on bulk cargo potential and the identification of commodities and potential clients. NS expressed interest in the development of an Omni Terminal and the associated cargo. NS also expressed interest in upgrading their ROW and grade crossings if the Amax site is developed. The importance of connecting to the Norfolk Southern is demonstrated by the NS system map (Figure 17) below.

Figure 17: Norfolk Southern System Map

The I-81 Crescent Corridor Project announced by NS to connect 13 States from New York/New Jersey to Louisiana and Plaquemines Parish will have significant benefit for the Parish and State (Figures 18 - 21).

Figure 18: Introducing the "I-81 Crescent Corridor"



Included as part of the project are commitments for ROW upgrades and new Corridor Terminals. These are shown below.

Figure 19: I-81 Crescent Corridor - Targeted and Existing Terminals

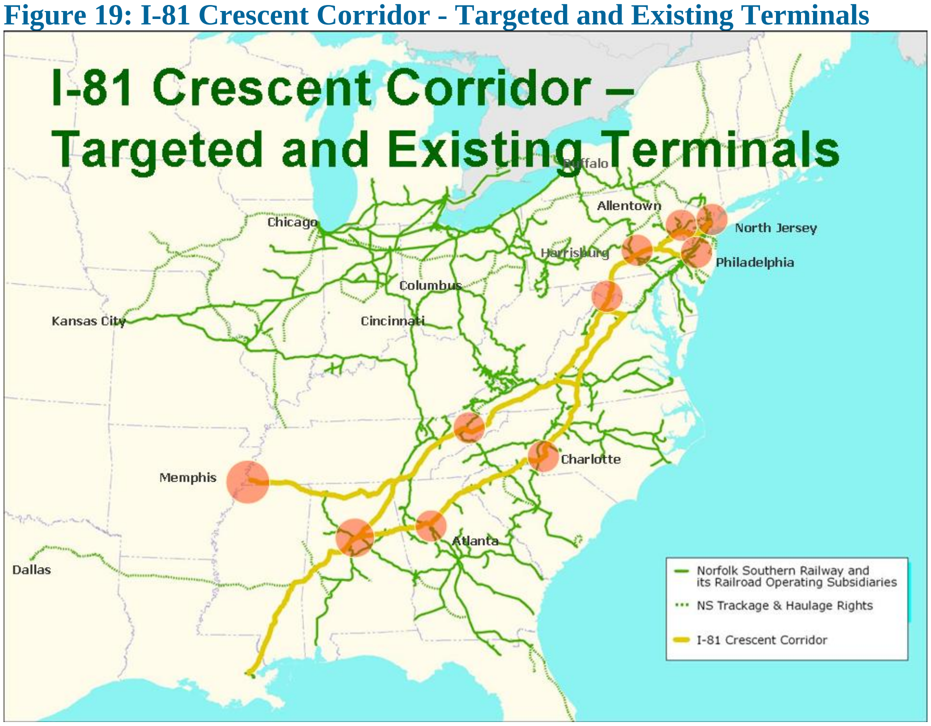


Figure 20: The I-81 Crescent Corridor - The Imperative for Public Investment

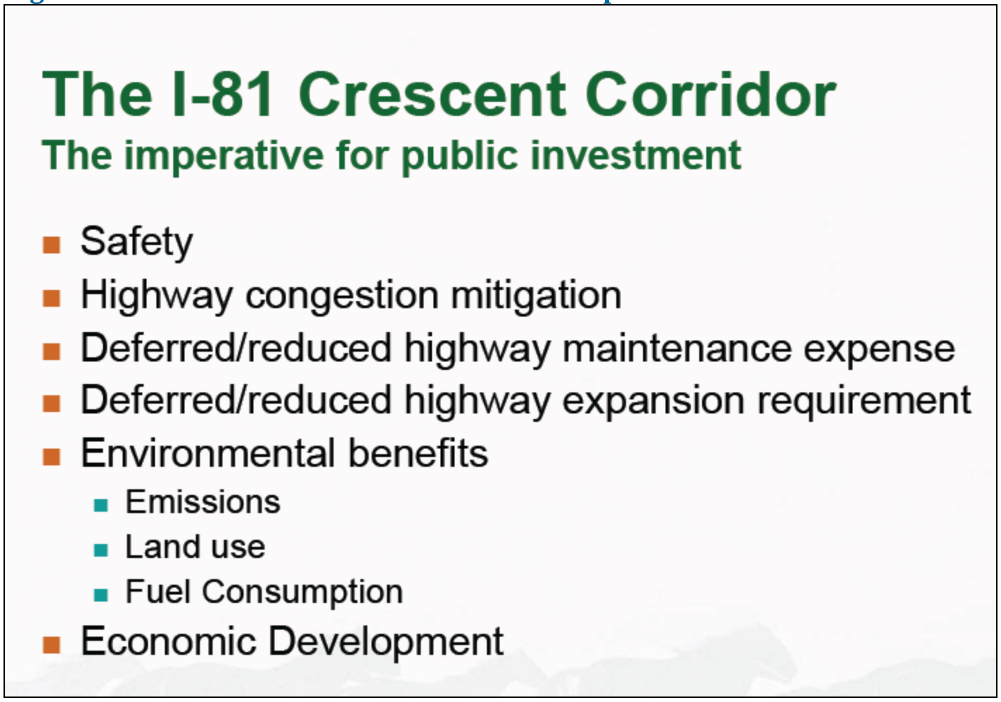
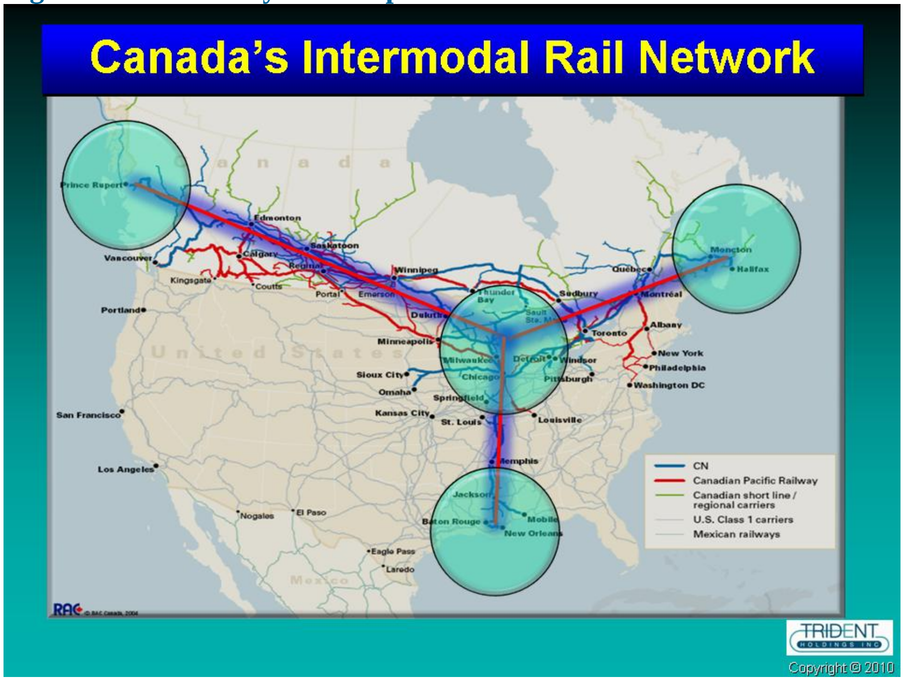


Figure 21: The I-81 Crescent Corridor Development

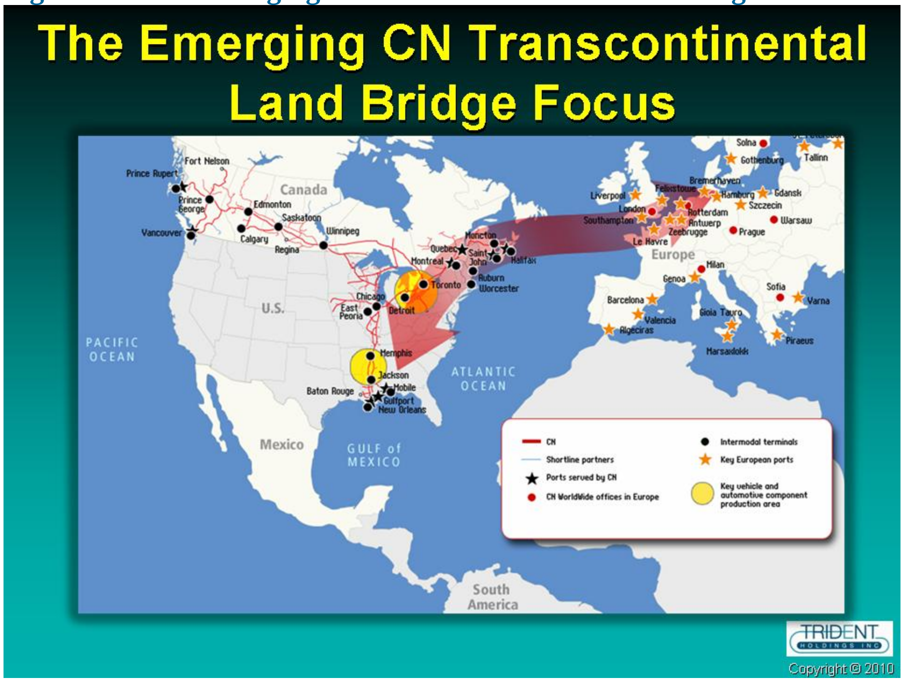
Trident discussed Canadian National (CN) interest in Plaquemines Parish port development. CN is a transcontinental railroad, the only one connecting the West, East and Gulf Coasts (see Figure 22). CN is has the shortest connection to Memphis which provides a competitive advantage to the Plaquemines Port value proposition. The CN system map is shown below.

Figure 22: The CN System Map



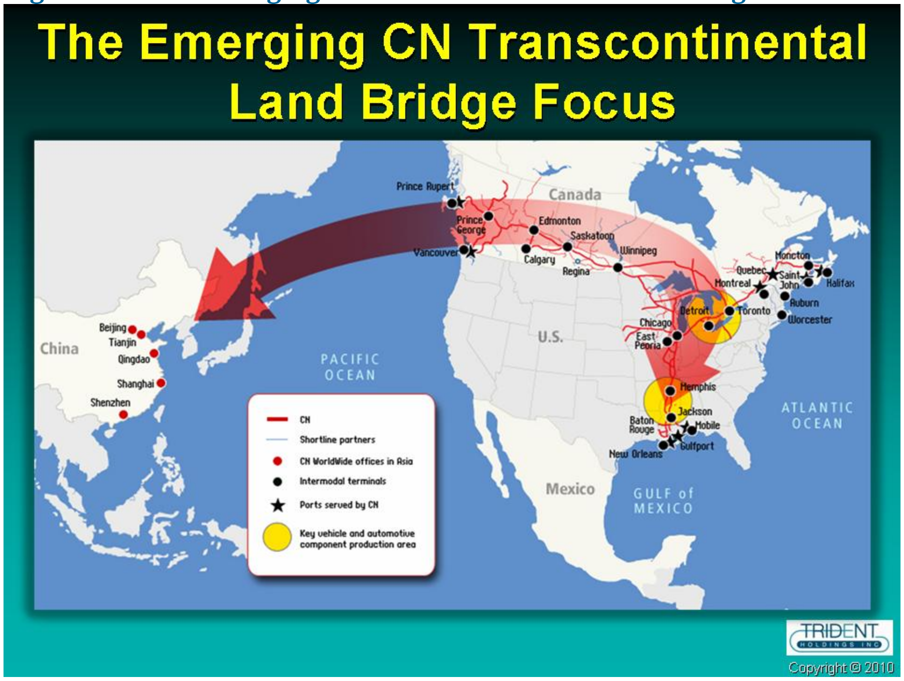
CN can create corridor access to both Europe and Asia while taking full advantage of Plaquemines Parish proximity to Central and South America. The European connection is outlined below in Figure 23.

Figure 23: The Emerging CN Transcontinental Land Bridge Focus – European Connection



The Asian land bridge connection is shown below in Figure 24.

Figure 24: The Emerging CN Transcontinental Land Bridge Focus – Asian Connection



As a Plaquemines Port develops, coordination with the Class I Railroads can enhance the growth of both Amax and Citrus II competitively compared to other Gulf Coast Ports.

Conclusion

There is current excess capacity in the transportation networks in Plaquemines Parish to accommodate the anticipated new traffic volumes that will be generated by new Port facilities at Amax or Citrus II and expanded activities in Venice. The added road and rail volumes by comparison of annual and hourly trafficking demonstrate minor increases even at peak hour movement. The likelihood that these volumes would actually flow at either AM or PM peak hour is unlikely but even if they did the added volumes would hardly impact the roadway and rail systems. The majority of traffic is estimated to flow by rail since these newly attracted trade volumes would likely distribute well beyond greater New Orleans and those movements would occur by rail. The emphasis of attraction to the Gulf region by the Class I Rail Carriers emphasizes the intent of these volumes to prefer that mode of distribution. Roadway volumes would have minor impact on the roadway network and projects on the Transportation Improvement Plan show that proposed construction of these dedicated projects will only serve to aid additional growth. As these Port sites are developed, barge interests will grow for distribution on the Mississippi River. The River has more than enough capacity to handle development far in excess to the proposed Port sites. As a result there is little or no impact to the transportation systems. The existing systems have excess capacity and the focused development interests of private carriers will only lead to expanded transportation services.

Task 5 Figures and Tables

Figures

Tables

1 Louisiana Department of Transportation and Development http://www.dotd.la.gov/highways/tatv/default.asp
2 Peters Road Supplemental Environmental Assessment 2009, Burk-Kleinpeter, Inc
3 Burk-Kleinpeter, Inc, 2009
4 LA 23 Feasibility Study – 2006 Burk-Kleinpeter, Inc.
5 LADOTD
6 USACOE, Institute of Water Resources

Task 6 – On-Site and Off-Site Opportunities and Constraints

Table of Contents

Task 6 – On-Site and Off-Site Opportunities and Constraints

Introduction

This task takes the idealized concept along with transportation requirements and identifies those opportunities that exist on the chosen sites to facilitate and accommodate operational, circulation and transportation networks in a way to optimize advantages to offsite markets and beneficial cargo owners and attract expanded global and regional trade. The strengths and weaknesses identified will serve as a tool in further development of the concepts into workable and feasible site alternatives.

Landside Access Requirements

As identified in Task 5 Intermodal Truck and Rail Access, the existing roadway and rail infrastructure has excess capacity to accommodate the development of Port facilities at both Amax and Citrus II locations. If truck and rail volumes were to be added from these sites into the proposed systems at peak hours for roadway and at highest levels of rail volumes, there is sufficient capacity for substantial additional transportation growth. Given proposed State projects for Route 23, truck traffic would move onto new roadways, thus alleviating any decrease in the Level of Service in Belle Chasse. If the LA DOTD projects were delayed or canceled the additional truck traffic would cause only minor changes in traffic volume and Levels of Service on roadway links and intersections however when Port development begins there will be a need to further assess LOS and delays at major intersections on LA 23 especially if the LA DOTD projects have been significantly postponed. The off-site intersection analysis is a detail for implementation of design and project permitting and is well beyond the scope of our work for the Comprehensive Port Development Master Plan but should be addressed in the next phase of project development. With the proposed roadway improvements, truck traffic would avoid the major intersections on Route 23.

The Amax Site would require efforts by the Norfolk Southern Railroad Company to upgrade trackage, modernize or eliminate grade crossings and increase accessibility. These improvements would only result from a commitment to develop the Amax Site and by securing trade and tenants for the site. The Norfolk Southern has expressed interest in facilitating growth at this site. Again, the Amax Site could be seen as the southern end of NS's Crescent Corridor.

Citrus II has attracted the attention of both the Rio Grande & Pacific Railroad (NOGC) and the NOPB. Both have expressed interest in connecting their services to the Port location if developed. Either could provide more than adequate rail connectivity for the Port by building on rail lines in new locations which would by-pass Belle Chasse. The NOGC is currently working with the State and the Parish to develop options and funding to eliminate grade crossings in Belle Chasse. Once completed, the NOGC would only need to extend their line to access the proposed Port site at Citrus II. The NOPB has expressed interest in by-passing most built up areas in Plaquemines Parish by building a new rail line near, and along the back levees to access Citrus II. The major requirement of NOGC is to see a commitment to build Citrus II and a comfort that it would have sufficient volumes to support their investment.

As stated in Task 5 the road and rail systems have excess capacity to accommodate the Port growth at both sites and can support additional growth beyond those developments. Task 2 concluded there is sufficient Gulf Coast market trade to support new Port development. Task 3 identified Plaquemines Parish sites that can support those new developments. Task 4 identified optimum layouts for those Port locations. Task 5 concluded the road and rail systems could provide efficient service to those sites.

Additional analysis shows that Louisiana and particularly Plaquemines Parish represents a distinct opportunity in the national grid for supply chain logistics and the support of future population and economic growth.

Internal Transportation Movements

Omni Terminal and Container & Intermodal Terminal Circulation Access Review

Functional Relationships and Adjacency Requirements for Marine Terminals: In considering layouts for any marine terminal, planners must seek to maximize efficiencies and create an appropriate balance among the various terminal elements. On the following pages, diagrams present flow charts for an idealized container terminal and intermodal terminal to illustrate critical areas of various components, such as:

- Ship-to-wharf apron transfer,
- Wharf apron area-to-storage area circulation,
- Storage area layout efficiency, balanced with generous space for traffic circulation,
- Storage-to-gate transfer,
- Gate location and adequate queuing capacity,
- Efficient transfer to nearby or on-dock Intermodal Yard areas, and
- Flexibility for possible ancillary functions such as CFS, M & R and wash-down areas.

The movement of cargo through these areas will determine the operational efficiency of the terminal and ultimately, the cargo throughput capacity of the facility.

In arriving at the optimum layout for a given multimodal terminal facility, marine and rail planners analyze and refine the various operating modules of a specific relationship diagram to maximize efficiencies and create an appropriate balance among the various terminal operations. The following Figures 1 and 2 present schematic flow charts for an idealized container and intermodal terminal as well as a combination container, break bulk, dry bulk, project cargo and Ro-Ro terminal contemplated for the Omni Terminal Concept.

The Future of Intermodal Rail and Port Terminal Interface Operations

As a conclusion to the terminal layout recommendations and considering the impact that Information Technology (IT) integration will have on the final marine terminal design, the following discussion and graphics are presented to illustrate the power of Information Technology (IT) to enhance and greatly increase intermodal and marine terminal productivity. This is shown as an example in Figures 1 and 2.

Figure 1: The Power of Information Technology

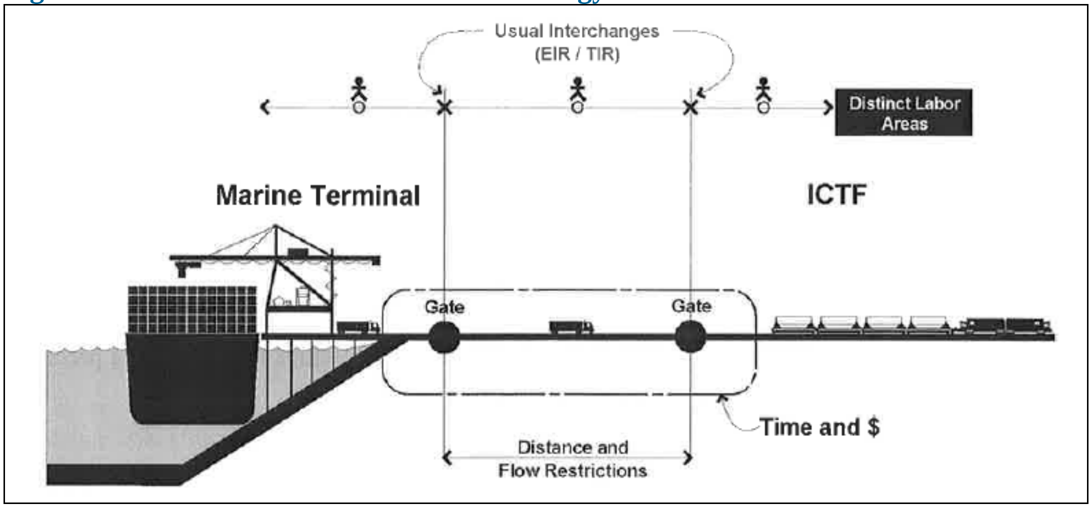
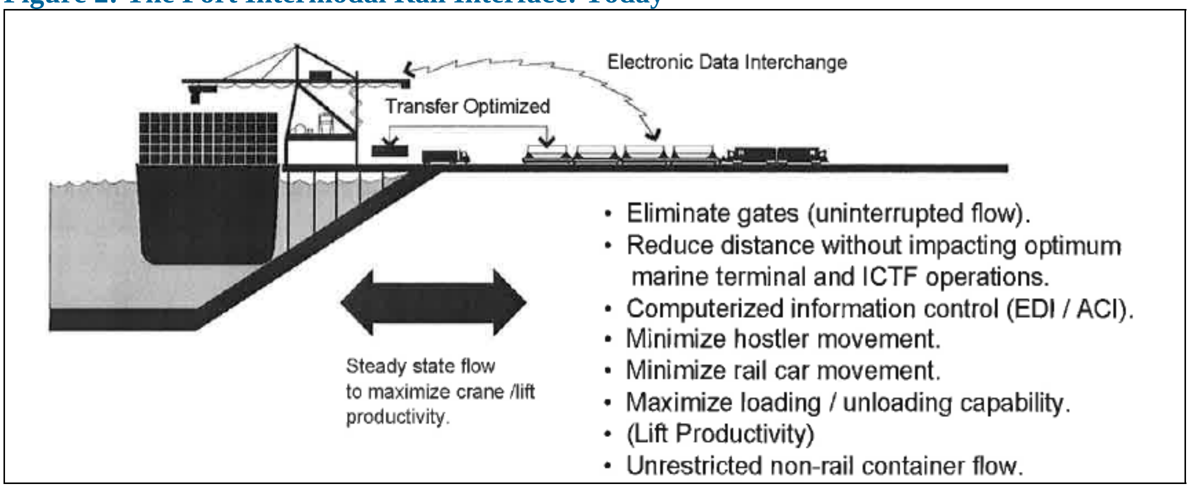


Figure 2: The Port Intermodal Rail Interface: Today



The Port Intermodal Rail Interface: The Way It Could Be in the Future

Terminal Operating & Information Technology Integration Recommendations

Commercial cargo flow through marine and intermodal terminals is easily affected by changes in a variety of variables (i.e. cargo dwell times, arrival/departure patterns of inland truck and rail cars, vessel scheduling). To minimize the disruption of commercial operations during commercial and military cargo surges, it is essential to manage the impact on these variables.

Information Technologies (IT) can be used within the marine and intermodal terminal to communicate between operations;, i.e. the management of truck traffic, rail car loading/unloading, vessel scheduling and loading/unloading to decrease cargo dwell time, and increase cargo throughput capability.

This increased cargo throughput capability/expandability can be considered as potential agility for handling military surge and sustainment cargoes. For example, if a marine terminal is able to decrease its dwell time and increase its throughput capability by using advanced IT communication capabilities, this increased capability could be used by the military in times of surge and sustainment.

Modern Terminal Operating Systems (TOS) are being used to increase terminal throughput and cargo velocity without investing substantial capital in infrastructure improvements or container handling equipment. Operating systems in ports are normally independently built upon specific needs of every individual port. Operating systems that vendors work with remain the same and simply add specific modules that will best fit the focus area.

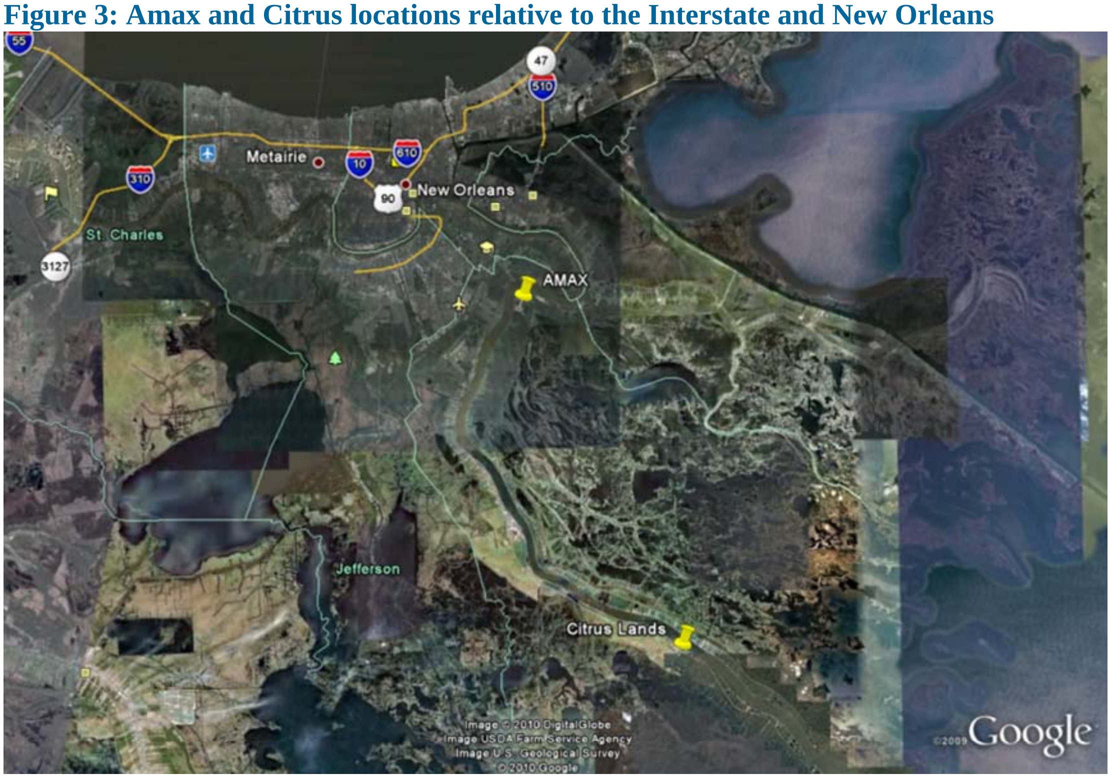
Supply Chain Logistics and Distribution Center Potentials

On-site and Off-site Opportunities, including multiple use Analysis

Each of the two sites under consideration for port development, Citrus Lands and Amax – provide an opportunity for development ancillary to primary port activities. In the Citrus development, the adjacent logistic park is an essential element to attract beneficial cargo owners and ocean carriers to the location.

The mix of possible uses is determined both by the physical layout of each parcel and by the strengths and weaknesses of the location (Figure 3).

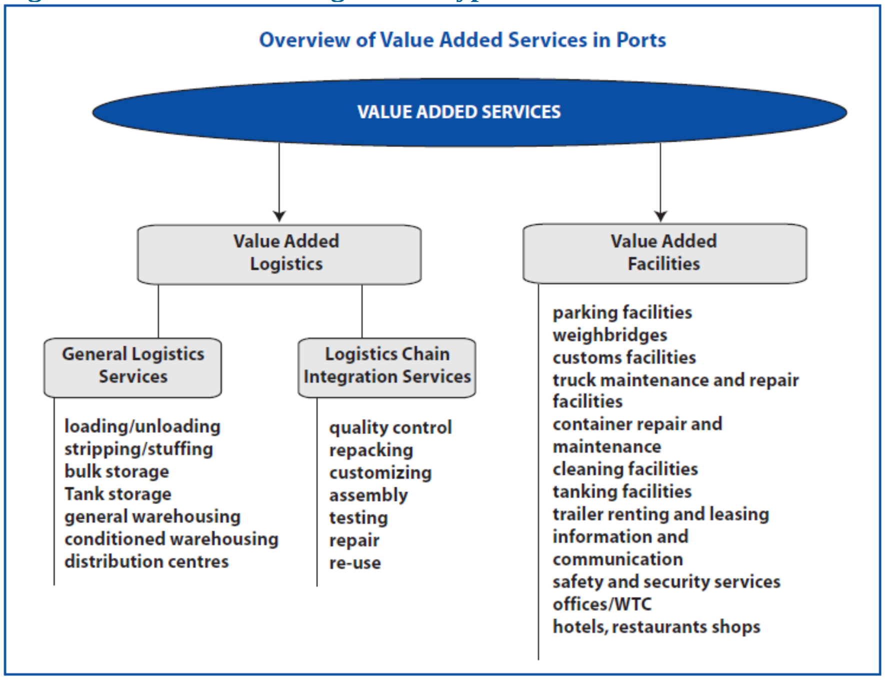
Figure 3: Amax and Citrus locations relative to the Interstate and New Orleans



Typical Adjacent Uses

Transportation and logistics nodes such as bulk and container ports naturally attract ancillary uses based on the opportunities and linkages these facilities provide. Light assembly, warehousing, transload, manufacturing, and associated uses all benefit from the access and infrastructure afforded by the port. These facilities take products which enter the port from international sources, or bring in domestic materials which are too big or cumbersome to move by road. Access to the road, rail, and – where available - inland waterway networks allow for distribution of finished products.

Figure 4: World Bank Diagram of Typical Value-Added Services



The World Bank[1] has performed considerable analysis on the characteristics of development at and around ports. In particular, it notes that large ports can form a critical nexus of economic activity that spurs the creation of industry clusters, particularly those which have a high reliance on logistics and distribution-related activities. Such port-related clusters have formed in the past at locations such as Rotterdam, Yokohama, Antwerp, Hamburg, Marseilles, and Houston see Figure 4.

Resulting port-related industry clusters and other ancillary development can, and has in the past, included the following:

- Ship repair
- Transport-related services
- Petroleum processing and refining
- Chemical processing
- Specialized marine services
- Warehousing and freight forwarding services
- Retail logistics

- Engineering and fabrication for movable structures
- Wind energy, turbines, blades, and nacelles
- Apparel industry logistics
- Trans shipment, Intermodal, and break bulk services
- New vehicle (automotive) preparation and processing
- Assembly and testing functions (retail, consumer, electronics, furniture and related products)
- General business-to business industrial products and services
- Logistics chain optimization services (e.g. repacking, customizing, repair, re-use)

The uses above are in addition to dedicated port-related functions such as:

- Customs facilities
- General logistics services
- Loading/unloading
- Bulk and tank storage
- General warehousing
- Refrigerated warehousing
- Ship repair and maintenance
- Container repair and maintenance
- Truck repair and maintenance
- Cleaning facilities
- Safety and security services
- Hotel, restaurant, other support hospitality

Strengths and Weaknesses of Each Property for Ancillary Development

Freight-related and other developments typically make location-based decisions on their needs for:

- Access to Markets – The ability to get goods efficiently from the point of origin/production to the point of further processing or consumption
- Interaction with the Transportation Network – Access to highways, rail facilities, ports, or other means of conveyance
- Labor and Workforce – An ample supply of appropriate talent and skills
- Total Cost Environment – All-in-costs enabling competitiveness in services and products
- Availability and Cost of Suitable Facilities – Buildings or sites which can efficiently accommodate the company's activities at a reasonable cost
- Utilities – An ample, reliable, and cost-effective supply of electricity, gas, water, and wastewater

- Tax and Regulatory Climate – A government regime which supports (and does not prohibit or inhibit commercial activities
- Natural Hazards – A site which mitigates interruption and/or risk
- Public Sector Assistance – Government programs which provide incentives, credits, or other investment to support the company initiatives

Plaquemines Parish is located in the Southeast corner of the New Orleans Metropolitan Statistical Area (MSA), and most development in the parish occurs directly along the Mississippi River. This is, in some part, as a result of the nature of the Delta itself, reclamation efforts and transportation infrastructure development.

Economic Base Analysis

Population largely remained stable in the Parish from 2000-2009, increasing by only 1% over the period. However, an analysis of the Parish's employment trends shows that the region lost an estimated 2,000 jobs between 2001 and 2008. This represents a 14% loss, compared to 2% growth in employment statewide. This creates economic challenges for the region, but a potential opportunity for new developers who wish to take advantage of the existing, underutilized skills base.

Location quotients show – through an analysis of a region's employment base – how much of an area's economic activity is exported, and resulting in net profit for the area. This is often used to measure the baseline economic advantages for a region for selected industries. A high and rising location quotient reveal an industry for which the region has a growing competitive advantage. This relative measure, coupled with growing employment figures (see Table 1 below), can be used to target industries of interest.

Table 1: Selected Employment and Location Quotient Data, Plaquemines Parish

Industry	Total Employment 2008	Total Employment 2008	% Growth 2001-08	Location Quotient	LQ Change 2001-08
Base Industry: Total, all industries	14,097	12,103	-14%	1	0
NAICS 11 Agriculture, forestry, fishing and hunting	82	44	-46%	0.35	-0.19
NAICS 22 Utilities	ND	ND	N/A	ND	N/A
NAICS 23 Construction	1898	1384	-27%	1.82	-0.35
NAICS 238 Specialty trade contractors	537	704	31%	1.46	0.48
NAICS 31-33 Manufacturing	2171	2276	5%	1.59	0.56
NAICS 325 Chemical manufacturing	511	440	-14%	4.85	0.7
NAICS 332 Fabricated metal product manufacturing	98	145	48%	0.88	0.42
NAICS 42 Wholesale trade	823	851	3%	1.34	0.23
NAICS 423 Merchant wholesalers, durable goods	399	551	38%	1.68	0.68
NAICS 44-45 Retail trade	ND	ND	N/A	ND	N/A
NAICS 48-49 Transportation and warehousing	2,445	1,879	-23%	4.11	-0.47

As a whole, the Parish has particular economic strengths for Wholesale Trade and for Manufacturing, with both sectors showing real (but small) increases in employment over the period, as well as significant increases in their location quotients. This later factor indicates increasing strengths for producing goods exported from the region.

The region's location quotient for Chemicals' manufacturing also increased over the analysis period, but did so while overall employment dropped in the industry, both nationally and in the region. This was also the case for the Construction industry. Other manufacturing sectors – notably metals' manufacturing – gained in employment numbers and in exported share, but still appear to be serving only local markets.

Cost Environment

Business and operational costs for the types of facilities described above include transportation costs, labor costs, real estate, utilities, and taxes. The current section focuses on labor costs as the other forms are either covered in other sections (e.g. taxes) or are highly variable for specific businesses (e.g. transportation).

Wage rates for the New Orleans-Metairie-Kenner, LA metropolitan statistical area are very similar to those found in competitive markets as shown in the following Table 2:

Table 2: Mean Hourly Wages

Mean Hourly Wages	New Orleans	Norfolk/ Virginia Beach	Savannah	Houston
Architecture and Engineering Occupations	$32.12	$32.85	$31.18	$40.44
Construction and Extraction Occupations	$18.08	$17.82	$16.63	$17.12
Installation, Maintenance, and Repair Occupations	$18.66	$18.90	$20.11	$18.66
Production Occupations	$18.38	$15.80	$17.82	$16.18
Transportation and Material Moving Occupations	$14.88	$15.26	$16.26	$15.19

Except in isolated cases, these are neither significantly higher nor lower than the competition. Hence, labor costs are neither a strategic advantage nor weakness for the area.

Tax Climate

The Tax Foundation – a non-profit, non-partisan educational organization known for their analysis of tax regimes, ranks Louisiana 35th in its ranking of state business tax climate. This low ranking is largely due to such factors as an average sales tax of 8.46%, the state's high capital stock tax rate (.3%), the fact that the state taxes both manufacturing machinery and utilities, and the fact that it is one of only ten states which collects an intangible property tax. This last tax is placed upon stocks, bonds and trademarks, and tends to discourage companies which have stock, holdings or even a corporate image that carry a significant value.

The state does have competitive unemployment insurance tax and offers a variety of incentive and credit programs to offset tax burdens. Such programs include:

Quality Jobs Program	Louisiana's Quality Jobs Program grants businesses engaged in manufacturing or other basic industries a cash rebate equal to 6% of annual gross payroll. Qualifying companies must have a minimum annual payroll of $500,000, pay wages equal to 1.75% of the prevailing minimum wage and provide insurance coverage equal to 85%. This program can be taken in conjunction with the Industrial Property Tax Exemption.

Industrial Property Tax Exemption	Louisiana's Industrial Property Tax Exemption exempts new manufacturing facilities and expansions from all property taxes for a period of up to ten years. Qualified applicants are able to combine these program benefits with those from the Enterprise Zone or Quality Jobs programs.
Exemptions for Manufacturers	A manufacturing entity locating in the State may enter into a contract with the Board of Commerce and Industry to obtain preferential tax treatment. The exemption may be for an initial period of no more than five years and may be renewed for an additional five years.
Economic Development Tax Equalization Credit	This exemption is offered to encourage the establishment of new manufacturing establishments, new headquarters, or new warehousing and distribution establishments in the State by providing a procedure whereby the total state and local taxes imposed on such establishments may be reduced, after all other incentives for the specific site have been applied.
Enterprise Zone Tax Credit - Jobs Credit	To claim this credit, a company will have to enter into an agreement with the State Board of Commerce and Industry. There is a Job Creation credit, equal to $2500 for each newly created job. This credit is taken as a one-time credit, however, it can be claimed for an additional year if the employee is receiving some form of public assistance. The credit may be increased to $5000 per employee if the applicant is in the aviation or aerospace industry, or the motor vehicles parts manufacturing industry.
Enterprise Zone Tax Credit - Sales and Use Tax Rebate	There is a rebate of sales and use tax on the purchases of the material, which is used in the construction of a building, or any addition or improvement thereon, for housing any legitimate business enterprise, and machinery and equipment used in that enterprise.

The State is in the process of implementing several new tax credits which will have specific implications for port-related activities. Each of the following was either passed in 2009 or in the process of refinement for enactment in the near future.

Ports of Louisiana Investor Credit (R.S. 47:6036)	Taxpayers are permitted a credit for investing in state port facilities in Louisiana. Taxpayers must apply to the Louisiana Department of Economic Development to receive certification. Projects must have a value of at least $5 million. The credit amount is at the discretion of the Department of Economic Development, but may be as large as the total cost of the project. The credit may be claimed at 5% of the award per year.
Ports of Louisiana Import Export Cargo (R.S. 47:6036)	Taxpayers are permitted a credit for the use of state port facilities in Louisiana. The credit is based on the number of tons of qualified cargo imported from, or exported to, manufacturing, fabrication, assembly, distribution, processing or warehousing facilities located in the state. The Louisiana Department of Economic Development certifies this credit and a copy of this certification must be attached to the return.

The amount of this credit is $5 per ton of qualified cargo. However, the statute indicates that the amount of the credits that the taxpayer will be certified to earn will be limited to the total allocation granted to the taxpayer for such tax year.

Natural Hazards

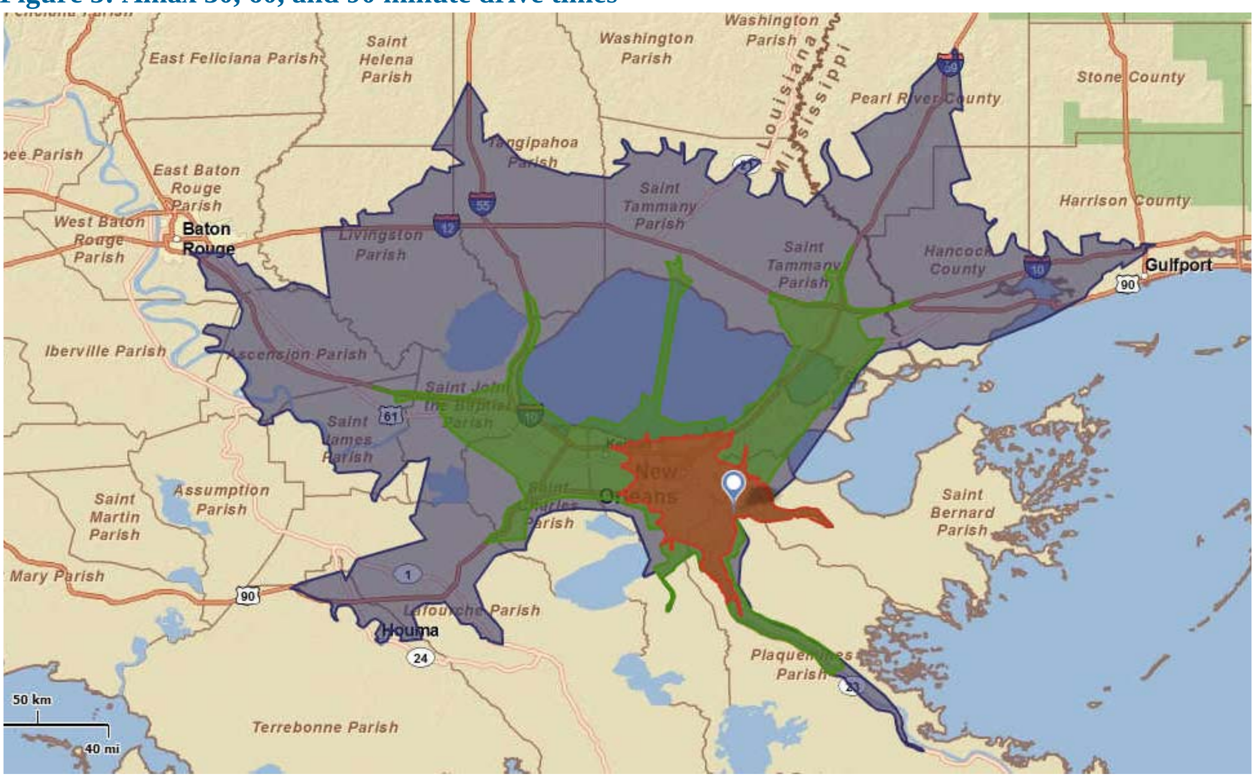
Any site or community has a natural hazard profile. While in some locations, the prime hazard may be earthquakes, in others, tornado or excessive snowfall may pose the risk. In each case, prospective businesses weigh the probable risks, the possible impact upon business operations, and the community's ability to respond to the risks.

According to the USGS, Southeastern Louisiana's prevalent natural risks come in the form of exposure to hurricane and flooding. The sites in question lie directly along the Mississippi River and may be subject to flooding or hurricane damage, although dike and levee systems have been significantly improved since 2005. However, it should be remembered that hurricanes and flooding also impact the community as a whole and the larger regional transportation network. Companies considering the area will need to be assured that risk management and mitigation plans are in place to minimize the impact to their businesses.

Amax

Access to Markets and the Transportation Network

Figure 5: Amax 30, 60, and 90 minute drive times



Located approximately 10 miles in a straight line from downtown New Orleans, the Amax property has access to the Greater New Orleans region through a variety of roadways and also has direct access to Class I rail via existing connections to the Norfolk Southern. These connections result in access to the national transportation system, enables access to a relatively large labor pool and to local area businesses throughout most of southeastern Louisiana (see Figure 5).

Workforce and Business Base

Table 3: Population within 60 Minutes of Amax

	2000	2009	2014	% Growth 2000-09	% Growth 2009-14
Total Population	1,178,123	992,502	1,109,052	-15.8%	11.7%
Population 25-64	695,211	601,340	659,039	-13.5%	9.6%

While Plaquemines Parish as a whole has experienced stability in population growth, Orleans and other Parishes lost considerable residential population as a result of Hurricane Katrina and the subsequent issues in 2005. This impact is reflected in the statistics above. Population for the region is expected to rebound considerably by 2014[2] (see Table 3)

Potential Target Industries and Requirements

The Amax site may be able to attract significant ancillary commercial development given the site's access to rail, highway, and workforce. In particular, transportation related uses such as transloading; light assembly, product kitting, and break bulk appear to be suitable for the location.

Transportation and logistics targets include:

> **Container Traffic** – As noted elsewhere in this report, the Amax site could support the movement of approximately 100,000 TEUs of container cargo on an annual basis. The direct link to Class I rail at the site supports this capability. This will, in turn, support developments at the site aimed at consumer products and retail assembly, and other kitting and logistics functions noted below. Bulk grains and foodstuff may also provide significant backhaul opportunities for this container operation.
>
> **Bulk Grain** – The Canadian National (CN) railroad currently moves a considerable amount of grain through the Port of Louisiana. Likewise, the Norfolk Southern Railroad could ship grain via Amax, particularly given the existing rail connections to the site.
>
> **Coal** –While concern was raised by the Parish Council about the further development of coal at this site a number of private sector companies have stated various levels of interest in this potential. While Trident believes with the Parish Council that this might not be the highest and best use for this site it still remains an interest that some companies have expressed and therefore needs to be mentioned. The Norfolk Southern as a carrier serves the coal fields of the American Midwest. As some companies have observed, coal from these regions may be collected and shipped via Amax to gasification plants in Florida and elsewhere in the Gulf Region.

Target ancillary industry and other potential uses for the property include:

Grain and agricultural transloading and processing – The Norfolk Southern has an interest in shipping bulk grains and agricultural products through the site. For the same reason, agricultural conglomerates such as ConAgra and ADM may be courted for both transloading and processing.

Fiber fuels – Wood or wood pellets may be moved from the Midwest by either barge or rail to the site for final processing and preparation for shipment to other Gulf Coast locations or overseas. The Amax site could serve as an ideal location for consolidation of raw timber and/or processing into fiber fuels of various types for shipment.

Food transloading – Given the amount of agricultural trade with Central and South America (coupled with the rail connections of the Amax site), the location could serve as an efficient location for transloading and seasonal processing of fruits and vegetables. The site could also accommodate such facilities as ripening chambers and refrigerated storage. Processing of foodstuffs may also be accommodated at the site, with finished products being shipped to major consumption zones by either road or rail.

Retail consumer products transloading and sub-assembly – In much the same way that retail products now move from the ports of LA/Long Beach to retail sites by rail and truck, the Amax site may provide transloading capabilities for retail users such as Wal-Mart, Target, and TJX when the Panama Canal expansion is complete. Such a connection would allow for an extremely efficient mode for kitting and final assembly for such products as furniture and home furnishings, destined for stores in the Midwest and Eastern Seaboard. In this case, the stakeholders could include large retail companies and the developers who serve them (AMB, First Industrial, etc.)

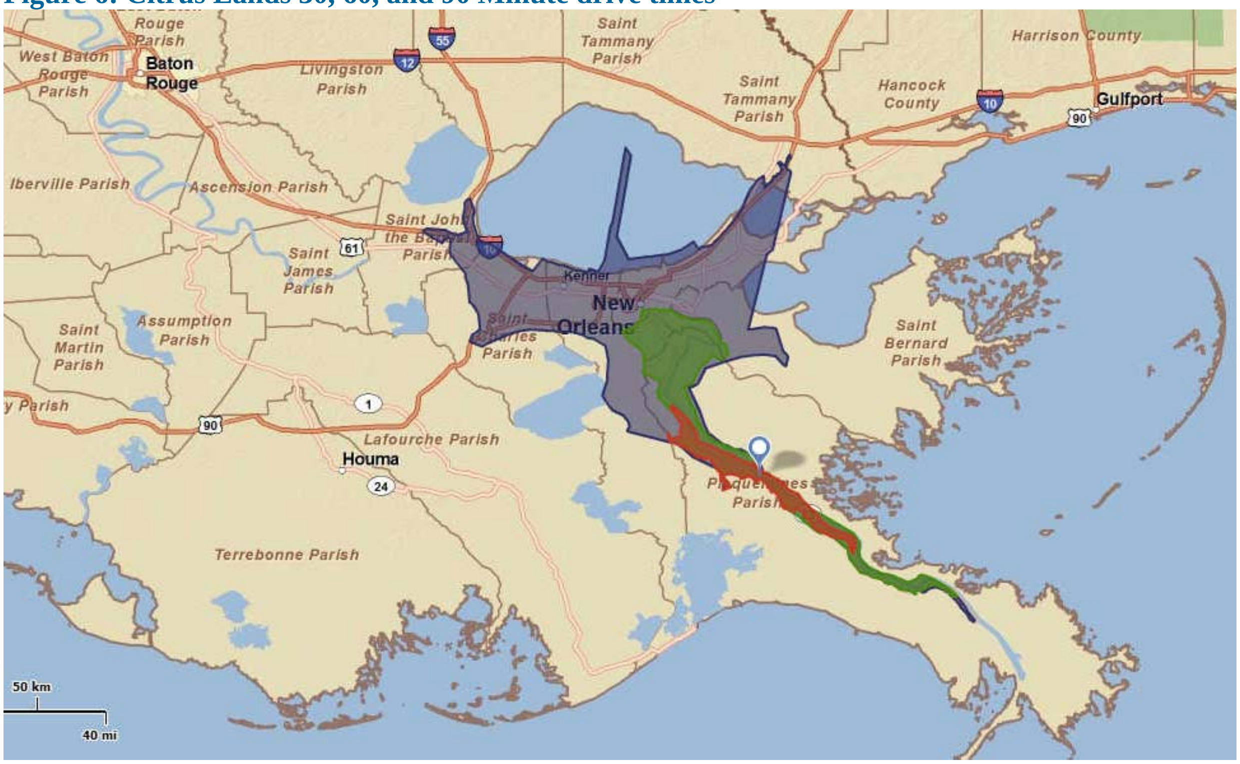
Trident has concluded the highest and best use of Amax property for ancillary industries is container transloading of both food (including refrigerated and multi-temperature storage and distribution) and retail consumer products, including sub-assembly, bulk grain and fiber fuel storage, processing and distribution. Break bulk handling, servicing and distribution will also offer opportunities. This can best be served through the development of an Omni Port design which would allow for maximum marketing of the Port site to multiple interests for trade.

Citrus II

Access to Markets and the Transportation Network

The Citrus II property is located 30 miles southeast of New Orleans along the Mississippi River. Primary access to the site is limited to Route 23, which runs parallel to the west/south bank of the River (see Figure 6).

Figure 6: Citrus Lands 30, 60, and 90 Minute drive times



Rail access deemed to be necessary for development would be gained through an extension of the New Orleans and Gulf Railroad running parallel to the roadway along the western bank of the Mississippi River. 30 of the 35 miles of trackage required to link the site to the Union Pacific Yard at Avondale are already in place. An additional 7 miles of track will need to be constructed to complete the connection.

Table 4: Workforce and Business Base Population within 60 Minutes of Citrus Lands

	2000	2009	2014	% Growth 2000-09	% Growth 2009-14
Total Population	150,396	144,667	147,389	-3.8%	1.9%
Population 25-64	88,438	86,215	86,586	-2.5%	0.4%

As with Amax, Lands lost considerable residential population due to the impact of Hurricane Katrina in 2005. This impact is reflected in the statistics above. Also as with Amax, population for the region is expected to rebound considerably by 2014 (see Table 4).

The site is more remote than Amax, and has a labor base approximately 12% as large. This will limit the staffing available at the site and could impact the types of development possible. The Citrus Lands site will be more conducive to less labor-intensive use. However due to its location on the lower portion of the Mississippi River, Citrus II has considerable cost advantages for attracting both inbound and export trade, thus making this site more profitable and sustainable in the future. This would result in more stable employment site with potential for future growth.

Possible Target Industries and Requirements

The prime advantage of the Citrus Lands site is its more immediate access to the Gulf of Mexico. This is beneficial for ocean shipping, as noted elsewhere in this report, but is also advantageous for energy-related uses as well.
The remoteness from other populated areas, while a detriment to other forms of development, could be an advantage for uses which would otherwise be too noisy, dirty, or otherwise objectionable to be placed closer to other commercial development. Chemical processing or bulk transloading may be development candidates for the site as a result.

Transportation and logistics targets include:

> **Container Traffic** – As noted elsewhere in this report, the Citrus Lands site could support the movement of approximately 700,000 TEU of annual container cargo. This traffic would then be transloaded either to rail via the Gulf railroad or to barge for movement further inland. Similar routes would be used for export of good from the center of the country to other coastal or overseas destinations.
>
> **Biofuels** – The proximity to rail and river transportation, a large land tract, and ocean transport suggest that biofuels (either ethanol or biodiesel) could be a good addition to the site. This also fits well with the New Orleans region's historic expertise with both petroleum and chemicals processing. ADM has expressed some interest in shipping fuels through the area, and should also be approached for production and processing.
>
> **Coal** – Similar to the Amax site, the Burlington Northern Santa Fe and Union Pacific railroads serve the coal fields of the Powder River Basin of Wyoming. The low-sulfur coal from this region is in high demand and may be collected at and shipped via Citrus Lands to power generation and gasification plants in Florida and elsewhere in the Gulf Region. Other equity interests (e.g. Prime Infrastructure) may also serve as sources of investment in this industry.

Ancillary industry and use targets for the property include:

> **Wind Energy** – Wind turbine manufacturers require considerable laydown space for towers, materials for installations, blade, and for the turbines themselves. Due to its size, proximity to key wind fields in the Gulf, to the shipping lanes of the Mississippi and the Gulf, and to Class I rail, Citrus Lands could be an attractive location for interim processing of wind equipment destined further inland or into the Gulf. Investors and operating companies such as Pattern Energy Group and Wind Energy Systems Technologies both operate or are establishing wind farms in the Gulf. Likewise, equity firms like Riverstone Holdings (holders of the former Babcock & Brown's wind portfolio) should be approached to gauge interest.

Petrochemical Processing – The entire New Orleans region has significant experience with petrochemicals processing and storage. Dow, Du Pont, and other corporations maintain significant investments in the River Parishes. Each should be approached as a location further downstream and more remote could provide additional operating flexibility.

Trident believes the highest and best use of Citrus property for ancillary industries is container transloading, distribution and subassembly in fact this distribution and value add element of the development is essential to attract beneficial cargo owners and ocean carriers to the location.

Selected Target Corporations and Developers [3]

These companies might have interest in one Port site or in both Amax and Citrus II

Developer

- AMB
- CenterPoint*
- First Industrial
- Industrial Developments International (IDI)
- IDS Real Estate Group*

Agricultural Products

- ADM
- ConAgra

Biofuels

- ADM

Chemical and Petrochemicals

- 3M
- BASF
- Conoco Philips
- Dow
- Du Pont
- ExxonMobil

Coal and Coal Products

- Prime Infrastructure
- Container Shipping
- APL/NOL
- Evergreen Group
- Hanjin/DSR Senator
- Maersk/Sealand
- P&O Nedlloyd
- Zim

Fiber Fuels

- Fiber Fuel International
- Fulghum Fibrefuels

Food Products

- ADM
- DelMonte
- Dole
- General Foods
- Heinz
- Hunts

Grains

- ADM
- ConAgra

Retailers

- Home Depot
- JC Penney
- Lowes
- Target
- TJX
- Wal-Mart

Wind Energy

- Pattern Energy Group
- Riverstone Holdings
- Wind Energy Systems Technologies

Table 5: Employment and Location Quotients for Selected Target Corporations and Developers in Plaquemines Parish[4]

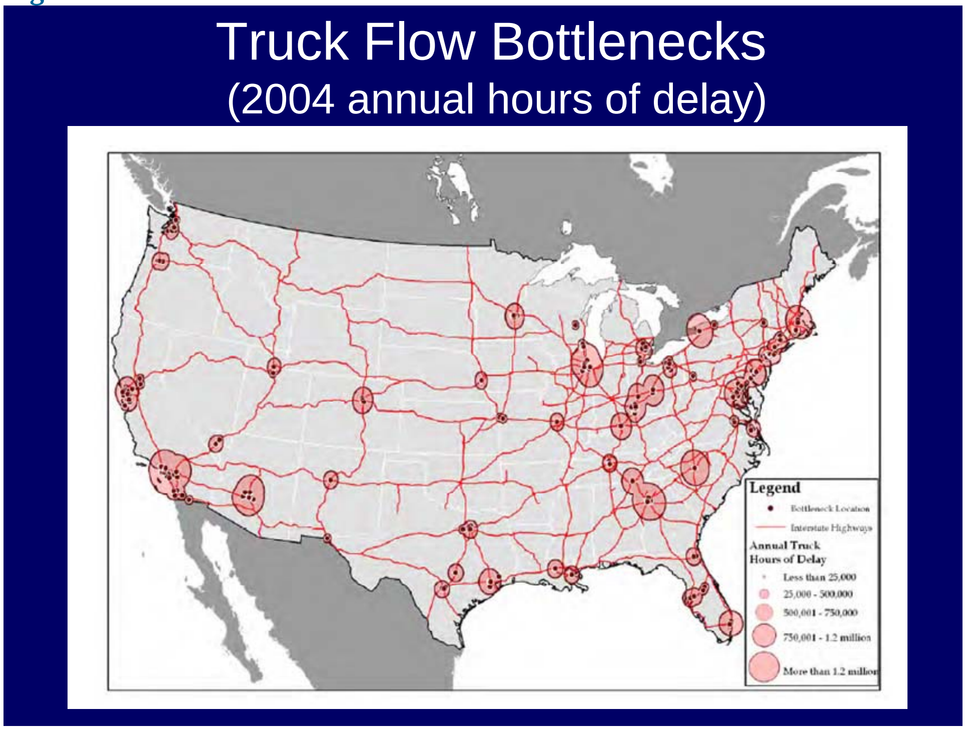
	Total Employment 2008		% Growth 2001-08		Location Quotient	LQ Change 2001-08
Industry	Louisiana -- Statewide	Plaquemines Parish, Louisiana	Louisiana -- Statewide	Plaquemines Parish, Louisiana	Plaquemines Parish, Louisiana	Plaquemines Parish, Louisiana
Base Industry: Total, all industries	1,541,554	12,103	2%	-14%	1	0
NAICS 11 Agriculture, forestry, fishing and hunting	9,984	44	-20%	-46%	0.35	-0.19
NAICS 22 Utilities	9,334	ND	-6%	N/A	ND	N/A
NAICS 23 Construction	134,981	1384	8%	-27%	1.82	-0.35
NAICS 238 Specialty trade contractors	65,494	704	6%	31%	1.46	0.48
NAICS 31-33 Manufacturing	152,568	2276	-12%	5%	1.59	0.56
NAICS 325 Chemical manufacturing	22,786	440	-17%	-14%	4.85	0.7
NAICS 332 Fabricated metal product manufacturing	18,944	145	-1%	48%	0.88	0.42
NAICS 42 Wholesale trade	75,761	851	-2%	3%	1.34	0.23
NAICS 423 Merchant wholesalers, durable goods	39,884	551	0%	38%	1.68	0.68
NAICS 44-45 Retail trade	225,483	ND	-1%	N/A	ND	N/A
NAICS 445 Food and beverage stores	36,581	339	-20%	30%	1.11	0.42
NAICS 48-49 Transportation and warehousing	70,407	1,879	1%	-23%	4.11	-0.47
NAICS 51 Information	28,494	11	-6%	-84%	0.03	-0.12
NAICS 52 Finance and insurance	57,790	102	-5%	-36%	0.16	-0.06
NAICS 53 Real estate and rental and leasing	32,705	543	-5%	-16%	2.41	-0.05
NAICS 54 Professional and technical services	83,674	ND	23%	N/A	ND	N/A
NAICS 55 Management of companies and enterprises	23,460	ND	0%	N/A	ND	N/A
NAICS 56 Administrative and waste services	97,274	517	6%	-37%	0.6	-0.23
NAICS 61 Educational services	20,695	ND	6%	N/A	ND	N/A
NAICS 71 Arts, entertainment, and recreation	32,991	75	-15%	21%	0.35	0.08
NAICS 72 Accommodation and food services	163,046	698	4%	-36%	0.57	-0.27
NAICS 81 Other services, except public administration	48,106	181	-8%	-42%	0.38	-0.2
NAICS 99 Unclassified	3,065	28	31%	N/A	1.26	N/A

Trident has held informal discussions with a number of parties relative to determine if there is interest in locating logistics and distribution facilities at either Amax or Citrus properties should a port development occur. Research and discussions concluded that there is definitely interest locating logistic and distribution activities on the southern Mississippi if port development were to take place however there is definite concern within the transportation sector for government funding and support.

Evaluation Criteria

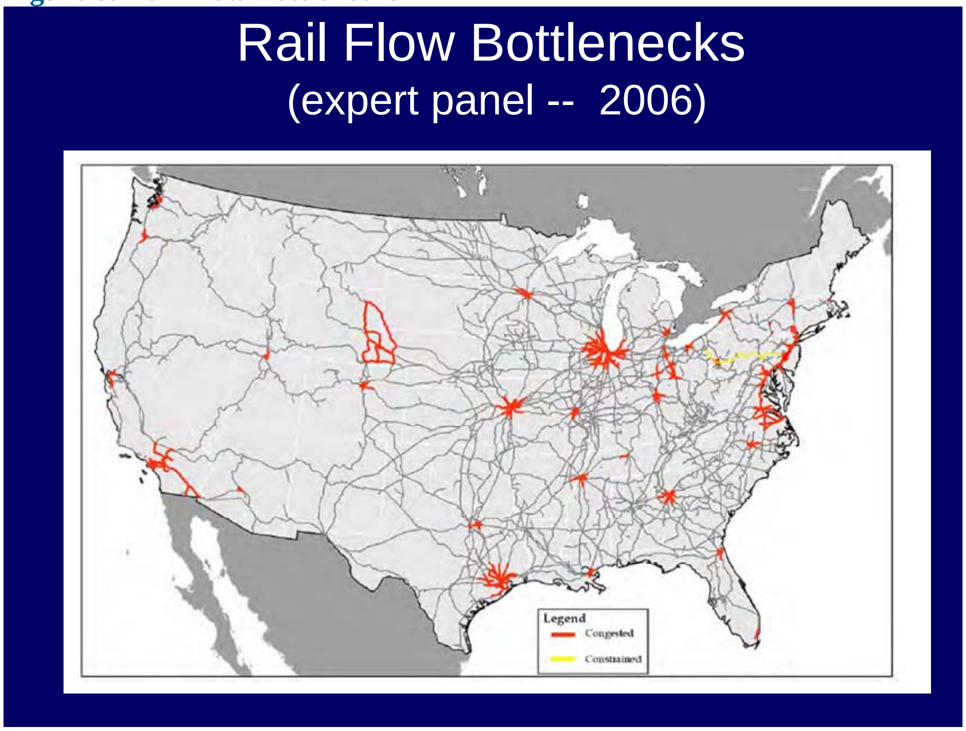
The United States is experiencing distinct congestion bottlenecks for both truck and rail transportation. Admittedly these bottlenecks were at a heightened level prior to the recent recession however those bottlenecks still exist today and there are insufficient federal and state funding levels to eliminate them. Economic growth sites and private sector investments for locating business at those sites is looking heavily at the reality of accommodating trade corridors and goods movement. Clearly the following charts below (Figures 7-9) obtained from the Georgia Institute of Technology demonstrate major restrictions in truck and rail travel primarily in the East around older urban centers however major delays are also occurring on the West Coast. The Gulf Coast has very reasonable access up through the center of the country.

Figure 7: Truck Flow Bottlenecks



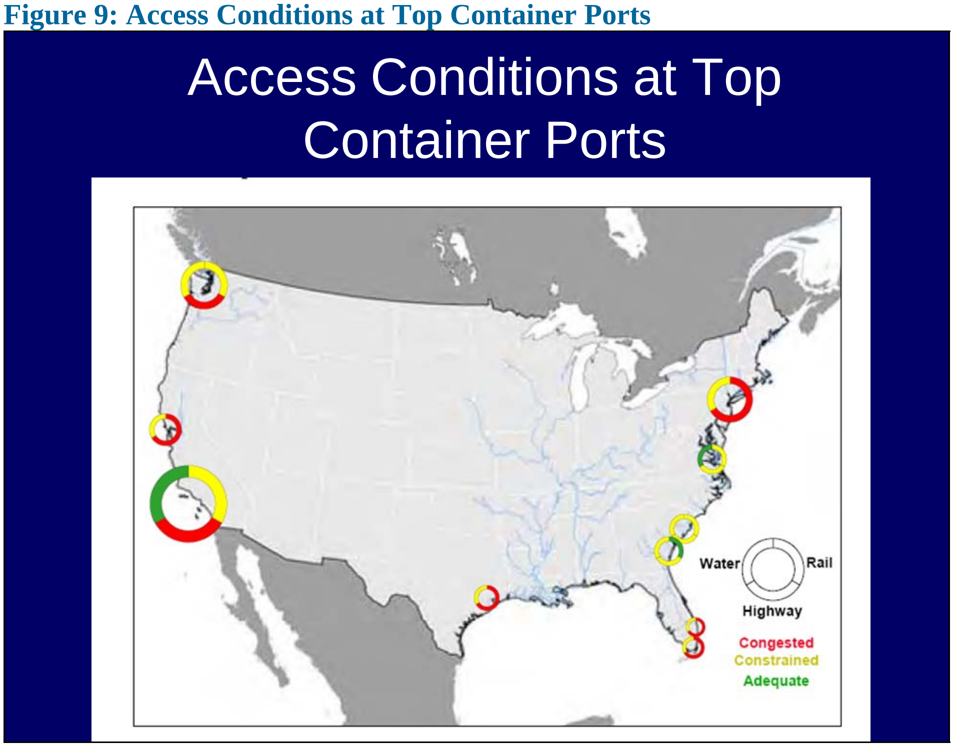
Similarly, there are restrictions for rail however the state of Louisiana is not showing any such difficulty remembering that New Orleans is only 1 of two locations in the whole country where there are six (6) Class I Railroads available for service.

Figure 8: Rail Flow Bottlenecks



Meanwhile major ports are also showing the inability to accommodate future growth.

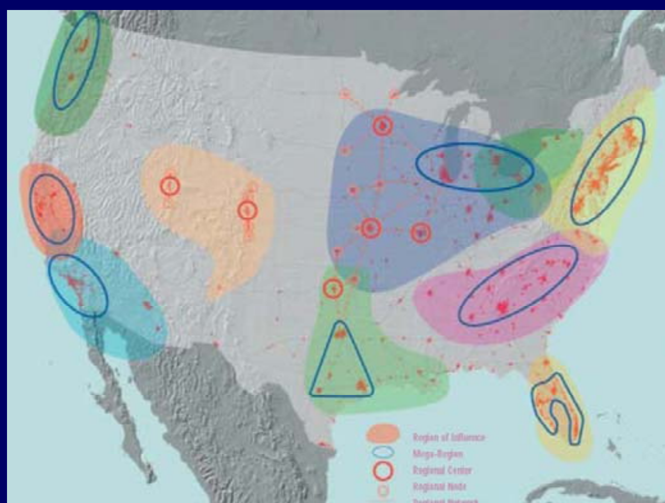
Figure 9: Access Conditions at Top Container Ports



The map below (Figure 10) shows the emerging Mega-Regions of the United States. As can be clearly seen Louisiana and Plaquemines Parish are positioned to be able to service directly three (3) of those regions by rail, truck and barge primarily through unrestricted travel ways. This factor will attract Beneficial Cargo Owners, carriers of all modes, investment interests and potential Distribution Centers. Trident's main premise since the start of this project has been "it is not about capacity it is about competition." Plaquemines can compete and it happens to have access to underutilized capacity for both truck and rail.

Figure 10: Evolving Mega-Regions in the United States

Evolving Mega-Regions in the United States



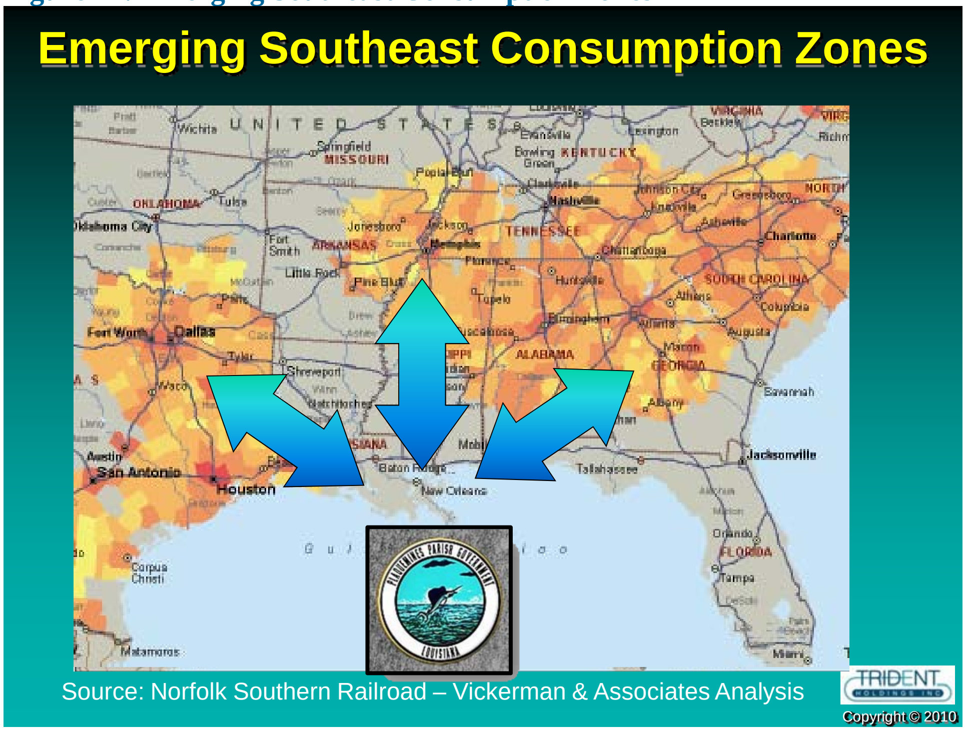
Source: Carbonell et al, *Global Gateway Regions, The United States of America's Third Century Strategy*, Southern California Association of Governments, Los Angeles, CA, Sept. 2005; based on "Toward an American Spatial Development Perspective," University of Pennsylvania, Department of Planning, Spring 2004.

The above Mega-Regions have been discussed and observed for some time and the commercial transportation distribution to those zones is actually lagging behind the growth of those regions. The graphic below shows the proximity to the zones. The areas highlighted by the arrows are potential truck service areas while the 10 state distributions which Trident identified in Task 2 would be served primarily by rail. Commerce which is less time sensitive or shelf life oriented potentially could be served by barge.

Conclusion

Given these realities the development of Port facilities in Plaquemines Parish is a timely decision and one that meets the test for private sector interest, endorsement and potential investment.

Figure 11: Emerging Southeast Consumption Zones



This distribution reality and opportunity is helping to drive the competitive positioning for locating new Port facilities in Plaquemines Parish. Unlike the findings in prior other studies and reports, Trident finds that this service region has substantial growth potential which is highly recognized by leading Colleges and Universities along with major Government Agencies. Plaquemines Parish is capable of serving a much larger region than previously considered by others. Port development in Plaquemines can attract major beneficial cargo owner, ocean and land carriers and distribute this trade to a growing and substantial market of the greater Midwest through Louisiana's historic ten (10) state traditional market share. With the development of these sites Plaquemines can capture new vibrant developers positioned to take advantage of these new portals to the US marketplace as evidenced by Figure 11.

Task 6 Figures and Tables

Figures

Tables

[1] World Bank Port Reform Toolkit, October 4, 2001. Accessed at http://siteresources.worldbank.org
[2] Data obtained from ESRI forecasts for 2009 and 2014; U.S. Bureau of the Census, 2000 Census of Population and Housing
[3] CWS Consulting
[4] ESRI forecasts for 2009 and 2014

Tax Foundation, State Business Tax Climate Index Rankings, 2006 - 2010
U.S. Bureau of the Census, 2000 Census of Population and Housing.
U.S. Bureau of Labor Statistics, Employment by NAICS, 2001, 2008
U.S. Bureau of Labor Statistics, May 2008 Metropolitan and Non-metropolitan Area Occupational Employment and Wage Estimates
World Bank Port Reform Toolkit, October 4, 2001

Task 7 – Alternative Development Plans – Recommended Port Development Master Plan

Table of Contents

Task 7 – Alternative Development Plans – Recommended Port Development Master Plan

Introduction

Task 7 presents the main Port Development Terminal Alternatives for each site considered. These alternatives specify build out capabilities, estimate throughput in tonnage and TEUs, present probable costs based on calculated estimates on build out quantities. Specifics are included on wharfs, buildings and warehousing, pavement areas, stormwater protection, and on-site rail and road access costs. Once presented these alternatives by site are re-evaluated against build out criteria and analyzed with and without future levee construction. Venice is evaluated pre/post the BP oil spill and assessed for potential expansion. Pro-forma financial models are presented in order to better understand the relative potential of each of developed terminal alternatives. Lastly Port security is discussed as a component of the required build out alternatives and presented not only as a required Homeland Security Standard but also as a means to attract substantial international trade.

Port Master Plan Development Alternative Planning and Methodology

In an effort to create alternative marine terminal development plans for the Plaquemines Port Development Master Plan, Trident Team concentrated on accommodating potential competitive cargos while ensuring the highest level of flexibility and expandability possible. This section of the report is a summary of the alternative port development plans that were created and are being recommended for this master planning process.

Three development plan alternative were created for consideration during the master planning process. Each of these alternatives addresses a potential market driven need for a marine river terminal integrated with efficient riverside, highway, and rail access. The purpose of the master planning process is to present a reasonable development scenario that forms the point of beginning for subsequent financial and operational analysis.

The following three alternatives are further evaluated in this task based on conceptual capital and operating costs, productivity, adjacency pros and cons, transport impacts, social, environmental, and aesthetic impacts, and other criteria which will lead to the selection of the preferred master plan alternative

Based on the cumulative results of all the analysis and master planning process evaluations accomplished in previous tasks, the Trident Team developed a series of schematic terminal layouts and operational plans as alternative master plans for both the top ranked Citrus II and the Amax properties.

The Task 2 Market Assessment Study provided the Trident Team with the market driven foundational principles upon which the alternative master development plans were based. The Task 3 Facility Assessment provided a comprehensive assessment of the physical, waterside and landside access characteristics as well as geotechnical, topographic, hydrographic, existing utility infrastructure, and other location attributes of the key port potential sites in Plaquemines Parish. Task 4 and 5 provided the Trident Team with an array of all the Master Plan Land and Water Use Requirements and the intermodal truck and rail access analysis. Task 6 focused on the On-site and Off-site opportunities and constraints for all the potential port sites.

Task 7 is the culmination and integration of all previous Port Development Master Plan efforts, investigations and analysis into recommended pragmatic Alternative Master Plans and recommendations and eventually the selection of the preferred Master Plan Alternatives.

Port Master Development Alternative No. 1 (Amax-Omni)

The Amax property alternative master development plans employ an Omni Terminal concept approach developed by Vickerman & Associates. The following is a general overview of that concept based on the previous task work and analysis for Tasks 4 and 5.

1. Amax Omni (Multipurpose) Terminal Concept

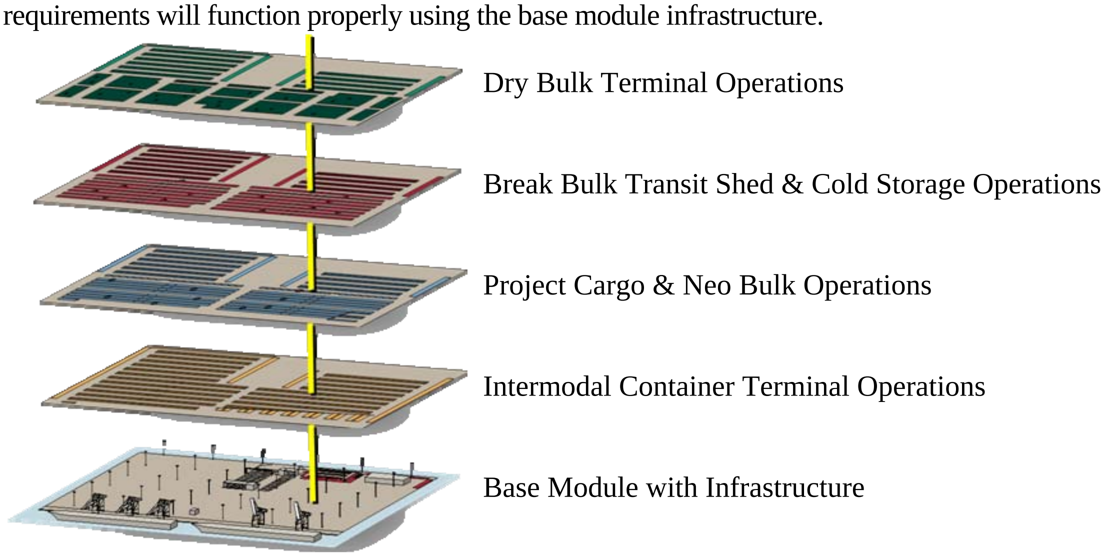
Because of the uncertainty of the market and potential cargoes available to Southeast Louisiana over the planning horizon of the next twenty years, a multi-purpose, multi-cargo flexible terminal strategy was adopted as the basis for the unique design of the Omni Terminal. This Omni Terminal strategy permits the Plaquemines Parish to take advantage of a wider array of market potential than would be afforded by the construction of a single focused operational facility.

The mechanics and theory behind the Omni Terminal concept have been coved in Tasks 4 and 5. The Omni terminal Concept is briefly reviewed here for the ease of the reader.

The Omni Terminal Concept was pioneered by Vickerman & Associates within the North American Port Industry. Vickerman & Associates port and intermodal terminal planning methodology uses as a starting point a rigorous competitive market analysis of the terminal's market demand. Many times there is insufficient market demand for all potential terminal operating and market types desired by the Port or Development Authority.

By combining the various terminal operational layouts in a layered operating plan overlay approach using computer aided design (CAD) methodologies, a multi functional terminal base planning module can be developed that will accommodate multiple market capabilities in a single flexible terminal planning module. Illustrated below is the multi-layered, multi-market Omni Port Terminal concept. A hypothetical Omni Terminal planning concept is illustrated below.

The physical base infrastructure is carefully laid out and positioned so that all the operating overlays requirements will function properly using the base module infrastructure.



The Amax Omni Terminal specifically targets the following cargo types using the Omni Terminal planning and operational approach:

- Dry and Refrigerated Containerized Cargoes
- Intermodal Rail Containerized Cargo
- Break Bulk Open Storage and Transit Shed Cargoes
- Cold Storage Cargoes
- Project and General Purpose Neo-Bulk Cargoes
- Dry Bulk Cargoes

The Amax Omni Terminal is a two berth vessel configured terminal. The new wharf quay would be a continuous structure tied directly to land with direct access ramps to facilitate truck movement.
The Omni Terminal backlands open storage and pavement area would be designed to handle stacked storage of containers (three high) and highway truck loading criteria (HS2044 ASSHTO Criteria) over the entire backlands storage area.

2. Amax Break Bulk – Neo Bulk Storage Terminal

The Trident Team used various generic break bulk and neo bulk terminal process flow diagrams and developed a flexible break bulk -neo bulk functional flow for use in the Amax Omni Terminal.

This break bulk – neo bulk terminal would allow for the construction of a 320,000 SF Break Bulk rail served transit shed generally constructed when required by the marketplace (Market Driven) and in general could be phased into 100,000 +/- SF increments and would be phased from West to East in 100,000+/- SF increments.

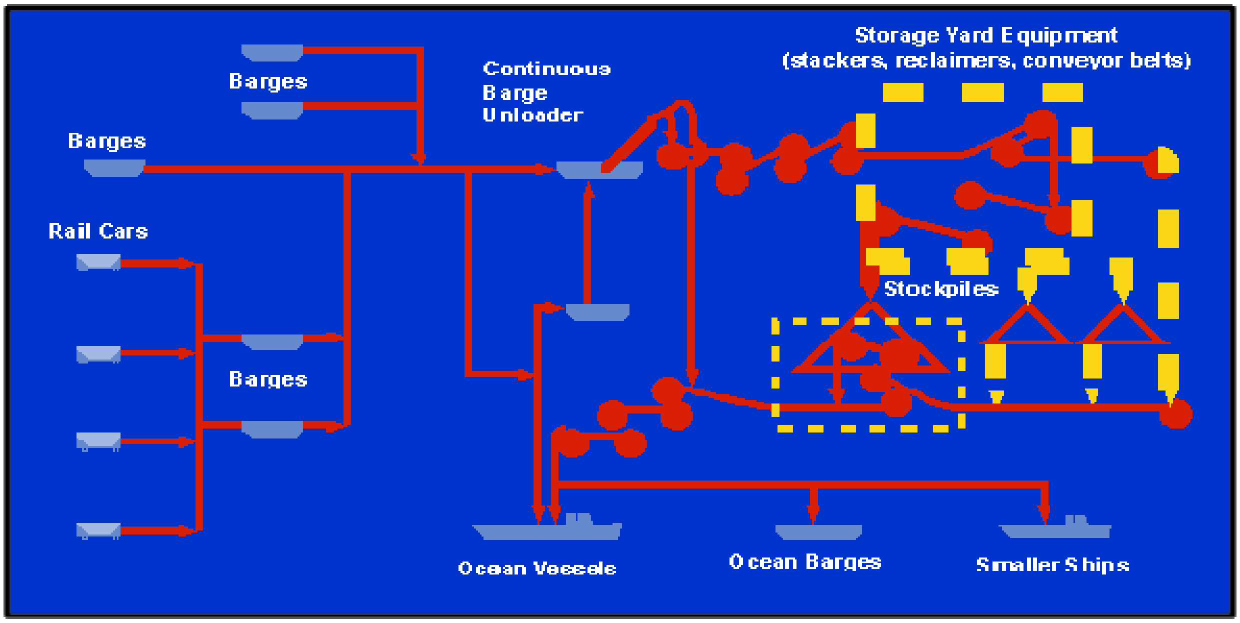
An important aspect of the transit shed placement and geometry is the intended separation and space provided between the Break Bulk Open Storage and Lay-down area and the Intermodal Container Terminal and Intermodal Rail operational areas. 25 acres of heavy pavement storage area suitable for a wide variety of project cargoes and all weather break bulk cargoes was positioned just south of the Break Bulk Transit Shed.

3. Amax Specialty Dry Bulk Terminal

The following illustrative diagram (Figure 1) depicts our generalized approach to marine and intermodal terminal planning and operational analysis using a process flow methodology for making terminal planning configuration and physical infrastructure recommendations.

The graph illustrates an automated Intermodal dry bulk terminal delivery process flow diagram. From this diagram and other similar dry bulk cargo process flow diagrams the Trident Team formulated a generic dry bulk terminal process flow that was adopted and integrated into the Omni (Multipurpose) Terminal planning approach.

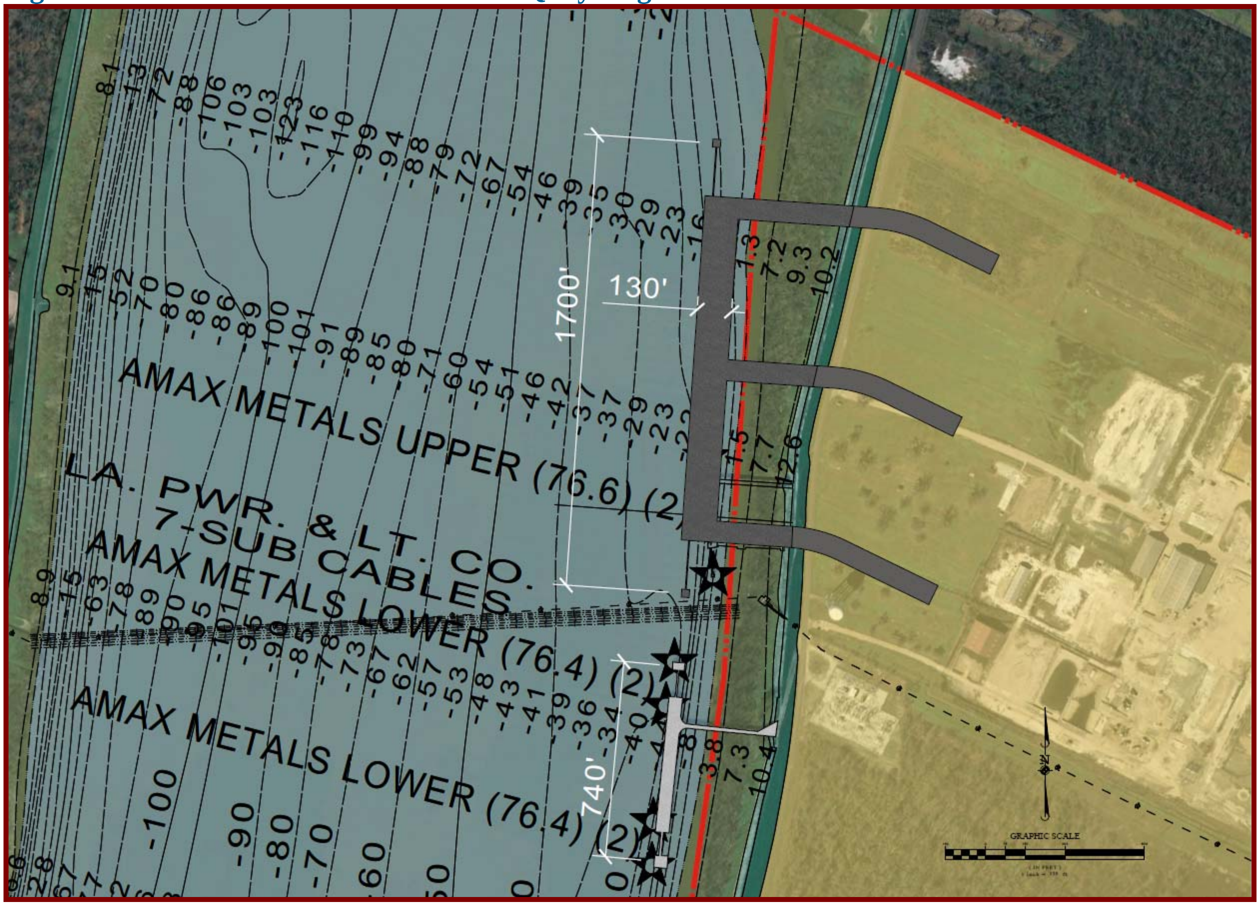
Figure 1:Terminal Planning and Operation Concept



Port Master Development Alternative Planning Considerations

The generalized approach to evaluating the entire Amax Site shows a potential for the development of a wharf with three (3) ramps if the entire site were to be built out to its full maximum development. The Omni Terminal concept requires one ramp while the Coal Alternative requires one. With careful concerns for navigational operations in the river and avoidance of existing major utility systems, a 1700 foot long multipurpose concrete wharf structure was envisioned on the Amax property western shoreline. The wharf apron could provide three truck access ramps to a 130 foot wide wharf/quay apron permitting semi-truck turn around on the wharf apron but more importantly continuous truck circulation movements to minimize cargo flow interruptions. The new concrete wharf structure is positioned just north of the existing 740 foot dolphin to dolphin wharf structure which is envisioned to be structurally renovated and rehabilitated with a new concrete wharf deck permitting barge and feeder vessel lay-berthing operations in support of potential Omni Terminal operations and or coal operations simultaneously (see Figure 2).

Figure 2: Amax Port Master Plan Wharf/Quay Alignment Considerations



*1,700 ft is the distance from dolphin to dolphin for the Omni Terminal Pier and the Pier width is 130'.
*740 ft is the distance from dolphin to dolphin for Bulk/Coal Operations.

Amax Property Dredging Concerns

As indicated on the above diagram, the proposed Amax two berth marginal wharf structure is positioned with the wharf front face in river water depths of approximately -16 to -23 feet of water. The Amax port development site will require dredging the river directly in front of the wharf to suit a multiplicity of anticipated vessels and create a suitable vessel basin in front of the wharf as well as providing for required dredging and depth for vessel approach and departure maneuvering to/from the Amax wharf. Because of the river geometry and ebb/flow at the proposed site, vessel maneuvering and berthing to the proposed wharf will require an experienced river pilot due to the complexities of the river hydrodynamics at the site. Routine maintenance dredging will also be required to maintain proper water depths at the wharf. Dredging costs have been included in the evaluation of Amax development costs.

Port Master Development Alternative No. 1 (Amax-Omni) Terminal Plan

The Amax Port Development is envisioned as a market driven development with the maritime and intermodal marketplace determining the specific schedule and sequence of development. The Omni terminal development concept has attempted to provide a flexible and expandable platform for accepting a wide range of market driven terminal operations at the Amax site. Adjustments in the Omni terminal layouts and plans will undoubtedly be required to synchronize the Amax terminal planning with the reality of the marketplace demands.

A significant component of the Omni terminal development is the multiple use two berth marginal wharf structure accommodating the following terminal operational modes:

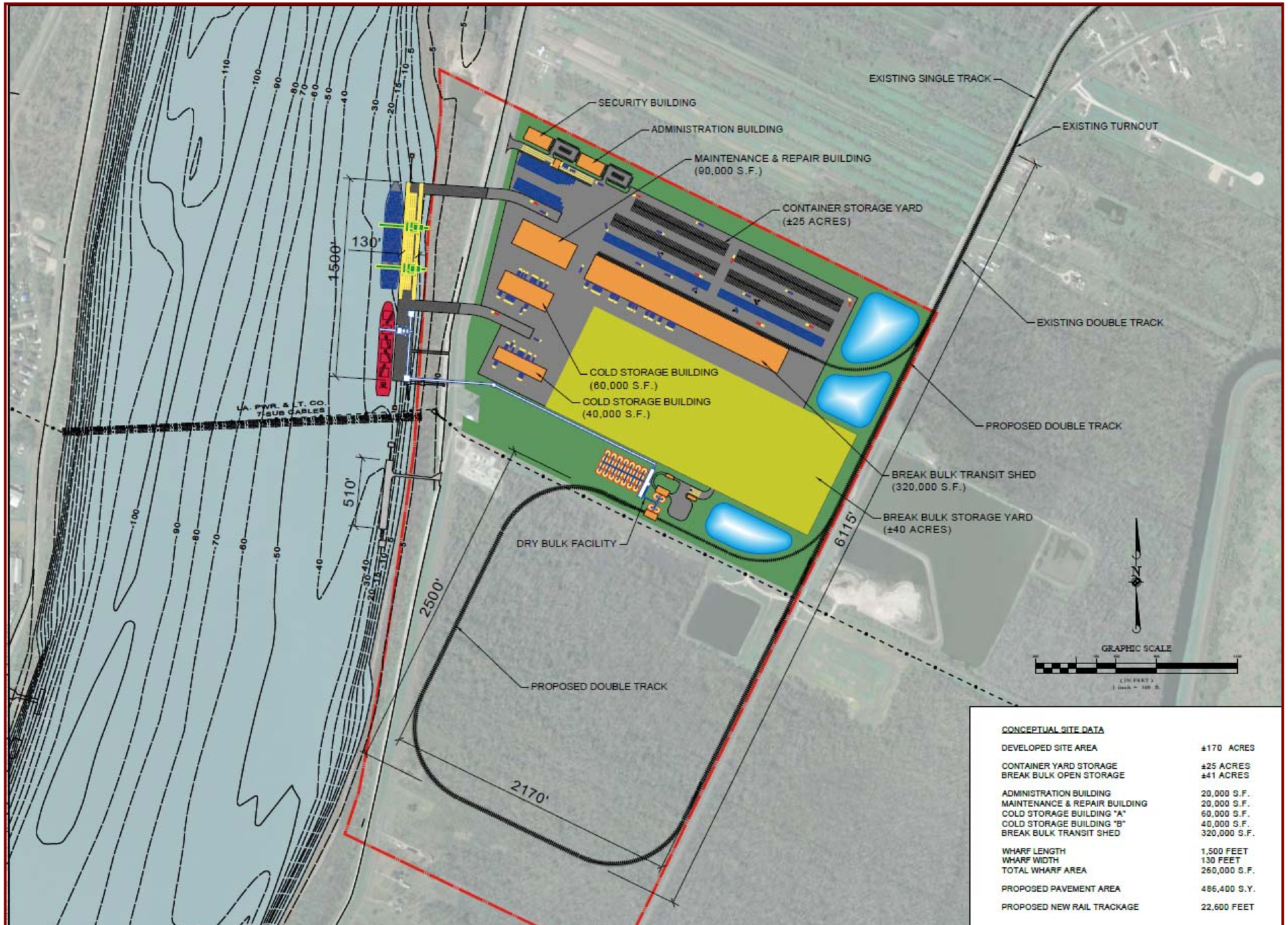
- ISO Container operations (North wharf only)
- Break Bulk Cargo operations (North or South wharf)
- Neo Bulk Cargo operations (North or South wharf)
- Project Cargo operations (North or South wharf)
- Dry Bulk Cargo operations (South wharf only)

Although covered in Task 9, it is helpful to envision a phased develop process for the Amax property. A potential Phase I of the Amax Port Development project is the construction of a specialized dry bulk terminal located along the southern property line of the non-wetland areas. The specialized dry bulk operation envisions dry bulk cargo operations such as grain, fertilizer, wood pellets, aggregates, mineral products, etc. The phase I development has been planned for flexibility of products and could accommodate a wide range of possible potential dry bulk operations. These operations could include vertical silo storage facilities, open storage, covered storage facilities, conveyor systems, vessel/wharf loading and unloading stationary and mobile equipment, rotary and stationary rail loading and unloading facilities.

A unique advantageous feature of the dry bulk terminal operational plans is the ability to accommodate a dedicated railroad loop unloading/loading track immediately to the south of the non-wetland parcel areas. The planned railroad loop track would be constructed in the wetlands area immediately to the south of the planned terminal improvements.

The specialized dry bulk terminal would utilize the southern new marginal wharf as indicated in the concept plan below. The new wharf would be outfitted with dry bulk vessel/wharf loading and unloading equipment designed specifically for the particular dry bulk terminal operation.

Figure 3: Proposed Amax Omni Terminal Operational Plan



Port Master Plan Development Alternative No. 1 (Amax-Omni) Description

This alternative (Figure 3) is provided to accommodate a modern, dry bulk and general cargo, rail-served marine terminal. The total acreage required to accommodate this concept is approximately 170 acres, not including the new rail corridors. The container terminal portion of the facility has a 40 acre foot print with approximately 25 acres of container storage, including aisles and terminal circulation traffic lanes. The break bulk terminal portion of the facility has an 80 acre footprint with approximately 40 acres of open storage. The dry bulk terminal footprint is approximately 25 acres. The remaining 25 acres are used for stormwater retention and rail access.

The following is a description of the major terminal elements and applicable characteristics:

Wharf

The proposed wharf for the AMAX-Omni Terminal concept is 1,500 feet in length, not including mooring dolphins, and 130 feet in width. The total serviceable wharf length, available to berth vessels is approximately 1,900 feet. This length is sufficient to accommodate one 950 foot container vessel and one 850 foot break bulk carrier vessel simultaneously.

The wharf is constructed of a concrete pile supported concrete deck, with rail-mounted gantry cranes for break bulk and containerized cargos. The total wharf deck area is approximately 260,000 square feet. Appropriate fender system is to be installed along the wharf face, with vessel mooring system based on 50 foot centers.

The wharf is connected to the landside on the upstream-side by two, paved earthen berms that cross the levee at-grade. Wharf access for terminal truck traffic is provided atop earthen berms at a grade of 2.5%. This grade is deemed to be sufficient for providing terminal truck access to the wharf from the landside. The construction of this wharf will not affect the current levee or any proposed plans by the US Army Corps of Engineers. The wharf will extend over the levee and probably require a bulkhead on the water side however this detail will be determined at final design. Presently all costs are included in the probable cost tables below.

Buildings

There are six major buildings proposed for this concept, exclusive of the dry bulk terminal. This includes a 20,000 square foot administration building, a 20,000 square foot security building that would also contain documentation and inspection services, and 90,000 square foot maintenance and repair building. There are also two proposed cold storage facilities, one 60,000 square feet and one 40,000 square feet. These buildings could also be container freight stations or conventional on-dock warehouses. A 320,000 square foot, rail-served transit shed supports general cargo terminal. Each building is steel frame construction, on concrete slab foundations. Assume maintenance and repair building may include pile supported overhead beam mounted cranes to accommodate heavy lift requirements for servicing cargo handling equipment.

The dry bulk terminal is 10 acres, with approximately 150,000 tons of silo storage, a two-lane terminal gate for inbound and outbound truck traffic, a truck scale and (un)loading shed, administration building and employee parking. All buildings are steel frame construction with concrete slab foundations. All cargo conveyance systems are steel frame supported, on concrete footers.

There are also two rail car dumper buildings, where rail cars are unloaded. Each building is steel frame construction, on concrete slab foundations. Assume rail car dumper buildings do not require pile support.

Paving

Total paving for the proposed terminal is approximately 486,400 square yards. Pavement can be described as medium strength, with the capacity to accommodate tractor trailer loads carrying loaded trailers and containers. The parking lot area next to the administration and security buildings will consist of light paving only, capable of supporting automobile loads.

Two terminal areas will require heavy, flexible paving to support container handling equipment and break bulk cargo storage. Heavy paving will total approximately 65 acres.

Stormwater Retention Pond

A stormwater retention pond is provided for the capture of terminal stormwater run-off. All ponds shown in alternative drawings are for illustrative purposes only and as a "best management practice" for water quality purposes to meet NPDES General Permit requirements.

Rail

All proposed rail is of typical construction, on prepared road beds as per AREMA standards. Total amount of new rail trackage is approximately 22,600 linear feet. New single track rail will be standard gauge, with the road bed being 22 feet in width, with 3 feet of engineered sub-grade, a minimum of 12 inches of sub-ballast and 12 inches of ballast. New double track rail will include a road bed width of 44 feet.

Annual Throughput Capacity Estimate

A spreadsheet based calculation was performed to determine the annual throughput capacity of the proposed AMAX-OMNI Terminal concept. The proposed terminal was modeled to determine the Maximum Practical Capacity (MPC). MPC is defined as the high end of a realistic operating scenario for a terminal, or at 100 percent operating capacity. There were three models calculated for the AMAX-OMNI Terminal concept, based on cargo type and operational requirements. The tables below provide the summary results of the annual throughput capacity model.

Table 1: Summary Container Capability Estimates

Summary Container Capability Estimates (in TEU)	
Component Summary	**AMAX-OMNI Terminal**
Component 1: Berth and Apron Activities	451,500
Component 2: Ship To Apron Transfer	650,397
Component 3: Apron To Storage Transfer	803,391
Component 4: Storage	123,455
Component 5: Intermodal Transfer	758,653
Component 6: Gate Processing	426,717
Terminal Summary	**AMAX-OMNI Terminal**
Total Terminal Acres	40
Throughput Capability per Terminal Acre	3,086
Total Storage Acres	12
Throughput Capability per Storage Acre	10,288
Maximum Practical Throughput Capacity Est.	**123,455**
Table of Limiting Factors	**AMAX-OMNI Terminal**
Component 1: Berth and Apron Activities	....
Component 2: Ship To Apron Transfer	....
Component 3: Apron To Storage Transfer	....
Component 4: Storage	Limiting
Component 5: Intermodal Transfer	....
Component 6: Gate Processing	....

Table 2: Summary Breakbulk Capability Estimates

Summary Break Bulk Capability Estimates (in Tons)	
Component Summary	**AMAX-OMNI Terminal**
Component 1: Berth and Apron Activities	1,407,754
Component 2: Ship To Apron Transfer	2,213,120
Component 3: Apron To Storage Transfer	1,493,856
Component 4: Storage	7,932,161
Component 5: Inland Transfer	1,549,764
Component 6: Gate Processing	2,786,233
Terminal Summary	
Total Storage Acres	47.0
Throughput Capability per Storage Acre	29,952
Total Terminal Acres	80
Throughput Capability per Terminal Acre	17,597
Maximum Practical Throughput Capacity Estimate	**1,407,754**
Table of Limiting Factors	**AMAX-OMNI Terminal**
Component 1: Berth and Apron Activities	Limiting Component
Component 2: Ship To Apron Transfer	....
Component 3: Apron To Storage Transfer	....
Component 4: Storage	....
Component 5: Inland Transfer	....
Component 6: Gate Processing plus Rail Transfer	....

Table 3: Summary Dry Bulk Capability Estimates

Summary Dry Bulk Capability Estimates	
Throughput Capability By Terminal Component (in Tons)	
Component 1: Vessel and Berth Activities	3,898,549
Component 2: Vessel To Apron Transfer	4,161,000
Component 3: Storage	3,360,000
Component 4: Inland Transfer	3,510,000
Component 5: Gate Processing	3,617,600
Maximum Practical Throughput Capacity Estimate	**3,360,000**
Component Summary Table of Limiting Factors	
Component 1: Vessel and Berth Activities	....
Component 2: Vessel To Apron Transfer	....
Component 3: Storage	Limiting
Component 4: Inland Transfer	....
Component 5: Gate Processing	....
Total Storage Acres Available	1.30
Throughput Capability per Storage Acre	2,584,615
Total Terminal Acres Available	25
Throughput Capability per Terminal Acre	134,400
Total Port's Throughput Capability	**3,360,000**
Total Storage Acres	**1.30**
Throughput Capability per Storage Acre	**2,584,615**
Number of Terminals	**1**
Average Storage Acres per Terminal	**1.30**
Acreage Throughput per Average Terminal	**3,360,000**

Amax – Omni Terminal Conceptual Construction Budget Estimate – Alternative 1

The Conceptual Construction Budget Estimate developed for the Plaquemines Parish Port Development Master Plan provide order of magnitude probable construction costs for the development of the specific properties for each intended use. Construction quantities have been determined based on the planning level detail provided in each concept plan. Unit construction costs are based upon local data gathered by the project team and supplemented by data published by R.S. Means. Terminal Equipment cost as well as operational costs are not included in the Conceptual Construction Budget Estimate

The Conceptual Construction Budget Estimate is prepared in an “Opinion of Probable Cost” and is expected to have a degree of accuracy of plus or minus 15%. Three “Opinion of Probable Cost” are included for the Amax – Omni Terminal as follows:

- Amax Omni Terminal – Specialized Dry Bulk Terminal
- Amax Omni Terminal – Break Bulk Terminal
- Amax Omni Terminal – Intermodal Container Rail Terminal
- These elements of the Amax Omni Terminal will generally proceed in a market drive sequence.
- Opinions of Probable Cost – Alternative 1 – Amax Omni Terminal

Table 4: Amax Omni Terminal Phase I - Opinion of Probable Cost

Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal - Phase I (Specialized Bulk Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
D	Demolition					
	1	Site Demolition	1	LS	$1,500,000	$1,500,000
					SUBTOTAL DEMOLITION	$1,500,000
S	SITE WORK					
	1	General Site Grading & Compaction	24,000	CY	$20	$480,000
	2	Lime Stabilization of Pavement Subgrade	34,000	SY	$3	$102,000
	3	Stormwater Basin Exacavation	56,500	CY	$20	$1,130,000
	4	Earthen Ramp Embankment	20,000	CY	$25	$500,000
	5	Water - Potable/Fire	30	AC	$5,000	$150,000
	6	Sanitary - Packaged Treatment Plant	1	LS	$385,000	$385,000
	7	Drainage - Storm Sewers	30	AC	$85,000	$2,550,000
	8	Pavement - Heavy Duty	34,000	SY	$70	$2,380,000
	9	Pavement - Standard Duty	0	SY	$40	$0
	10	Fencing - Site Perimeter	11,000	LF	$40	$440,000
	11	Striping/Traffic Control	0	LS	$250,000	$0
	12	Dredging	440,000	CY	$7	$3,080,000
					SUBTOTAL SITE WORK	$11,197,000
R	RAIL					
	1	Clearing & Grubbing	6	AC	$10,000	$60,000
	2	Rail Track Extensions	18,000	LF	$200	$3,600,000
	3	Rail Turnouts	6	EA	$175,000	$1,050,000
					SUBTOTAL RAIL	$4,710,000
W	WHARF					
	1	Concrete Wharf	106,000	SF	$250	$26,500,000
	2	Fender System	600	LF	$450	$270,000
					SUBTOTAL WHARF	$26,770,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	0	LS	$1,000,000	$0
	2	Administration Building	0	SF	$350	$0
	3	Security Building	0	SF	$350	$0
	4	Maintenance & Repair	0	SF	$200	$0
	5	Cold Storage Buildings	0	SF	$250	$0
	6	Break Bulk Transit Shed	0	SF	$150	$0
					SUBTOTAL BUILDINGS & STRUCTURES	$0
					SUBTOTAL SITE DEVELOPMENT COSTS	$44,177,000
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$662,655
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$220,885
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$7,510,090
					CONTINGENCY (AT 20%)	$8,835,400
					TOTAL SITE DEVELOPMENT COSTS	$61,406,030

Table 5: Amax Omni Terminal Phase II - Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal - Phase II (Break Bulk Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	0	LS	$1,500,000	$0
					SUBTOTAL DEMOLITION	$0
S	SITE WORK					
	1	General Site Grading & Compaction	129,000	CY	$20	$2,580,000
	2	Lime Stabilization of Pavement Subgrade	317,400	SY	$3	$952,200
	3	Stormwater Basin Exacavation	64,500	CY	$20	$1,290,000
	4	Earthen Ramp Embankment	0	CY	$25	$0
	5	Water - Potable/Fire	95	AC	$5,000	$475,000
	6	Sanitary - Packaged Treatment Plant	0	LS	$385,000	$0
	7	Drainage - Storm Sewers	95	AC	$85,000	$8,075,000
	8	Pavement - Heavy Duty	311,500	SY	$70	$21,805,000
	9	Pavement - Standard Duty	5,900	SY	$40	$236,000
	10	Fencing - Site Perimeter	0	LF	$40	$0
	11	Striping/Traffic Control	0	LS	$250,000	$0
	12	Dredging	306,000	CY	$7	$2,142,000
					SUBTOTAL SITE WORK	$37,555,200
R	RAIL					
	1	Clearing & Grubbing	0	AC	$10,000	$0
	2	Rail Track Extensions	2,750	LF	$200	$550,000
	3	Rail Turnouts	1	EA	$175,000	$175,000
					SUBTOTAL RAIL	$725,000
W	WHARF					
	1	Concrete Wharf	0	SF	$250	$0
	2	Fender System	0	LF	$450	$0
					SUBTOTAL WHARF	$0
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$1,000,000	$1,000,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Security Building	20,000	SF	$350	$7,000,000
	4	Maintenance & Repair	90,000	SF	$200	$18,000,000
	5	Cold Storage Buildings	100,000	SF	$250	$25,000,000
	6	Break Bulk Transit Shed	320,000	SF	$150	$48,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$106,000,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$144,280,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$2,164,203
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$721,401
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$24,527,634
					CONTINGENCY (AT 20%)	$28,856,040
					TOTAL SITE DEVELOPMENT COSTS	$200,549,478

Table 6: Amax Omni Terminal Phase III - Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal - Phase III (Intermodal Container Rail Terminal) Plaquemines Parish Port Development Master Plan Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	0	LS	$1,500,000	$0
					SUBTOTAL DEMOLITION	$0
S	SITE WORK					
	1	General Site Grading & Compaction	32,000	CY	$20	$640,000
	2	Lime Stabilization of Pavement Subgrade	135,000	SY	$3	$405,000
	3	Stormwater Basin Exacavation	74,000	CY	$20	$1,480,000
	4	Earthen Ramp Embankment	20,000	CY	$25	$500,000
	5	Water - Potable/Fire	45	AC	$5,000	$225,000
	6	Sanitary - Packaged Treatment Plant	0	LS	$385,000	$0
	7	Drainage - Storm Sewers	45	AC	$85,000	$3,825,000
	8	Pavement - Heavy Duty	135,000	SY	$70	$9,450,000
	9	Pavement - Standard Duty	0	SY	$40	$0
	10	Fencing - Site Perimeter	0	LF	$40	$0
	11	Striping/Traffic Control	1	LS	$250,000	$250,000
					SUBTOTAL SITE WORK	$16,775,000
R	RAIL					
	1	Clearing & Grubbing	0	AC	$10,000	$0
	2	Rail Track Extensions	1,850	LF	$200	$370,000
	3	Rail Turnouts	0	EA	$175,000	$0
					SUBTOTAL RAIL	$370,000
W	WHARF					
	1	Concrete Wharf	154,000	SF	$250	$38,500,000
	2	Fender System	900	LF	$450	$405,000
					SUBTOTAL WHARF	$38,905,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	0	LS	$1,000,000	$0
	2	Administration Building	0	SF	$350	$0
	3	Security Building	0	SF	$350	$0
	4	Maintenance & Repair	0	SF	$200	$0
	5	Cold Storage Buildings	0	SF	$250	$0
	6	Break Bulk Transit Shed	0	SF	$150	$0
					SUBTOTAL BUILDINGS & STRUCTURES	$0
					SUBTOTAL SITE DEVELOPMENT COSTS	$56,050,000
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$840,750
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$280,250
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$9,528,500
					CONTINGENCY (AT 20%)	$11,210,000
					TOTAL SITE DEVELOPMENT COSTS	$77,909,500

Table 7: Amax Omni Terminal - Opinion of Probable Cost

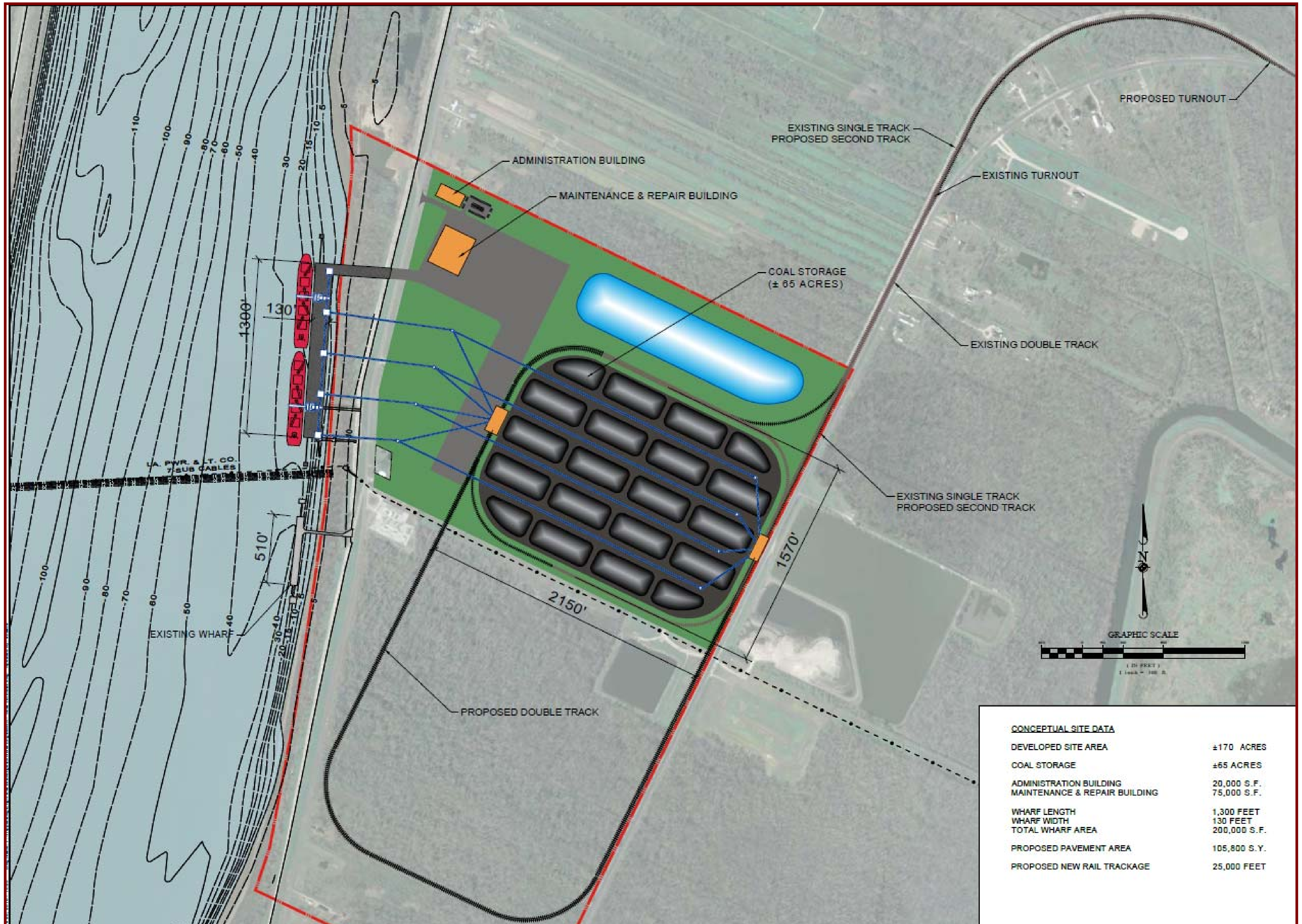
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal Plaquemines Parish Port Development Master Plan Plaquemines Parish, Louisiana						
D	Demolition					
	1	Site Demolition	1	LS	$1,500,000	$1,500,000
					SUBTOTAL DEMOLITION	$1,500,000
S	SITE WORK					
	1	General Site Grading & Compaction	185,000	CY	$20	$3,700,000
	2	Lime Stabilization of Pavement Subgrade	486,400	SY	$3	$1,459,200
	3	Stormwater Basin Exacavation	195,000	CY	$20	$3,900,000
	4	Earthen Ramp Embankment	40,000	CY	$25	$1,000,000
	5	Water - Potable/Fire	170	AC	$5,000	$850,000
	6	Sanitary - Packaged Treatment Plant	1	LS	$385,000	$385,000
	7	Drainage - Storm Sewers	170	AC	$85,000	$14,450,000
	8	Pavement - Heavy Duty	480,500	SY	$70	$33,635,000
	9	Pavement - Standard Duty	5,900	SY	$40	$236,000
	10	Fencing - Site Perimeter	11,000	LF	$40	$440,000
	11	Dredging	746,000	CY	$7	$5,222,000
					SUBTOTAL SITE WORK	$65,277,200
R	RAIL					
	1	Clearing & Grubbing	6	AC	$10,000	$60,000
	2	Rail Track Extensions	22,600	LF	$200	$4,520,000
	3	Rail Turnouts	7	EA	$175,000	$1,225,000
					SUBTOTAL RAIL	$5,805,000
W	WHARF					
	1	Concrete Wharf	260,000	SF	$250	$65,000,000
	2	Fender System	1,500	LF	$450	$675,000
					SUBTOTAL WHARF	$65,675,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$1,000,000	$1,000,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Security Building	20,000	SF	$350	$7,000,000
	4	Maintenance & Repair	90,000	SF	$200	$18,000,000
	5	Cold Storage Buildings	100,000	SF	$250	$25,000,000
	6	Break Bulk Transit Shed	320,000	SF	$150	$48,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$106,000,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$244,257,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$3,663,858
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$1,221,286
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$41,523,724
					CONTINGENCY (AT 20%)	$48,851,440
					TOTAL SITE DEVELOPMENT COSTS	$339,517,508

Port Master Development Alternative No. 2 (Amax-Coal) Terminal Plan

During detailed discussions and formal interviews with selected Class I railroads it became clear that several Class I Railroads believe that developing a specialized Coal/Coke terminal as the southern terminus for a modern state-of-the-art rail served import /export North-South Coal movement terminal could be considered as a viable alternative for the Amax property. Community concerns regarding environmental risks, although well founded, could be mitigated deploying current state-of-the-art coal terminal dust suppression systems and enclosed environmental controlled conveyance systems as well as quay side vessel environmental control technologies

This alternative is provided to accommodate a modern, coal import/export, rail-served marine terminal. The total acreage required to accommodate this concept is approximately 170 acres, not including the new rail corridors. Figure 4 is a description of the major terminal elements and applicable characteristics:

Figure 4: Proposed Amax Coal Terminal Operational Plan



The Amax-Coal, Alternative No. 2, is a dedicated coal/coke import/export dry bulk transfer terminal. Please note that both berths at the wharf are dedicated to dry bulk coal/coke vessel unloading/loading capabilities.

This alternative is provided to accommodate a modern, coal import/export, rail-served marine terminal. The total acreage required to accommodate this concept is approximately 170 acres, not including the new rail corridors. The following is a description of the major terminal elements and applicable characteristics:

Wharf

The proposed wharf for the AMAX-Coal Terminal concept is 1,300 feet in length, not including mooring dolphins, and 80 feet in width. The total serviceable wharf length, available to berth vessels is approximately 1,700 feet. This length is sufficient to accommodate two 800 foot bulk carrier vessel simultaneously.

The wharf is constructed of a concrete pile supported concrete deck, with rail-mounted gantry cranes for transferring coal. The total wharf deck area is approximately 123,000 square feet. Appropriate fender system is to be installed along the wharf face, with vessel mooring system based on 50 foot centers.
The wharf is connected to the landside on the upstream-side by an earthen berm that crosses the levee at-grade. Wharf access for vehicular traffic is provided atop earthen berms at a grade of 8.0%. This grade is deemed to be acceptable for potential required vehicular access to the wharf from the landside for emergency vehicles and other operational terminal vehicles as necessary.

Buildings

There are two major buildings proposed for this concept, including a 20,000 square foot administration building and a 75,000 square foot maintenance and repair building. Each building is steel frame construction, on concrete slab foundations. Assume maintenance and repair building may include pile supported overhead beam mounted cranes to accommodate heavy lift requirements for servicing equipment.

There are also two rail car rotary buildings, where rail cars are unloaded. Each building is steel frame construction, on concrete slab foundations. Assume rail car rotary buildings may include pile supported beam structures to accommodate rotary equipment for dumping rail cars.

Paving

Total paving for the proposed terminal is approximately 92,900 square yards. Pavement can be described as medium strength, with the capacity to accommodate tractor trailer loads carrying heavy equipment between the maintenance and repair facility and the coal storage area. The parking lot area next to the administration building will consist of light paving only, capable of supporting automobile loads.

Coal Yard

The coal yard is the area where coal is stored for transfer. Coal is stored in piles, with a total area of approximately 65 acres available. Coal storage areas will be engineered with typical geotechnical measures for mitigating coal storage and handing processes. The coal yard is served by overhead conveyors and stacker/reclaimer cranes, typical for waterfront coal terminals.

Stormwater/Spray Retention Pond

A stormwater retention pond is provided for the capture of terminal stormwater run-off and wetting water. Water is sprayed onto active coal piles to mitigate coal dust. All ponds shown in alternative drawings are for illustrative purposes only and as a "best management practice" for water quality purposes to meet NPDES General Permit requirements.

Rail

All proposed rail is of typical construction, on prepared road beds as per AREMA standards. Total amount of new rail trackage is approximately 25,000 linear feet. New single track rail will be standard gauge, with the road bed being 22 feet in width, with 3 feet of engineered sub-grade, a minimum of 12 inches of sub-ballast and 12 inches of ballast. New double track rail will include a road bed width of 44 feet.

Annual Throughput Capacity Estimate

A spreadsheet based calculation was performed to determine the annual throughput capacity of the proposed AMAX-Coal Terminal concept. The proposed terminal was modeled to determine the Maximum Practical Capacity (MPC). MPC is defined as the high end of a realistic operating scenario for a terminal, or at 100 percent operating capacity. Table 8 below provides the summary results of the annual throughput capacity model.

Table 8: Summary of Capability Estimates

SUMMARY CAPABILITY ESTIMATES	
Throughput Capability By Terminal Component (Tons/Yr)	
Component 1: Vessel and Berth Activities	11,596,515
Component 2: Vessel To Apron Transfer	12,316,560
Component 3: Storage	18,700,000
Component 4: Inland Transfer	15,226,661
Maximum Practical Throughput Capacity Estimate	**11,596,515**
Component Summary Table of Limiting Factors	
Component 1: Vessel and Berth Activities	Limiting
Component 2: Vessel To Apron Transfer	....
Component 3: Storage	....
Component 4: Inland Transfer	....
Total Storage Acres Available	50.00
Throughput Capability per Storage Acre	231,930
Total Terminal Acres Available	80
Throughput Capability per Terminal Acre	144,956
Total Port's Throughput Capability	**11,596,515**
Total Storage Acres	**50.00**
Throughput Capability per Storage Hectare	**231,930**
Number of Terminals	**2**
Average Storage Acres per Terminal	**25.00**
Acreage Throughput per Average Terminal	**5,798,257**

Amax – Coal Terminal Conceptual Construction Budget Estimate – Alternative 2

The Conceptual Construction Budget Estimate developed for the Plaquemines Parish Port Development Master Plan provide order of magnitude probable construction costs for the development of the specific properties for each intended use. Construction quantities have been determined based on the planning level detail provided in each concept plan. Unit construction costs are based upon local data gathered by the project team and supplemented by data published by R.S. Means. Terminal Equipment cost as well as operational costs are not included in the Conceptual Construction Budget Estimate

The Conceptual Construction Budget Estimate is prepared in an “Opinion of Probable Cost” and is expected to have a degree of accuracy of plus or minus 15%.

Table 9: Amax Site - Coal Terminal - Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Coal Terminal						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	1	LS	$1,500,000	$1,500,000
					SUBTOTAL DEMOLITION	$1,500,000
S	SITE WORK					
	1	General Site Grading & Compaction	185,000	CY	$20	$3,700,000
	2	Lime Stabilization of Pavement Subgrade	92,900	SY	$3	$278,700
	3	Stormwater Basin Exacavation	240,000	CY	$20	$4,800,000
	4	Earthen Ramp Embankment	15,000	CY	$25	$375,000
	5	Water - Potable/Fire	85	AC	$5,000	$425,000
	6	Sanitary - Packaged Treatment Plant	1	LS	$142,500	$142,500
	7	Drainage - Storm Sewers	20	AC	$85,000	$1,700,000
	8	Pavement - Standard Duty	92,900	SY	$40	$3,716,000
	9	Fencing - Site Perimeter	11,000	LF	$40	$440,000
	10	Striping/Traffic Control	1	LS	$50,000	$50,000
	11	Dredging	675,000	CY	$7	$4,725,000
					SUBTOTAL SITE WORK	$20,352,200
R	RAIL					
	1	Clearing & Grubbing	6	AC	$10,000	$60,000
	2	Rail Track Extensions	25,000	LF	$200	$5,000,000
	3	Rail Turnouts	7	EA	$175,000	$1,225,000
					SUBTOTAL RAIL	$6,285,000
W	WHARF					
	1	Concrete Wharf	123,000	SF	$250	$30,750,000
	2	Fender System	1,300	LF	$450	$585,000
					SUBTOTAL WHARF	$31,335,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$100,000	$100,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Maintenance & Repair	75,000	SF	$200	$15,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$22,100,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$81,572,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$1,223,583
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$407,861
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$13,867,274
					CONTINGENCY (AT 20%)	$16,314,440
					TOTAL SITE DEVELOPMENT COSTS	$113,385,358

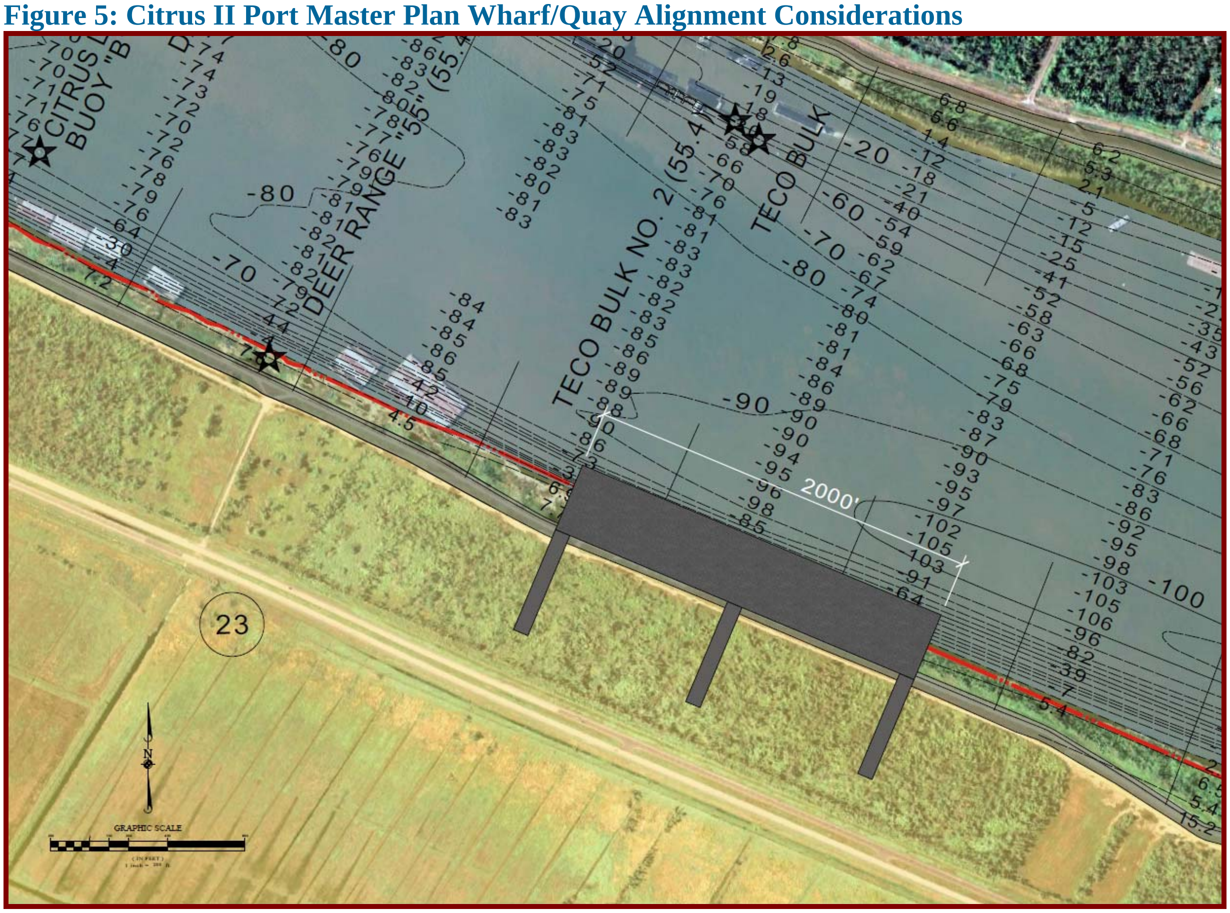
Port Master Development Alternative No. 3 (Citrus II Container & Intermodal Port) Terminal Plan

The Citrus II Port Development is envisioned as a linear sequentially developed set of interconnected market driven projects. As will be discussed in Task 9, the initial two phases of the Citrus II project were envisioned as being closely developed and are referred to as a Phase 1A and 1B. Phase 1A being the two berth marine Container Terminal project and Phase 1B being the development of the adjacent "On-Dock" Intermodal rail Terminal project.

Citrus II Port Master Plan Wharf/Quay Alignment Considerations

Careful consideration was given for navigational operations on the river and avoidance of existing major utility systems and a 2,000 foot long 1,000 psf concrete wharf structure was positioned on the Citrus II property western shoreline. The wharf apron will provide three truck access ramps to a wharf/quay apron extending from the bull rail front face of the wharf/quay back to the river containment dike structure permitting semi-truck turn around on the wharf apron but more importantly continuous truck circulation movements to minimize cargo flow interruptions between the backlands container terminal and the operational areas of the container wharf. The existing dike and batcher would be incorporated into the western portion of the container terminal wharf structure (Figure 5).

Figure 5: Citrus II Port Master Plan Wharf/Quay Alignment Considerations



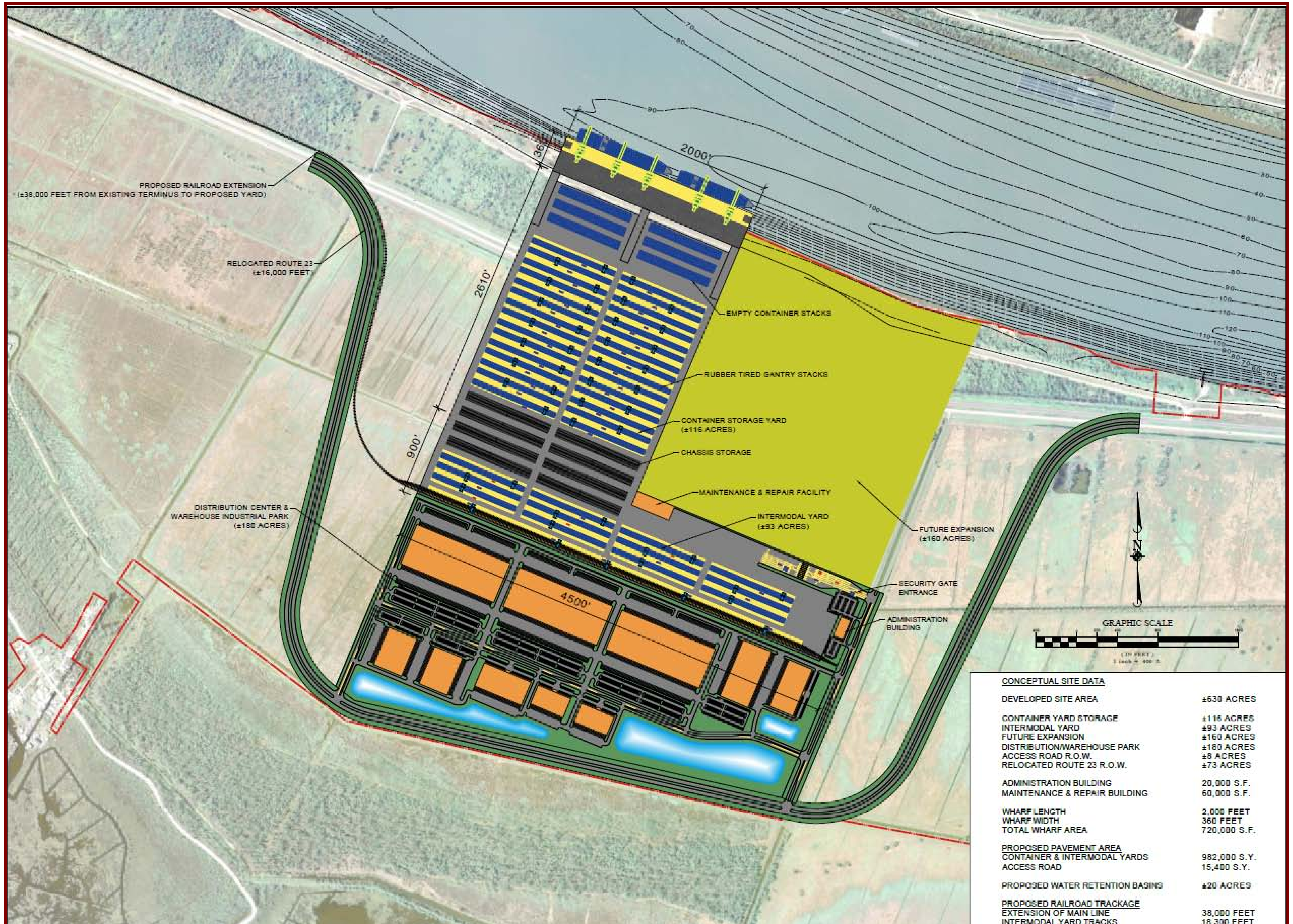
The new concrete wharf structure was positioned to maximize the front face alignment of the container wharf with the closest water depth contour to the shore permitting an unencumbered front face water depth of more than 50 feet. Another consideration was to minimize the disruption and elimination of barge and vessel anchorages along the Citrus II property river shoreline and to minimize disruption of current navigational river aids.

The finish grade for the concrete wharf deck will be determined to be above the 200 year flood elevation for the river. The final elevation of the wharf deck could be determined at a higher elevation should State and Federal officials desire to establish an operating wharf deck capable of withstanding future hurricane events permitting the wharf and terminal facilities to be used as an emergency cargo transfer station and disaster preparedness platform.

The competitive success of the marine Container Terminal is highly dependent on the operational efficiencies provided by the adjacent On-Dock Intermodal Rail Terminal project and are considered independent projects although strategically linked from a market competitive position. These interrelated projects are intended to permit direct, unencumbered container cargo movements from the Container Terminal into and out of the Intermodal Rail Terminal. Basically the centroid of container movement on the ship needs to as close to the centroid for rail to increase terminal efficiencies and lower overall costs. This is an internal movement to the overall Port site encompassing the Port and Intermodal Rail Facility and due to this reality and importance these separate functions are considered as part of Phase 1, subparts A and B.

Similarly the Phase II Citrus II project is the construction of an adjacent State-of-the-art Logistics Distribution Center and Industrial Warehouse Complex. Although no direct interconnectivity of cargo flow envisioned between the Container Terminal and the Intermodal Rail Terminal. The Logistics Park will be adjacent to the Intermodal Rail Terminal and the entrance and exit from the Logistics park will be in close proximity to the Container terminal and Intermodal Rail terminal common entrance gate complex. Generally Distribution Centers and Industrial Warehousing do not require immediate access to incoming or outbound containers. These facilities are engaged in a number of activities such as consolidating container traffic into different size loads either for rail or trucking shipment and also possible assemblage of final products for release and as such these activities are less time sensitive and do not require immediate ship access. Port Terminal traffic flow is geared more to the needs of the rail industry due to the need to move trainsets on a more predictable and scheduled flow thus requiring direct connection between the Port Container Terminal and the Rail Intermodal Yard (see Figure 6).

Figure 6: Proposed Citrus II River Container Terminal Operational Plan



A substantial advantage of the close proximity of the marine Container Terminal, Intermodal Rail Terminal, and the proposed adjacent Logistics Park will be to dramatically reduce the cost of truck drayage between distribution warehouses and the marine container operations and intermodal terminal operations. As an illustrative example, the recent BNSF Railroad Logistics Park development in Chicago, Wal-Mart has indicated that the entire cost of their new 3.4 million square foot distribution center at the BNSF Logistics Park was covered by the reduced cost of the truck drayage from the distribution center and the BNSF intermodal rail terminal.

A major feature of the Citrus II Container River Terminal is the expansion capability of the terminal layout. Indicated in yellow, the land area immediately south of the container terminal development is available for expansion of the container terminal either for additional container operations or for other marine related cargoes.

Indicated in green on the above Alternative No. 3 terminal plan is the relocation of the LA 23 Highway. This is the minimum relocation configuration based on minimum radius requirements of the Louisiana Department of Transportation and Development. From a regional planning perspective, it would probably be better to push the highway connections further north and south to open up additional lands for port development along here. What is depicted in the terminal plan I is the minimum needed for this concept plan to function properly.

Port Master Plan Development Alternative No. 3 (Citrus II River Container & Intermodal Distribution Center) Description

This alternative is provided to accommodate a modern, rail-served marine container terminal, with adjacent logistics park. The total acreage required to accommodate this concept is approximately 580 acres, including 160 acres of future expansion area. This concept truly enhances the ability of the Parish to attract private Sector investment, development and distribution companies, develop additional revenue and jobs for the Parish. Generally these Distribution Centers act as a consolidation and repackaging area for volumes that needs to be transported by truck or by rail and need to be placed either in larger or smaller containers. Twenty foot units and forty eight foot units can be repackaged into fifty three foot trailers for example. Often Distribution Centers can serve to be a place for final assembly of finished goods and as such Free Enterprise Zones often make good use of such locations. As a result the Distribution Center is a very high value added component for an effective International Container Port.

Major Terminal Elements and Applicable Characteristics:

Wharf

The proposed wharf for the Citrus Lands II container terminal concept is 2,000 feet in length and 360 feet wide. This length is sufficient to accommodate two 950 foot container vessels simultaneously.

The wharf is of concrete-pile supported concrete deck with pile-supported crane rails. The wharf deck elevation is the same as the levee height. Total wharf area is 720,000 square feet.

Buildings

There are two major buildings proposed for this concept. This includes a 20,000 square foot administration building and a 60,000 square foot maintenance and repair building. Each building is steel frame construction, on concrete slab foundations. Assume maintenance and repair building may include pile supported overhead beam mounted cranes to accommodate heavy lift requirements for servicing cargo handling equipment.

The warehousing and distribution area is approximate 180 acres. This area is not sized on market potential but merely illustrated to show the potential footprint for similar facilities. Building sizes and paved areas are arbitrary.

Paving

Total paving for the proposed container and intermodal terminal is approximately 982,000 square yards. Pavements can be described as a mix of medium strength, with the capacity to accommodate tractor trailer loads carrying loaded trailers and containers, and heavy strength, capable of accommodating stacked container storage and container handling equipment wheel loads.

The parking lot area next to the administration and security buildings will consist of light paving only, capable of supporting automobile loads. Also, a new access road leading to the terminal gate from the proposed relocated LA 23 will consist of approximately 15,400 square yards of medium strength paving, capable of handling tractor trailer loads.

Stormwater Retention Pond

A stormwater retention pond is provided for the capture of terminal stormwater run-off. All ponds shown in alternative drawings are for illustrative purposes only and as a "best management practice" for water quality purposes to meet NPDES General Permit requirements.

Rail

All proposed rail is of typical construction, on prepared road beds as per AREMA standards. Total amount of new rail trackage is approximately 18,300 linear feet. New single track rail will be standard gauge, with the road bed being 22 feet in width, with 3 feet of engineered sub-grade, a minimum of 12 inches of sub-ballast and 12 inches of ballast. Intermodal rail working track will be embedded in pavement. Extension of existing rail corridor from Myrtle Grove to project site is not considered here.

Annual Throughput Capacity Estimate

A spreadsheet based calculation was performed to determine the annual throughput capacity of the proposed Citrus Lands II Container Terminal concept. The proposed terminal was modeled to determine the Maximum Practical Capacity (MPC). MPC is defined as the high end of a realistic operating scenario for a terminal, or at 100 percent operating capacity. Table 10 below provides the summary results of the annual throughput capacity model.

Table 10: Summary Container Capability Estimates

Summary Container Capability Estimates	
Component Summary	**Citrus Lands - TEUs**
Component 1: Berth and Apron Activities	903,000
Component 2: Ship To Apron Transfer	1,918,671
Component 3: Apron To Storage Transfer	2,730,655
Component 4: Storage	969,121
Component 5: Intermodal Transfer	758,653
Component 6: Gate Processing	853,434
Terminal Summary	Citrus Lands- Acres
Total Terminal Acres	224
Throughput Capability per Terminal Acre	3,387
Total Storage Acres	57
Throughput Capability per Storage Acre	13,310
Maximum Practical Throughput Capacity Estimate	**758,653**
Table of Limiting Factors	**Citrus Lands**
Component 1: Berth and Apron Activities	....
Component 2: Ship To Apron Transfer	....
Component 3: Apron To Storage Transfer	....
Component 4: Storage	....
Component 5: Intermodal Transfer	Limiting
Component 6: Gate Processing	....

Citrus II and Amax On-Dock/Near Dock Intermodal Rail Terminal Capability

A unique market driven demand feature of the Master Plan Alternatives is the requirement for providing on-dock or near dock intermodal rail terminal capabilities in close proximity to both the Citrus II and Amax marine terminal development. This requirement is driven predominantly by port competitive issues within the US Gulf Coast and North America in general.

An on-dock or near dock intermodal rail terminal would operate in the backland area of both the Amax Omni Terminal and the Citrus II Container Terminal Alternatives. The Citrus II Container Terminal could permit working track train lengths of up to 4,000 FT. The Amax Omni Terminal Intermodal terminal could provide working track train lengths of up to 2,000 FT.

In the case of the Amax Omni Terminal concept, the intermodal terminal would be fairly simple with two train loading tracks and perhaps one or two storage tracks. The initial lift equipment is envisioned as top lift forklifts or fork lift Reach Stackers. Container storage for the intermodal rail terminal would be provided by the adjacent Omni terminal open storage area.

Eventually when intermodal container volumes dictated the facility would permit, via a Multiple Grid Operating Overlay (MGOS) methodology described above, the installation of Rubber Tired Gantry (RTG) intermodal (two high) lift equipment.

Citrus II Container & Intermodal Terminal Conceptual Construction Budget Estimate – Alternative 3

The Conceptual Construction Budget Estimate developed for the Plaquemines Parish Port Development Master Plan provide order of magnitude probable construction costs for the development of the specific properties for each intended use. Construction quantities have been determined based on the planning level detail provided in each concept plan. Unit construction costs are based upon local data gathered by the project team and supplemented by data published by R.S. Means. Terminal Equipment cost as well as operational costs are not included in the Conceptual Construction Budget Estimate

The Conceptual Construction Budget Estimate is prepared in an “Opinion of Probable Cost” and is expected to have a degree of accuracy of plus or minus 15%. Three “Opinion of Probable Cost” are included for the Citrus II Container & Intermodal Terminal as follows:

- Citrus II Container & Intermodal Terminal – Container Marine Terminal (Phase IA)
- Citrus II Container & Intermodal Terminal – Intermodal Rail Terminal (Phase IB)
- Citrus II Container & Intermodal Terminal –Logistics Distribution Center (Phase 2)

These elements of the Citrus Container & Intermodal Terminal will generally proceed in a market drive sequence.

Table 11: Citrus II Site – Phase 1A - Container Marine Terminal – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
Citrus Lands II Site - Phase IA (Container Marine Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
S	SITE WORK					
	1	Clearing & Grubbing	35	AC	$10,000	$350,000
	2	General Site Grading & Compaction	194,000	CY	$20	$3,880,000
	3	Lime Stabilization of Pavement Subgrade	555,000	SY	$3	$1,665,000
	4	Stormwater Basin Exacavation	325,000	CY	$20	$6,500,000
	5	Earthen Ramp Embankment	50,000	CY	$25	$1,250,000
	6	Water - Potable/Fire	120	AC	$5,000	$600,000
	7	Sanitary - Packaged Treatment Plant	1	LS	$150,000	$150,000
	8	Drainage - Storm Sewers	120	AC	$85,000	$10,200,000
	9	Pavement - Heavy Duty	545,600	SY	$70	$38,192,000
	10	Pavement - Standard Duty	9,400	SY	$40	$376,000
	11	Fencing - Site Perimeter	14,000	LF	$40	$560,000
	12	Striping/Traffic Control	1	LS	$1,200,000	$1,200,000
					SUBTOTAL	$64,923,000
T	ACCESS ROADWAY					
	1	Grading & Compaction	15,000	CY	$20	$300,000
	2	Lime Stabilization of Pavement Subgrade	15,400	SY	$3	$46,200
	3	Drainage - Storm Sewers	8	AC	$85,000	$680,000
	4	Pavement - Heavy Duty	15,400	SY	$70	$1,078,000
	5	Striping/Traffic Control	1	LS	$25,000	$25,000
					SUBTOTAL	$2,129,200
R	RAIL					
	1	Rail Track Extensions	0	LF	$200	$0
	2	Rail Turnouts	0	EA	$175,000	$0
					SUBTOTAL	$0
W	WHARF					
	1	Concrete Wharf	720,000	SF	$250	$180,000,000
	2	Fender System	2,000	LF	$450	$900,000
					SUBTOTAL	$180,900,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$2,500,000	$2,500,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Maintenance & Repair	60,000	SF	$200	$12,000,000
			SUBTOTAL BUILDINGS & STRUCTURES			$21,500,000
			SUBTOTAL SITE DEVELOPMENT COSTS			$269,452,200
			MOBILIZATION/DEMOBILIZATION (AT 1.5%)			$4,041,783
			EROSION / SEDIMENT CONTROL (AT 0.5%)			$1,347,261
			PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)			$45,806,874
			CONTINGENCY (AT 20%)			$53,890,440
			TOTAL SITE DEVELOPMENT COSTS			$374,538,558

Table 12: Citrus II Site – Phase 1B - Intermodal Rail Terminal – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
Citrus Lands II Site - Phase IB (Intermodal Rail Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
S	SITE WORK					
	1	Clearing & Grubbing	0	AC	$10,000	$0
	2	General Site Grading & Compaction	146,000	CY	$20	$2,920,000
	3	Lime Stabilization of Pavement Subgrade	427,000	SY	$3	$1,281,000
	4	Stormwater Basin Exacavation	0	CY	$20	$0
	5	Earthen Ramp Embankment	0	CY	$25	$0
	6	Water - Potable/Fire	89	AC	$5,000	$445,000
	7	Sanitary - Packaged Treatment Plant	0	LS	$150,000	$0
	8	Drainage - Storm Sewers	89	AC	$85,000	$7,565,000
	9	Pavement - Heavy Duty	427,000	SY	$70	$29,890,000
	10	Pavement - Standard Duty	0	SY	$40	$0
	11	Fencing - Site Perimeter	0	LF	$40	$0
	12	Striping/Traffic Control	1	LS	$800,000	$800,000
					SUBTOTAL	$42,901,000
T	ACCESS ROADWAY					
	1	Grading & Compaction	0	CY	$20	$0
	2	Lime Stabilization of Pavement Subgrade	0	SY	$3	$0
	3	Drainage - Storm Sewers	0	AC	$85,000	$0
	4	Pavement - Heavy Duty	0	SY	$70	$0
	5	Striping/Traffic Control	0	LS	$25,000	$0
					SUBTOTAL	$0
R	RAIL					
	1	Rail Track Extensions	18,300	LF	$200	$3,660,000
	2	Rail Turnouts	6	EA	$175,000	$1,050,000
					SUBTOTAL	$4,710,000
W	WHARF					
	1	Concrete Wharf	0	SF	$250	$0
	2	Fender System	0	LF	$450	$0
					SUBTOTAL	$0
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	0	LS	$2,500,000	$0
	2	Administration Building	0	SF	$350	$0
	3	Maintenance & Repair	0	SF	$200	$0
			SUBTOTAL BUILDINGS & STRUCTURES			$0
					SUBTOTAL SITE DEVELOPMENT COSTS	$47,611,000
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$714,165
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$238,055
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$8,093,870
					CONTINGENCY (AT 20%)	$9,522,200
					TOTAL SITE DEVELOPMENT COSTS	$66,179,290

Table 13: Citrus II Site – Container/Intermodal Terminal – Opinion of Probable Cost Phase II

OPINION OF PROBABLE COST						8-Jul-10
Citrus Lands II Site - Container/Intermodal Terminal						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
S	SITE WORK					
	1	Clearing & Grubbing	35	AC	$10,000	$350,000
	2	General Site Grading & Compaction	340,000	CY	$20	$6,800,000
	3	Lime Stabilization of Pavement Subgrade	982,000	SY	$3	$2,946,000
	4	Stormwater Basin Exacavation	325,000	CY	$20	$6,500,000
	5	Earthen Ramp Embankment	50,000	CY	$25	$1,250,000
	6	Water - Potable/Fire	209	AC	$5,000	$1,045,000
	7	Sanitary - Packaged Treatment Plant	1	LS	$150,000	$150,000
	8	Drainage - Storm Sewers	209	AC	$85,000	$17,765,000
	9	Pavement - Heavy Duty	972,600	SY	$70	$68,082,000
	10	Pavement - Standard Duty	9,400	SY	$40	$376,000
	11	Fencing - Site Perimeter	14,000	LF	$40	$560,000
	12	Striping/Traffic Control	1	LS	$2,000,000	$2,000,000
					SUBTOTAL	$107,824,000
T	ACCESS ROADWAY					
	1	Grading & Compaction	15,000	CY	$20	$300,000
	2	Lime Stabilization of Pavement Subgrade	15,400	SY	$3	$46,200
	3	Drainage - Storm Sewers	8	AC	$85,000	$680,000
	4	Pavement - Heavy Duty	15,400	SY	$70	$1,078,000
	5	Striping/Traffic Control	1	LS	$25,000	$25,000
					SUBTOTAL	$2,129,200
R	RAIL					
	1	Rail Track Extensions	18,300	LF	$200	$3,660,000
	2	Rail Turnouts	6	EA	$175,000	$1,050,000
					SUBTOTAL	$4,710,000
W	WHARF					
	1	Concrete Wharf	720,000	SF	$250	$180,000,000
	2	Fender System	2,000	LF	$450	$900,000
					SUBTOTAL	$180,900,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$2,500,000	$2,500,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Maintenance & Repair	60,000	SF	$200	$12,000,000
			SUBTOTAL BUILDINGS & STRUCTURES			$21,500,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$317,063,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$4,755,948
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$1,585,316
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$53,900,744
					CONTINGENCY (AT 20%)	$63,412,640
					TOTAL SITE DEVELOPMENT COSTS	$440,717,848

Alternative Port Master Plans Evaluation Matrix Analysis and Approach

One of the first deliverables of the Trident Team in this Plaquemines Parish Port Master Planning process was recommendations to the Parish Council to establish the criteria and methodology for selection of the preferred Master Plan Alternative. The feedback from the Parish Council on this initial deliverable product was used to formulate the final Master Plan Alternative evaluation matrix criteria.

An evaluation matrix was developed to evaluate the relative merits of proposed development alternatives presented earlier in Task 7. Using an iterative review process that involved discussions with Plaquemines Parish Council members, Plaquemines Parish port staff and stakeholders the project team scored each alternatives ability to meet the proposed evaluation criteria. The resulting scores are the opinion of the project team and focus on rational performance data such as conceptual capital and operating costs, productivity, adjacency pros and cons, transport impacts, social, environmental, and aesthetic impacts, and other criteria.

Weighted values were placed against the identified criteria to derive a maximum attainable score. Note that the weighting of the criteria is separate from the raw scoring of the performance of each alternative. The two numbers (weight x performance score) are multiplied to provide a weighted evaluation score for each alternative leading to a meaningful comparison and final selection. An example of this type of evaluation matrix and the equations used are provided in Table 14:

Table 14: Sample Evaluation Matrix

CRITERIA	(Scenario) POLB WEIGHT	ALTERNATIVES EVALUATION SCORES		
		A	B	C
1) Flexibility	W1	W1 x PSA1	W1 x PSB1	W1 x PSC1
2) Expandibility and Contractibility	W2	W2 x PSA2	W2 x PSB2	W2 x PSC2
3) Environmentally Responsive	W3	W3 x PSA3	W3 x PSB3	W3 x PSC3
4) Rail Efficiency	etc.	etc.	etc.	etc.
5) Truck Efficiency				
6) Conducive to Security				
7) Cost Effective Construction				
8) Linear Flow within Terminal				
9) Conducive with Pier A Expansion				
Maximum Possible Score	SUM W1...9			
WEIGHTED SCORE		SUM	SUM	SUM
Percentage of Maximum Possible Score		0%	0%	0%

*Note: "PS" = Performance Score

The performance scores were then used in a matrix analysis to evaluate the relative responsiveness of each alternative to varying weights of each criterion. In order to sum up the scores into a meaningful overall score for each alternative, the criteria were each given weights representing the relative importance of each issue. The table below provides the results of the matrix evaluation used to provide an unbiased recommendation for future port development in Plaquemines Parish.

Plaquemines Port Development Master Plan Alternatives

1. Amax Omni Terminal
2. Amax Coal Terminal
3. Citrus II Container & Intermodal Terminal

Two Evaluation Matrix Conditions Evaluated

Trident elected to provide two evaluation matrix analyses predicated on the following conditions:

- **Port Master Plan Alternative Matrix Evaluation Without Planned Landside Access Improvements** – evaluation of the port projects with current landside access transport capabilities
- **Port Master Plan Alternative Matrix Evaluation With Planned Landside Access Improvements** – evaluation of the port projects with the planned improvements for both truck and intermodal rail discussed in previous Master plan task elements

The paramount importance of efficient truck and intermodal rail landside access to the both the Amax and Citrus II port development properties was deemed a strategically important market differentiator for the two port development sites and as such an independent evaluation was accomplished under the two conditions.

Matrix Evaluation Criteria Explanatory Note: The following Master Plan Alternative evaluation Matrices (Table 15) incorporate different evaluation criteria and recommended weighting factors from those previously used to determine port site selection in earlier Port Master Plan tasks. Where, in the opinion of the Trident Team, the criteria would be identical the criteria was eliminated and only pertinent evaluation criteria was used.

Table 15: Plaquemines Parish Port Development Matrix Evaluation without Planned Landside Access Improvements (Current Conditions)

Comprehensive Port Development Master Plan for Plaquemines Parish Matrix Evaluation Without Planned Landside Access Improvements					
No.	Evaluation Criteria	Port Master Plan Development Alternatives (Raw Performance Scores, Scale 1 to 10)			
		Recommended Weight	Alternative 1 Amax- Omni	Alternative 2 Amax - Coal	Alternative 3 Citrus II
1	Flexibility	4.00	9.00	3.00	7.00
2	Expandability	3.00	6.00	5.00	9.00
3	Environmentally Responsive	9.00	5.00	1.00	7.00
4	Berth Efficiency & Water/Navigational Access	4.00	6.00	6.00	7.00
5	Rail Efficiency Access (Potential)	7.00	8.00	8.00	3.00
6	Truck Efficiency Access	6.00	7.00	7.00	5.00
7	Marketability	10.00	7.00	7.00	8.00
8	Cost Effective Construction	8.00	5.00	7.00	6.00
9	Market Driven Development	7.00	9.00	8.00	8.00
	Maximum Possible Score	**580.00**			
	Alternative Raw Performance Score (Sum of All Raw Scores)		**62.00**	**52.00**	**60.00**
	Weighted Score (Individual Criteria Weight x Raw Score)		**394.00**	**340.00**	**381.00**
	Port Master Plan Development Alternative Rank		**No. 1**	**No. 3**	**No. 2**
	Percent of Maximum Possible Score		**67.93%**	**58.62%**	**65.69%**

Landside Access for Rail and Truck

Existing Conditions

Considering existing landside access for truck and rail infrastructure, the Amax Property site is ranked number one with Citrus II rated number two due to Amax being in close proximity to both an existing rail line with direct feed to a Class I rail carrier and also for having a shorter distance for trucks to access the Interstate System

The Amax site is the only current port development site being advanced with existing rail access via the Norfolk Southern Railroad and connects directly to the Norfolk Southern (NS) North-South Crescent Corridor leading to the States of New York and New Jersey in the US Northeast.

The NS Railroad is spending more than $600 million in improvements to the NS Crescent Corridor (see Figure 7). In December 2009 Norfolk Southern's Crescent Corridor was officially endorsed by the Retail Industry Leaders Association. l Industry Leaders Association. The rail line opens a large catchment area for potential distribution of goods and commodities for Plaquemines Parish and could enhance NS stated goals in converting more truck cargos to rail while increasing distribution distances. Meanwhile truck distribution has the opportunity to service three mega consumption zones for growth in the Deep South.

Figure 7: Norfolk Southern Corridor Investments

The Amax site would also have access to the NS Meridian Speedway Corridor leading to Dallas, TX. The NS is spending another $300 million on the Meridian Speedway Corridor improvements. With the total expenditure of nearly $900 million on improvements to these two corridors alone, these corridors represent nearly 70% of the total investment that the NS Railroad is making on major corridor improvements.

Future Planned Transportation Developments

Task 5 identified major improvements which would enhance road transportation on LA 23. These improvements have been identified in the TIP as proposed by the LA DOTD and endorsed by the Regional Planning Commission. The improvements would allow diversion of trucks from lower Plaquemines Parish from entering Belle Chasse and thus avoiding more congested commercial and residential areas. These improvements facilitate better truck movement and potential investment in facilities south of Belle Chasse and the Naval Air Station.
Substantial progress is being reported by the Rio Grande & Pacific Railroad/ NOGC in relocating its current trackage from Belle Chasse. Plaquemines Parish has adopted supportive language in their attempt to secure State and Federal funding in advancing the relocation. If this is accomplished it would eliminate over 200 at grade crossings and bring extension of rail to within three (3) miles of the proposed Citrus II site.

With the addition of these transportation improvements, the matrix evaluation swings heavily in favor of Citrus II Port Development as evidenced below in Table 16.

Table 16: Plaquemines Parish Port Development Matrix Evaluation with Planned Landside Access Improvements (Future Planned Improvements)

Comprehensive Port Development Master Plan for Plaquemines Parish
Matrix Evaluation With Planned Landside Access Improvements

No.	Evaluation Criteria	Recommended Weight	Port Master Plan Development Alternatives (Raw Performance Scores, Scale 1 to 10) Alternative 1 Amax- Omni	Alternative 2 Amax - Coal	Alternative 3 Citrus II
1	Flexibility	4.00	9.00	3.00	7.00
2	Expandability	3.00	6.00	5.00	9.00
3	Environmentally Responsive	9.00	5.00	1.00	7.00
4	Berth Efficiency & Water/Navigational Access	4.00	6.00	6.00	7.00
5	Rail Efficiency Access (Potential)	7.00	8.00	8.00	9.00
6	Truck Efficiency Access	6.00	7.00	7.00	7.00
7	Marketability	10.00	7.00	7.00	8.00
8	Cost Effective Construction	8.00	5.00	7.00	6.00
9	Market Driven Development	7.00	9.00	8.00	8.00
	Maximum Possible Score	**580.00**			
	Alternative Raw Performance Score (Sum of All Raw Scores)		**62.00**	**52.00**	**68.00**
	Weighted Score (Individual Criteria Weight x Raw Score)		**394.00**	**340.00**	**435.00**
	Port Master Plan Development Alternative Rank		**No. 2**	**No. 3**	**No. 1**
	Percent of Maximum Possible Score		**67.93%**	**58.62%**	**75.00%**

By focusing on future landside access improvements for both truck and intermodal rail and evaluating the potential port development sites with the following future landside access improvements, the Citrus II port development site is ranked number one with the Amax property ranked number two.

The contemplated landside transportation access improvements include:

- Providing reliable and productive intermodal rail services via the following potential developments:
    a. The Westbank New Orleans Public Belt Railroad (NOPB) back levee route from West

Bridge Junction to the Citrus II property, or

b. The NOBP Peters Road, Back Levee and Hwy 23 route to the Citrus II property, or

c. The Proposed Rio Grande Pacific Corporation and the New Orleans & Gulf Coast Railway (NOGC) Rail Realignment from Harvey to Cedar Grove to the Citrus II property.

- Providing Truck access improvements to the Citrus II property as outlined in previous Tasks by constructing LA 23 improvements

d. Constructing and improving the back levee system to the Citrus II property

- Relocating LA 23 around the proposed Port Container Terminal and Intermodal Terminal at Citrus II. This exact location of the proposed relocated LA 23 will be determined during final design of the site. The roadway could be located totally around the Container and Intermodal Terminals including the proposed Distribution Center or it could be located in between the Intermodal Center and the Distribution Center. The exact location will be determined by a number of Parish inputs and environmental impacts. The final location will of course determine final probable costs and will identify what sources of funding might support such a relocation whether they be Federal, State and or Parish contributions. As a result this cost has not been included at this time but will be addressed in final design.

Evaluation Matrix Criteria Development

The project objectives have provided guidance to the project team while performing this study and form the basis for a starting point to develop a series of evaluation criteria. These criteria are to be used to evaluate the feasibility of three proposed port development concepts:

1. Amax - Omni Terminal
2. Amax - Coal Terminal
3. Citrus II Container & Intermodal Terminal

Each criterion was weighted to represent relative importance and applied to the raw performance scores for each alternative, leading to a final evaluation score (weighted score), and an identification of the preferred development plan.

The objectives that were developed in the initial phases of this evaluation were compiled into nine fundamental criteria. These criteria are listed and explained in the following paragraphs including a brief summary of the issues involved and an explanatory narrative. A numeric performance score of 1 to 10 is attributed to each criterion. The score of 1, 2 or 3 corresponds to low weight. A score of 3, 4, 5 or 6 corresponds to medium weight. A score of 7, 8 or 9 corresponds to high weight, and 10 would indicate the highest.

Three criteria weights were given to each criterion to represent the corresponding weights associated with each development scenario. The following summary provides a description of each criterion and the weight associated with the criterion used to evaluate each port development alternative.

1) Flexibility – 4

Ability to adjust features, provide new configurations and improve operations within and around the terminal.

Flexibility for changing conditions and new opportunities has been identified by the project team as one of the most important issues in this planning process. It is very important that each of the port development alternatives recommended be flexible enough to adapt to changing market and operational conditions.

Both the Amax Omni Terminal and Citrus II Container Terminal alternatives provide flexibility in operations and overall terminal development phasing. The Amax Omni Terminal concept allows multiple cargoes to be handled and phasing of the facility as market demand dictates.

The Citrus Lands II Terminal concept allows for multiple containerized cargo types to be handles and allows for the utilization of multiple modes of transportation, both truck and intermodal rail. The Amax Coal Terminal alternative does not possess similar flexibility due to its limited ability to handle multiple cargo types.

2) Expandability – 3

Ability to adjust terminal and adjacent area sizes.

Expandability for future growth is an important selection criterion. It is weighted only slightly less then flexibility due to the availability of land and the importance of good transition to a higher growth scenario.

All master plan alternatives provide the ability to expand as market demand requires. The Citrus Lands II Container Terminal concept provides the greatest ability for expansion.

3) Environmentally Responsive – 9

Lower environmental impacts.

Due to the existing heavy industrial uses found on the Mississippi River in Plaquemines Parish this criterion is weighted high. Considering the recent catastrophe resulting from the oil spill in the Gulf of Mexico it is assumed that local tolerance for environmentally sensitive port development alternatives will remain very low.

Assuming the concept utilizes state-of-the-art container handling equipment such as LNG terminal tractors, electrified cranes and etc., and the use of intermodal train to transport container volumes to inland destination, the Citrus Lands II Container Terminal alternative provides the most environmentally responsive development opportunity. However, both the Amax Omni Terminal and Citrus II Container Terminal alternatives are more environmentally responsive than the Amax Coal Terminal alternative due to perceived challenges with mitigating impacts from coal handling operations.

4) Berth Efficiency and Access - 4

Efficient use of the proposed berths by multiple vessels, as well as good channel access within the harbor and minimal impact on existing navigational conditions.

The proximity of storage and transfer facilities to the available berths is critical to an effective marine terminal and is a high priority. This criterion includes the ability to share berths with other compatible

cargoes and minimizing impacts to navigational conditions for vessel traffic transiting past the proposed port development sites.
All alternatives have been planned to provide sufficient berth access for applicable vessel types and cargoes. It is believed that all alternatives minimize impacts to existing navigation. However it is recommended that the appropriate vessel navigational simulations be performed as required by the U.S. Army Corp of Engineers to validate the project team findings.

5) Rail Efficiency/Access – 7

Efficient alignment of rail yard(s) for switching, multiple RR access, storage tracks, rail marshalling and loading operations.

Rail access and operation is crucial to development of all port development alternatives proposed for this master plan. Therefore, this criterion is given considerable weight for those alternatives.
The alternatives proposed for the Amax property both take advantage of the presence of the existing rail access and provide substantial advantages for initiating rail service over the Citrus Lands II Container Terminal concept.

6) Truck Efficiency/Access – 6

Efficient alignment and orientation of truck access area(s) to proposed marine terminal with minimal construction requirements and subsequent impact to local traffic patterns.

Truck access to each of the proposed port development alternatives is important to the ultimate efficiency of each concept. Although some reconfiguration of the existing roadway system will be required for each proposed port development alternative it is assumed that impacts to local traffic patterns will be minimal or capable of being mitigated. For this reason this criteria is weighted relatively low.

All concepts will require rerouting of existing state highways to provide secure road access to over-the-road trucks. However, it is assumed that the Citrus II Container Terminal concept will be the most costly due to the magnitude of the relocating Highway 23. The Amax concepts use the existing English Turn Road to provide truck access and Highway 39 as a bypass road for POV and other non-terminal related vehicular traffic.

7) Marketability – 10

The attractiveness of the proposed facilities to private investors and users.

Since it is the recommendation of this project that a public private partnership be pursued to achieve the development of the preferred port development alternative, this criterion is weighted highest.

Both the Amax Omni Terminal and Citrus II Container Terminal concepts provide the highest opportunity for private-public partnerships in support of facility development.

8) Cost Effective Construction – 8

Lower development costs including consideration of land acquisition, remediation and dredging issues.

Efficient use of existing resources and total terminal cost (including land acquisition/relocation costs) were identified by the project team as a primary criterion for attracting new business. For this reason it is assumed that the concepts proposed for the Amax property provide the greatest opportunity to take advantage of existing infrastructure and suitable construction conditions to minimize development costs.

9) Market Driven Development – 7

Responsiveness to the projected market demand.

It is imperative that all the scenarios meet the identified market driven demand provided in market forecast of this master plan. Therefore, this criterion was given a relatively high priority weight.

Selection of Preferred Master Plan Alternative

The previous section of the report included a description of the evaluation criteria that were used to evaluate the three master plan alternatives, the methodology for developing the matrix evaluation criteria and a summary of the performance scores and evaluation of the recommended master plan alternatives. The evaluation methodology and specific criteria that were derived from the project goals and objectives were used to evaluate and identify the most favorable development plans from the three concept alternatives provided in earlier tasks. The purpose of developing these criteria is to provide an unbiased tool and a documented process for evaluating the alternative development plans.

Based on the results of the of the previous task involved in the Comprehensive Port Development Master Plan the **Amax - Omni Terminal** and **Citrus II Container & Intermodal Terminal** concepts provide the highest opportunity for market driven development, although all identified port development alternatives have high market demand.

The Amax – Omni Terminal was ranked number 1 <u>under current existing conditions</u> related to truck and rail intermodal landside access. The Citrus II Container & Intermodal Terminal was ranked number 1 assuming that the future planned truck and rail landside access improvements were achieved.

Preliminary Engineering Site Development and Terminal Equipment Considerations

As indicated in the previous Port Master Plan Alternatives Evaluation Matrix, the importance of productive and efficient landside access truck and intermodal rail capability is paramount to achieving a competitive port development

A major focus of the preliminary engineering considerations for the preferred master plan alternative was the layout and operating requirements for the terminal equipment, particularly the intermodal terminal lift equipment evaluations and preliminary selection. Recommendations for an idealized train loading track length and operating storage configurations were include in the idealized terminal modules and were incorporated into the layout and planning for the three Port Alternative Master Plans..

For the Citrus II port development a major operational constraint was the desired 4,000 foot length of the operating tracks for the intermodal rail terminal in order to minimize the number of breaks in the railroad unit train staging operations thereby reducing train cut and train position operating costs.

The operational equipment requirements for the Omni Terminal concept vary widely depending on the dominant cargo type. Equipment recommendations for the intermodal container handling portion of the Amax Omni Terminal concept are similar to the intermodal lift equipment recommendations for the Citrus II Container and Intermodal Terminal.

The following is a brief synopsis of the intermodal operating equipment considerations that lead to preliminary selection of the preferred alternative layout configuration for the container port and intermodal rail developments.

Type of Train-Loading Equipment

A major consideration in planning the intermodal storage layout is what type of loading equipment will be used. It is essential to identify not only the equipment planned for immediate use, but also the potential for alternative handling modes which may be used in the future.

Every intermodal rail yard utilizes a different combination of container-handling equipment. On- dock or near-dock intermodal yards may also share equipment with the adjacent marine river container terminal. The three basic principal methods of container handling in U.S. intermodal rail yards are:

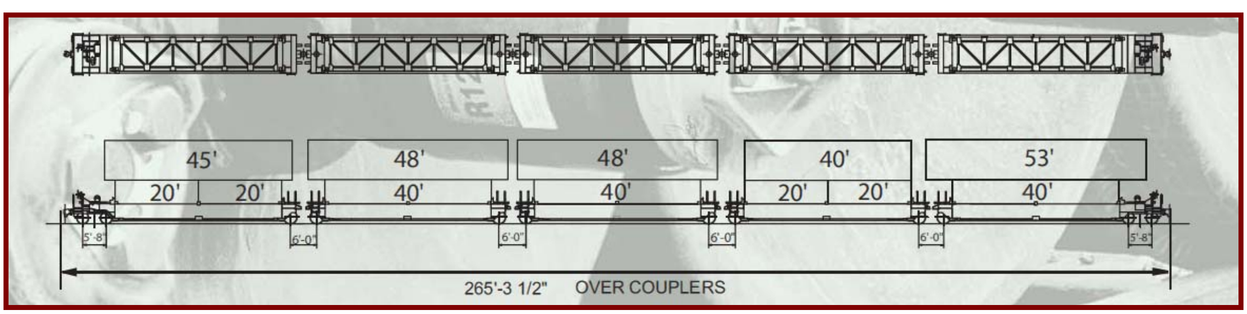
- Top loader/forklift trucks (FLT)
- Straddle Carrier rubber tired equipment
- Rubber-tired gantries (RTG)

A minority of intermodal yards use the straddle carriers approach; and in Europe, the rail mounted gantry is often used in place of the RTG. Future technology may also create additional types of container-handling equipment. Including overhead bridge cranes and large rail mounted gantry cranes nested with other terminal equipment.

Where equipment may be shared or where the intermodal rail yard is likely to be operated by a variety of tenants, the terminal designer must anticipate use of both FLT and RTG container-handling equipment.

General Track Layout Equipment Considerations

Intermodal rail yard track layouts are generally governed by the length of a unit train of cars. This unit train may vary from 6,000-10,000 feet long and in some cases upwards of 12, 000 feet and generally consists of 22 to 33 cars using a five unit permanently articulated double stacked well car configuration. Each of these well cars is an articulated set of five platforms with a capacity of two 40-foot containers per platform. Older cars are 265 feet long. However, with the advent of 45-foot and 53-foot containers, newer cars of 305 feet or more in length have been put into service. The final Intermodal yard terminal designer must anticipate the mix of different rail car sizes in use and understand that the trend is toward longer cars and longer trains made up of a variety of intermodal rail cars with different lengths and configurations.



The loading tracks or pad tracks, must also allow sufficient additional length for a minimum 100-foot-wide vehicle pass-through crossing. The ideal intermodal track layout has multiple loading tracks of approximately 3,000 feet to 5,000 feet for each unit train. However, land restrictions often require the train to be distributed into loading tracks of approximately 2,000 to 2,500 feet each.

Additional storage tracks, the escape or run-around track and the bad order track, are also recommended. Therefore, the minimum intermodal yard configuration has multiple loading tracks. The most desirable distribution of these tracks is as separated pairs with space for trucks, container- handling equipment and often, storage or staging areas between them.

Alternative Terminal Container & Intermodal Equipment Considerations

The most common container & intermodal terminal equipment options are:
Rubber-tired gantry (RTG) cranes over a single track

- RTGs over multiple tracks
- Top picks FLT (Port Packers) loading from the side of the tracks
- Reach Stackers (Top Picks) loading over a loaded train reaching the second train
- Straddle carriers loading along the length of the tracks
- Rail-mounted gantry cranes (RMGs) over multiple tracks

RTGs and top pick FLT equipment can also allow the option of center storage. Straddle carrier and RMC operations normally rely on remote storage to support the unloading and loading operations.

Intermodal Rail Pre-Staging and Live Loading Operational Considerations

Terminal layout and equipment selection is also affected by various intermodal rail operational decisions. Pre-staging, or locating chassis or containers directly adjacent to and parallel or slightly angled to the working track, allows the operator to prepare for a train prior to arrival and thus accomplish quicker train turn-around times. It also ensures that a crane will not be waiting for a hostler.

However, pre-staging requires more hostler moves to and from the storage area than are required by a direct flow of traffic. Also, pre-staging is difficult to impossible with some types of equipment and multiple adjacent track configurations and requires two trackside spaces to effectively operate with double-stack trains. Nonetheless, if space and budget permits, pre- staging can be a valuable option in the operator's bag of tricks and should be incorporated into the facility layout.

Live loading is a term used to describe the direct trackside unloading and loading by outside (customer) truckers. This practice has the advantages of reducing the need for storage; reducing the number of yard hostlers and promoting quicker train turn-around times. It is especially appropriate when dealing with large blocks of dedicated cargo. It has the disadvantage of allowing outside truckers to flow through the loading areas, thus reducing the control an operator has over the traffic pattern in this key area.

Preliminary Intermodal Rail Lift Equipment Considerations & Recommendations

1. Auto Steering, Low Emissions, Rubber Tired Gantry (RTG) Crane Recommendations

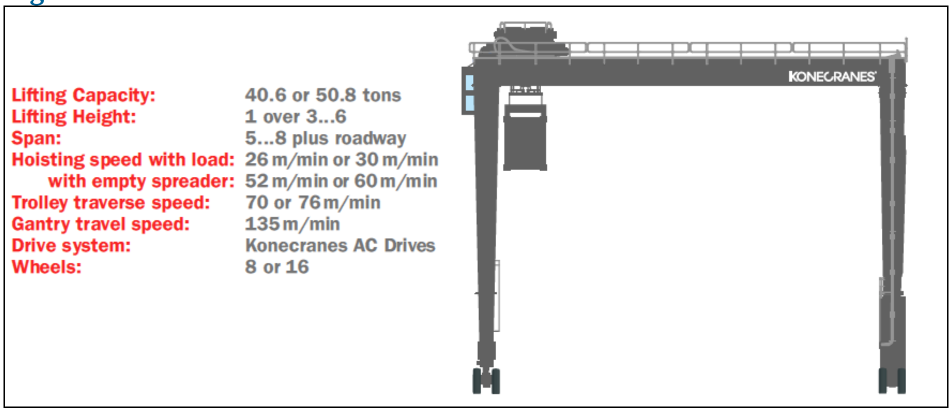
The following equipment considerations and recommendations are provided only as general planning guidelines and provide Plaquemines Parish Council with generic equipment recommendations in order to more fully understand the Alternative Master Plan recommendations for the Amax and Citrus II terminal sites.

Generically auto-steering, low emissions, RTG cranes are recommended for intermodal rail operations as well as Omni Terminal container operations when higher throughput volumes are achieved or required. The following illustrations provide insights into the Trident Team planning considerations for the various operational concerns in the intermodal rail terminal for both the Citrus II and Amax property port development sites. References to certain equipment manufacturers are for illustration purposes only and do not represent specific equipment recommendations (Figures 8 – 10).

Figure 8: Intermodal Rail Crane (Translift) – RTG Crane

Figure 9: Autosteering – RTG KoneCrane

Figure 10: RTG Crane General Performance Criteria - KoneCrane



2. Low Emissions Side Pick and Top Pick Lift Truck Recommendations (Illustrations):

Low emissions side pick/top pick and reach stackers are recommended for both the intermodal rail and Omni Terminal container operations when initial operations and lower throughput volumes are acceptable (Figures 11 & 12).

Figure 11: Side Pick and Top Lift Fork Trucks

Figure 12: Reach Stacker Operations - KoneCrane

Overall Terminal Equipment Flexibility and Expandability Considerations

With the multiplicity of layout and operating options facing the intermodal terminal operator and designer and the cost and relative permanence of laying thousands of feet of track in a fixed configuration, the value of designing for flexibility becomes very clear. For example, the terminal operator may want the ability to operate with top picks at one point and later, to partially or totally covert to RTGs.

Also, it may be valuable to convert from an RTG over single track intermodal operation, to an RTG over multiple intermodal tracks operation, thus increasing the number of working tracks without increasing the overall terminal size. Certainly, the option to allow various arrangements of wheeled and stacked storage to be implemented and adjusted as needed over the life of the facility and can be an essential element of the long-term success and throughput capability of the terminal.

Moreover, these flexibility options should be applied at the planning and design level, thus ensuring that the layout can accommodate the desired operational modes, requires a minuscule cost compared to the cost of future land acquisition, retrofitting and reconstruction that may face the operator of a facility not designed for flexibility.

Further development of the Citrus II and Amax property sites should adopt this equipment flexibility concept along with terminal expandability considerations in the preliminary engineering and final design concepts.

Venice

As discussed in Task 3, Venice was chosen as a site for potential port development because it represents an expansion opportunity for existing industries. In particular, some of these opportunities are the upstream exploration and production supply and support service industry, the commercial and sports fishing industries and the eco-tourism industry.

As a result of the recent Horizon disaster Venice is ideally situated and suited to serve as the prime location for a Federal and State oil-spill response center, coordinating all activities including regulatory enforcement, emergency response and on-going containment, monitoring and clean up.

Lack of existing rail and with no plans for rail access to Venice that makes economic sense eliminated the Venice location as a major cargo port location, except possibly as a transfer terminal.

Seapoint, a private sector developer is planning to develop a Transfer Terminal near Venice. However, its plans are proprietary and are not available to Trident.

Therefore, Trident concentrated its Venice analysis on infrastructure that could enhance Venice's potential in the existing industries and new infrastructure and services required as a result of the Horizon oil spill.

Offshore Oil and Gas

Exploration and Production, upstream industry (E&P)

Venice has long been a major and strategic location for the Gulf of Mexico offshore supply and service E&P sector and a detailed report of the existing economic impact of the Port was completed by Louisiana State University (LSU) in October, 2009. The following is a press release on their findings; the complete study is included in the Appendix.

> **LSU Center for Energy Studies Examines the Economic Importance of the Port of Venice.**
> Timely investment in the Port of Venice could elevate it into a significant world-class offshore oil and gas service port along the Louisiana Gulf Coast, according to a report released by the LSU Center for Energy Studies (CES). The Port of Venice Complex, commonly referred to as the "Gateway to the Gulf," would benefit considerably from the service and maintenance activities arising from new drilling and production operations in the eastern Gulf of Mexico.
>
> "The Port of Venice is exceptionally well-positioned to take advantage of new eastern Gulf of Mexico drilling and production prospects, creating economic development opportunities for the local and state economies, and reducing U.S. dependence on foreign sources of energy," said Professor David Dismukes, Center for Energy Studies associate executive director and principle investigator for the study. "However, these opportunities won't happen without continued investment in the waterways and channels leading into the port complex."
>
> Venice's contribution to the Louisiana economy is not well known. While other, more visible ports in the state focus almost exclusively on federal deepwater production, Venice provides support to a balanced mix of state and federal drilling and production activities in the Gulf. Most importantly, Venice supports in-state production activities that are estimated to contribute more than $350 million per year in mineral revenues directly to Louisiana and not to the federal government. The area serviced by Venice accounts for some 20 percent of all in-state mineral revenues.
>
> Over the past five years, Venice has supported in-state oil and gas production activities that have contributed some $1.69 billion in state mineral revenues. "An investment in Venice is clearly a direct investment in Louisiana and one that yields almost immediate economic and financial benefits that are not dependent upon the irregularities of federal royalty revenue policies," Dismukes said.

> The CES economic impact analysis of the Port was based upon a detailed tenant and port user survey that incorporated economic impact models and analyses, as well as sophisticated satellite tracking measurements to examine vessel movements into, out of, and through the port to state and federal drilling and production locations.
>
> The CES impact study estimated that the Port will have made more than $117 million and $188 million in capital investments in 2008 and 2009, respectively. These capital investments, comprised of infrastructure improvements and marine vessel expenditures, will lead to more than 1,070 jobs for the local economy and neighboring Louisiana parishes.
>
> Annual operations at the Port are estimated to create more than $197 million in economic activity in both 2008 and 2009. Over the past two years, the Port has employed, on average, more than 850 people in the local economy.
>
> The Port has a significant competitive advantage in serving the new offshore areas recently slated for drilling in the eastern Gulf. The geographic location of the Port of Venice gives it the ability to provide oil and gas service companies a 6-to-95 percent fuel cost advantage to important eastern Gulf of Mexico lease sales relative to other central and eastern GOM ports in Louisiana, Mississippi, Alabama and Florida."

Existing Infrastructure

The E&P Offshore Supply and Service is currently being serviced by the Venice Port Complex. This complex received significant damage as a result of Hurricane Katrina but has been rebuilding ever since and there are plans in place for a major expansion.

Following is a description taken from their Web Page.

Venice Port Complex

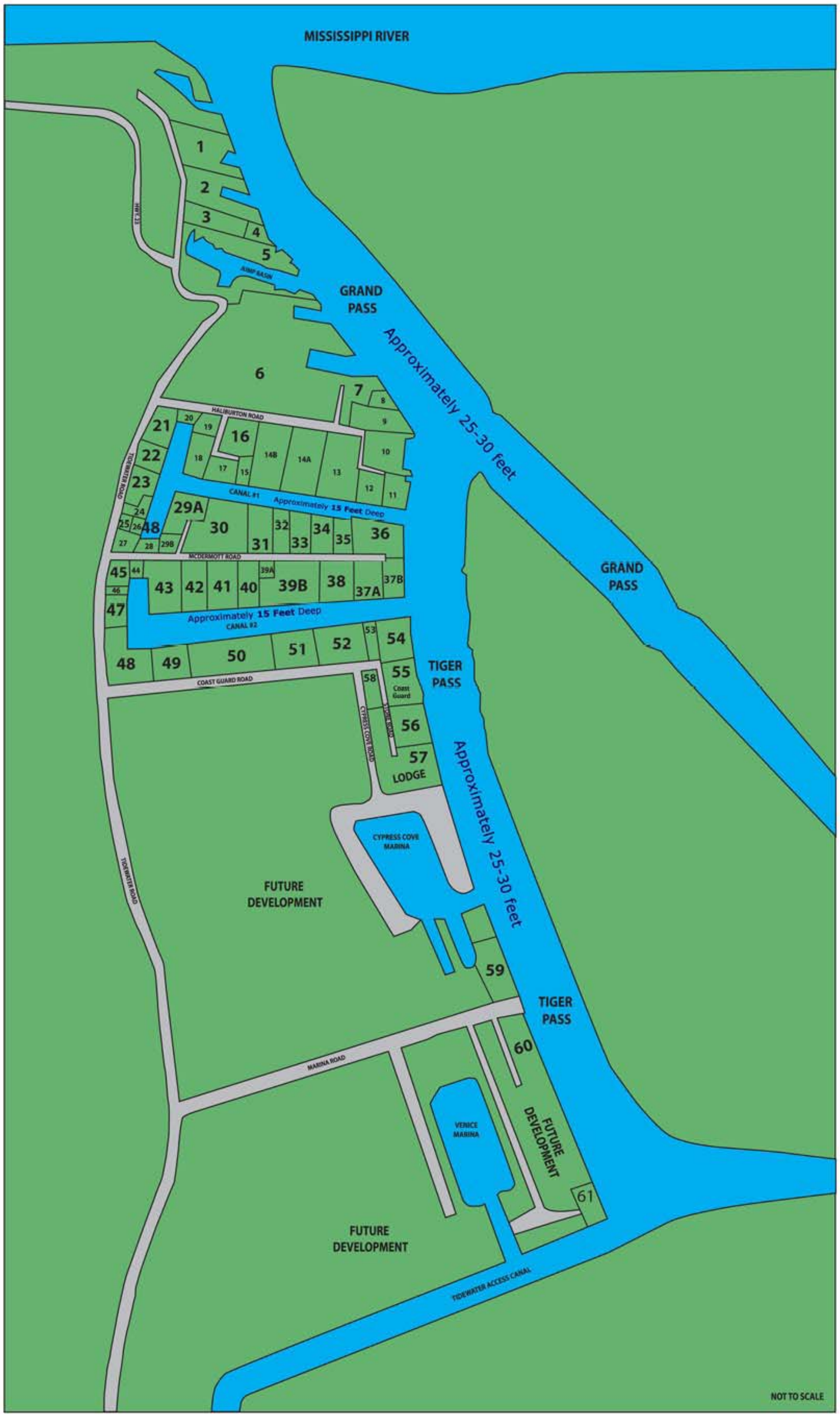
As described by their web page

> "For over 60 years, Venice, Louisiana has played a critical role in developing and servicing some of the most prolific energy properties in the Gulf of Mexico and has long established itself as a major hub for the energy industry. Reliable ground transportation via levee protected four-lane highway and available deep water, continue to make Venice the most convenient, cost-effective and business- friendly location to access the Gulf. Venice is strategically located hours closer to the Eastern Gulf than any other port. The Venice Port Complex is an extensive multi-purpose facility, which includes heavy industrial tenants, major production and service companies, as well as other commercial, fishing, and recreational facilities. As part of a 1500 acre parcel of land at the end of Louisiana State Hwy. 23, The Venice Port Complex is only minutes from the Gulf via Tiger Pass, Baptiste Collette, South Pass or the Mississippi River. There is tremendous opportunity for your business, as sites for industrial and recreational use are now available. We are aggressively marketing developed sites ranging from 1 to 10 acres, as well as larger undeveloped sites that we build to suit your specific needs or joint ventures. The Venice Port Complex is committed to maintaining a primary role within the energy

industry, and is seeking tenants in service, exploration and production-related businesses. We are ready to work with you on long or short term leases to insure that your goals of growth and profitability are achieved". Figures 13 and 14 show the location and layout of the Venice Port Complex.

Figure 13: The Venice Port Complex

Figure 14: The Venice Port Complex



Proposed Expansion

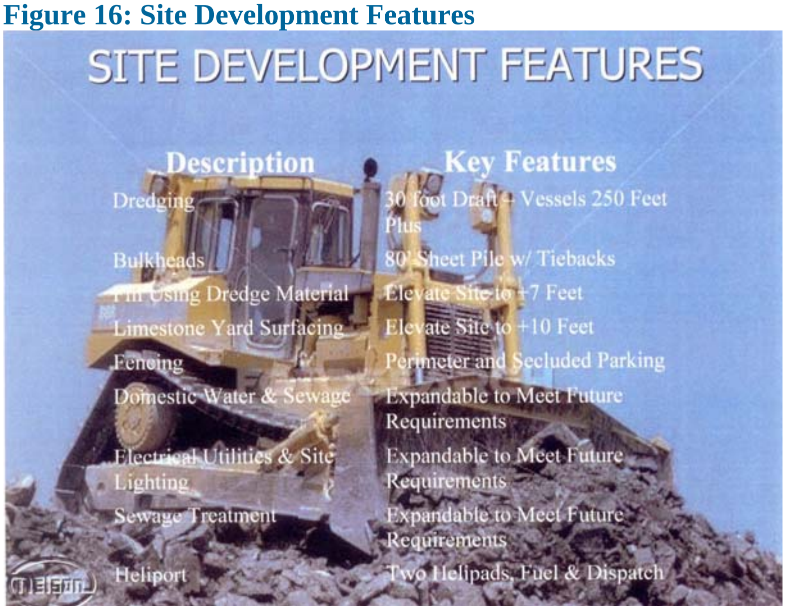
In 2009, Plaquemines Parish Council engaged Waldemar S. Nelson Inc. of New Orleans to do a study of "*Venice Boat Base, Siting Analysis, Development Plan and Cost Estimate*". A copy of the power point presentation is included in the Appendix.

This study suggests building a new deep water boat base on one of three locations in Venice as show in Figure 15.

Figure 15: Potential Sites

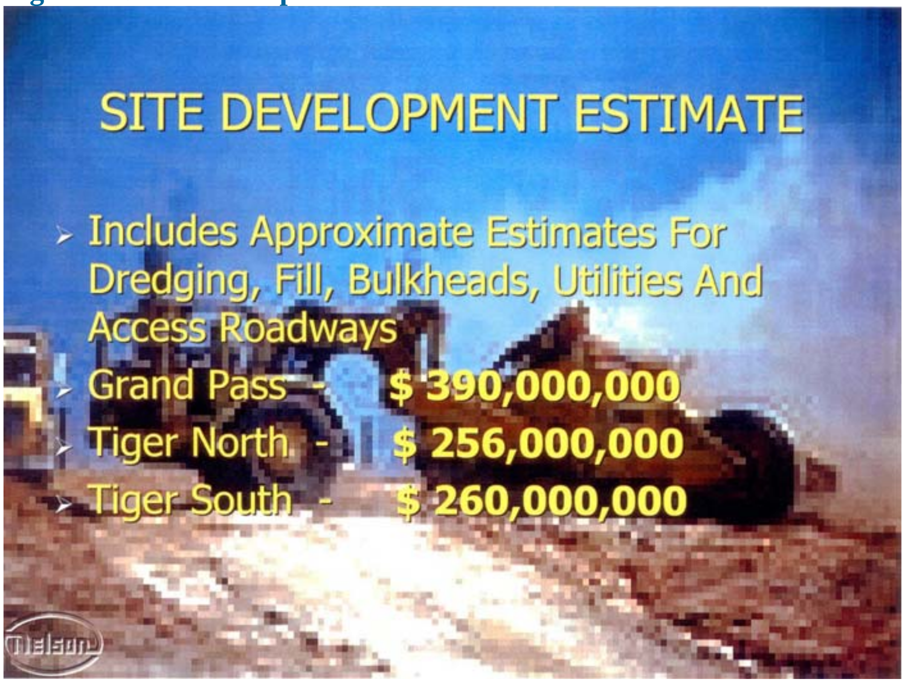
The features of the New Development as stated in the PowerPoint Presentation in Figure 16

Figure 16: Site Development Features



The cost of the new development outlined in the Power Point Presentation is estimated to be between 260-350 million dollars see Figure 17.

Figure 17: Site Development Estimates



Trident research confirms that Venice is a logical, efficient and competitive location for an expanded Exploration and Production Offshore Oil and Gas Supply and Service base for the following reasons:

1. Venice is closer to one third of the existing exploration and production activity in the Gulf of Mexico
2. Venice can competitively supply and service nearly 40% of the existing exploration and production activity in the Gulf of Mexico
3. The majority of new deep water exploratory wells are sited east of Southwest Pass.
4. Offshore supply vessels are getting larger and these will require deep water.
5. Venice is unique in having levee-protected major highway access to its site.
6. Venice has existing infrastructure and is currently providing service.
7. There is need to have two major supply bases in Louisiana for back-up and alternative service to the industry.
8. Venice has demonstrated their capability during the Horizon oil spill crisis.

There are significant enhancements required to position and sustain Venice as one of the major support and supply bases for the Gulf Region. As a result of the Horizon oil spill the timing and need for these enhancements has intensified (Figure 18). As a result Trident recommends the following:

1. ***That Plaquemines Parish begin immediately to work with State and Federal Officials to identify the long term service and infrastructure requirements to provide security, enforcement of regulations s, emergency response to all sector threats and supply and support services for the industry in the Gulf region.***

2. ***That Plaquemines Parish, with the support of the State and Federal Government Officials, conduct an assessment to identify specific industry infrastructure and service needs as a result of the Horizon oil spill and identify and confirm funding sources to plan, design and build the necessary infrastructure and to provide the services required.***

3. ***That there be confirmation (complete with a time schedule and an allocation of funding) for the dredging of the Baptiste Collette Channel from current maintenance dredging of 16 feet MLG to 26 feet MLG. There should also be dredging of Tiger Pass and Grand pass.***

4. ***That the State of Louisiana support and promote the continued development of two substantial Exploration and Production offshore supply and support bases in Southern Louisiana***

Figure 18: Venice - Post Horizon Oil Spill

Tourism Sector

Commercial Fishery and Sports Fishery

Venice is considered a world class fishing destination because of the variety of fish that can be caught and the opportunity for ear round fishing. In recognition of the implications of the timing and extent of the Horizon oil spill clean up, there is opportunity for expansion of the sports fishing as a year round industry.

Species include:

1. Yellow Fin Tuna
2. Black Fin tuna
3. Blue Marlin
4. Mahi Mahi
5. Red Snapper
6. Mangrove Snapper
7. Vermillion Snapper
8. Lane Snapper
9. Gag grouper
10. Black grouper
11. Cobia
12. Amberjack
13. King mackerel
14. Shark

The fishing in Venice is best described by Outdoor Writer Jerry LaBella.

by Jerry LaBella
Venice, Louisiana, fishing like no other place on the planet!
Just like Venice, Italy, the homeland of Marco Polo, where winding canals are streets, so it is with Venice, Louisiana. Well, perhaps it isn't as romantic as the Italian counterpart, due to the industrialization of the oil and commercial fishing industry.

Nevertheless, this southeastern Louisiana town is but a small area gone unnoticed by most people, other than sportfishing fanatics and those connected with the oil industry.

Venice, located 75 miles southeast of New Orleans at the end of Highway 23, sits right at the edge of the famous Mississippi River Delta and its network of surrounding tributaries. This area has received worldwide acclaim as one of the most fertile zones that nature has ever created on the face of the earth. To the locals, "fertile" is in direct connection with sportfishing fishing— like no other place! Its only rival is nearby Grand Isle.

There's something about Venice that sets it apart from other wetland. Some say it’s the pristine passes, like that of the familiar Tiger Pass, boasting scattered grass stands and canebrakes along certain runs, while other runs are lined with water hyacinth and elephant ear vegetation. It's like someone hand planted an Amazon garden along the route.

What makes this region so unique is the fact that both freshwater and saltwater converge on the territory like two struggling armies staking out claims. As a result, the productive waters and marshland are nursery grounds for an endless array of aquatic species.

For example, while other regions along the coast offer blue water sportfishing, it is generally only accessible to larger, offshore vessels able to travel 40-70 miles out from the coast. That's not the case with Venice, which is a gateway to relatively short routes to the blue water zone and the 100 fathom curve.

Take South Pass sea buoy, for example, located approximately 25 miles south of the "Jump" — the waterway connecting point to the river, west bank side of Venice. Heading south from the South Pass buoy, the 100 fathom curve is only 9 miles out.

Here, along the edge of the continental shelf are deep water oil production platforms which hold blue marlin, wahoo, tuna and dolphin.

If that's not your bag, try the tarpon grounds of the West Delta Blocks, such as 58 or 61. These are located just ten miles southwest of Tiger Pass.

And, if bottom fishing for snapper, grouper, cobia, king mackerel and amberjack is more in line, move further southwest to blocks 79, 90 and 104. All these platforms also offer an array of bottom species like croaker and white trout.

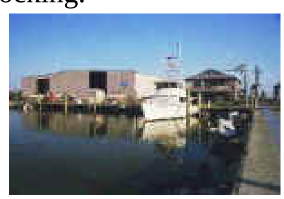
If you're one who doesn't like fishing open water, the areas of Tante Phine Pass, the Wagonwheel, Red Pass, Grand Pass, Southwest Pass and the Mississippi River and surrounding marsh, to name a few, team with speckled trout, redfish, founder and striped bass; specifically during the low river stages of fall season.

Just across the river and a few blocks north of the Jump on the east bank of the river is Baptiste Collette waterway, which runs northeast to two very productive fishing grounds: Breton Sound and the Main Pass Blocks. It is this same route that many choose to take to get to the Chandeleur chain of which Breton and Gosier Islands form the southern most part. Here are numerous shallow water rigs which make for ideal catches of Spanish mackerel, flounder, specks, reds and cobia. The surf areas of the islands offer excellent wadefishing for trout, reds and flounder as well, mostly capitalized on during the warmer and moderate months.

To define Venice is to understand the truest meaning of the word "versatile." This is an area that has it all, and the easiest access to each species. Just ask Dave Ballay, a 35 year veteran guide fisherman with a wealth of knowledge and information of the area and former owner of Venice Marina, "Where's the best fishing in the continental U.S.?"

"Venice!" he readily replies. "There's just no place that you can fish as many different species in one area. And, I would love for somebody to try and tell me that there's a better spot ... I'll argue the point," he emphatically stated. Dave and his wife, Debbie, are both tarpon fishing enthusiasts and were the original owners of the Venice Marina several years prior to hurricane Katrina which devastated the area.

This marina is a fully equipped marina, with bait, ice, back-down ramps, boat slips and groceries. There are mooring slips for overnight and long-term docking.



Venice is actually host to two marinas. Besides the aforesaid marina, Cypress Cove Marina, located within a couple of miles from Venice Marina off of Tidewater Rd., also has all the need amenities much like its counterpart.

These marinas are perhaps the most secure marinas in the area, with 24 hr. security guards on duty for after hour safety. At present, since hurricane Katrina the hoists are not in operation at either marinas but may become operational in the near future.

Prior to hurricane Katrina, Port Eads Marina, located near the southern end of South Pass on the west bank side of the waterway, was a famous outpost for offshore sportfishing vessels and home to the New Orleans Big Game Fishing Club (NBGFC). Port Eads Marina is only accessible by boat and has since been totally devastated by hurricane Katrina, including the NBGFC facility. The only structure remaining at this writing is the South Pass lighthouse which now lists to one side. (More information on the NBGFC can be found here, click.)

The NOBGFC is currently working on plans for a new clubhouse in Cypress Cove Marina, according to Samuel Sanders IV, President of the club. And Sanders indicated that when and if the Port Eads Marina reopens, another clubhouse facility will be rebuilt.

Longtime fishing veteran Ronnie Granier also appreciates the versatility and the productivity of the area, having fished it for over 35 years. He offers one of a number of guide services available to the area. Ronnie caters to the many interested in redfish and speckled trout fishing and other inside species and near shore.

The jetties at the passes of Southwest Pass, South Pass and Tiger Pass are some of Ronnie's favorite places for fishing speckled trout and redfish, but he admits there are other species he runs into. "There's a lot of white trout, croakers, sheepsheads, drum and occasionally pompano and things like that," Ronnie said. "Down by the passes," he chuckled, "well, you know, you're liable to catch anything down there."

Ronnie knows that firsthand, for he's the only fisherman in Louisiana to catch a snook, a species never before caught anywhere in Louisiana's waters. "I use the plastic cocahos (swim-tail minnow lure). That's about all I use. And sometimes I touch `em up with shrimp and I use 1/2 oz. - 3/4 oz. heads."

Ronnie said, "redfish can be caught at the passes, weather permitting, 365 days a year." And he added, "I don't know of another place you can say that."

Brandon Ballay, son of former Venice Marina owner Dave Ballay, has similar sentiments. He, like his dad, is also an avid tarpon buff that runs a charter service out of Venice to an array of different species aboard the charter boat `Aw Heck.'

While Brandon admits many species like wahoo, tuna and king mackerel can be caught year-round, he has learned from experience the seasonal patterns that reap the best catches of each. It's this type of reputation, as with other charter services to the area, that keeps people coming from near and far to fish Venice. Brandon says one can expect to catch the best production of tuna in the fall, wahoo in the spring, and tarpon, marlin and bull dolphin in the summer.

"Venice is definitely number one as far as tuna, wahoo and tarpon," Brandon said. "And, as far as tarpon," he continued, "you may catch more tarpon in Florida, but we catch the big ones here. Our average fish is 130 to 140 lbs. In Florida, it might be 100 lbs."

"There's no place in the world, that I know of, that you can go out and catch a 120 lb. yellowfin, stop on the way in and fish the mouth of the rock jetty and catch redfish, speckled trout, croakers - and all of that in the same trip, on the same boat," Brandon added.

There are even certain areas during low river stages that produce both saltwater and freshwater species in the same spot. It's not unusual to catch Spanish mackerel, trout, reds, flounder and a variety of freshwater bass in such places as the Wagonwheel, the Wildlife Refuge Wall and the passes off of Pass A Loutre.

It's no wonder some have referred to Venice as the cornucopia of the fishing world.

Venice is less than a one day drive from New Orleans offers opportunity to attract the ardent anglers from a New Orleans convention, conference or tour. There is existing hospitality infrastructure including new builds since Hurricane Katrina. These include:

1. Venice Marina Cabins
2. Lighthouse Lodge
3. Venice Inn
4. Venice Marina House Boat

There is an active and successful commercial fishery in Venice that presents both economic development and tourism opportunities, as well as supporting fine seafood dining potential, again dependent on the impact of the Horizon oil spill.

The economic impact of the commercial and recreational fishery can be seen in the 2009 Power point presentation by the Louisiana Department of Wildlife and Fisheries in Figures 19 & 20. A full copy of the Presentation is included in the Appendix. For all intense and purpose this economic impact has been lost until the industry returns to norm.

Figure 19: Economic Impact Commercial Fishing 2008

Saltwater Commercial Fishing

Dockside Value	$264,960,224
Retail Sales	$1,761,885,471
Total Economic Impact	$2,349,180,628
Jobs Supported	26,345
State and Local Tax Revenues	$166,923,916

Figure 20: Economic Impact Recreational Fishing 2008

Saltwater Recreational Fishing

Retail Sales	$472,092,061
Total Economic Impact	$757,091,876
Jobs Supported	7,733
State and Local Tax Revenues	$49,976,489

Bird Hunting

Bird hunting in Venice pre the horizon oil spill, is best described by Super Strike Charters web page.

> "The Duck Hunting in Venice, Louisiana is now regarded as the last frontier of truly unbelievable locations for duck hunting. The beautiful Mississippi River Delta provides the perfect habitat to attract thousands of ducks back to the area year after year. The Delta provides a home to the largest number of species of ducks during November to January, which makes every hunt exciting -- you never know what you will be shooting at next. On a hunt in Venice, you will get the opportunity to bag Pintail, Wigeon, Gadwall, Green and Blue Winged Teal, Mottle Ducks, Mallards, Shovelers, Red Heads, Canvasbacks, and Scaup. You might also get a chance to get one of our more rare species down here which include Buffleheads, Ruddy Ducks, and Golden Eyes."

Eco-Tourism

Depending on the impact of the Horizon oil spill, one of the best opportunities for Eco-tourism exists 10 miles south of Venice at Pass A Loutre Wildlife Management Area - in total some 115,000 acres. A description from their web page:

Pass A Loutre
Acreage: 66,000 Acres
Owned: Louisiana Department of Wildlife and Fisheries
Parish: Plaquemines Parish
Office: New Iberia

2415 Darnell Road
New Iberia 70560, LA
Phone: (337) 373-0032

Description: Pass-a-Loutre Wildlife Management Area is located in southern Plaquemines Parish at the mouth of the Mississippi River, approximately 10 miles south of Venice, and is accessible only by boat. The nearest public launches are in Venice. This area is owned by the Louisiana Department of Wildlife and Fisheries and encompasses some 115,000 acres.

The area is characterized by river channels with attendant channel banks, natural bayous, and man-made canals which are interspersed with intermediate and fresh marshes. Hurricane damage and subsidence have contributed to a major demise of vegetated marsh areas resulting in formation of large ponds. Habitat development is primarily directed toward diverting sediment-laden waters into open bay systems (i.e., creating delta crevasses), which promotes delta growth.

Waterfowl and other migratory game bird hunting, rabbit hunting, and archery hunting for deer are permitted on Pass-a-Loutre.

A trapping program is conducted annually to control surplus furbearing animals and alligators.

There is excellent fishing in the freshwater areas as well as the more saline waters. Fish species present are typical inland saltwater varieties near the gulf and along river channels. Freshwater species including bass, bream, catfish, crappie, warmouth, drum, and garfish can be caught in the interior marsh ponds. Salt water species include redfish, speckled trout and flounder.

Other forms of recreation available include boating, picnicking, nature study, crabbing, and camping. There are 5 designated tent-camping areas on the area and 3 areas which have been designated to allow the mooring of recreational houseboats. Prior to mooring; however, houseboats must receive a permit from the Department.

Tourism Summary:

Trident believes that Tourism, including the sectors identified above and the commercial fishery (depending on Horizon impact), offer significant potential to Venice and that port and hospitality infrastructure is key to development to take advantage of this opportunity.

Trident suggests the following:

1. That Plaquemines Parish, with the support of State and Federal Government Officials identify what accelerated remediation process can be implemented to return sustainability to these industries post the Horizon oil spill.

2. That Plaquemines parish, with the support of State and Federal Government Officials identify opportunities for individuals and businesses negatively impacted by the Horizon oil spill to assist them in an accelerated remediation process of the Horizon oil spill.

3. That Plaquemines Parish, with the support of State and Federal Government Officials conduct an assessment to identify specific industry infrastructure and service needs post the accelerated remediation process and identify and confirm funding sources to plan, design and build the necessary infrastructure and to provide the identified services.

4. That the tourism sectors of sports fishing, bird hunting and eco-tourism, as well as the commercial fishery be included in port development planning at both the existing sport complex and at any new port development.

5. That Plaquemines Parish develops a concentrated single purpose program on behalf of and with the support of all stakeholders to promote, protect and expand the tourism infrastructure in Venice.

6. That Plaquemines Parish, in cooperation with the State of Louisiana develop a comprehensive marketing plan to support the tourism industry in Venice. A telling statement is made in the advertisement of Cajun Odysea Outfitters of Venice when they state on their web page "Venice is quite possibly the last fishing village in the United States of America. There is nothing here, there is no tourism, and there is no publicity outside of South Louisiana."

Environmental and Regulatory Impact Review

Depending on the specific location and design of a new port facility identified by on-site surveys, the potential of impacts to the natural and human environment may be determined to be under the regulatory permitting and authorization by the U. S. Army Corps of Engineers (COE), U. S. Coast Guard (USCG), or Surface Transportation Board (STB) and that an Environmental Assessment (EA) or an Environmental Impacts Statement (EIS) may be required. This can be coordinated with those Agencies once a firm commitment is made to build out those sites, surveys have been completed and concept designs are positioned in preparation of conducting Preliminary Engineering to a minimum of 30% design.

It is highly recommended that coordination with all appropriate Federal and State Regulatory Agencies commence as soon as possible in the development process to facilitate a timely review, proper mitigation is determined and authorization to proceed to construction is obtained.

A new port facility in any of the three designated locations (Alternative Master Plans) would require a number of federal and state regulatory approvals. The primary required environmental authorizations include a Section 10 and possibly Section 404 permit from the U. S. Army Corps of Engineers, New Orleans District (COE), Section 401 (also referred to as Water Quality Certification) and General Stormwater (Louisiana Pollutant Discharge Elimination System [LPDES]) Permit for from the Louisiana Department of Environmental Quality (LDEQ), and a Coastal Use Permit (or Federal Consistency Determination if federal funding is involved) from the Office of Coastal Management, Louisiana Department of Natural Resources (LDNR).

The U. S. Coast Guard (USCG) is very influential regarding the COE's review and issuance of Section 10 permits in the Mississippi River. The highest percentage of COE permit denials is for proposed activities in the Mississippi River. For that reason, the USCG should be contacted early in the process in order to identify any potential problems with the proposed locations. In addition, the COE's internal review of a port project's potential effects on the Mississippi River Guide and/or 100-Year Hurricane Protection Levee would have a weighty influence on the permit decision.

Additional authorizations (with environmental considerations) would be needed for highway improvements/relocations from the Louisiana Department of Transportation and Development (LDOTD) and possibly for rail service from the Surface Transportation Board (STB). The property owners can build new railroad tracks on their own property without seeking STB approval; however, if new track must be built to reach a property, the property owner must file with the STB for approval to build the track or seek an exemption for the construction. The exemption may be granted if the proposed rail construction is not controversial. If there is controversy, the STB would most likely require that the proposed action to be submitted to a full approval process.

The LDEQ would require two general (LPDES) permits for the management of Stormwater. The Stormwater permit is based on an approved plan that would address all aspects of post-construction drainage. The Stormwater construction permit would consist of an approved plan that would minimize potential impacts from turbid runoff resulting from site preparation related construction activities. The Stormwater construction permit can be applied for right before construction is initiated, but the application of the Stormwater permit should be filed early in the permitting process.

Additional authorizations for post-construction activities that support port operations, would be needed from the LDEQ for point source discharges of water (LPDES), underground storage tanks, air omissions, generation of hazardous wastes, and other activities; State Fire Marshal Office for aboveground storage tanks; and Louisiana Department of Health and Hospitals for sewerage treatment.

If a subdivision of property would have to be approved by the Plaquemines Parish Council. Zoning approval and a construction permit would also be required from Plaquemines Parish Government with the latter filing applied for concurrently with the COE and LDNR permit applications. In addition, Plaquemines Parish would also need to issue building permits for individual structures that would need to comply with all parish construction and flood elevation requirements.

The following discussions are confined to obtaining federal and state authorizations and approvals for the three locations in the order from least to most difficult. The data presented in the following section for each potential project site were derived from existing databases available on public accessible Web sites. The potential environmental impact assessments were based on baseline information and the description of project actions provided for analysis. No field work was undertaken to verify site conditions.

Amax Property Considerations

The apparent lack of wetlands at the primary location of the facility and the ability to construct the port facility without any major improvement or relocation of LA HWY 39 or HWY 3137 are two strong advantages the Amax site offers. Wetlands probably exist in the Batture (land located between the guide levee and Mississippi River) that would require Section 10 and 404 authorizations. Additional wetlands appear to be located below the proposed Port site and might require permitting if rail access is needed through that area.

The COE would identify and evaluate the potential effects of the project on the guide levee and would probably approve the project if their concerns were satisfactorily addressed. While potential Section 10 permit issues, regarding proposed appurtenances in the river, are unknown at the current time, the presence of existing port improvements in the river at this location would appear to favor a positive permit decision. The LDNR would likely approve the project. The LA DOTD would have to approve the proposed crossings of LA HWY 39 by the railroad and HWY 3137 by the wharf access infrastructure, but it is doubtful that a long environmental review process would be required. Approval from the STB for rail improvements appears to be likely, contingent on STB jurisdictional authority. The USCG could determine that an EA is required.

Location and Area

The project footprint for the AMAX - Coal Terminal Concept Plan and the AMAX – Omni Terminal Concept Plan are basically the same and contain approximately 380 acres.

Soil Types

With the exception of the urban soils classified on the developed portion of the site, the majority of the site contains higher well drained natural levee soils: Carville silt loam, Cancienne silt loam and Cancienne silty clay loam. The two small areas of hydric soils consist of Carville, Cancienne, Schriever frequently flooded soils on the strip of batture located between the Mississippi River and the Mississippi River Flood Protection Levee and Shriever clay located on the northeast corner of the site adjacent to LA HWY 39.

Flood Zones

Approximately two-thirds of the site is within Zone B – Areas between limits of 100-year flood and 500-year flood. The Batture and a narrow strip of land on the eastern side of the property along LA HWY 39 are in Zone A6 – Areas of 100-year flood. These data are from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders.

Oil and Gas Wells

There is one recorded plugged and abandoned dry hole located within the northwest corner of the project area.

Oil and Gas Fields

There are no oil or gas fields developed in the project area.

Petroleum Pipelines

One natural gas pipeline extends northeast and parallel to LA HWY 39 from the eastern side of the developed portion of the project site to the Norfolk Southern Property.

Land Use and Habitats

The majority of the project site is comprised of developed land, followed by re-growth of forest on former agricultural land. A small area of cleared land remains at the southwest part of the site and a retention pond is located near the southeast corner of the development complex.

Wetlands

According to NWI data, the project area contains freshwater forested/shrub wetland (Batture along the Mississippi River) and freshwater ponds (associated with the development complex.) There are potential wetlands adjacent to the proposed Port site which might be impacted by the proposed rail access.

Cultural Resources

One cultural resource area, Monplasir Plantation covering approximately 1 acre is located within the project area in the vicinity of the proposed double track looping though the southern half of the project site.

Threatened and Endangered Species

No threatened or endangered species have been recorded on the proposed project site.

Hazardous Materials and Waste Sites

Amax Metals Recovery Inc. is located on the site and is listed as a LQG. The site is a TRIS reporter of industrial inorganic chemicals. Corrective actions were listed for this facility, but the facility is currently in compliance. Concept siting has tried to totally avoid any known location of the known contaminant locations however final determination cannot be completed until such time that owner/state releases more detailed information about the aspects of this hazardous site. Remediation attempts, possible groundwater plume transport, containment and or removal attempts all impact the ability to locate any proposed final design. At this point with all of the available data the development concept appears clear of any involvement.

Flood Protection Levees and Elevation

The site is protected by the Mississippi River flood protection levee and the back protection levee along the Forty-Arpent Canal. No additional floodwall construction is required for the construction of the wharf. The wharf will extend over and above the levee. A bulkhead will probably be constructed on the waterside of the wharf but that determination will not be made until final design.

Coastal Restoration and Flood Protection Projects

There are no coastal restoration projects located on the AMAX site.

Citrus II Land Considerations

Despite the likely presence of wetlands in the Batture, the apparent lack of wetlands within the main project footprint should result in a favorable permit decision for the wetland component of this site. The COE would also have to review the project's potential effects on the guide and hurricane protection levees and determine if additional measures would have to be included to ensure the integrity of the two levees.

As drawn, the conceptual site design incorporates the Mississippi River Flood Protection Levee into the port development complex. This is not permitted by the COE, thus the design would have to be reconfigured to safeguard the integrity of the protection levee and maintain specified clearances. Potential riverine Section 10 permit issues are unknown, but would have to be addressed if identified.

The LDNR would likely issue an authorization for a port at this location. The need to relocate a significant portion of LA HWY 23 would result in the LDOTD having to conduct a comprehensive NEPA evaluation. With the lead federal agency, consisting of the COE, USCG, or STB (if taking jurisdiction), an EA would probably be likely, but it could be determined that an EIS would be required.

Because the railroad does not currently connect to the proposed construction site, the property owner must file with the STB for approval to build the track or seek an exemption for the construction. The exemption may be granted if the proposed rail construction is not controversial. If there is controversy, the STB would most likely require that the proposed action to be submitted to a full approval process. The following is from the Trident Team's review of existing and available data bases.

Location and Area

The Citrus Lands II project site contains approximately 590 acres on the west side of the Mississippi River.

Soil Types

The site contains five soils: Carville, Cancienne, Schriever frequently flooded, Cancienne silt loam, Cancienne silty clay loam, Harahan clay and Westwego clay. All of these soils are hydric except the Cancienne silt loam and Cancienne silty clay loam located on the most elevated portion of the natural levee adjacent and parallel to the Mississippi River Flood Protection Levee.

Flood Zones

The area contains one flood zone, Zone A3 – Areas of 100-year flood. These data are from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders.

Oil and Gas Wells

One plugged and abandoned dry hole is located within the project site.

Oil and Gas Fields

There are no oil and gas fields within the project site.

Petroleum Pipelines

A review of readily available records indicates there are no petroleum pipelines within the project site.

Land Use and Habitats

The majority of the project site consists of agriculture/pasture with a narrow strip of scrub/shrub habitat located between LA HWY 23 and the Mississippi River Flood Protection Levee. The drainage ditch defining the southern boundary of the site contains fresh marsh and scrub/shrub habitat. The northern portion of the project site contains a narrow strip of forested batture between the protection levee and the river channel.

Wetlands

According to NWI data, the only wetlands on the project site are forested batture land along the Mississippi River channel and fresh water marsh in the drainage ditch along the site's southern boundary.
Cultural Resources
There are no recorded archaeological sites or sites on or eligible for listing on the National Register of Historic Sites.

Flood Protection Levees and Elevation

The proposed project site is protected from Mississippi River flooding by an earthen protection levee constructed by the US Army Corps of Engineers. The earthen back protection levee south of the project site was built and maintained by private interests. The type, location and elevation of these levees are being reviewed with regard to upgrading with a focus on having the Corps upgrade the back levee. Wharf construction will not interfere or impact the levee due to the wharf extending beyond and above the existing levee. No current plans exist for modification of the levee. If such plans become known prior to final design and construction the wharf will be configured to still be in excess of contact with the levee.

Coastal Restoration and Flood Protection Projects

While the area of influence of the BA-01 Davis Pond Freshwater Diversion is shown as encompassing the southern part of the project site, the influence would be confined to lowering salinities in marshes south of the back protection levee. The freshwater diversion would be prevented from encroaching on the project site by the back protection levee.

Venice Considerations

The Venice Alternative that is located in the northern part of an undeveloped, contiguous wetland area, while not impossible, would be difficult to obtain COE and LDNR wetland use permits for development at this site. Development of the existing Port would require far less environmental review and permitting. Most of the information presented is relative to the site outside of the present Port due to considerable approval process and development that would be required to develop that site. The existing Port should be built to maximum efficiency as a means to accommodate the future development at Venice without a lengthy and costly environmental review process.

The lack of guide and protection levees would negate the need for the COE to evaluate same. Potential Section 10 permit issues remain undetermined, but the USCG would likely have safety concerns regarding marine traffic in the area. A tie-in to LA HWY 23 would require LDOTD approval. Because marine traffic into and out of the Port of Venice, consisting of large vessels, would have to be maintained, significant movable or fixed span bridges for vehicular and rail traffic would be required. The USCG would be responsible for both bridge authorizations and an EA would likely be required if the undeveloped alternative were to be pursued.

Venice – Grand Pass Site

Location and Area

The proposed Venice Port site contains approximately 227 acres and is located on the point of land between Grand Pass and the main Mississippi River Channel. The site has not road or rail access to the northern part of the parish.

Soil Types

The entire proposed project site consists of one hydric soil, Carville, Cancienne, Shriever frequently flooded (CV).

Flood Zones

The flood zone for this site is listed as V21 - areas of 100-year coastal flood with velocity (wave action). These data are from maps published in 1985 and do not reflect the most current FIRM maps. The revised FIRM maps are currently under review by FEMA, Plaquemines Parish Government and stakeholders.

Oil and Gas Wells

Four plugged and abandoned dry holes are located within the project area.

Oil and Gas Fields

There are no oil and gas fields listed for the site.

Petroleum Pipelines

Data maintained by the Louisiana Department of Natural Resources show no petroleum pipelines within the project area.

Land Use and Habitats

The project site consists primarily of forest land, subject to overflow when the Mississippi River floods, and scattered water bodies.

Wetlands

According to NWI data (derived from interpretation of 1988 aerial photographs), the project area contains the following wetlands: 1) Freshwater Forested/Shrub wetland (204 acres), 2) Freshwater pond (16 acres), 3) Riverine (2 acres) and 4) Freshwater emergent wetland (5 acres). The large area of wetlands would require substantial mitigation, including alternative site analyses and minimization of footprint to diminish adverse effects.

Cultural Resources

One cultural resource site named The Jump, Grand Pass Fishing Village and covering 15 acres is located on the northwest side of the project area along Grand Pass. Construction at this site would require mitigation.

Hazardous Materials and Waste Sites

A search of existing databases revealed no permitted facilities or other known hazardous materials or waste within the project area.

Flood Protection Levees and Elevation

There are no flood protection levees around the proposed port site located between the Mississippi River and Grand Pass. The crest of the levee near the Mississippi River is approximately 5 feet in elevation while the remainder of the site is approximately 2.5 feet in elevation

Coastal Restoration & Flood Protection Projects

There are no coastal restoration or flood protection projects located at the proposed Venice port site. There are three Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) projects proposed for the restoration of deteriorating wetland areas west of the proposed Venice – Mississippi River site: 1) MR 12 – Mississippi River Sediment Trap, 2) MR 14- Spanish Pass Diversion, 3) MR- Venice Ponds Marsh Creation and Crevasse.

Venice – Tiger Pass North and South Site

Some major considerations for construction at these two sites include the following:

- Virtually all of the project site is in wetland or shallow water bodies
- Maintenance of navigation channels and slips in the vicinity of proposed CWPPRA projects
- Water quality issues in the dredged canals and slips
- The area may contain petroleum related pipelines and wells that would need to be investigated as part of the pre-planning effort.

A well defined and substantiated purpose and need for port development at these two sites should facilitate acquisition of regulatory approvals because ports are water dependant and necessitate displacement of wetlands in coastal Louisiana. It is likely that there would be substantial mitigation required to compensate for the loss of wetlands and wetland functions.

Preliminary Engineering and Environmental Assessment of Preferred Site(s) Process

In the development process there are distinctive steps which a Public or Private developer takes and each of these steps imply ever growing commitments of time; money; risks for completing the project; receiving expected returns on investment; timing of construction, land acquisition, obtaining necessary equipment, obtaining expected rates and schedules from carriers which will coincide with a Port's opening, securing a Port Operator, having trained labor on site, and a myriad of other sub-elements all of which can affect the ultimate outcome of success in building a Port.

Plaquemines Parish has just developed its Comprehensive Port Development Master Plan which needs to be authorized. Detailed steps in development are discussed in Task 8 and 9. Many of the detailed questions pertaining to construction costs, environmental permitting and mitigation and project schedule can only be answered when Preliminary Engineering begins which is almost always coupled with the EIS/EA Process due to similar requirements and complimentary needs which each demands to be successful.

Given that the conceptual alternatives in the Comprehensive Port Development Master Plan were extensively tested and wetted many of the risk factors have been reduced while the development alternatives have been clearly shown to have viable utility and strength.

The Evaluation Criteria by Alternative confirms their responsiveness to market demands and ability to meet the needs of the Parish and the Port's sustainability:

Criteria	Amax	Citrus II	Venice
Flexibility	yes	yes	yes
Expandability	some	yes	yes
Environmental Responsive	possible	possible	possible
Berth Efficiency and Access	yes	yes	NA
Rail Efficiency/Access	yes	possible	NA
Truck Efficiency/Access	yes	yes	yes
Adjacency	possible	yes	yes
Marketability	yes	yes	yes
Conducive to Security	yes	yes	yes
Cost Effective Construction*	probable	probable	probable
Market Driven Development	yes	yes	NA
On-Terminal Traffic	yes	yes	yes
Responsive to Technology	yes	yes	NA

*Cost Effective Construction – Amax has unknown Hazardous Waste issues which might complicate final construction costs due to avoidance, containment or clean-up issues; Citrus II has constructability issues with levees and rail which are external to the Port's overall construction costs however are determinants as to when the Site might be completed; and Venice has two identified sites, the first being an established Port location and the second being a greenfield site with unknown mitigative environmental costs and both sites require completed dredging programs.

Given the above findings it is the considered opinion of Trident Team that the sites and the selected alternatives for those sites meet the Go/No Go Test and that the Alternatives shown in the beginning of Task 7 should be furthered in their development by the Preliminary Engineering and EIS/EA Processes and that the Parish should engage the Private Sector in advancing the building of these sites.

Environmental Management System Benefits and Opportunities

Environmental Management System (EMS) is a business planning tool that can assist public seaports to provide a healthy environment for their citizens while continuing to meet public demands and economic growth. An EMS delivers significant benefits toward enhancing port operational effectiveness and efficiency. Particular benefits include: improved operational control; more effective and efficient emergency response; improved credibility and an enhanced public image; lower degree of environmental liability risk; improved insurance coverage and rates; and improved management confidence in the handling and resolution of environmental issues.

Environmental performance improvements also provide an avenue for cost savings on insurance premiums, regulatory incentives, and state and federal funding opportunities. A partnership of the American Association of Port Authorities (AAPA), the Global Environment and Technology Foundation, and the U.S. Environmental Protection Agency (EPA) organizes a Port EMS Assistance Project, providing port-based EMS training, mentoring, and technical assistance. The AAPA reports that all U.S. ports have nearly 70 percent of the elements already in place to develop and implement an EMS.

The Trident Team's evaluation of Plaquemines Parish Port Terminal District operational elements indicates that the Plaquemines Parish Port Terminal District may have the necessary elements in place to efficiently develop an EMS. Implementation of an EMS would greatly benefit the Port during planning of new development opportunities outlined in this Comprehensive Port Development Master Plan. A typical EMS would provide a framework of environmental management elements, such as an outline of environmental training program, internal environmental auditing, pollution prevention measures, energy reduction measures, the best management practices to improve air quality and water quality, better land utilization planning, and community involvement.

Conceptual Economic Evaluation of Preferred Port Master Plan Alternatives

Alternatives

For the purposes of this conceptual economic evaluation the alternatives are:

1. Amax Property, Omni Port Design, one berth Container and one berth Break Bulk. This evaluation does not include the specialized Bulk Facility or Alternative Coal Terminal.
2. Citrus II Property, two berths Container Terminal and Intermodal Rail Terminal. This evaluation does not include the adjacent logistic park.

The evaluation includes for each property:

1. Summary page with assumptions
2. Financial Model
3. Economic Impact

Disclaimer

The financial model used for this evaluation is based on one set of stated assumptions and one of many financing options, the Internal Rate of Return (IRR) and the Return on Investment (ROI) may vary significantly with changes to the assumptions and changes to the financing structure or financing options

The purpose of this financial model is to determine the potential financial viability of the project under the assumed capital costs and financial model inputs and to determine a return on Investment as a result of these assumptions.

The conclusion reached from the results of both the Citrus Land II and Amax projects is that they both project sufficient return to justify the additional investment to do the additional specific project definition, detailed engineering and costing.

Citrus II Property Summary

Description

Citrus Lands II Site-Container/ Intermodal Terminal. Two berths, as described in Task 7

Summary

Based on the following assumptions and financing structure and options this development produced and Internal Rate of Return (IRR) of 9.2 percent and a Return on Investment (ROI) of 14.5 percent.

Assumptions
For details see Assumptions Page of Financial Model.

Capital Costs

Please Note that Capital Costs are taken from Opinion of Probable Costs in Task 7, Trident notes that the probable cost estimates are very conservative with substantial soft cost and contingency allocations and is aware that these costs can be significantly reduced by final design, value engineering and numerous other factors.

Based on the Opinion of Probable Costs in Task 7

Hard Costs

Citrus Lands II Site - Container/Intermodal Terminal	$440,717,848
Terminal Cost assumption for Model	$440,717,848
Land Acquisition (Port site only)	$ 15,000,000 estimate
Equipment	$ 72,000,000.

Table 17: Equipment Capital Costs Detail

Equipment Capital Costs Detail ($USD in mm) Citrus II Site			
Description	**# of Each**	**Cost**	**Amount**
Equipment			
SPP Gantry Crane (STS)	5	10	50
RTG Cranes	6	1.5	9
RMG Cranes	0	2.5	0
Reach Stacker	3	0.5	1.5
Side Pick	0	0.3	0
Hustlers/BombCarts	25	0.125	3.13
Miscellaneous	3	1	3
Terminal Tractor	0	0.12	0
Terminal Trailer	0	0.02	0
Truck Crane	0	3	0
Fork Lift	2	0.06	0.12
Reach Stacker	0	0.5	0
Pedestrian Bridge	0	0.075	0
Transformer Subst.	3	0.1	0.3
IT	1	5	5
Total Equipment		**24.80**	**72.0**

Total Hard Costs ***$527,717,848***

Soft Costs

Financing, legal and Misc. plus Startup	$ 31,663,071
Total Construction Cost	**$ 559,380,919**

Debt to Equity: 60% to 40%

Interest Rate: 7%

Refinancing after 15 years (Additional Debt) $200,000,000

Volumes

Containers	Initial Year (Growing)	205,000 containers (348,500 TEUs)
	Year Six (Then flat line)	475,000 containers (807,500 TEUs)

Note: Year 6 and beyond marginally exceeds the Maximum Practical Throughput Capacity established in Task 7 because the Maximum Practical Capacity is established by the lowest number achieved of any operating component which in this case was intermodal transfer. Since the operating methodology of the container terminal includes a truck allocation Trident defaulted to the next impact component which was berth and apron activities at 903,000 TEUs so the 807,500 TEUs used in this model is well within an acceptable operating range.

Pricing

Containers $295. per container *(this includes, storage and all other supplemental charges)*

Table 18: Citrus Lands II Site – Pro-forma Financial Model - Assumptions

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Assumptions

Basic Parameters	
Construction Period	1.5
Operating Period	25
Construction Cost	$559,380,919

Cost	
Hard Costs	
Land Acquisiton	$15,000,000
Construction	$440,717,848
Equipment	$72,000,000
Subtotal	$527,717,848
Soft Costs	$31,663,071
Total Cost	$559,380,919

Financial Assumptions	
Average Inflation Rate	2.00%
Interim Financing Rate	7.00%
Long Term Financing Rate	7.00%
Capital Structure	
Debt	60%
Equity	40%
	100%
Refinancing year 15	
Additional Debt	$ 200,000,000

Volumes Move	
Baseline	
Initial Lifts	205,000
Year 2	305,000
Year 3	375,000
Year 4	400,000
Year 5	410,000
Year 6	475,000

Pricing per Move		
Baseline		
lifts		$295
Average Inflation Rate	Yrs 1-5	2%
	Yrs 6-10	2%
	Yrs 11-15	2%
	Yrs 16-20	2%

Baseline Operating Costs per TEU	
Labour	$89.10
Fuel	$5.20
Electricity	$2.20
Insurance	$1.10
Repairs and Maintenance	$20.20
Overhead and Management	$23.00
	$140.80

Returns

Project Average ROI	14.5%
IRR	9.2%

Table 19: Citrus Lands II Site – Pro-forma Financial Model - Capital Costs

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Capital Costs

		Total	Year 1	Year 2	Year 3
Hard Costs					
Land Acquisition		$15,000,000	$15,000,000	$0	$0
Construction		$440,717,848	$176,287,139	$154,251,247	$110,179,462
Equipment		$72,000,000	$0	$18,000,000	$54,000,000
Subtotal		$527,717,848	$191,287,139	$172,251,247	$164,179,462
Soft Costs					
Financing, Legal and Misc	5%	$26,385,892	$9,564,357	$8,612,562	$8,208,973
Interest on Interim Financing		$56,980,000	$3,820,000	$20,390,000	$32,770,000
Startup	1%	$5,277,178	$0	$0	$5,277,178
Working capital	2%	$10,554,357	$0	$0	$10,554,357
Subtotal		$99,197,428	$13,384,357	$29,002,562	$56,810,509
Total Capital Costs		**$626,915,276**	**$204,671,496**	**$201,253,809**	**$220,989,971**

Table 20: Citrus Lands II Site – Pro-forma Financial Model – Years 1 – 10

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Cash Flow

		Construction Period			Operating Period									
Year		1	2	3	1	2	3	4	5	6	7	8	9	10
Volume Lifts														
Total					205,000	305,000	375,000	400,000	410,000	475,000	475,000	475,000	475,000	475,000
Cash Flow														
Capital														
Initial Investment		-$250,770,000	$0	$0										
Capital Sinking Fund	1.00%				-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178
Operating														
Total Revenue					$60,475,000	$91,774,500	$115,094,250	$125,222,544	$130,920,170	$154,709,323	$157,803,509	$160,959,579	$164,178,771	$167,462,346
Operating Costs														
Operations					$28,860,000	$43,800,000	$54,930,000	$59,770,000	$62,490,000	$73,840,000	$75,320,000	$76,820,000	$78,360,000	$79,930,000
Interest					$25,010,000	$23,700,000	$22,380,000	$21,060,000	$19,750,000	$18,430,000	$17,110,000	$15,800,000	$14,480,000	$13,170,000
Bond Retirement					$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000
Total Operating Costs					$72,680,000	$86,310,000	$96,120,000	$99,640,000	$101,050,000	$111,080,000	$111,240,000	$111,430,000	$111,650,000	$111,910,000
Cash Flow Before Income Tax					-$12,205,000	$5,464,500	$18,974,250	$25,582,544	$29,870,170	$43,629,323	$46,563,509	$49,529,579	$52,528,771	$55,552,346
Tax on Income					$0	$0	-$1,130,000	-$3,290,000	-$4,830,000	-$8,700,000	-$9,850,000	-$10,980,000	-$12,100,000	-$13,200,000
Cash Flow from Operations		$0	$0	$0	-$12,205,000	$5,464,500	$17,844,250	$22,292,544	$25,040,170	$34,929,323	$36,713,509	$38,549,579	$40,428,771	$42,352,346
Refinancing														
Net Cashflow		-$250,770,000	$0	$0	-$17,482,178	$187,322	$12,567,072	$17,015,366	$19,762,991	$29,652,144	$31,436,331	$33,272,401	$35,151,592	$37,075,168
Returns														
Annual Return on Investment (cash on cash, after tax)					-7.0%	0.1%	4.7%	6.3%	7.4%	11.1%	11.7%	12.4%	13.1%	13.8%
Project Average ROI	14.5%													
Project IRR	9.2%													

Table 21: Citrus Lands II Site – Pro-forma Financial Model – Years 11 - 20

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Cash Flow

		Operating Period									
Year		**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Volume Lifts											
Total		475,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000	475,000
Cash Flow											
Capital											
Initial Investment											
Capital Sinking Fund	1.00%	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178	-$5,277,178
Operating											
Total Revenue		$170,811,593	$174,227,825	$177,712,381	$181,266,629	$184,891,962	$188,589,801	$192,361,597	$196,208,829	$200,133,005	$204,135,666
Operating Costs											
Operations		$81,530,000	$83,160,000	$84,820,000	$86,520,000	$88,250,000	$90,010,000	$91,810,000	$93,650,000	$95,520,000	$97,430,000
Interest		$11,850,000	$10,530,000	$9,220,000	$7,900,000	$20,580,000	$18,570,000	$16,550,000	$14,530,000	$12,520,000	$10,500,000
Bond Retirement		$18,810,000	$18,810,000	$18,810,000	$18,810,000	$18,810,000	$28,807,500	$28,807,500	$28,807,500	$28,807,500	$28,807,500
Total Operating Costs		$112,190,000	$112,500,000	$112,850,000	$113,230,000	$127,640,000	$137,387,500	$137,167,500	$136,987,500	$136,847,500	$136,737,500
Cash Flow Before Income Tax		$58,621,593	$61,727,825	$64,862,381	$68,036,629	$57,251,962	$51,202,301	$55,194,097	$59,221,329	$63,285,505	$67,398,166
Tax on Income		-$14,300,000	-$15,370,000	-$16,450,000	-$17,500,000	-$15,060,000	-$16,280,000	-$17,500,000	-$18,720,000	-$19,930,000	-$21,150,000
Cash Flow from Operations		$44,321,593	$46,357,825	$48,412,381	$50,536,629	$42,191,962	$34,922,301	$37,694,097	$40,501,329	$43,355,505	$46,248,166
Refinancing						$200,000,000					
Net Cashflow		$39,044,415	$41,080,646	$43,135,203	$45,259,451	$236,914,783	$29,645,122	$32,416,918	$35,224,150	$38,078,327	$40,970,987
Returns											
Annual Return on Investment (cash on cash, after t		14.6%	15.3%	16.1%	16.9%	88.3%	11.1%	12.1%	13.1%	14.2%	15.3%
Project Average ROI	14.5%										
Project IRR	9.2%										

Table 22: Citrus Lands II Site – Pro-forma Financial Model – Years 1 - 10 Sources & Uses

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Sources and Uses

	Construction Period			Operating Period									
Year	1	2	3	1	2	3	4	5	6	7	8	9	10
Cost and Source of Funds													
Project Costs													
Construction	$204,671,496	$201,253,809	$220,989,971										
Operations (negative cash flow)				$17,482,178	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$204,671,496	$201,253,809	$220,989,971	$17,482,178	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cumulative Total	$204,671,496	$405,925,305	$626,915,276	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454
Sources													
Developer													
Initial Investment	$250,770,000												
Negative Cash flow				$17,482,178	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Developer Investment	$250,770,000	$250,770,000	$250,770,000	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178
Interim Financing													
Interim Financing Drawn	-$46,098,504	$201,253,809	$220,989,971										
Interim Financing O/S	-$46,098,504	$155,155,305	$376,145,276	0									
Long Term Financing													
Long Term Bond Debt Issued				$376,150,000									
Long Term Bond Debt Retired				$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500
Long Term Bond Debt O/S				$357,342,500	$338,535,000	$319,727,500	$300,920,000	$282,112,500	$263,305,000	$244,497,500	$225,690,000	$206,882,500	$188,075,000

Table 23: Citrus Lands II Site – Pro-forma Financial Model – Years 11 - 20 Sources & Uses

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Sources and Uses

	Operating Period									
Year	11	12	13	14	15	16	17	18	19	20
Cost and Source of Funds										
Project Costs										
Construction										
Operations (negative cash flow)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cumulative Total	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454	$644,397,454
Sources										
Developer										
Initial Investment										
Negative Cash flow	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Developer Investment	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178	$268,252,178
Interim Financing										
Interim Financing Drawn										
Interim Financing O/S										
Long Term Financing										
Long Term Bond Debt Issued					$ 200,000,000					
Long Term Bond Debt Retired	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$18,807,500	$28,807,500	$28,807,500	$28,807,500	$28,807,500	$28,807,500
Long Term Bond Debt O/S	$169,267,500	$150,460,000	$131,652,500	$112,845,000	$294,037,500	$265,230,000	$236,422,500	$207,615,000	$178,807,500	$150,000,000

Table 24: Citrus Lands II Site – Pro-forma Financial Model – Years 1 - 10 Profit & Loss

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Profit and Loss

Year		1	2	3	4	5	6	7	8	9	10
Total Income		$60,475,000	$91,774,500	$115,094,250	$125,222,544	$130,920,170	$154,709,323	$157,803,509	$160,959,579	$164,178,771	$167,462,346
Expenses											
Operations		$28,860,000	$43,800,000	$54,930,000	$59,770,000	$62,490,000	$73,840,000	$75,320,000	$76,820,000	$78,360,000	$79,930,000
Depreciation (CCA)		$37,610,000	$35,360,000	$33,240,000	$31,240,000	$29,370,000	$27,610,000	$25,950,000	$24,390,000	$22,930,000	$21,550,000
Interest on Debt		$25,010,000	$23,700,000	$22,380,000	$21,060,000	$19,750,000	$18,430,000	$17,110,000	$15,800,000	$14,480,000	$13,170,000
Total Expenses		$91,480,000	$102,860,000	$110,550,000	$112,070,000	$111,610,000	$119,880,000	$118,380,000	$117,010,000	$115,770,000	$114,650,000
Income Before Taxes		-$31,005,000	-$11,085,500	$4,544,250	$13,152,544	$19,310,170	$34,829,323	$39,423,509	$43,949,579	$48,408,771	$52,812,346
Total Income Taxes		$0	$0	$1,130,000	$3,290,000	$4,830,000	$8,700,000	$9,850,000	$10,980,000	$12,100,000	$13,200,000
Profit (Loss) After Income Tax		-$31,005,000	-$11,085,500	$3,414,250	$9,862,544	$14,480,170	$26,129,323	$29,573,509	$32,969,579	$36,308,771	$39,612,346
Depreciation (CCA)											
Average Rate	6.00%										
Opening		$626,915,276	$589,305,276	$553,945,276	$520,705,276	$489,465,276	$460,095,276	$432,485,276	$406,535,276	$382,145,276	$359,215,276
Depreciation		$37,610,000	$35,360,000	$33,240,000	$31,240,000	$29,370,000	$27,610,000	$25,950,000	$24,390,000	$22,930,000	$21,550,000
Closing		$589,305,276	$553,945,276	$520,705,276	$489,465,276	$460,095,276	$432,485,276	$406,535,276	$382,145,276	$359,215,276	$337,665,276

Table 25: Citrus Lands II Site – Pro-forma Financial Model – Years 11 - 20 Profit & Loss

Citrus Lands II Site - Container / Intermodal Terminal
Pro-forma Financial Model

Profit and Loss

Year		11	12	13	14	15	16	17	18	19	20
Total Income		$170,811,593	$174,227,825	$177,712,381	$181,266,629	$184,891,962	$188,589,801	$192,361,597	$196,208,829	$200,133,005	$204,135,666
Expenses											
Operations		$81,530,000	$83,160,000	$84,820,000	$86,520,000	$88,250,000	$90,010,000	$91,810,000	$93,650,000	$95,520,000	$97,430,000
Depreciation (CCA)		$20,260,000	$19,040,000	$17,900,000	$16,830,000	$15,820,000	$14,870,000	$13,980,000	$13,140,000	$12,350,000	$11,610,000
Interest on Debt		$11,850,000	$10,530,000	$9,220,000	$7,900,000	$20,580,000	$18,570,000	$16,550,000	$14,530,000	$12,520,000	$10,500,000
Total Expenses		$113,640,000	$112,730,000	$111,940,000	$111,250,000	$124,650,000	$123,450,000	$122,340,000	$121,320,000	$120,390,000	$119,540,000
Income Before Taxes		$57,171,593	$61,497,825	$65,772,381	$70,016,629	$60,241,962	$65,139,801	$70,021,597	$74,888,829	$79,743,005	$84,595,666
Total Income Taxes		$14,300,000	$15,370,000	$16,450,000	$17,500,000	$15,060,000	$16,280,000	$17,500,000	$18,720,000	$19,930,000	$21,150,000
Profit (Loss) After Income Tax		$42,871,593	$46,127,825	$49,322,381	$52,516,629	$45,181,962	$48,859,801	$52,521,597	$56,168,829	$59,813,005	$63,445,666
Depreciation (CCA)											
Average Rate	6.00%										
Opening		$337,665,276	$317,405,276	$298,365,276	$280,465,276	$263,635,276	$247,815,276	$232,945,276	$218,965,276	$205,825,276	$193,475,276
Depreciation		$20,260,000	$19,040,000	$17,900,000	$16,830,000	$15,820,000	$14,870,000	$13,980,000	$13,140,000	$12,350,000	$11,610,000
Closing		$317,405,276	$298,365,276	$280,465,276	$263,635,276	$247,815,276	$232,945,276	$218,965,276	$205,825,276	$193,475,276	$181,865,276

Trident utilized its experience in economic development to assess associated benefits from infrastructure development and found the following results in Figures 21 and 22:

- Increase of $330 million in Louisiana GDP
- $170 million in the US GDP
- Creates 3,000 Person Years of direct employment in Louisiana
- 2,000 Person Years generated spin-off activities in the state
- 2,500 Person Years in the rest of the US

$120 million in Louisiana GDP

- $20 million GDP generated in the US
- 900 direct Person Years in Louisiana
- 1,300 spin-off jobs created in the US
- Overall US total impact to 2,200 Person Years

Figure 21: Economic Impact Citrus II Development – Construction Impacts

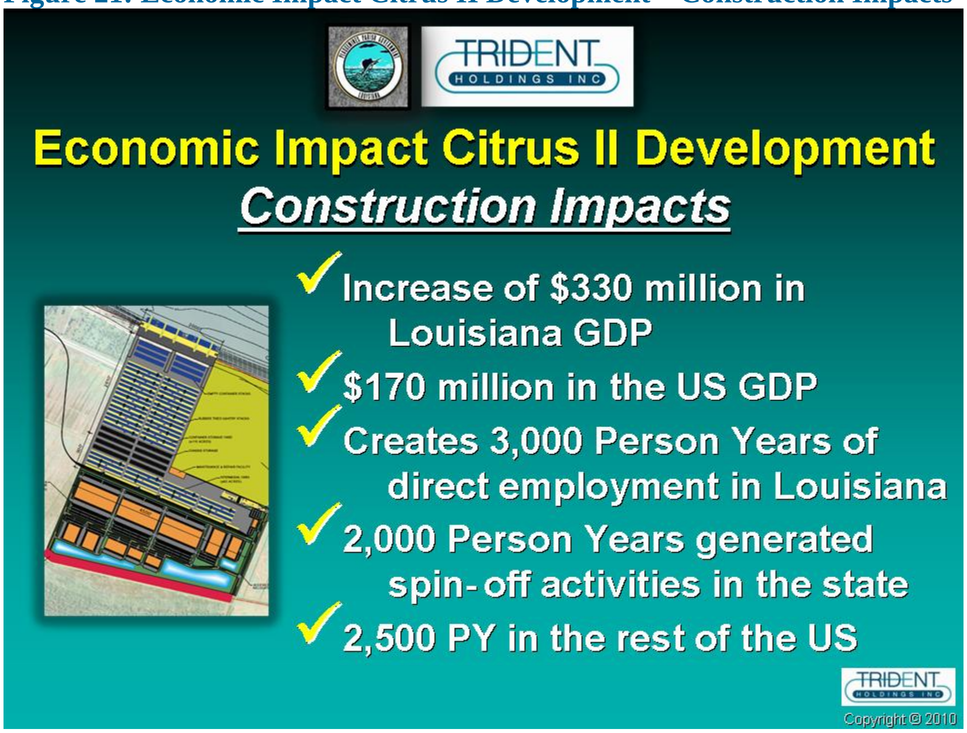


Figure 22: Economic Impact Citrus II Development – Annual Operational Impacts

Amax Property Summary

Description

Omni Terminal Phase II (Break Bulk Terminal) one berth and Omni Terminal Phase III (Intermodal Container Rail Terminal) one berth. As described in Task 7

Summary

Based on the following assumptions and financing structure and options this development produced and Internal Rate of Return (IRR) of 8.3 percent and a Return on Investment (ROI) of 13.1 percent.

Assumptions

For details see Assumptions of Financial Model.

Capital Costs

Please Note that Capital Costs are taken from Opinion of Probable Costs in Task 7, Trident notes that the probable cost estimates are very conservative with substantial soft cost and contingency allocations and is aware that these costs can be significantly reduced by final design, value engineering and numerous other factors.

Based on the Opinion of Probable Costs in Task 7

Hard Costs

Amax-Omni Terminal-Phase II (Break Bulk Terminal)		$200,549,483
Amax-Omni Terminal-Phase III (Intermodal Container Rail Terminal)		$ 77,909,500
		$278,458,983
Less Structures with no Revenue attributed in Model		
Cold Storage	$25,000,000	
Transit Shed	$48,000,000	
	$73,000,000 (No reduction on soft cost or contingency)	$ 73,000,000
Terminal Cost assumption for Model		$ 205,458,983
Land Acquisition		$ 10,000,000
Equipment		$ 45,800,000

Table 26: Equipment Capital Costs Detail

Equipment Capital Costs Detail ($USD in mm) **Amax Site**			
Description	**# of Each**	**Cost**	**Amount**
Equipment			
SPP Gantry Crane (STS)	3	10.00	30.0
RTG Cranes	0	1.50	-
RMG Cranes	0	2.50	-
Reach Stacker	15	0.50	7.5
Side Pick	0	0.30	-
Hustlers/BombCarts	15	0.13	1.9
Miscellaneous	3	1.00	3.0
Terminal Tractor	0	0.12	-
Terminal Trailer	0	0.02	-
Truck Crane	0	3.00	-
Fork Lift	2	0.06	0.1
Reach Stacker	0	0.50	-
Pedestrian Bridge	0	0.08	-
Transformer Subst.	3	0.10	0.3
IT	1	3.00	3.0
Total Equipment		**22.80**	**45.8**

Total Hard Costs ***$261,258,983***

Soft Costs

Financing, legal and Misc. plus Startup $ 15,675,539

Total Construction Cost **$ 276,934,522**

Debt to Equity: 60% to 40%

Interest Rate: 7%

Refinancing after 15 years (Additional Debt) $150,000,000

Volumes

Containers	Initial Year (Growing)	70,000 containers (119,000 TEUs)
	Year Five (Then flat line)	125,000 containers (212,500 TEUs)

Note: Year 5 and beyond exceeds the Maximum Practical Throughput Capacity established in Task 7 because the Maximum Practical Capacity is established by the lowest number achieved of any operating component which in this case was storage. Since this Omni Terminal can utilize other available storage area and because the operating methodology of the container terminal does not utilize a high percentage of storage Trident defaulted to the next impact component which was berth and apron activities at 451,501 TEUs so the 212,000 used in this model is well within an acceptable operating range.

Break Bulk Tons	Initial Year (Growing)	703,877 Tons
	Year Five (Then flat line)	1,126,204 Tons

Note: Well within the 1,407,754 Maximum Practical Throughput Capacity established in Task 7

Pricing

Containers $295. per container *(this includes, storage and all other supplemental charges)*
Bulk $15. per ton

Table 27: Amax Site - Pro-forma Financial Model - Assumptions

Amax Site - Omni Terminal Break Bulk and Container
Pro-forma Financial Model

Assumptions

Basic Parameters	
Construction Period	1.5
Operating Period	25
Construction Cost	$276,934,522

Cost	
Hard Costs	
Land Acquisiton	$10,000,000
Construction	$205,458,983
Equipment	$45,800,000
Subtotal	$261,258,983
Soft Costs	$15,675,539
Total Cost	$276,934,522

Financial Assumptions	
Average Inflation Rate	2.00%
Interim Financing Rate	7.00%
Long Term Financing Rate	7.00%
Capital Structure	
Debt	60%
Equity	40%
	100%
Refinancing year 15	
Additional Debt	$ 150,000,000

Volumes Move	
Baseline	
Initial Lifts	70,000
Year 2	90,000
Year 3	100,000
Year 4	120,000
Year 5	125,000
Year 6	125,000

Pricing per Move		
Baseline		
lifts		$295
Average Inflation Rate	Yrs 1-5	2%
	Yrs 6-10	2%
	Yrs 11-15	2%
	Yrs 16-20	2%

Baseline Operating Costs per TEU	
Labour	$89.10
Fuel	$5.20
Electricity	$2.20
Insurance	$1.10
Repairs and Maintenance	$20.20
Overhead and Management	$23.00
	$140.80

Returns

Project Average R(	13.1%
IRR	8.3%

Volumes	
Tons	
Year 1	703,877
Year 2	844,652
Year 3	985,428
Year 4	1,055,815
Year 5	1,126,203
Year 6	1,126,203

Pricing per Ton		
Baseline		
Per Ton		$15
Average Inflation Rate	Yrs 1-5	2%
	Yrs 6-10	2%
	Yrs 11-15	2%
	Yrs 16-20	2%

Baseline Operating Costs per Ton	
Cost	$9.00

Table 28: Amax Site - Pro-forma Financial Model - Capital Costs

Amax Site - Omni Terminal Break Bulk and Container
Pro-forma Financial Model

Capital Costs

		Total	Year 1	Year 2	Year 3
Hard Costs					
Land Acquisition		$10,000,000	$10,000,000	$0	$0
Construction		$205,458,983	$82,183,593	$71,910,644	$51,364,746
Equipment		$45,800,000	$0	$11,450,000	$34,350,000
Subtotal		$261,258,983	$92,183,593	$83,360,644	$85,714,746
Soft Costs					
Financing, Legal and Misc	5%	$13,062,949	$4,609,180	$4,168,032	$4,285,737
Interest on Interim Financing		$27,730,000	$1,840,000	$9,840,000	$16,050,000
Startup	1%	$2,612,590	$0	$0	$2,612,590
Working capital	2%	$5,225,180	$0	$0	$5,225,180
Subtotal		$48,630,719	$6,449,180	$14,008,032	$28,173,507
Total Capital Costs		**$309,889,702**	**$98,632,773**	**$97,368,676**	**$113,888,253**

Table 29: Amax Site - Pro-forma Financial Model - Cash Flow - Years 1 – 10

Amax Site - Omni Terminal Break Bulk and Container
Pro-forma Financial Model

Cash Flow

		Construction Period			Operating Period									
Year		**1**	**2**	**3**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Volume Lifts														
Lifts					70,000	90,000	100,000	120,000	125,000	125,000	125,000	125,000	125,000	125,000
Tons					703,877	844,652	985,428	1,055,815	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203
Total					773,877	934,652	1,085,428	1,175,815	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203
Cash Flow														
Capital														
Initial Investment		-$123,960,000	$0	$0										
Capital Sinking Fund	1.00%				-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590
Operating														
Revenue														
Lifts					$20,650,000	$27,081,000	$30,691,800	$37,566,763	$39,914,686	$40,712,980	$41,527,239	$42,357,784	$43,204,940	$44,069,038
Tons					$10,558,155	$12,923,176	$15,378,589	$16,806,590	$18,285,575	$18,651,287	$19,024,312	$19,404,799	$19,792,895	$20,188,753
Total Revenue					$31,208,155	$40,004,176	$46,070,389	$54,373,353	$58,200,261	$59,364,266	$60,551,552	$61,762,583	$62,997,834	$64,257,791
Operating Costs														
Operations					$16,194,893	$20,683,905	$23,877,154	$28,013,954	$30,021,345	$30,620,772	$31,234,587	$31,862,879	$32,495,737	$33,143,252
Interest					$12,360,000	$11,710,000	$11,060,000	$10,410,000	$9,760,000	$9,110,000	$8,460,000	$7,810,000	$7,160,000	$6,510,000
Bond Retirement					$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000
Total Operating Costs					$37,854,893	$41,693,905	$44,237,154	$47,723,954	$49,081,345	$49,030,772	$48,994,587	$48,972,879	$48,955,737	$48,953,252
Cash Flow Before Income Tax					-$6,646,738	-$1,689,730	$1,833,236	$6,649,399	$9,118,916	$10,333,494	$11,556,964	$12,789,703	$14,042,098	$15,304,539
Tax on Income					$0	$0	$0	$130,000	$970,000	$1,500,000	$2,000,000	$2,500,000	$3,000,000	$3,490,000
Cash Flow from Operations		$0	$0	$0	-$6,646,738	-$1,689,730	$1,833,236	$6,779,399	$10,088,916	$11,833,494	$13,556,964	$15,289,703	$17,042,098	$18,794,539
Refinancing														
Net Cashflow		-$123,960,000	$0	$0	-$9,259,328	-$4,302,320	-$779,354	$4,166,809	$7,476,326	$9,220,904	$10,944,374	$12,677,114	$14,429,508	$16,181,950
Returns														
Annual Return on Investment (cash on cash, after tax)					-7.5%	-3.2%	-0.6%	3.0%	5.4%	6.7%	7.9%	9.2%	10.4%	11.7%
Project Average ROI	13.1%													
Project IRR	8.3%													

Table 30: Amax Site - Pro-forma Financial Model - Cash Flow - Years 11 – 20

Amax Site - Omni Terminal Break Bulk and Container
Pro-forma Financial Model

Cash Flow

		Operating Period									
Year		11	12	13	14	15	16	17	18	19	20
Volume Lifts											
Lifts		125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000
Tons		1,126,203	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203	1,126,203
Total		1,251,203	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203	1,251,203
Cash Flow											
Capital											
Initial Investment											
Capital Sinking Fund	1.00%	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590	-$2,612,590
Operating											
Revenue											
Lifts		$44,950,419	$45,849,428	$46,766,416	$47,701,744	$48,655,779	$49,628,895	$50,621,473	$51,633,902	$52,666,580	$53,719,912
Tons		$20,592,528	$21,004,378	$21,424,466	$21,852,955	$22,290,014	$22,735,814	$23,190,531	$23,654,341	$24,127,428	$24,609,977
Total Revenue		$65,542,947	$66,853,806	$68,190,882	$69,554,700	$70,945,794	$72,364,709	$73,812,004	$75,288,244	$76,794,009	$78,329,889
Operating Costs											
Operations		$33,805,517	$34,482,627	$35,174,679	$35,881,773	$36,594,008	$37,331,489	$38,074,318	$38,832,605	$39,616,457	$40,405,986
Interest		$5,860,000	$5,210,000	$4,560,000	$3,900,000	$13,750,000	$12,580,000	$11,400,000	$10,230,000	$9,050,000	$7,880,000
Bond Retirement		$9,300,000	$9,300,000	$9,300,000	$9,300,000	$9,300,000	$16,796,500	$16,796,500	$16,796,500	$16,796,500	$16,796,500
Total Operating Costs		$48,965,517	$48,992,627	$49,034,679	$49,081,773	$59,644,008	$66,707,989	$66,270,818	$65,859,105	$65,462,957	$65,082,486
Cash Flow Before Income Tax		$16,577,430	$17,861,179	$19,156,202	$20,472,927	$11,301,785	$5,656,721	$7,541,185	$9,429,139	$11,331,052	$13,247,403
Tax on Income		$3,970,000	$4,440,000	$4,900,000	$5,370,000	$3,200,000	$3,780,000	$4,350,000	$4,930,000	$5,500,000	$6,080,000
Cash Flow from Operations		$20,547,430	$22,301,179	$24,056,202	$25,842,927	$14,501,785	$9,436,721	$11,891,185	$14,359,139	$16,831,052	$19,327,403
Refinancing						$150,000,000					
Net Cashflow		$17,934,840	$19,688,589	$21,443,613	$23,230,337	$161,889,195	$6,824,131	$9,278,595	$11,746,549	$14,218,462	$16,714,813
Returns											
Annual Return on Investment (cash on cash, after t		13.0%	14.2%	15.5%	16.8%	117.1%	4.9%	6.7%	8.5%	10.3%	12.1%
Project Average ROI	13.1%										
Project IRR	8.3%										

Table 31: Amax Site - Pro-forma Financial Model - Sources & Uses - Years 1- 10

Amax Site - Omni Terminal Break Bulk and Container
Pro-forma Financial Model

Cash Flow

	Construction Period			Operating Period									
Year	**1**	**2**	**3**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Cost and Source of Funds													
Project Costs													
Construction	$98,632,773	$97,368,676	$113,888,253										
Operations (negative cash flow)				$9,259,328	$4,302,320	$779,354	$0	$0	$0	$0	$0	$0	$0
Total	$98,632,773	$97,368,676	$113,888,253	$9,259,328	$4,302,320	$779,354	$0	$0	$0	$0	$0	$0	$0
Cumulative Total	$98,632,773	$196,001,449	$309,889,702	$319,149,029	$323,451,349	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703
Sources													
Developer													
Initial Investment	$123,960,000												
Negative Cash flow				$9,259,328	$4,302,320	$779,354	$0	$0	$0	$0	$0	$0	$0
Total Developer Investment	$123,960,000	$123,960,000	$123,960,000	$133,219,328	$137,521,647	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002
Interim Financing													
Interim Financing Drawn	-$25,327,227	$97,368,676	$113,888,253										
Interim Financing O/S	-$25,327,227	$72,041,449	$185,929,702	0									
Long Term Financing													
Long Term Bond Debt Issued				$185,930,000									
Long Term Bond Debt Retired				$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500
Long Term Bond Debt O/S				$176,633,500	$167,337,000	$158,040,500	$148,744,000	$139,447,500	$130,151,000	$120,854,500	$111,558,000	$102,261,500	$92,965,000

Table 32: Amax Site - Pro-forma Financial Model - Sources & Uses - Years 11- 20

Amax Site - Omni Terminal Break Bulk and Container
Pro-forma Financial Model

Cash Flow

	Operating Period									
Year	11	12	13	14	15	16	17	18	19	20
Cost and Source of Funds										
Project Costs										
Construction										
Operations (negative cash flow)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cumulative Total	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703	$324,230,703
Sources										
Developer										
Initial Investment										
Negative Cash flow	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Developer Investment	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002	$138,301,002
Interim Financing										
Interim Financing Drawn										
Interim Financing O/S										
Long Term Financing										
Long Term Bond Debt Issued					$ 150,000,000					
Long Term Bond Debt Retired	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$9,296,500	$16,796,500	$16,796,500	$16,796,500	$16,796,500	$16,796,500
Long Term Bond Debt O/S	$83,668,500	$74,372,000	$65,075,500	$55,779,000	$196,482,500	$179,686,000	$162,889,500	$146,093,000	$129,296,500	$112,500,000

Table 33: Amax Site - Pro-forma Financial Model - Profit and Loss - Years 1- 10

Amax Site - Omni Terminal Break Bulk and Container

Profit and Loss

Year		1	2	3	4	5	6	7	8	9	10
Total Income		$31,208,155	$40,004,176	$46,070,389	$54,373,353	$58,200,261	$59,364,266	$60,551,552	$61,762,583	$62,997,834	$64,257,791
Expenses											
Operations		$16,194,893	$20,683,905	$23,877,154	$28,013,954	$30,021,345	$30,620,772	$31,234,587	$31,862,879	$32,495,737	$33,143,252
Depreciation (CCA)		$18,590,000	$17,480,000	$16,430,000	$15,440,000	$14,520,000	$13,650,000	$12,830,000	$12,060,000	$11,330,000	$10,650,000
Interest on Debt		$12,360,000	$11,710,000	$11,060,000	$10,410,000	$9,760,000	$9,110,000	$8,460,000	$7,810,000	$7,160,000	$6,510,000
Total Expenses		$47,144,893	$49,873,905	$51,367,154	$53,863,954	$54,301,345	$53,380,772	$52,524,587	$51,732,879	$50,985,737	$50,303,252
Income Before Taxes		-$15,936,738	-$9,869,730	-$5,296,764	$509,399	$3,898,916	$5,983,494	$8,026,964	$10,029,703	$12,012,098	$13,954,539
Total Income Taxes		$0	$0	$0	$130,000	$970,000	$1,500,000	$2,000,000	$2,500,000	$3,000,000	$3,490,000
Profit (Loss) After Income Tax		-$15,936,738	-$9,869,730	-$5,296,764	$379,399	$2,928,916	$4,483,494	$6,026,964	$7,529,703	$9,012,098	$10,464,539
Depreciation (CCA)											
Average Rate	6.00%										
Opening		$309,889,702	$291,299,702	$273,819,702	$257,389,702	$241,949,702	$227,429,702	$213,779,702	$200,949,702	$188,889,702	$177,559,702
Depreciation		$18,590,000	$17,480,000	$16,430,000	$15,440,000	$14,520,000	$13,650,000	$12,830,000	$12,060,000	$11,330,000	$10,650,000
Closing		$291,299,702	$273,819,702	$257,389,702	$241,949,702	$227,429,702	$213,779,702	$200,949,702	$188,889,702	$177,559,702	$166,909,702

Table 34: Amax Site - Pro-forma Financial Model - Profit and Loss - Years 11- 20

Amax Site - Omni Terminal Break Bulk and Container

Profit and Loss

Year		11	12	13	14	15	16	17	18	19	20
Total Income		$65,542,947	$66,853,806	$68,190,882	$69,554,700	$70,945,794	$72,364,709	$73,812,004	$75,288,244	$76,794,009	$78,329,889
Expenses											
Operations		$33,805,517	$34,482,627	$35,174,679	$35,881,773	$36,594,008	$37,331,489	$38,074,318	$38,832,605	$39,616,457	$40,405,986
Depreciation (CCA)		$10,010,000	$9,410,000	$8,850,000	$8,320,000	$7,820,000	$7,350,000	$6,910,000	$6,490,000	$6,100,000	$5,740,000
Interest on Debt		$5,860,000	$5,210,000	$4,560,000	$3,900,000	$13,750,000	$12,580,000	$11,400,000	$10,230,000	$9,050,000	$7,880,000
Total Expenses		$49,675,517	$49,102,627	$48,584,679	$48,101,773	$58,164,008	$57,261,489	$56,384,318	$55,552,605	$54,766,457	$54,025,986
Income Before Taxes		$15,867,430	$17,751,179	$19,606,202	$21,452,927	$12,781,785	$15,103,221	$17,427,685	$19,735,639	$22,027,552	$24,303,903
Total Income Taxes		$3,970,000	$4,440,000	$4,900,000	$5,370,000	$3,200,000	$3,780,000	$4,350,000	$4,930,000	$5,500,000	$6,080,000
Profit (Loss) After Income Tax		$11,897,430	$13,311,179	$14,706,202	$16,082,927	$9,581,785	$11,323,221	$13,077,685	$14,805,639	$16,527,552	$18,223,903
Depreciation (CCA)											
Average Rate	6.00%										
Opening		$166,909,702	$156,899,702	$147,489,702	$138,639,702	$130,319,702	$122,499,702	$115,149,702	$108,239,702	$101,749,702	$95,649,702
Depreciation		$10,010,000	$9,410,000	$8,850,000	$8,320,000	$7,820,000	$7,350,000	$6,910,000	$6,490,000	$6,100,000	$5,740,000
Closing		$156,899,702	$147,489,702	$138,639,702	$130,319,702	$122,499,702	$115,149,702	$108,239,702	$101,749,702	$95,649,702	$89,909,702

Likewise Trident developed the following economic assessment of benefits for development of the Amax site as shown in Figures 23 and 24.

Figure 23: Economic Impact Amax Development - Construction Impacts

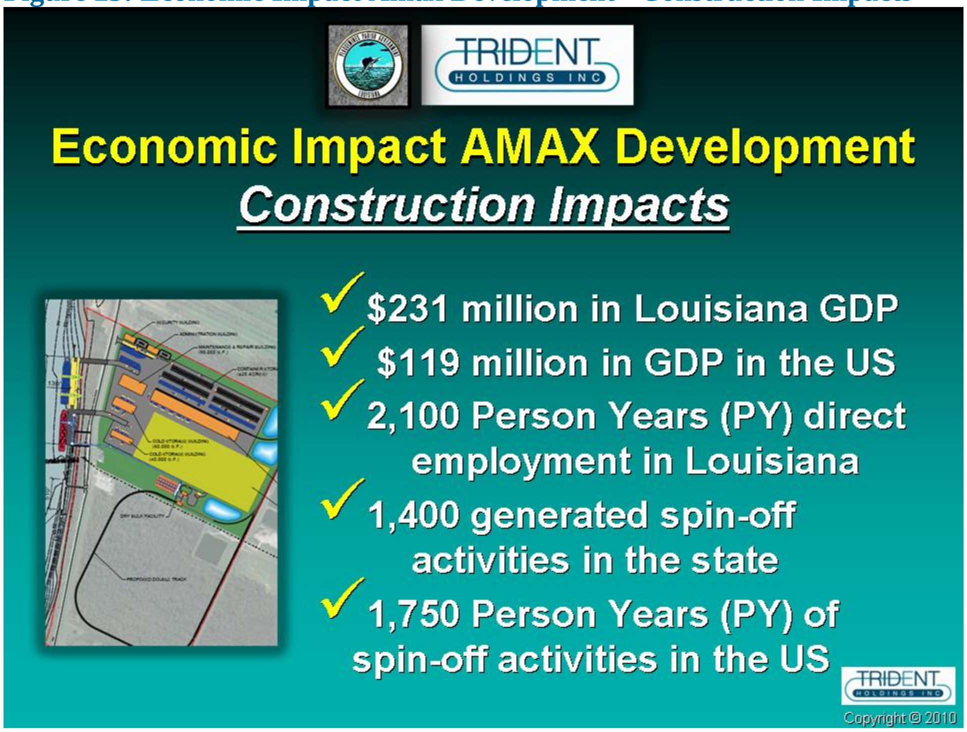
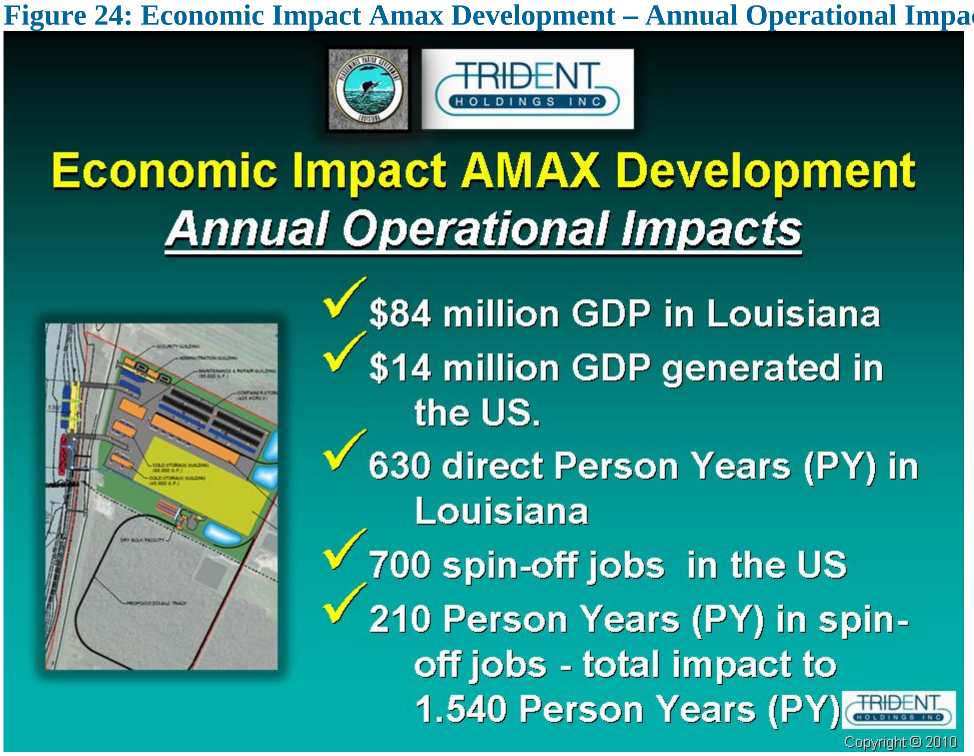


Figure 24: Economic Impact Amax Development – Annual Operational Impacts



Generalized Port Security Considerations for Port Master Plan Alternatives

One of the primary needs and requirements of any proposed or existing International Port is the requirement for advanced Port Security measures and as such these need to be accommodated into the Comprehensive Port Development Master Plan. Failure to identify these needs and requirements would leave a major input out of what needs to be developed. All three Port Master Plan Alternatives will be required to comply with the current US ports security and safety regulations and policies. Although the port development terminals will have unique terminal operations the port security and safety regimes will be similar, however customized to suit terminal operational features. Only a fraction of the total port security domain requirements are presented in order to start to familiarize the port developer with the complexity and sophistication of the port security environment required in today's modern marine and intermodal terminal.

The opinions expressed herein regarding port and terminal security systems for the planned port terminal development alternatives in Plaquemines Parish, Louisiana is cursory and conceptual in nature. Final port security systems and must be validated and properly designed with all appropriate Federal and State security requirements and regulations.

Radiological and X-Ray Detection Portals for Port and Intermodal Rail Terminals

Shortly after September 11, 2001, the President of the United States created the Department of Homeland Security (DHS). As a part of the National Infrastructure Protection Plan (NIPP) a need was seen to keep International Terrorists from being able to import radiological or nuclear material into the Continental United States (CONUS). To accomplish this radiation detection, portals were placed at 22 of the busiest ports in CONUS.

Figure 25: Mobile Scanner Technology

Within in the DHS structure is the U.S. Customs and Border Patrol (USCBP), who up until 2005 were responsible for operating all radiological detection portals at Ports of entry within the CONUS. The Department of Homeland Security has estimated that they process approximately 64,000 containers arriving in CONUS each Day. In April 2005 the Domestic Nuclear Detection Office (DNDO) was created. Their duties, among other things, are acquiring and supporting the development of radiation detection equipment. This equipment that is currently in use is first generation radiation detection portals that use a technology known as "plastic scintillators" of (PVT). While these first generation portals are accurate and simple to operate they are not without problems. These first generation scanners can create many "false positives" as they cannot distinguish between specific types of radiation. In other words, they can detect radiation but fail to determine the type, source, or amount being generated (Figure 25).

To establish what type and the quantity of radiation that has been detected by the PVT, personnel at a Port use Radio Isotope Identification Devices (RIIDs). The "false positives" that generate the secondary checks with the RIIDs require additional manpower, time and equipment. Many of these work horse PVT portals are still in use at ports throughout CONUS, however they are increasingly viewed as no longer cost or time efficient.

The problem with the older scanners is that many harmless things can generate radiation. Some examples are rice, bananas, kitty litter and glazed tiles. These commonly shipped items generate the false readings on the older PVTs. While these first generation PVT scanners do have the ability to detect both Gamma and Neutron radiation they cannot break down the source. This has lead to advanced research under the DNDO by several companies for a better more accurate scanner (Figure 26).

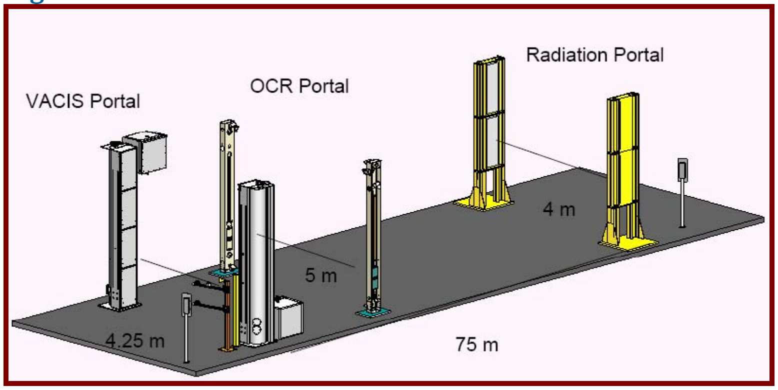
Figure 26: Portal Radiation Scanners

The new generation of Portal Radiation Scanners can distinguish between types of radiation and their amounts. This next generation of scanners commonly referred to as Advanced Spectroscopic Portal monitors (ASP) can detect nuclear and radiological materials and further identify the type of material. While testing in 2006 by the GAO determined that accuracy was a problem when scanning Highly Enriched Uranium (HEU) the scanners used then did not meet DNDO standards.

The DNDO choose to ignore the data from testing conducted sighting that among other things the performance standard of 95 percent accuracy was unreasonable. The DNDO has indicated that the standards of the ASP monitors will increase. Setting aside the standards, the fact of the matter is that the newer ASP portals are more sensitive and can be utilized in a far specific manner than could the earlier PVT style monitors. The ASP will reduce the number of "unknown" or 'false positives" generated from the PVTs requiring secondary checks.

There are 8 vendors who manufacture the Advanced Spectroscopic Portals (ASP) systems in the United States, and another 5 international vendors. Those 13 vendors have created 12 different types of the ASP monitor. Some of these companies, Raytheon, Thermo Electron, Canberra Industries, and Spectrum San Diego Inc., are actively working to produce ASP portals (Figure 27). In 2006 the Department of Homeland Security announced it had planned to set aside $1.2 billion to purchase new radiation detection portals that were to be placed at ports of entry throughout CONUS.

Figure 27: ASP Portals



Both the PVT and the ASP share a life cycle of between 5 and 10 years with normal use and maintenance. While the PVTs cost approximately $50,000 to $100,000 dollars to purchase, their yearly maintenance is approximately $5,500. The ASP monitors are currently priced between $380,000 to $1.8 million depending on manufacturer and size. The yearly maintenance cycle of the ASP system will generally cost between $38,000 and $50,000 a year.

Figure 28: Truck Portal

Design and specific capabilities differ slightly among the many models manufactured by the 13 separate vendors. Much of the functionality is standardized. Generally speaking, all ASP models are capable of detecting both Gama and Neutron radiation. All models are built on a rugged platform in anticipation of outdoor use. Constructed of polyvinyl toluene gamma-ray detection material, these passive radiation-detection systems emit no radiation themselves. The exterior shell operates well in all environmental conditions, the optimal operational temperatures range between; -30° F to a max of 125° F. These platforms are generally water-resistant and self contained. Most if not all the models are built either as a tower unit, or an arch way. This type of construction allows for either the container/vehicle to pass through or the container/vehicle to move past the sensors. Each of the different manufacturers has different power requirements for the portals they design. An acceptable range would be 90-250Vac., 47-63 Hz less than 100VA (Figure 28).

The detection sensors, once they are powered up, take anywhere from 20 seconds to 1 minute to obtain a background radiation signature from the area prior to reading a container or vehicle. While sensitivity of the sensors is manufacturer specific, most will detect within the below listed range:

GAMMA: 1,000g of 235U (HEU) or 10g of 239 Pu with a 50% probability and 95% confidence.
NEUTRON: Slightly less than 200g of 239 Pu in a shielded container. *

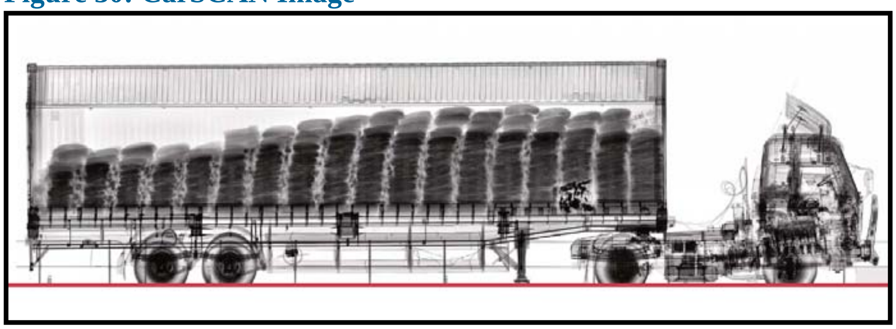
*Further reference to the specification and capabilities of ASP monitors can be obtained from the DOE Office of Scientific and Technical Information in Oak Ridge, Tennessee.

Figure 29: Rail Portal

Depending on the manufacturer and design chosen, the smallest physical foot print for the tower style scanner will be 120” h X 10”wX10”d per pillar that is placed upon a concrete pedestal foundation. Enough room must be considered to accommodate the size of the vehicle or container being scanned. Raytheon manufactures a larger version of this tower style scanner that is used on 53” semi tractor trailer trucks (Figure 29).

The semi tractor trailer scanner will create a much larger footprint. Furthermore, it will require a larger operational area to include a truck turn around and inspection site. The larger arch style port will take up a greater footprint that can be as large as 140”h X 125”w X 145” l. This will accommodate the larger arch portal scanner such as the one manufactured by CarSCAN manufactured by Spectrum San Diego, Inc., and Raytheon (Figure 30).

Figure 30: CarSCAN Image



While source element detection, power consideration, and cost factors are all important considerations when selecting an ASP scanner, the overall size of the portal’s footprint should not be overlooked. Many of the existing PVTs and ASPs are excellent tools, but they may actually be too small to be an effective and smart investment. Specific costs and associated expenses, actual dimensions and other requirements of an Advanced Spectroscopic Portal will require contacting one of the 13 vendors for specifics.

X-Ray technology used in security related fields is different than Radiological detection technology. Current X-Ray scanning technology utilizes both traditional spectroscopy methods and the duel perspective method known as Raman-Fourier (FTIR).

The traditional spectroscopy X-Ray measures the light emitted from elements, whereas the FTIR method measures light absorbed by a substance. The Transportation Security Administration (TSA) began using the FTIR technology in 2007 with the issuance of the First-Defender, a hand held Raman spectrometer and the FT FTIR system made by TruDefender in 2008. The older technology failed to determine the density of certain substances such as liquids, gels, and aerosols because the algorithms struggled or outright failed when scanning liquids, gels and aerosols. These substances cause the greatest concern when they are utilized in the manufacturing of an organic based Improvised Explosive Device (IED) such as TATP and HMTD. In 2006, terrorists plotted to blow up several transatlantic flights using these organic based explosives. This plot had caused the TSA to seek a partial ban and later restrictions on liquids, gels and aerosols. It further caused for a call on better X-Ray equipment and the development of FTIR technology.

Many explosive detection units and security screeners utilize a form of X-Ray called Open Vision LT. This allows for a compact design and ease of maneuverability by the operator. One pioneer in this field of X-Ray equipment is Envision Product Design. This Open Vision LT allows for a safer examination of suspected or suspicious packages as it requires little or no movement of the package. Further success has been found in limited cases with this product at other locations where human smuggling is predominant. The technology has reveled hidden smuggled humans who have stowed away in containers and secreted compartments in truck trailers and ships.

Applicable Port Security Related Regulations for Initiating Port Development

The SAFETY Act: The Support Anti-Terrorism by Fostering Effective Technologies Act of 2002 (SAFETY Act) (6 U.S.C. §§ 441-444), part of the Homeland Security Act of 2002, is a risk mitigation tool that minimizes risks from lawsuits arising from acts of terrorism. The regulations implementing the SAFETY Act are found in 6 CFR Part 25. The Act was developed following post-9/11 lawsuits filed against Port Authorities, security companies, Boeing, and others in which courts found that terrorist actions associated with 9/11 should have been reasonably foreseeable by these entities and thus ruled in favor of the plaintiffs. The result to the anti-terrorism industry was expensive and resulted in uncertain insurance coverage for terrorist-related damages, vendors refusing to perform security work for fear of lawsuits, increased liability, and limited risk mitigation options.

The SAFETY Act addresses the need to protect Qualified Anti-Terrorism Technologies (QATT) from the liability risks. QATTs are defined as "any product, equipment, service (including support services), device, or technology (including information technology) designed, developed, modified, or procured for the specific purpose of preventing, detecting, identifying, or deterring acts of terrorism or limiting the harm such acts might otherwise cause, that is designated as such by the Secretary" (6 CFR Part 25 §865). The SAFETY Act encourages the development and use of innovative and new anti-terror products and services through providing liability protections for all QATTs.

There are two levels of protection afforded under the SAFETY Act: Designation and Certification. Under Designation, limited liability is provided. The liability of the seller is limited to the amount of liability insurance that the Department of Homeland Security (DHS) determines the seller must maintain. Certification allows the seller of an anti-terrorism technology to assert the Government Contractor Defense for claims arising from acts of terrorism; in other words, sellers receive a presumption of immediate dismissal from claims. In both circumstances, claims against customers are to be immediately dismissed. To obtain SAFETY Act protections, products and services must be designated and certified by the DHS. The process requires submitting an application to the DHS for review and approval.

It is recommended that Plaquemines Parish Council consider SAFETY Act protections for all Port operations pertaining to anti-terrorism technologies to reduce liability in the event of a terrorism act. Both equipment and port safety procedures are covered for submittal under QATT. The terror threats facing ports are real and many claims against Port Authorities have been awarded in favor of the plaintiffs. Port operations for which the SAFETY Act may be applicable include, but are not limited to, security vendors, screening operations, and security and technology procurement.

Conclusion

The Terminal Alternatives presented all have merit and are able to respond to the key market opportunities that are developing for the Gulf Coast. The Alternatives have been properly sized, evaluated, costed and positioned to serve as a base for Public and Private Decision Making for determining potential investment for each site and the various alternatives at each location. In conclusion these are viable alternatives and are able to attract new and stable business interests.

Task 7 Figures and Tables

Figures

Tables

Task 8: Draft Master Plan Development

Table of Contents

Task 8: Draft Master Plan Development

Introduction

Task 8 offers perspectives and viewpoints from Trident Holdings on Private Sector versus Public Sector Ownership including comparative strengths and weaknesses to both approaches. Operational guidance is also presented along with insight into the needs of the private sector in today's global market and what does it take for this sector to invest in infrastructure. In this Task Trident revisits the rationale as to why Plaquemines Parish has a very distinct and timely advantage for Port Development and how that should act as determinant for the Parish to take decisive steps in determining how it sees its own governance and potential structure related to new Port facilities. A recommended Path Forward is presented along with a call to develop marketing materials that include 3D Color Renderings.

Private Sector Corporate Structure Approach to Port Development – Ownership, Operational Structure and Governance Overview

In the past, port infrastructure development was often a "**build it and they will come**" approach. A Governing body would determine a waterfront site to be strategic, an Authority would be established to manage the development and public funds would be used to build the infrastructure justified by the economic impact of the development.

The Authority, armed with the strategic location and infrastructure and seeking only a financial return on the operational cost of the terminal, would then introduce the development to the industry and often think there was a "divine right" to cargo that could be routed through the port.

Gone are the days of "build it and they will come". Today's catalyst is not about capacity, it is about being competitive in terminal handling costs and competitive in the origin and destination (o/d) supply chain cost.

Lenders within the port infrastructure sector are more sophisticated and demand higher returns and greater percentages of equity to debt agreements. Lenders look for equity from entities that have balance sheets sufficient to support the development, even during downturns and slow starts.

Long term debt is more difficult to secure and lenders are less risk tolerant, so debt is usually arranged by syndication, and today's syndicates are larger than prior to the recession with several lenders participating and all engaging in separate due diligence.

Even with higher percentages of equity and broader shared risk, long term debt lenders look for revenue guarantees by demanding throughput volume contracts or throughput guarantees. These commitments have to be from creditable industry stakeholders like global ocean carriers, global beneficial cargo owners or global port operators which have balance sheets to support the guarantee.

Today, the industry is truly global and key industry stakeholders, such as ocean carriers, beneficial cargo owners and port operators control the supply chain routing, and in return for committing any throughput volume or guarantees, they want an equity position in the terminal. An equity position has the potential to get them concession pricing, preferential contracts and the best slot allocations. Any port development today should allocate a portion of equity for key industry stakeholders who can provide throughput volume.

Development Prerequisites[1]

The prerequisites of port or terminal development are at least one of the following:

1. To have a significant local import consumption or be an export production market
2. To be a strategic location in a competitive supply chain
3. To have a multimodal, efficient and competitive transportation network conductivity to at least one major consumer consumption zone.

Today, any port or terminal must strive to be:

1. The most efficient (most modern throughput technology)
2. The most competitive (lowest operating costs)
3. The most secure (at no throughput or cost penalty)
4. The greenest (again with no throughput or cost penalty)

A key component of port development is the need to understand advanced competitive logistics and the resulting impact on the port development. The most successful new port developments must have at least one and preferably both of the following:

1. An adjacent industrial park as close to the port as possible to accommodate logistics' services and value-add opportunities
2. Efficient and competitive Intermodal rail connectivity to move cargo to and from the terminal and the consumption or production zones, preferably with two or more railroads.

The key elements of competitive logistics' services are:

1. Understanding the competitive supply chains
2. Understanding the costs of each supply chain
3. Developing a competitive supply chain
    a. Adjacent industrial parks and distribution centers
    b. Assembly and manufacturing opportunities
4. Developing the logistics infrastructure to support it.
    a. Storage
    b. Consolidation and de-consolidation
    c. Cross-dock services
    d. Packaging and pricing
    e. Distribution
5. Develop value-add opportunities
    a. Repack
    b. Unique storage
    c. Testing and repair

   d. Auto roll on/roll off (ro/ro)services
   e. Fumigating
   f. Quality control
6. Developing a flexible transportation system that allows for quick and efficient multi modal options.
7. Develop strong relationships with carriers and beneficial cargo owners, including compatible operating systems
8. Develop operating methodologies to maximize:
   a. Throughput
   b. Labor
   c. Information systems
   d. Transparency for customs and security
   e. Minimal carbon footprint

Developments that include modern terminals and adjacent logistics parks and flexible multimodal transportation ramps are expensive with high initial capital costs. Therefore, it is difficult for single entities and even local, State and Federal Governments to fund these large developments. This is even more evident today when Governments face enormous demands on available funds with compelling competitive projects.

There is a new player in the sector; the powerful Private Sector: and Governments and lending agencies have confirmed that private sector participation can be a major enabler for the development of port infrastructure.

A number of major entities in the sector are embracing the efficiencies and access to capital offered by the private sector and in the past decade there has been ever-increasing participation by the private sector in port and terminal development.

Private Sector involvement in Port Development began in the 1980's as a result of the following factors:

1. Congestion
2. Deterioration of service
3. Restrictive labor practices
4. Increasing containerization
5. Governments' inability to improve efficiency in the structure
6. Unwillingness or inability for Governments to invest in new technologies and expansion.
7. Outsourcing by Governments

The evolution was driven by the need to:

1. Increase infrastructure service levels

2. Increase efficiency in operations
3. Better allocate limited Public funds

Sector globalization was diffusing the benefits to non-local benefactors, reducing the justification for local public funding. Global strategic alliances impacted how ports were financed, regulated and operated.

Ports generate both public and private benefits. Public benefits are the creation of the harbor or channel and the resulting navigational aids, pilotage, security, coastal protection and regulations. The private benefits are the result of transactions that generate profit. As great as the public benefits are, the private sector cannot achieve them unless there is a direct return on investment (ROI) to them. Government justifies their expenditure by the resulting economic impact. It is this difference, ROI vs. economic impact that challenges the separation of public vs. private in ports.

Within the port system, one or more organizations fill the following roles:

1. Landlord for private entities offering a variety of services;
2. Regulator of economic activity and operations;
3. Planner for future operations and capital investments;
4. Operator of nautical services and facilities;
5. Marketer and promoter of port services and economic development;
6. Cargo-handler

The greatest economic impact of port development for a Government would be to own, design, build, finance and operate the port or port terminal. However, in today's post recession world there are a number of reasons why there should be, if not a need for consideration to be given to other "ownership and management" structures.

Those reasons include:

1. The private sector's primary objective is to realize the greatest return on investment; Governments are often forced to consider other competing objectives.
2. Global private sector stakeholders have economies of scale, network and experience
3. The post-recession need for multiple equity participants and balance sheets to support the equity requirement with today's high equity-to-debt ratios
4. The post-recession need to have the finance risk shared by a number of long-term debt holders and the reluctance for single recourse recovery.
5. The demands by key stakeholders to take equity positions in the assets of the supply chain to increase their profitability in return for guaranteed throughput; an essential element of financing approvals.

Government's objective in port development should be to get the greatest benefits for its citizens, by return on investment for monies invested, by legitimate fees and charges to the sector and by the

economic activity created. Therefore, it is prudent for Government to consider all forms of ownership and management of port infrastructure to determine the optimum cost/benefit scenario.
Following is a list of potential ownership and management structures with explanation and a list of advantages and disadvantages as stated by World Bank Port reform Tool Kit Module 3.

Public Service Port: 100% Publicly Owned and Operated

Strength:

- Superstructure development and cargo handling operations are the responsibility of the same organization (unity of command).
- Total Control
- It captures all value appreciation.

Weakness:

- There is a limited, or no role for the private sector in cargo handling operations
- There is less problem-solving capability and flexibility for labor problems, since the port administration is the major employer of port labor. There is lack of internal competition, leading to inefficiency and poor use of resources and under-investment as a result of government interference. Operations are not user or market-oriented and there is, potentially, a lack or fear of innovation.
- There is sole responsibility to support cost, cost overruns, operating losses, equipment replacement and capital expenditures.

Stevedore Concession: 100% Public Owned with Contracted Stevedores[2]

Strength:

- Investments in port infrastructure and equipment (in particular ship/shore equipment) are provided by the public sector, thus avoiding duplication of facilities.
- Captures most of the value appreciation

Weakness:

- The Port Administration and private enterprise jointly share the cargo handling services (split operation), leading to conflicting situations as the private operators do not own major equipment, and they tend to function as labor pools and do not develop into entities with strong balance sheets. This causes instability and limits their future expansion. There is risk of under-investment and a lack of innovation.
- More equipment misuse or abuse and less control over preventive maintenance.

Full Concession Port: Public Sector owns land and Terminal Concessions Terminal Operations and Equipment Supply to Private sector Operator

Strength:

- A single entity (the private sector) executes cargo-handling operations and owns and operates cargo-handling equipment. The terminal operators are more loyal to the port and more likely to make needed investments as a consequence of their long-term contracts.
- Private terminal handling companies generally are better able to cope with market requirements.
- Limits on-going investment

Weakness:

- Risk of over-capacity as a result of pressure from various private operators.
- Risk of misjudging the optimum timing of capacity additions.
- Majority of the value appreciation goes to concession operator.

Fully Privatized Port

Strength:

- Maximum flexibility with respect to investments and port operations. No direct government interference.
- Ownership of port property enables market oriented port development and tariff policies. Economies of scale, network and in case of re-development, private operator probably realizes a high price for the sale of port land. The often-strategic location of port land may enable the private operator to broaden its scope of activities.

Weakness:

- Government may need to create a Port Regulator to control monopolistic behavior.
- The Government (be it national, regional or local) loses its ability to execute a long term economic development plan with respect to the port business. If and when the necessity arises to re-develop the port area, Government has to spend considerable amounts of money to buy back the port land. There is a risk of speculation with port land held by private owners.
- No participation in value appreciation

Public Private Partnership: Public and Private Sector Jointly Own Land and Equipment and Operate the Terminal

Strength:

- Operates as private sector Corporation with Board of Directors representing all shareholders, profit is the primary objective, providing competitive and efficient services enhanced by global expertise, networks and alliances. Government commits to providing a competitive environment.
- All shareholders participate in the value appreciation.
- Limited or little cash investment from Government for percentage of ownership

Weakness:

- Government loses control
- Limits value appreciation

Trident understands the serious implications for the Plaquemines Parish Port, Harbor and Terminal District (Parish District) and Plaquemines Council to select an "ownership and management structure" that is practical, affordable and provides the optimum benefit to the citizens of Plaquemines Parish.

Trident is cognizant of the following;

1. The potential for at least three port development projects within the Parish in the near to mid-term.
2. The cost of the three potential developments, each terminal is a minimum of $300,000,000 and as high as $500,000,000.
3. The limits to the bonding capacity of the Parish
4. The need to separate Port Governance and Port operations
5. The extended learning curve of port operating personnel
6. The human resource expertise required
7. The difficulty to finance greenfield developments
8. The need to attract industry stakeholders with volume commitments and global alliances
9. The demand of industry stakeholders for equity in return for volume commitments
10. Access to technology, systems and process of industry stakeholders

For all of the above reasons, Trident believes the Private Sector or Public Private Partnership is the most practical option for Plaquemines Parish.

In the private sector model, the Port District would act as the catalyst for development of this Master Plan and the introduction of the opportunity to private sector interest. In this way, Plaquemines Parish benefits from the regulatory fees and income they produce, dividends from shareholder ownership and the enormous economic impact the projects create. An economic impact analysis for a typical terminal was presented with the financial model in Task 7.

In the public private partnership model, the partnership does not need to be, and perhaps should not be, limited to two or three entities. For example, a partnership could consist of Plaquemines Parish, a world class port operator, a world class ocean carrier, a beneficial cargo owner, a railroad, equity market entity or investment bank. It could also include other political interests that would add value, limit opposition and advance the public spending for essential transportation corridor connectivity, whether rail or road.

Trident has identified a strong interest by industry stakeholders to locate in Louisiana, and in particular, the southern Mississippi. However, those same industries are discouraged by the seeming lack of support by all levels of Government. The State sends signals they are not convinced that cargo growth will occur and are not prepared to spend public funds on improved or new cargo transportation infrastructure, while the existing ports and associations are attempting to prevent new capacity due to their concerns over loss of trade volume to a new competing Port. The parochial attitude of the individual Parishes creates competition often at the expense of development that would have regional benefit. Trident has identified that the potential new market advantages for attracting shipping volumes to Louisiana is significant to benefit the entire region, existing Ports and new Port construction. Even with the addition of Amax and Citrus II there will still exist unmet demand for new and expanded port development.

Trident recommends that Plaquemines Parish, together with Trident collaborate on a Public Private Partnership that includes industry stakeholders from the private sector and public sector entities that have the potential to add value, reduce opposition and encourage State and Federal spending for the purpose of creating and improving State distribution and transportation infrastructure.

Regulatory Requirements[3]

In addition to the ownership and "operating and management structure", a review of the Parishes' regulatory regime is required to determine if it meets the needs of any new port developments. It is important that the regulatory regime protects the interest of Plaquemines Parish and its citizens, but does not impose burdens on port developments that make them noncompetitive.

The Port District must ensure that any new or existing port development or terminal operates in the public interest, that it operates safely, that it operates in an environmentally prudent manner and that it operates efficiently and offers fair and competitive services that benefit the local economy.

Regulatory considerations include:

Technical

1. Safety
2. Homeland Security
3. Immigration
4. Customs
5. Navigation
6. Pilotage

7. Tugging and Towing
8. Berthing
9. Docking
10. Mooring
11. Fuelling, or bunkering
12. Hazardous Material
13. Emergency, contingency and mitigation planning

Environmental

1. Dredging
2. Emissions
3. Terminal
4. Vessels
5. Bilge Disposal
6. Hazardous Material
7. Carbon Footprint
8. Optimum Land Use
9. Coastal Preservation
10. Emergency, contingency and mitigation planning

Social

1. Safety
2. Labor Practices
3. Socio-economic Impacts
4. Commercial Impacts
5. Net Contributor

The Port District and the Plaquemines Parish Council must develop a Governance/Oversight Body that will:

1. Determine the regulatory needs of new developments
2. Determine if the same regulatory need is required by existing terminals or if there are Grandfather Provisions.
3. Examine the existing regulations and determine if they are adequate to meet the needs of any new development
4. Determine what new regulations are required
5. Determine if new regulations are under Federal/State or Parish authority

6. Determine if existing fees are sufficient to administer, police and enforce existing and future regulations
7. If required, develop new fee or rate schedule
8. Test fee schedule to determine if it decreases the competitiveness of the port
9. Lobby for any required Federal or State regulations
10. Legislate any new regulations and fee or rate schedule

This could be accomplished by the creation of an Oversight Board with authority to hire a Port Executive Director and work and oversee with that person in the creation of a Port Development Group. The Oversight Board could be made up of a representative from the Parish Council, a representative from the Parish Port and Terminal District and possibly and another at-large representative of Parish interests. This would allow the Oversight Board and the Port Executive Director to focus on the necessary outreach efforts which must be undertaken to make the Port successful while initiating agreements, partnerships and affiliations necessary to maximize the Port's potentials.

Governance

The Port District must decide if it will become the Governance Body for existing port and new port developments in Plaquemines Parish. There are two options for the Parish in this regard:
Have Council approve to make the Port District responsible for port governance, and have the authority, when approved by Council, to determine ownership, management and operational involvement of the Parish in any port development. Have council make the Port District responsible, and have the authority, when approved by Council, develop, police and administer port regulations, including the right to charge and collect fees and impose penalties.

Have Council authorize the Port District to create a Port Development Authority with representatives from the Port District, Parish Council and the Community at Large to provide the governance, be responsible for, and have the authority to complete the tasks stated in number one.

Trident recommends that the Plaquemines Port District implements option two by creating a Port Development Authority responsible to Council through the Port District and further, that the Port Development Authority have representation from Council, the administration and the community-at-large.

Trident strongly recommends the need for a dedicated Port Development Authority Executive Director with the experience and expertise in port management, port operational management, port regulatory management and port governance. It is essential to have full time, qualified leadership at the helm of any substantial Port Development opportunities in Plaquemines Parish.

Go or No Go Decision

Trident has identified distinct opportunities that have been created as a result of the recent economic upheaval and subsequent rebound. Trade routes are changing. Railroads are attracting greater levels of volume as a result of new trackage, freight consolidation centers, elimination of grade crossings and height restrictions and modernization of equipment. Existing Ports are struggling with their inability to accommodate continued growth due to limited space, environmental regulations and cost of upgrades.

Trident's market assessment has concluded that notwithstanding the volume expected by the Port of New Orleans in the next 20 years, and with the developments at the Amax and Citrus II sites as outlined in this report, there will be a requirement for even more capacity in Southern Louisiana. Given the interest from railroads, land owners, cargo owners, investors and carriers, it is obvious that Plaquemines Parish can realize growth in containers, bulk and break bulk markets. Trident has concluded that it is the right time for port development at Plaquemines Parish. .

Parish's Path Forward

The Comprehensive Port Development Master Plan has identified a need and opportunity, potential site locations, operational analysis, cost considerations, environmental issues, timing concerns, economic benefits, and build out options

One of the primary first tools in this Comprehensive Port Development Master Plan is the need to create marketing materials which outlines Port opportunities, animation and highlights concept by location to attract discussion with private sector developers. A significant step forward will be demonstrated by the authorization of this Master Plan by the Plaquemines Parish Council. An announcement of the Plan's authorization and a public symposium with interested parties from the public and private sector will signify the Port's interest and intent. This initial step will lead to identifying the form of administration/authority/Oversight that best suits the Parish's needs and at the same time helps develop the relationships the Parish will need to have with private sector investors and developers.

The creation of a more permanent governance model can then be accomplished and the engagement of a Port Director/Manager can occur as a result of the preliminary steps mentioned above. It will now be clear how the Parish will react to the development at each of the three sites – Amax, Citrus II and Venice.

One of the first strategic tasks that needs to be addressed is whether to determine interests by traditional means, such as Expression of Interests, Requests for Qualifications, Requests for Proposals or Design Build, Design/ Build /Operate, or Design/ Build /Own /Operate

Public/Private Partnerships to reduce financial risk. Making this determination will address how the development process can then initiate and commence through design and construction. This designation in and of itself will generate interests in going forward within the private sector and potential developers.

Conclusion

Site Specific Direction

Trident recommends the best approach for Amax is for the Parish to select a Client (Plaquemines Parish) Professional Representative to oversee a process whereby the Council and Port District would determine whether to pursue, first Expressions of Interest, RFQ/RFPs for developer interests, or second the various

Design Build options and determine which is in the best interest of the Parish. The solicitation might attract a specific company for a certain type of operation or the solicitation could attract a developer interested specifically in the Omni Terminal concept.

This would guarantee that the chosen developer/tenant/operator would adhere to the specifications, requirements and expectations established by the Parish for a specific location. Since the Parish is reviewing its options on land acquisition at Amax and the potential "build out" of this site could be expedited, such that it could be built within 1 to 2 years by one of the two processes (solicitation or Design build) mentioned above which would probably best serve the Parish's needs. If the Parish selects a developer with a specific commodity interest then their development process could possibly be realized in a 1-2 year process. This would be accomplished by collapsing design and permitting into a tightened construction period. This is possible because such an entity has a specific purpose in mind probably with a generic design all ready to be employed and all that would be required would be the permitting for their development. However such a developer would possibly have a narrower vision for full development of the site at its highest and best use and the Parish's return on investment in Amax would be less than expected. If the Parish adopts the concept of an Omni Terminal, this would require solicitation of broader terminal interests, a more complete design and permitting process leading to full construction of a greater expanse of the Amax site. This type of construction could take up to 4 years however the potential for greater revenues and job creation are greater given this higher use of the site.

The Citrus II Port location requires more time to develop and is most likely best served by a Public/Private Partnership (P3) that would significantly reduce the financial exposure and risk for the Parish. This property has the potential for the greatest return on investment and long term benefit for the Parish, in both revenue and employment. A consortium led by the Parish could include investors, a land owner, a rail company, the state, other Parishes, carriers and beneficial cargo owners. The Parish should consider seeking private sector development of the property's back levee system as a means to start the development of Citrus II. In order to proceed with container Port development, it will be necessary to first complete the back levee and relocate rail. Involvement by the private sector in such initiatives should be investigated. It is important to note that any real investment of any size at Citrus II is likely to require the development of the back levees regardless of what is developed since this will reduce risk, land development and operating costs. To attract Port development the extension of rail service is a necessity since truck access and volumes and cost to deliver would make any sizable Port unlikely. Barge traffic while a component to Port development would unlikely be able to generate enough volume to support and moderate to large scale Port.

Venice has been identified in this Master Plan as one of the most remarkable locations within the entire country. It should be developed with a goal of protecting the traditional revenue generating activities (offshore support, sport fishing and hunting, etc.)

Trident has concluded that in the short to medium term, emphasis should be placed on activities associated with remedial efforts for the Horizon oil spill and crisis. This includes locating the administrative headquarters and infrastructure required to service the disaster in Plaquemines Parish. This will result in significant employment for years to come and the placement and retention of valuable infrastructure.

Once an initial Partnership (others will probably be added later with substantial investment required) there will be the need to raise funds to assist the development of activities needed to make the Partnership and the Port development successful. This initial seed funding would probably be $2 to $3 million dollars contributed by the Partnership. The funding would compensate efforts in outreach efforts to public and private sectors outside of the Partnership. The need for this outreach is self-evident such that other investors, carriers, Ports, railroads, government agencies, beneficial cargo owners, etc. will be needed to either join in the project or support its development. The need to facilitate meetings, generate information, compliment Master Plan information on trade markets and opportunities or development scenarios and engineering specifics will require additional expenditures in going forward. This seed funding will make those activities obtainable. As stated earlier, the all most immediate need for a marketing brochure, color renderings and animation of the Ports would significantly move the promotion of these sites and greatly enhance the understanding of the opportunities they present.

If Amax proceeds through the stated development process as mentioned above, that Port facility will be governed by the Parish oversight and the successful bidder for that site. The Citrus II site however would however require a different process in going through final development. The initial formation of a Public/Private Partnership would govern some of the procedures and requirements that will be identified in advancing the Port site to completion. The realization of completing this project will have certain definable components which will be needed to insure the delivery of the Port Facility within the timeframe and parameters identified.

At some point there will be the need to have an independent Validation of the Market Assessment; this facilitates investor confidence, carrier attention and the ability to attract an established operator for the Port. The validation will probably entail an econometric analysis which should be directed and reviewed by representatives for the Parish and the Partnership Alliance. This step allows for the Partnership to then test the Physical Feasibility of the concept and validate the sizing of the initial Port and equipment. Once established in this detail the Financial Viability is reviewed in greater detail looking at revenue projections, cost staging, returns on investments, labor costs, and lift costs for all modes, taxes and or additional revenue incentives and balance sheet analysis for the first few years of operations.

Once the initial steps have been taken and a final decision to engage has been made by the Partnership then a commissioning Preliminary Engineering to 30% is required to answer questions on projected cost to construct, environmental mitigation and permitting, and to facilitate operating concerns. This is usually commissioned at the same time as EIS/EA whichever is deemed appropriate by State and Federal Agency review of the proposed project. As the Project moves through the EIS/Preliminary Engineering stage consortium partners will want to finalize outreach to carrier, BCOs, Class Is, etc to secure rates, schedules, and commitments where possible. Concept Approval is secured by the finding of a Finding of No Significant Impact (FONSI) or a Record of Decision (ROD) through the EIS Process. Once secured the risk to development is greatly reduced and final preparations for construction can begin. Preparation of Financial Models will be revisited with known commitments and costs more clearly identified. The final build out costs are more accurately stated and the Public Private Partnership can then secure final funding in preparation for final Engineering and construction. Just as with the Amax Port facility, the Partnership would determine whether to go through an RFQ/RFP Process or a Design Build. Upon securing final funding through institutions or new Partnership with equity partners which could be investors, operators and or carriers, then the Final Construction solicitation can begin. Given that Plaquemines has a twelve month construction capability, the Port at Citrus II should be able to move to completion within a reasonable timeframe. This construction needs to be carefully coordinated with completion of the back levees and Rail road service extension to the Port site.

Color 3-D Renderings of Draft Master Port Development Plan (Optional Service)

One of the most useful tools in communicating concepts, physical layout, and relationship of working spaces with transportation connections, and the overall scale of a project is by employing 3-D Color Renderings. Technology makes it capable to have the ability to overlay concepts on real photographic imagining both at the aerial and ground perspectives. Software enables the viewer to actually move through a site from a plane aerial view or on the ground and the viewer can rotate their view 360 degrees. This capability enhances the understanding of a project, promotes increased efficiencies by seeing spatial relationships and intrigues the viewer with the ability to see a project and understand its operations and importance. **Trident recommends that Plaquemines Parish consider engaging a provider of these services and develop renderings and a simulation of proposed activities to better illustrate and communicate planned development.** Eventually, this creation will be a valuable marketing tool.

The benefits of having and employing this resource can be enormous. First it generates fully understanding within the local Government/Council/Port District. Second it allows the Parish to communicate effectively with the Public, State/Federal Governments and Regulatory Agencies, potential operators/carriers and those involved in construction of the project, potential shippers and possible tenants, and aids in attracting investment monies from the private sector. This tool has been effectively used by other Ports and private sector companies and the resource has become a mainstay in moving their projects forward.

Endnotes:

[1] The World Bank Port Reform Toolkit Module 3
[2] The World Bank Port Reform Toolkit Module 3
[3] The World Bank Port Reform Toolkit Module 3

Task 9 Assessment and Evaluation of Land Options

Table of Contents

Task 9 Assessment and Evaluation of Land Options

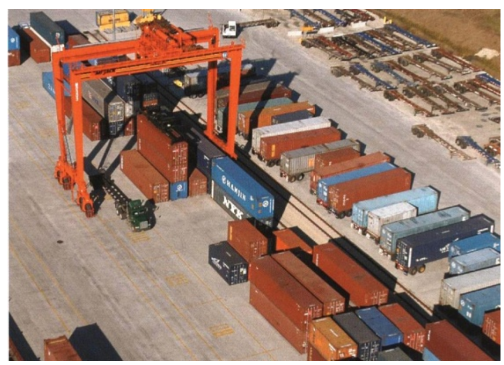
Introduction

Task 9 is a progression to understanding the options available to the Parish in implementing any of the Development Terminal Alternatives and whether to pursue those options in conjunction with the Private Sector and if so, how. Specifically labor considerations for each scenario is presented along with more complete operational plans, terminal technology options, construction probable costs and associated timelines for development. Development strategies are advanced along with Public/Private Partnerships which are fully exploring all which leads to decisions on decisive next steps.

Management and Labor Operational Plans

Types of equipment and methods of operations relate directly to management and labor expectations and as such are significant issues related concepts and expectations generated in the Comprehensive Port development Master Plan. The following text states some of the options the proposed Ports will face.

Overall Terminal Operational Equipment Flexibility and Expandability Considerations



With the multiplicity of layout and operating options facing the intermodal container terminal owner and designer today and the cost and relative permanence of laying thousands of feet of track in a fixed configuration, the value of designing for flexibility becomes very clear. For example, the operator may want the ability to operate with top picks at one point and later, to partially or totally covert to RTGs. Please refer to previous Port Master Plan tasks descriptions and analysis for a description of the system developed by Vickerman & Associates referred to as the Multiple Grid Operating Overlay System (MGOS) which can be deployed to provide for maximum equipment flexibility and interchangeability with more advanced terminal modes of operation..

In an intermodal rail setting, it may be valuable to convert from a Rubber Tired Gantry (RTG) equipment mode over a single track operation, to an RTG over multiple tracks operation, thus increasing the number of working tracks without increasing the overall terminal size. Certainly, the option to allow various arrangements of wheeled and stacked storage to be implemented and adjusted as needed over the life of the facility and can be an essential element of the long-term success and throughput capability of the terminal.

Moreover, it is important to apply these options at the planning and design level of facility development, thus ensuring that the layout can accommodate the desired operational equipment modes, requiring a minuscule cost compared to the cost of future land acquisition, retrofitting and reconstruction that may face the operator of a facility not designed for flexibility in the marine terminal planning and design phase.

Omni & Intermodal Terminal Container Equipment General Operational Considerations

The following brief narratives provide insights into the operational and associated layout requirements and demands for today's modern marine terminals. In general, only container handling equipment is discussed in the following narratives as other Break Bulk, Dry Bulk and Project Cargo operations are highly dependent on the specific and unique marine cargo types that would be associated with a unique market driven opportunity for either the Citrus II or Amax property sites.

Only conventional container handling equipment will be discussed. More advanced forms of terminal operations such as Automatic Guided Vehicles (AGVs) are beyond the scope of this marine terminal equipment overview.

Container Chassis Mode of Operations

The chassis mode of operation requires fairly large aisles of 50 to 70 feet, depending on container and truck/tractor size. Typically aisle spaces of 62 to 64 feet for 40-foot container rows are used. Unless other types of equipment are used in conjunction with chassis, the containers remain wheeled for greater selectivity. Chassis typically arrive and depart a container facility by road tractor, while second moves within the facility are performed by yard tractors (hostlers). Although hostlers have a much tighter turning radius, aisle widths are typically designed to accommodate road tractor pull-out.

Since chassis are used to transfer containers to and from various facility areas, most of the yard pavement can be designed for the lighter HS20 loading. Cost of tractors is approximately $80,000 to $90,000 while chassis cost approximately $20,000 to $25,000.

Container Top Loader or Side Loader (Port Packer) Operations

The top loader, top picks or side loader (also referred to as "Port Packer") is typically used in a stacking or grounded type of container operation. This machine is a modified fork-lift truck and is therefore sometimes referred to as a FLT. Aisles are generally 60 to 70 feet; however, some types of top loader equipment can operate in a tighter mode. Top loader stacking rows can vary from two- wide to six-wide for loaded containers, to as much as 10-wide for empty containers. Because of the heavier loading capabilities of the top loader, the paving should be designed to accommodate these heavier axle and wheel loads. Side loaders are lighter machines usually used to stack empty containers.

One of the advantages of the top loader is its maneuverability throughout the marine or intermodal facility; however, it is not recommended for carrying containers over long distances. Top loaders are also capable of stacking loaded containers as much as four-high and empty containers as much as seven-high. Costs of top loaders start at $450,000 and can range upwards to $700,000.

Container Straddle Carrier Operations

The straddle carrier (Strad) drives over container stacks on wheels and picks up individual containers from overhead within its own framework. Since it straddles rows of containers, additional spacing is required between these rows. Typical aisle lane widths for strads are 5 and 6 feet. Some strads used at intermodal yards are built extra-wide to fit over container carrying railcars. In designing the storage yard layout, consideration should be given to the possible use of extra-wide equipment.

One of the advantages of the versatile straddle carrier is its ability to travel to and from various parts of the facility, performing all types of transfer operations. This advantage requires the entire paved area be designed to accommodate straddle carrier loading. Typically, strads travel over two-high stacks with one pass-over; while some are designed for three-high stacks with one pass-over; one-over-four is also available. The one-over-four type of strad has an approximate overall height of 57 feet. Special attention should be given to any equipment that may have to pass under the portal beam of container-handling equipment.
Costs of straddle carriers start at $650,000 and can range to $800,000.

Container Rubber-Tired Gantry Crane (RTG) Operations

Figure 1: Container Rubber-Tired Gantry Crane (RTG) Operations

The rubber-tired gantry crane (RTG) mode (Figure 1) also drives over container stacks and picks up individual containers from overhead; these container stacks can be as much as eight-wide. Typical spacing of RTG rows (distance between center of wheel of one RTG and another RTG) is from 12 to 14 feet. Additionally, RTGs can be built to straddle from two to six containers wide, although six-wide is more common in container terminals.

The option to use a smaller- gage unit may be preferred in an intermodal facility; however, this would limit its flexibility for use in a marine terminal. Typically, RTGs travel over three-high stacks with one pass-over, while some are designed for as much as five-high stacks with one pass-over.

Concrete pads or runways are sometimes required for RTGs, and special care must be taken by the engineer/designer in designing these runways for maximum slope requirements. One of the advantages of the RTG is its selectivity capabilities, meaning that it can pick and remove or relocate containers within a stack more readily than most other equipment.

RTGs generally move parallel to a stack of containers but can traverse to other stacked rows by rotating their wheels 90 degrees; however, concrete pads or thickened asphalt areas are required. Costs of rubber-tired gantry cranes start at $1,400,000 and can range to $1,750,000.

The Future of Intermodal Rail and Port Terminal Interface Operations

As a conclusion to the terminal equipment operational considerations and recommendations and as a transition to the Terminal & Information Technology Integration Recommendations discussion the following graphics developed by Vickerman & Associates are presented to illustrate the power of Information Technology (IT) to enhance and greatly increase intermodal and marine terminal productivity (Figures 2 & 3).

Figure 2: The Port - Intermodal Rail Interface: Today

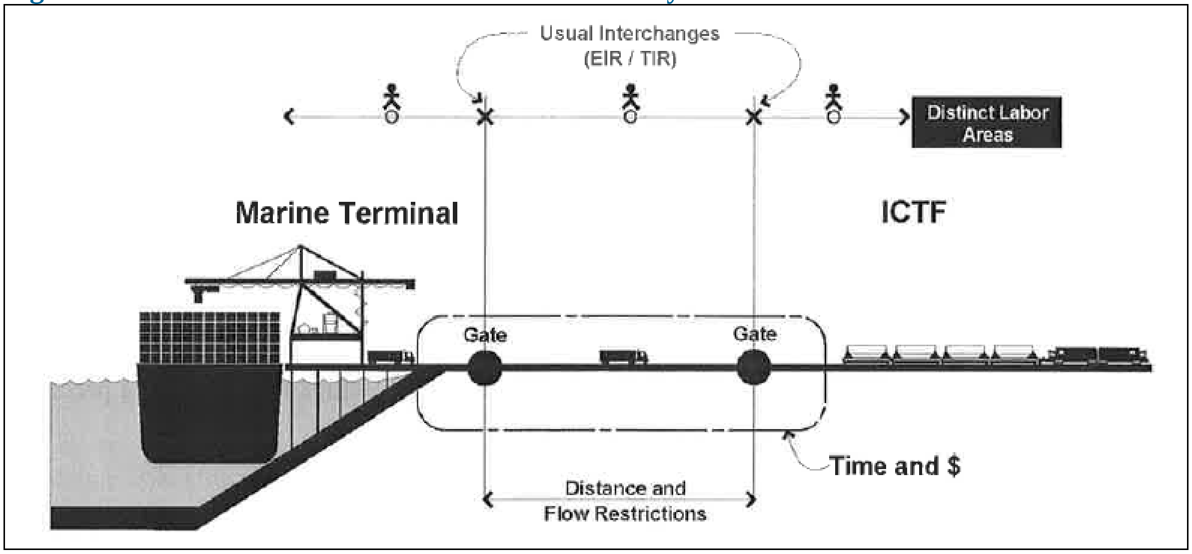
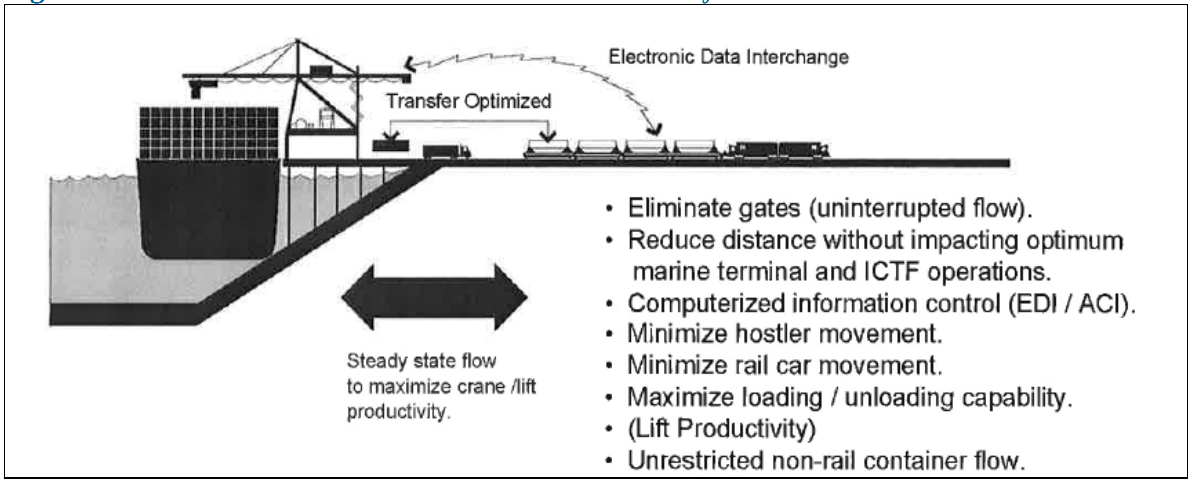
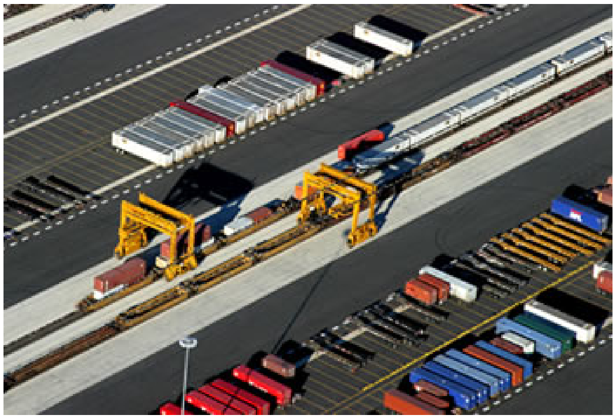


Figure 3: The Port - Intermodal Rail Interface: The Way It Could Be in the Future



Terminal & Information Technology Integration Recommendations



Commercial cargo flow through today's marine and intermodal terminals is easily affected by changes in a variety of variables (i.e. cargo dwell times, arrival/departure patterns of inland truck and rail cars, vessel scheduling). To minimize the disruption of commercial operations during commercial and military cargo surges, it is essential to manage the impact on these variables. Information Technologies (IT) can be used within the marine and intermodal terminal to communicate between operations; the management of truck traffic, rail car loading/unloading, vessel scheduling and loading/unloading, decreasing cargo dwell time, and hence increasing cargo throughput capability.

This increased cargo throughput capability/expandability can be considered as potential agility for handling military surge and sustainment cargoes. For example, if a marine terminal is able to decrease its dwell time and increase its throughput capability by using advanced IT communication capabilities, this increased capability could be used by the military in times of surge and sustainment.

Modern Terminal Operating Systems (TOS) are being used to increase terminal throughput and cargo velocity without investing substantial capital in infrastructure improvements or container handling equipment. Operating systems in ports are normally independently built upon specific needs of every individual port. Operating systems that vendors work with remain the same and simply add in specific modules that will best fit the focus area.

There are TOS vendors that prefer to outsource the operating system and use add-ins or other peripherals to suit the particular needs of each client. Table 1 provides a brief overview of eight currently available terminal operating system software options and their featured components. These software options are being used in modern intermodal and container terminals throughout the world.

Table 1: Terminal Operating Systems

	NAVIS	TSB	Tideworks	Cosmos	ESC	MTLS	Jade	FCC
Movement Analysis	✓		✓	✓	✓	✓	✓	
Vessel Information	✓		✓	✓	✓	✓	✓	✓
Customizable Reports	✓		✓	✓		✓	✓	✓
Berth Planning Tools	✓		✓	✓	✓		✓	
Add-Ons/Modules	✓		✓	✓	✓	✓		

For terminal management purposes, it is more practical to tag the material handling equipment. In this system, digital GPS (DGPS) Sensors are placed around the perimeter of a yard or terminal. The yard or terminal and the containers, as they enter, are mapped. Sensors track each piece of equipment moving, not each container. Operating information (which container to pick up next) can also be transmitted electronically to the yard equipment. The database maintains real-time information, being updated instantaneously for containers that have been removed or have left the terminal. Three current applications of this technology include NAVIS, Containertrac, and iRay Technologies.

An Equipment Tag Reader is typically located on various pieces of terminal equipment (i.e., forklift or spreader bar) the equipment can read a pre-programmed tag on a container, providing key manifest data for verification to the equipment operator and / or the yard manager.

Differential Global Positioning System (DGPS) Receivers calculate the difference between the intended and known position of an object. A DGPS Receiver in a container yard can track containers using the Intermodal Tags attached, if not the Equipment GPS Tag. Not only can a container be traced in a yard, but also its departure or entry into a yard can be followed. Linked to a DGPS Satellite a container can be tracked almost globally.

Current applications include the tracking of satellites themselves. A DGPS Receiver is located at a fixed point. The base station's positional reading at any time is subtracted from its known position to calculate the location and atmospheric errors for the satellites being tracked at that time. If the mobile receiver (i.e.:

on the container chassis) is tracking the same satellites and is within a zone of similar atmospheric effects to the base station, then the base station location error can be used as an estimate of the mobile receiver's location error, which can be used to calculate an improved location for the mobile receiver.

When container tracking extends beyond the immediate confines of a terminal, it is more practical to apply an intermodal tag to each asset (container or trailer). An Intermodal Tag is an electronic identification tag or portable data storage unit that is affixed directly to a container. There are currently three types of tags available: Passive, Semi-passive, and Active.

Passive Tags are read-only tags containing "permanent" information. Permanent information is information that may not be erased and pertains to the container itself, such as container number, dimensions, and tare weight. The container number can be entered into a database to retrieve waybill information while in transit for a specific voyage. The passive tag is read by a handheld or fixed electronic device, which must be positioned near the tag (typically within a few feet). Some passive tags may be equipped with a battery to boost the signal for more distant recognition by electronic equipment, typically within 300 yards.

Semi-passive and Active Tags are read-write tags containing cargo specific information, in addition to "permanent" information. These tags provide the user with the ability to update cargo information each time a container is reloaded. Information within a Semi-passive Tag must be entered and read via a handheld input/output device similar to that used for a passive tag. Information within an Active Tag can be entered and retrieved via radio signal from a remote location.

Passive Tags require no power supply in order to store information. Semi-passive and Active tags are equipped with battery power supplies. The power supplies for Semi-passive tags typically exhibit a lifespan of at least seven years (advertised for ten). Active Tag power supplies will typically experience a significantly shorter lifespan, as few as two to five months for an Active Tag. American President Lines (APL, Ltd.) has tested a number of different tags at the Ports of Seattle, Los Angeles, and Hong Kong. The United States Army is currently using Active Tags while considering the use of Semi-passive Tags having advanced features, such as "Directing capability".

Current industry trends indicate that the Passive Tag is preferred due to little need for a battery (therefore, less commercial cost) and the fact that updated cargo information for Semi-Passive and Active Tags are typically not entered as new cargo is loaded. The decision to utilize any one of the tags is primarily a balance between costs versus the benefits gained. Therefore, the prevalent security method employed is verification of container location and contents via an on-site check.

Examples of Representative Break Bulk Marine Terminal Information Technologies (IT)

The following descriptions are provided for general information on specific representative examples of Break Bulk Marine Terminal Operating Systems and do not represent a comprehensive or exhaustive listing of all products or systems available in the marine and intermodal industry today.

Tideworks Genoa Breakbulk Management IT System Deployment

Tideworks Technology® Inc. has deployed its Genoa Breakbulk Management System® in many US Gulf Coast Ports. Genoa™ is a suite of systems designed to help multi-purpose terminal operators more effectively plan, manage and control terminal processes. Implementation of the Genoa Breakbulk Management System software suite includes Genoa Terminal™ (multi-purpose terminal system), Genoa Storage™ (warehousing and inventory control), Genoa Comm™ (communications server software), and Genoa Online™ (Web portal for real-time data). In addition, Tideworks is providing complete functionality for RF (radio frequency) hand-held devices.

The Genoa system is designed to provide multi-purpose terminals with the following enhancements to their operations:

- **Better Financial Management**: Fully-developed financial functions allow terminal operators to allocate workforce and equipment resources, forecast costs, track purchase orders, and generate invoices. Genoa also auto-calculates demurrage fees and supports sale of consignments including the recalculation of demurrage for new owners.
- **Increased Flexibility and Visibility**: Genoa provides support for all cargo types including break-bulk, bulk, ro-ro, and containers. It allows visibility into cargo from the individual piece level to consignment or B/L level.
- **Improved Customer Service**: GenoaComm, the suite's communications server software, is designed to increase and improve communication between operators and terminal customers. Terminal operators can generate automatic emails and faxes to customers for deliveries, stock reports, and more. Genoa Online, the suite's Web portal, includes real-time inventory data, cargo releases, and bookings, providing customers with immediate updates and answers to questions about their cargo.

Tideworks Technology –Vendor/Producer of Mainsail and Spinnaker Terminal Operating Systems

Tideworks Technology, a division of marine terminal operator Stevedoring Services of America (SSA), provides software solutions to cargo terminal operators worldwide. They offer terminal operation systems; Mainsail Terminal Management System and Spinnaker Planning Management System.

The following is a descriptive breakdown of these two systems:

Mainsail Terminal Management System® is an easy-to-use terminal operating system that efficiently manages every component of a container terminal operation, combining the best practices of hands-on terminal management with secure and reliable Internet-driven technologies. Mainsail has the following features:

- A straightforward browser based interface for gate, yard and vessel inventory management is designed to minimize keystrokes and improve processing speed. Terminal operators find it easy to get started and efficiently manage transactions.
- The highly flexible system design allows you to run your operation the way you want. Customizable workspaces empower terminals to personalize access menus and user rights for each position.
- Integration with numerous third party and proprietary systems, devices, and applications offer seamless data communication between all business critical components at the terminal for improved efficiency, accuracy, and data visibility.
- E-gate solutions are available in Mainsail, integrating optical character recognition (OCR),

cameras, truck scales, voice, and information kiosks into one system.

- Mainsail Online provides access to selected terminal data to customers and partners through an intuitive web interface for enhanced, instantaneous communication for all parties involved.
- Comprehensive, flexible reporting provides the real-time data you need on-demand to improve your operation

Spinnaker Planning Management System® empowers terminal operators to increase cargo volume and reduce vessel turn time by providing fully-integrated vessel, berth, yard, and rail planning tools in one workspace. Spinnaker has the following features:

- Graphical planning tools with flexible, intuitive drag and drop capabilities enable planners to quickly direct real-time container information into efficient and accurate orders for vessel, gate, yard, and rail moves.
- Vessel berthing allows the terminal to adjust the physical positioning of individual vessels alongside the quay to schedule and plan for use of terminal facilities.
- Yard mapping and equipment pooling automates yard planning and assignment of container moves.
- Optional direct integration with differential GPS, handheld devices, mounted mobile display units, and equipment software interfaces improve data accuracy and efficiency in updating real-time inventory location and status information.
- Electronic data interchange (EDI) using industry standard and proprietary file types make it easy to send and receive stow and pre-stow plans seamlessly.

Management and Operational Plans of Specific Master Plan Alternatives

In a Comprehensive Port Development Master Plan it is useful to estimate the types of equipment, relative associated costs and potential employment figures per site and by what type of operation. This directly is important in decision making processes, estimating economic impacts and finally in overall development costs. The information below estimates employment by operation and by site. Subsequently this information is supportive in making base recommendations and is a component of the financial models developed.

Citrus II Site-Container/Intermodal Terminal (RTG Operation)

Typical Terminal Management

President	1
General Manager	1
Terminal Superintendent	1
Administration	4
IT	2
Security	2
Gate Supervisors	2
Storage	10
Maintenance Manager	1
Maintenance Supervisors	3
Total	**27**

Typical 2 Crane Crew **(Citrus would have two of these crews when four cranes are operating)**

Crane 1

Operators	2
Foreman	1
RTG Operators	3
Yard Tractor Operators	5
Total	**11**

Crane 2

Operator	1
Foreman	1
RTG Operators	2
Yard Tractor Operators	5
Total	**9**

Total two crane crew	**20**
Four cranes operational	**40**

Yard Crew **(When cranes are not working)**

RTG Operators	4
Yard Tractor Operators	10
Foreman	1
Total	**15**

Amax –Break Bulk and Container/Intermodal Terminal

Typical Terminal Management

President	1
General Manager	1
Terminal Superintendent	1
Administration	4
IT	2
Security	2
Gate Supervisors	2
Storage	10
Maintenance Manager	1
Maintenance Supervisors	3
Total	**27**

Typical 3 Crane Crew

Crane 1

Operators	2
Foreman	1
RTG Operators	3
Yard Tractor Operators	5
Total	**11**

Crane 2

Operator	1
Foreman	1
RTG Operators	2
Yard Tractor Operators	5
Total	**9**

Crane 3

Operator	2
Foreman	1
RTG Operators	3
Yard Tractor Operators	5
Total	**11**

Total three crane crew	**31**

Yard Crew (When cranes are not working)

RTG Operators	4
Yard Tractor Operators	10
Foreman	1
Total	**15**

Note: Container cranes, equipment and crews would service as base equipment and staff for break bulk operation any additional equipment (contract cargo etc.) and crews required would be priced as a cost of sale of that particular move.

Conceptual Construction Budget Estimate

The Conceptual Construction Budget Estimate developed for the Comprehensive Port Development Master Plan provides order of magnitude probable construction costs for the development of the specific properties for each intended use. Construction quantities have been determined based on the planning level detail provided in each concept plan. Unit construction costs are based upon local data gathered by Trident and supplemented by data published by R.S. Means where detailed local data was not available. The probable cost tables were re-evaluated and compared to estimated construction timelines. While the probable costs remain the same as in Task 7 they have been intentionally restated for the construction timetable comparisons.

Assumptions that apply to all Opinions of Probable Cost:

- Pavement Areas are assumed to require lime stabilization for adequate subgrade support.
- Pavement is assumed to be 14-inch concrete section (heavy duty) or a 3-inch asphalt on 10-inch aggregate base (standard duty) where applicable.
- Pavement Areas are assumed to require lime stabilization for adequate sub-grade support.
- Water – Potable/Fire assumed standard fire hose length of 150 feet and resulting hydrant spacing of 300 feet.
- Sanitary sewer service is not available to any of the properties and will require a packaged wastewater treatment system.
- Storm sewer drainage assumes that a catch basin can drain a maximum area of 1.0 acre
- Perimeter fencing is a US Customs Security Boundary fence incorporating an 8’ chain link with multiple barbed wire outriggers
- Unit costs are based primarily on local cost data compiled by the project team. Where local data was not available, R.S. Means Sitework and Landscape Cost Data was utilized.

AMAX Omni Terminal specific assumptions:

- Site grading is equivalent to 115 acres with an average cut/fill of 1.0 feet.
- Storm water basin is 12 acres and 10 feet in total depth
- Packaged sanitary treatment plant capacity of 50,000 GPD
- Striping is based on 25 acres at $10,000 per acre (container yard)

Initial TEU estimates in Task 5 for transportation impacts were readdressed based on site limitations and costs analysis.

Task 5 Original estimates

Amax Site		**200,000 TEUs Annually**	**TEUs per unit***	**Annual Units**	**Units**
	%	#			
Rail	50%	100,000	1.6	62,500	Articulated Railcar
Truck	25%	50,000	2.7	18,519	53' Truckload
Barge	25%	50,000	50	1,000	Barges

Adjusted Traffic estimates based on concepts and further site analysis

Amax Site		**123,455 TEUs Annually**	**TEUs per unit***	**Annual Units**	**Units**
	%	#			
Rail	50%	61,728	1.6	38,580	Articulated Railcar
Truck	25%	30,864	2.7	11,431	53' Truckload
Barge	25%	30,864	50	617	Barges

These traffic levels are lower than originally anticipated and thus represent reduced impact on the overall transportation networks that they connect to.

Table 2: Amax Site - Omni Terminal - Phase I (Specialized Bulk Terminal) – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal - Phase I (Specialized Bulk Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	1	LS	$1,500,000	$1,500,000
					SUBTOTAL DEMOLITION	$1,500,000
S	SITE WORK					
	1	General Site Grading & Compaction	24,000	CY	$20	$480,000
	2	Lime Stabilization of Pavement Subgrade	34,000	SY	$3	$102,000
	3	Stormwater Basin Exacavation	56,500	CY	$20	$1,130,000
	4	Earthen Ramp Embankment	20,000	CY	$25	$500,000
	5	Water - Potable/Fire	30	AC	$5,000	$150,000
	6	Sanitary - Packaged Treatment Plant	1	LS	$385,000	$385,000
	7	Drainage - Storm Sewers	30	AC	$85,000	$2,550,000
	8	Pavement - Heavy Duty	34,000	SY	$70	$2,380,000
	9	Pavement - Standard Duty	0	SY	$40	$0
	10	Fencing - Site Perimeter	11,000	LF	$40	$440,000
	11	Striping/Traffic Control	0	LS	$250,000	$0
	12	Dredging	440,000	CY	$7	$3,080,000
					SUBTOTAL SITE WORK	$11,197,000
R	RAIL					
	1	Clearing & Grubbing	6	AC	$10,000	$60,000
	2	Rail Track Extensions	18,000	LF	$200	$3,600,000
	3	Rail Turnouts	6	EA	$175,000	$1,050,000
					SUBTOTAL RAIL	$4,710,000
W	WHARF					
	1	Concrete Wharf	106,000	SF	$250	$26,500,000
	2	Fender System	600	LF	$450	$270,000
					SUBTOTAL WHARF	$26,770,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	0	LS	$1,000,000	$0
	2	Administration Building	0	SF	$350	$0
	3	Security Building	0	SF	$350	$0
	4	Maintenance & Repair	0	SF	$200	$0
	5	Cold Storage Buildings	0	SF	$250	$0
	6	Break Bulk Transit Shed	0	SF	$150	$0
					SUBTOTAL BUILDINGS & STRUCTURES	$0
					SUBTOTAL SITE DEVELOPMENT COSTS	$44,177,000
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$662,655
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$220,885
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$7,510,090
					CONTINGENCY (AT 20%)	$8,835,400
					TOTAL SITE DEVELOPMENT COSTS	$61,406,030

Table 3: Amax Site - Omni Terminal - Phase II (Specialized Bulk Terminal) - Opinion of Probable Cost

Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal - Phase II (Break Bulk Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
D	Demolition					
	1	Site Demolition	0	LS	$1,500,000	$0
					SUBTOTAL DEMOLITION	$0
S	SITE WORK					
	1	General Site Grading & Compaction	129,000	CY	$20	$2,580,000
	2	Lime Stabilization of Pavement Subgrade	317,400	SY	$3	$952,200
	3	Stormwater Basin Exacavation	64,500	CY	$20	$1,290,000
	4	Earthen Ramp Embankment	0	CY	$25	$0
	5	Water - Potable/Fire	95	AC	$5,000	$475,000
	6	Sanitary - Packaged Treatment Plant	0	LS	$385,000	$0
	7	Drainage - Storm Sewers	95	AC	$85,000	$8,075,000
	8	Pavement - Heavy Duty	311,500	SY	$70	$21,805,000
	9	Pavement - Standard Duty	5,900	SY	$40	$236,000
	10	Fencing - Site Perimeter	0	LF	$40	$0
	11	Striping/Traffic Control	0	LS	$250,000	$0
	12	Dredging	306,000	CY	$7	$2,142,000
					SUBTOTAL SITE WORK	$37,555,200
R	RAIL					
	1	Clearing & Grubbing	0	AC	$10,000	$0
	2	Rail Track Extensions	2,750	LF	$200	$550,000
	3	Rail Turnouts	1	EA	$175,000	$175,000
					SUBTOTAL RAIL	$725,000
W	WHARF					
	1	Concrete Wharf	0	SF	$250	$0
	2	Fender System	0	LF	$450	$0
					SUBTOTAL WHARF	$0
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$1,000,000	$1,000,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Security Building	20,000	SF	$350	$7,000,000
	4	Maintenance & Repair	90,000	SF	$200	$18,000,000
	5	Cold Storage Buildings	100,000	SF	$250	$25,000,000
	6	Break Bulk Transit Shed	320,000	SF	$150	$48,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$106,000,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$144,280,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$2,164,203
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$721,401
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$24,527,634
					CONTINGENCY (AT 20%)	$28,856,040
					TOTAL SITE DEVELOPMENT COSTS	$200,549,478

Table 4: Amax Site - Omni Terminal - Phase III (Specialized Bulk Terminal) – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal - Phase III (Intermodal Container Rail Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	0	LS	$1,500,000	$0
					SUBTOTAL DEMOLITION	$0
S	SITE WORK					
	1	General Site Grading & Compaction	32,000	CY	$20	$640,000
	2	Lime Stabilization of Pavement Subgrade	135,000	SY	$3	$405,000
	3	Stormwater Basin Exacavation	74,000	CY	$20	$1,480,000
	4	Earthen Ramp Embankment	20,000	CY	$25	$500,000
	5	Water - Potable/Fire	45	AC	$5,000	$225,000
	6	Sanitary - Packaged Treatment Plant	0	LS	$385,000	$0
	7	Drainage - Storm Sewers	45	AC	$85,000	$3,825,000
	8	Pavement - Heavy Duty	135,000	SY	$70	$9,450,000
	9	Pavement - Standard Duty	0	SY	$40	$0
	10	Fencing - Site Perimeter	0	LF	$40	$0
	11	Striping/Traffic Control	1	LS	$250,000	$250,000
					SUBTOTAL SITE WORK	$16,775,000
R	RAIL					
	1	Clearing & Grubbing	0	AC	$10,000	$0
	2	Rail Track Extensions	1,850	LF	$200	$370,000
	3	Rail Turnouts	0	EA	$175,000	$0
					SUBTOTAL RAIL	$370,000
W	WHARF					
	1	Concrete Wharf	154,000	SF	$250	$38,500,000
	2	Fender System	900	LF	$450	$405,000
					SUBTOTAL WHARF	$38,905,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	0	LS	$1,000,000	$0
	2	Administration Building	0	SF	$350	$0
	3	Security Building	0	SF	$350	$0
	4	Maintenance & Repair	0	SF	$200	$0
	5	Cold Storage Buildings	0	SF	$250	$0
	6	Break Bulk Transit Shed	0	SF	$150	$0
					SUBTOTAL BUILDINGS & STRUCTURES	$0
					SUBTOTAL SITE DEVELOPMENT COSTS	$56,050,000
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$840,750
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$280,250
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$9,528,500
					CONTINGENCY (AT 20%)	$11,210,000
					TOTAL SITE DEVELOPMENT COSTS	$77,909,500

Table 5: Amax Site - Omni Terminal – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Omni Terminal Plaquemines Parish Port Development Master Plan Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	1	LS	$1,500,000	$1,500,000
					SUBTOTAL DEMOLITION	$1,500,000
S	SITE WORK					
	1	General Site Grading & Compaction	185,000	CY	$20	$3,700,000
	2	Lime Stabilization of Pavement Subgrade	486,400	SY	$3	$1,459,200
	3	Stormwater Basin Exacavation	195,000	CY	$20	$3,900,000
	4	Earthen Ramp Embankment	40,000	CY	$25	$1,000,000
	5	Water - Potable/Fire	170	AC	$5,000	$850,000
	6	Sanitary - Packaged Treatment Plant	1	LS	$385,000	$385,000
	7	Drainage - Storm Sewers	170	AC	$85,000	$14,450,000
	8	Pavement - Heavy Duty	480,500	SY	$70	$33,635,000
	9	Pavement - Standard Duty	5,900	SY	$40	$236,000
	10	Fencing - Site Perimeter	11,000	LF	$40	$440,000
	11	Dredging	746,000	CY	$7	$5,222,000
					SUBTOTAL SITE WORK	$65,277,200
R	RAIL					
	1	Clearing & Grubbing	6	AC	$10,000	$60,000
	2	Rail Track Extensions	22,600	LF	$200	$4,520,000
	3	Rail Turnouts	7	EA	$175,000	$1,225,000
					SUBTOTAL RAIL	$5,805,000
W	WHARF					
	1	Concrete Wharf	260,000	SF	$250	$65,000,000
	2	Fender System	1,500	LF	$450	$675,000
					SUBTOTAL WHARF	$65,675,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$1,000,000	$1,000,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Security Building	20,000	SF	$350	$7,000,000
	4	Maintenance & Repair	90,000	SF	$200	$18,000,000
	5	Cold Storage Buildings	100,000	SF	$250	$25,000,000
	6	Break Bulk Transit Shed	320,000	SF	$150	$48,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$106,000,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$244,257,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$3,663,858
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$1,221,286
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$41,523,724
					CONTINGENCY (AT 20%)	$48,851,440
					TOTAL SITE DEVELOPMENT COSTS	$339,517,508

Table 6: Amax Site - Omni Terminal – Construction Timeline

CONSTRUCTION TIMELINE — 10-May-10

AMAX Site - Omni Terminal

Plaquemines Parish Port Development Master Plan

Plaquemines Parish, Louisiana

	Duration	Year 1												Year 2												Year 3												Year 4												Year 5											
Task	(Months)	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
SITE DESIGN & PERMITTING	24																																																												
DEMOLITION	5																																																												
SITE CONSTRUCTION	23																																																												
General Site Grading & Compaction	3																																																												
Stormwater Basin Exacavation	3																																																												
Earthen Ramp Embankment	2																																																												
Drainage - Storm Sewers	10																																																												
Water - Potable/Fire	3																																																												
Sanitary - Packaged Treatment Plant	2																																																												
Lime Stabilization of Pavement Subgrade	8																																																												
Pavement	4																																																												
Fencing - Site Perimeter	2																																																												
Striping/Traffic Control	2																																																												
RAIL CONSTRUCTION	11																																																												
WHARF CONSTRUCTION	13																																																												
BUILDING CONSTRUCTION	20																																																												

Note: wharf construction timeline includes dredging.

AMAX Omni Terminal Construction Schedule

The overall time period for construction is conservatively estimated at 3 ½ years for the Omni Terminal design. This time line is influenced by unknown locations and degrees of impact of the on-site hazardous waste. While those wastes are reportedly contained; the nature, quantification, site limitations of those wastes need to identified along with any required remediation. The design and permitting process is therefore estimated at two years allowing for sufficient time to address those issues. Simultaneous to that activity would be the final design modifications to a potential identified or yet to be identified operator of such a terminal. Once the ground is broken the construction timeframe is estimated at two years which includes dredging of the River for the approaches to the wharf and along the frontage of the wharf. If during the Solicitation of Interest by the Parish, an owner/operator comes forward with specific needs based on their expected business then the construction time table could possibly be shortened. This is due to experience that such firms often have template site and terminal expectations and all that is needed is for the template to be adjusted to the new site location. Such a possibility could reduce the design and permitting requirements and reduce the overall timeline.

AMAX Coal Terminal specific assumptions:

- Site grading is equivalent to 115 acres with an average cut/fill of 1.0 foot.
- Storm water basin is 15 acres and 10 feet in total depth
- 85 acres of fire protection covers the pavement/buildings areas plus the coal storage area
- Packaged sanitary treatment plant capacity of 9,500 GPD.
- Storm sewer drainage provided only within building/pavement area and not within coal storage area.

Table 7: Amax Site - Coal Terminal – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
AMAX Site - Coal Terminal Plaquemines Parish Port Development Master Plan Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
D	Demolition					
	1	Site Demolition	1	LS	$1,500,000	$1,500,000
					SUBTOTAL DEMOLITION	$1,500,000
S	SITE WORK					
	1	General Site Grading & Compaction	185,000	CY	$20	$3,700,000
	2	Lime Stabilization of Pavement Subgrade	92,900	SY	$3	$278,700
	3	Stormwater Basin Exacavation	240,000	CY	$20	$4,800,000
	4	Earthen Ramp Embankment	15,000	CY	$25	$375,000
	5	Water - Potable/Fire	85	AC	$5,000	$425,000
	6	Sanitary - Packaged Treatment Plant	1	LS	$142,500	$142,500
	7	Drainage - Storm Sewers	20	AC	$85,000	$1,700,000
	8	Pavement - Standard Duty	92,900	SY	$40	$3,716,000
	9	Fencing - Site Perimeter	11,000	LF	$40	$440,000
	10	Striping/Traffic Control	1	LS	$50,000	$50,000
	11	Dredging	675,000	CY	$7	$4,725,000
					SUBTOTAL SITE WORK	$20,352,200
R	RAIL					
	1	Clearing & Grubbing	6	AC	$10,000	$60,000
	2	Rail Track Extensions	25,000	LF	$200	$5,000,000
	3	Rail Turnouts	7	EA	$175,000	$1,225,000
					SUBTOTAL RAIL	$6,285,000
W	WHARF					
	1	Concrete Wharf	123,000	SF	$250	$30,750,000
	2	Fender System	1,300	LF	$450	$585,000
					SUBTOTAL WHARF	$31,335,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$100,000	$100,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Maintenance & Repair	75,000	SF	$200	$15,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$22,100,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$81,572,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$1,223,583
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$407,861
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$13,867,274
					CONTINGENCY (AT 20%)	$16,314,440
					TOTAL SITE DEVELOPMENT COSTS	$113,385,358

Table 8: Amax Site - Coal Terminal - Construction Timeline

CONSTRUCTION TIMELINE — 10-May-10

AMAX Site - Coal Terminal
Plaquemines Parish Port Development Master Plan
Plaquemines Parish, Louisiana

Task	Duration (Months)	Year 1 (J F M A M J J A S O N D)	Year 2 (J F M A M J J A S O N D)	Year 3 (J F M A M J J A S O N D)	Year 4 (J F M A M J J A S O N D)	Year 5 (J F M A M J J A S O N D)
SITE DESIGN & PERMITTING	24					
DEMOLITION	5					
SITE CONSTRUCTION	11					
General Site Grading & Compaction	3					
Stormwater Basin Exacavation	3					
Earthen Ramp Embankment	1					
Drainage - Storm Sewers	2					
Water - Potable/Fire	2					
Sanitary - Packaged Treatment Plant	2					
Lime Stabilization of Pavement Subgrade	2					
Pavement	1					
Fencing - Site Perimeter	2					
Striping/Traffic Control	1					
RAIL CONSTRUCTION	11					
WHARF CONSTRUCTION	6					
BUILDING CONSTRUCTION	18					

Note: wharf construction timeline includes dredging.

AMAX Coal Terminal Construction Timeline

The construction timeline for the Amax Coal Terminal runs in excess of four years. This is primarily due to the needed demolition of facilities on site and the added construction of new buildings related to the site. Given the concerns for a Coal Terminal and its proximity to residential areas, fugitive dust is a major perceived concern which will require time during the design and permitting stages to fully evaluate and provide proper mitigation. As a result the establishment of this type of activity will require time to fully implement this scenario and construct.

Citrus II Container Terminal assumptions:

- Clearing and grubbing of heavily vegetated areas only.
- Site grading is equivalent to 209 acres with an average cut/fill of 1.0 foot.
- Storm water basin is 20 acres and 10 feet in total depth
- Packaged sanitary treatment plant capacity of 10,000 GPD.
- Striping is based on 200 acres at $10,000 per acre (container yard)
- Access roadway grading is equivalent to 8 acres with an average cut/fill of 1.0 foot.

Initial TEU estimates in Task 5 for transportation impacts were readdressed based on site limitations and costs analysis.

Task 5 Original estimates

Table 9: Citrus Container Traffic

Citrus Site		**700,000 TEUs Annually**	**TEUs per unit***	**Annual Units**	**Units**
	%	#			
Rail	75%	525,000	1.6	328,125	Articulated Railcar
Truck	20%	140,000	2.7	51,852	53’ Truckload
Barge	5%	35,000	50	700	Barges

Adjusted Traffic estimates based on concepts and further site analysis

Table 10: Citrus Container Traffic Re-evaluated

Citrus Site		**758,653 TEUs Annually**	**TEUs per unit***	**Annual Units**	**Units**
	%	#			
Rail	75%	568,990	1.6	355,619	Articulated Railcar
Truck	20%	151,730	2.7	56197	53' Truckload
Barge	5%	37,933	50	759	Barges

The volumes for throughput were recalculated based on site consideration, size, and operational flow. Given the number of berths, wharf size and expected container operation and the potential to attract larger vessels, the new throughput TEUs were developed. The prior transportation analysis had shown that the previous estimates of modal split and added volumes to the transportation networks would have little impact on those respective systems and that there would still be large excess capacity in those systems even after the Port is operative.

Table 11: Citrus Lands II Site - Phase 1A (Container Marine Terminal) – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
Citrus Lands II Site - Phase IA (Container Marine Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
S	SITE WORK					
	1	Clearing & Grubbing	35	AC	$10,000	$350,000
	2	General Site Grading & Compaction	194,000	CY	$20	$3,880,000
	3	Lime Stabilization of Pavement Subgrade	555,000	SY	$3	$1,665,000
	4	Stormwater Basin Exacavation	325,000	CY	$20	$6,500,000
	5	Earthen Ramp Embankment	50,000	CY	$25	$1,250,000
	6	Water - Potable/Fire	120	AC	$5,000	$600,000
	7	Sanitary - Packaged Treatment Plant	1	LS	$150,000	$150,000
	8	Drainage - Storm Sewers	120	AC	$85,000	$10,200,000
	9	Pavement - Heavy Duty	545,600	SY	$70	$38,192,000
	10	Pavement - Standard Duty	9,400	SY	$40	$376,000
	11	Fencing - Site Perimeter	14,000	LF	$40	$560,000
	12	Striping/Traffic Control	1	LS	$1,200,000	$1,200,000
					SUBTOTAL	$64,923,000
T	ACCESS ROADWAY					
	1	Grading & Compaction	15,000	CY	$20	$300,000
	2	Lime Stabilization of Pavement Subgrade	15,400	SY	$3	$46,200
	3	Drainage - Storm Sewers	8	AC	$85,000	$680,000
	4	Pavement - Heavy Duty	15,400	SY	$70	$1,078,000
	5	Striping/Traffic Control	1	LS	$25,000	$25,000
					SUBTOTAL	$2,129,200
R	RAIL					
	1	Rail Track Extensions	0	LF	$200	$0
	2	Rail Turnouts	0	EA	$175,000	$0
					SUBTOTAL	$0
W	WHARF					
	1	Concrete Wharf	720,000	SF	$250	$180,000,000
	2	Fender System	2,000	LF	$450	$900,000
					SUBTOTAL	$180,900,000
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	1	LS	$2,500,000	$2,500,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Maintenance & Repair	60,000	SF	$200	$12,000,000
			SUBTOTAL BUILDINGS & STRUCTURES			$21,500,000
			SUBTOTAL SITE DEVELOPMENT COSTS			$269,452,200
			MOBILIZATION/DEMOBILIZATION (AT 1.5%)			$4,041,783
			EROSION / SEDIMENT CONTROL (AT 0.5%)			$1,347,261
			PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)			$45,806,874
			CONTINGENCY (AT 20%)			$53,890,440
			TOTAL SITE DEVELOPMENT COSTS			$374,538,558

Table 12: Citrus Lands II Site - Phase 1B (Container Marine Terminal) – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
Citrus Lands II Site - Phase IB (Intermodal Rail Terminal)						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
S	SITE WORK					
	1	Clearing & Grubbing	0	AC	$10,000	$0
	2	General Site Grading & Compaction	146,000	CY	$20	$2,920,000
	3	Lime Stabilization of Pavement Subgrade	427,000	SY	$3	$1,281,000
	4	Stormwater Basin Exacavation	0	CY	$20	$0
	5	Earthen Ramp Embankment	0	CY	$25	$0
	6	Water - Potable/Fire	89	AC	$5,000	$445,000
	7	Sanitary - Packaged Treatment Plant	0	LS	$150,000	$0
	8	Drainage - Storm Sewers	89	AC	$85,000	$7,565,000
	9	Pavement - Heavy Duty	427,000	SY	$70	$29,890,000
	10	Pavement - Standard Duty	0	SY	$40	$0
	11	Fencing - Site Perimeter	0	LF	$40	$0
	12	Striping/Traffic Control	1	LS	$800,000	$800,000
					SUBTOTAL	$42,901,000
T	ACCESS ROADWAY					
	1	Grading & Compaction	0	CY	$20	$0
	2	Lime Stabilization of Pavement Subgrade	0	SY	$3	$0
	3	Drainage - Storm Sewers	0	AC	$85,000	$0
	4	Pavement - Heavy Duty	0	SY	$70	$0
	5	Striping/Traffic Control	0	LS	$25,000	$0
					SUBTOTAL	$0
R	RAIL					
	1	Rail Track Extensions	18,300	LF	$200	$3,660,000
	2	Rail Turnouts	6	EA	$175,000	$1,050,000
					SUBTOTAL	$4,710,000
W	WHARF					
	1	Concrete Wharf	0	SF	$250	$0
	2	Fender System	0	LF	$450	$0
					SUBTOTAL	$0
B	BUILDINGS & STRUCTURES					
	1	Main Port Access/Security Gate	0	LS	$2,500,000	$0
	2	Administration Building	0	SF	$350	$0
	3	Maintenance & Repair	0	SF	$200	$0
			SUBTOTAL BUILDINGS & STRUCTURES			$0
					SUBTOTAL SITE DEVELOPMENT COSTS	$47,611,000
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$714,165
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$238,055
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$8,093,870
					CONTINGENCY (AT 20%)	$9,522,200
					TOTAL SITE DEVELOPMENT COSTS	$66,179,290

Table 13: Citrus Lands II Site (Container Marine Terminal) – Opinion of Probable Cost

OPINION OF PROBABLE COST						8-Jul-10
Citrus Lands II Site - Container/Intermodal Terminal						
Plaquemines Parish Port Development Master Plan						
Plaquemines Parish, Louisiana						
Task No.	Item No.	Item	Quantity	Unit	Unit Cost	Item Cost
S		SITE WORK				
	1	Clearing & Grubbing	35	AC	$10,000	$350,000
	2	General Site Grading & Compaction	340,000	CY	$20	$6,800,000
	3	Lime Stabilization of Pavement Subgrade	982,000	SY	$3	$2,946,000
	4	Stormwater Basin Exacavation	325,000	CY	$20	$6,500,000
	5	Earthen Ramp Embankment	50,000	CY	$25	$1,250,000
	6	Water - Potable/Fire	209	AC	$5,000	$1,045,000
	7	Sanitary - Packaged Treatment Plant	1	LS	$150,000	$150,000
	8	Drainage - Storm Sewers	209	AC	$85,000	$17,765,000
	9	Pavement - Heavy Duty	972,600	SY	$70	$68,082,000
	10	Pavement - Standard Duty	9,400	SY	$40	$376,000
	11	Fencing - Site Perimeter	14,000	LF	$40	$560,000
	12	Striping/Traffic Control	1	LS	$2,000,000	$2,000,000
					SUBTOTAL	$107,824,000
T		ACCESS ROADWAY				
	1	Grading & Compaction	15,000	CY	$20	$300,000
	2	Lime Stabilization of Pavement Subgrade	15,400	SY	$3	$46,200
	3	Drainage - Storm Sewers	8	AC	$85,000	$680,000
	4	Pavement - Heavy Duty	15,400	SY	$70	$1,078,000
	5	Striping/Traffic Control	1	LS	$25,000	$25,000
					SUBTOTAL	$2,129,200
R		RAIL				
	1	Rail Track Extensions	18,300	LF	$200	$3,660,000
	2	Rail Turnouts	6	EA	$175,000	$1,050,000
					SUBTOTAL	$4,710,000
W		WHARF				
	1	Concrete Wharf	720,000	SF	$250	$180,000,000
	2	Fender System	2,000	LF	$450	$900,000
					SUBTOTAL	$180,900,000
B		BUILDINGS & STRUCTURES				
	1	Main Port Access/Security Gate	1	LS	$2,500,000	$2,500,000
	2	Administration Building	20,000	SF	$350	$7,000,000
	3	Maintenance & Repair	60,000	SF	$200	$12,000,000
					SUBTOTAL BUILDINGS & STRUCTURES	$21,500,000
					SUBTOTAL SITE DEVELOPMENT COSTS	$317,063,200
					MOBILIZATION/DEMOBILIZATION (AT 1.5%)	$4,755,948
					EROSION / SEDIMENT CONTROL (AT 0.5%)	$1,585,316
					PLANNING, DESIGN, CONSTRUCTION ADMINISTRATION, PERMITTING (AT 17%)	$53,900,744
					CONTINGENCY (AT 20%)	$63,412,640
					TOTAL SITE DEVELOPMENT COSTS	$440,717,848

Table 14: Citrus Lands II Site – Container/Intermodal Terminal) – Construction Timeline

CONSTRUCTION TIMELINE

10-May-10

Citrus Lands II Site - Container/Intermodal Terminal

Plaquemines Parish Port Development Master Plan

Plaquemines Parish, Louisiana

Task	Duration (Months)	Year 1: J F M A M J J A S O N D	Year 2: J F M A M J J A S O N D	Year 3: J F M A M J J A S O N D	Year 4: J F M A M J J A S O N D	Year 5: J F M A M J J A S O N D
SITE DESIGN & PERMITTING	24					
SITE CONSTRUCTION	27					
Clearing & Grubbing	3					
General Site Grading & Compaction	6					
Stormwater Basin Exacavation	5					
Earthen Ramp Embankment	2					
Drainage - Storm Sewers	13					
Water - Potable/Fire	3					
Sanitary - Packaged Treatment Plant	2					
Lime Stabilization of Pavement Subgrade	16					
Pavement	8					
Fencing - Site Perimeter	2					
Striping/Traffic Control	6					
ACCESS ROADWAY	6					
Grading & Compaction	1					
Drainage - Storm Sewers	2					
Lime Stabilization of Pavement Subgrade	1					
Pavement	1					
Striping/Traffic Control	1					
RAIL CONSTRUCTION	8					
WHARF CONSTRUCTION	18					
BUILDING CONSTRUCTION	18					

Citrus II Container Terminal Construction Timeline

The construction estimate for Citrus II is estimated to be five (5) years. Over two ½ years of that estimate is to allow for Port Terminal and Intermodal Terminal design, the completion of an Environmental Impact Statement, commitment and advancement if not completion of the Railroad extension and back levees to Citrus II and other required permits. Once these activities are successfully completed and a Record of Decision is given for the project then final construction would take a little more than two (2) years. There does exist the opportunity that either a Public Private Partnership or a private developer could reduce the timeframe if it advanced final design at risk. This means final design would be prepared without totally securing the completion of the EIS or required permits. The risk involves that if sites considerations change either by the findings in the EIS or through permit mitigation than changes to the final design would have to be redone. If however there are no such changes, by advancing the schedule on design there does exist the potential to reduce the overall timeline by six to twelve months or to engage ground breaking earlier than expected on certain parts of the project. The risk in time and money compared to getting the Port up and operative sooner would need to be weighed against each other to determine the viability of the risk.

Strategic Port Development Plan – Recommended Approach and Implementation Steps

Through the process of developing The Comprehensive Port Development Master Plan for Plaquemines Parish Trident has accomplished the following strategic tasks that when connected serve as a path forward for implementation of port development in Plaquemines Parish.

Strategic Port Development Tasks Accomplished:

1. A review of more than 50 previous studies and reports concerning port capacity, market forecasts, development plans and data on Louisiana ports including cargo distribution and transportation within the Gulf of Mexico region.

   The conclusion was that all of these studies looked at and based their findings on existing and traditional patterns of distribution. So capacity, future requirements and forecasts were based on the status quo. Trident "skating to where the puck will be rather than where it is" adopted the approach about "What if" what if Plaquemines Parish could develop a terminal, adjacent logistic services and a multi modal distribution capability to the developing, expanding and overlaying consumption and production zones north to the Mid West and Ohio Valley perhaps even to Canada and beyond.

2. The development of a market analysis and forecast based on previous studies and new trade data from **USA Trade Online Data,** sponsored by the U.S. Census Bureau using the North American Industry Classification System (NAICS) commodity classification codes, concentrating on origins and destinations both traditional and new, to and from local and north corridor states that can be competitively served by a Plaquemines Parish Port Terminals with competitive rail conductivity.

   The conclusion was that there is potential incremental market demand to support the development of additional port capacity within Plaquemines Parish providing that competitive distribution resources and efficient landside access transportation conductivity were available.

3. The evaluation of twelve initial and five primary sites were evaluated within Plaquemines Parish to determine the optimum sites for port development. A unbiased development criteria weighted matrix tool was used to determine the sites with greatest development potential

   The conclusion was that the Amax Property at mile maker 76.5 on the east side of the Mississippi was deemed to be the best site for short term development and Citrus Land II Site at approximately mile 54 on the west side of the Mississippi was deemed to be the best long term development site. At the same time Venice was included as a prime development site because of its existing major contribution to the economy of the region in the oil and gas, commercial fishery and tourisms sectors.

   The Amax site best use was determined to be an Omni Port Terminal combining container, break bulk and specialized bulk potential. The Citrus site best use was for a multi berth container terminal, Intermodal yard and logistic park. Venice development potential was related to the existing industries and the impact and opportunities post the Horizon Oil Spill.

4. The next task was to design concepts for the two cargo development sites, complete with plans, costing, operational plans, phasing and economic evaluations. Potential rail alternative to provide the essential Intermodal conductivity were also researched.

   The conclusion was that the proposed developments on the two sites were feasible and potentially viable pending levee construction, rail conductivity and the identification of strategic proponents producing through put or through put guarantees.

The final task is to identify for Plaquemines Parish the way forward or the implementation steps necessary to transform the plan into reality.

Preamble to the Plaquemines Parish Comprehensive Port Development Master Plan – Recommended Approach and Implementation Steps

Initially Trident had assumed that Trident would be permitted to actively identify, communicate with and recommend potential port development interests and proponents, however Trident was directed by the Plaquemines Parish Council leadership not to go in that direction for the Port Master Plan but rather to consider the Plaquemines Parish Port Harbor & Terminal District (the Port Authority) and the Parish Council as the primary proponent for port development in the Parish and present implementation options and recommendations based on that premise. As a result of this direction, the following approach and implementation suggestions and recommendations are based on Plaquemines Parish Council and the Port Authority taking the lead for port development in the Parish and actively participating in the proposed port and intermodal rail development projects.

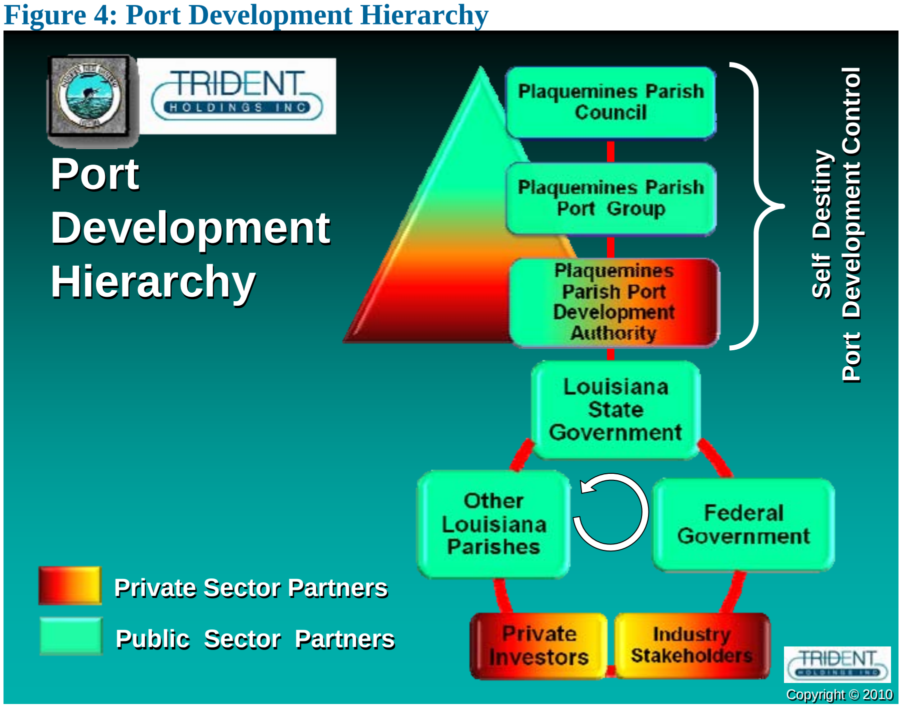
In this task Trident has identified the order of magnitude cost of a basic Omni Terminal at Amax at approximately $276,935,000.00, including land purchase, construction, equipment and soft costs. A two berth Container and Intermodal Terminal at Citrus Land II site would have an order of magnitude cost of approximately $559,381,000.00 including cost of land, construction, equipment and soft cost but not including Levee construction and rail access.

These order of magnitude budget estimates when considered in total are very ambitious port developments scenarios and it may be unreasonable to expect that Plaquemines Parish Government can afford to commit that level of investment and of financial resources to the recommended port development projects despite their physical feasibility, potential financial viability and significant economic impact.

The Port Development Authority Concept Defined

Based on the preamble assumptions identified above, Trident is recommending a methodology or process by which Plaquemines Parish Council and The Port Authority can use the investment in this Comprehensive Port Development Master Plan, its ability to partner with both Public sector and Private sector entities to "Champion" and promote the concepts recommended in the port master plan, to be the sponsor, advocate and catalysts for Public sector expenditure in supporting essential transportation infrastructure, to be an engaged and proactive supporting member of a Public Private Partnership (P3) and thereby earn an equity stake in the development consortium for port development within Plaquemines Parish assuring Plaquemines Parish Council the control of their own self destiny The logical conclusion to this private sector driven strategic direction for the Plaquemines Parish Council is to form a Port Development Authority, an economic development driven organization and not necessarily a public Port Authority (Figure 4).

Figure 4: Port Development Hierarchy



As illustrated above, Trident proposes and highly recommends a Port Development Authority Hierarchy with The Plaquemines Parish Council in control, enabling the Port Authority to develop a Port Development Authority, not the usual public Port Authority, but a much broader and more aggressive Port Development Authority that can partner with other Public or Private Sector Partners to accomplish port development in the Parish on its terms and with a degree of equity involvement in each phase of the port development process. As illustrated above the Port Development Authority would partner with a variety of both public and private interests in order to accomplish the recommended port development master plan.

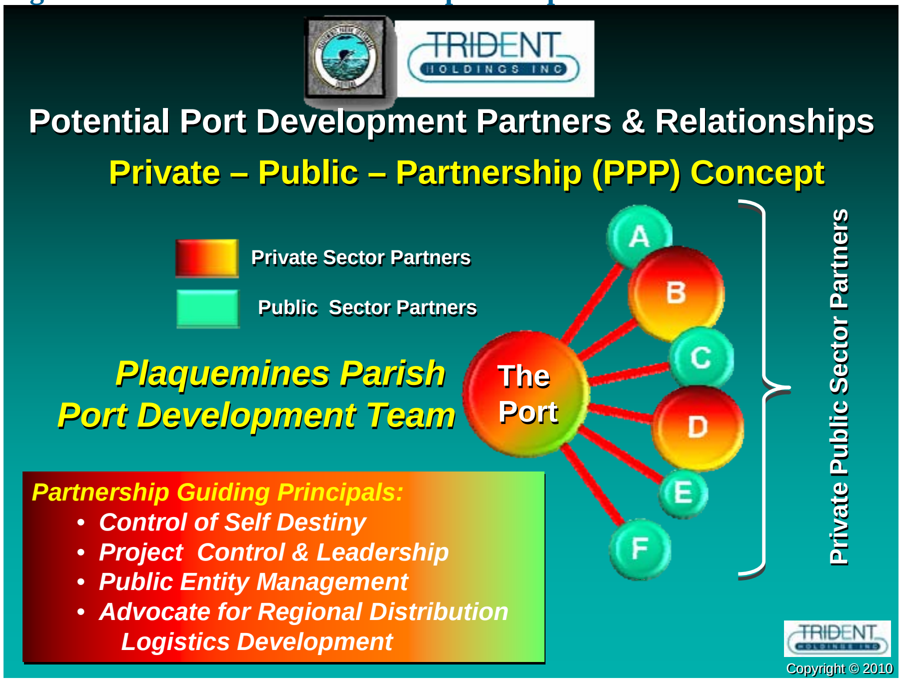
Overarching Port Development Authority Partnering Guiding Principles

The strategic overarching guiding principles for the Plaquemines Parish Port Development Authority are:

- Plaquemines Parish Council control of self destiny over Parish port development activities
- Plaquemines Parish Council overall control, management and leadership of the entire port development program
- Plaquemines Parish Council proactive management of all public entity involvement in the port development program
- Plaquemines Parish Council role and responsibility as the advocate, promoter and sponsor for Plaquemines Parish becoming the regional distribution and logistics center hub for the US Gulf coast and the logistics gateway to the US heartland consumption zones

These concepts are conceptually illustrated below and form the nucleus of efforts and activities whereby Plaquemines Parish could derive and earn a potential equity interest and position in each of the Port Master Plan development project elements and their associated Public Private Partnerships (Figure 5).

Figure 5: Private Public Partnership Concept



As illustrated below, obvious Public Sector Partners are the Federal Government and the State Government but they could also include adjacent Parishes, other Southeastern Louisiana Ports or complementary port development entities such as US heartland inland waterway ports and terminals as well as inland distribution centers and networks.

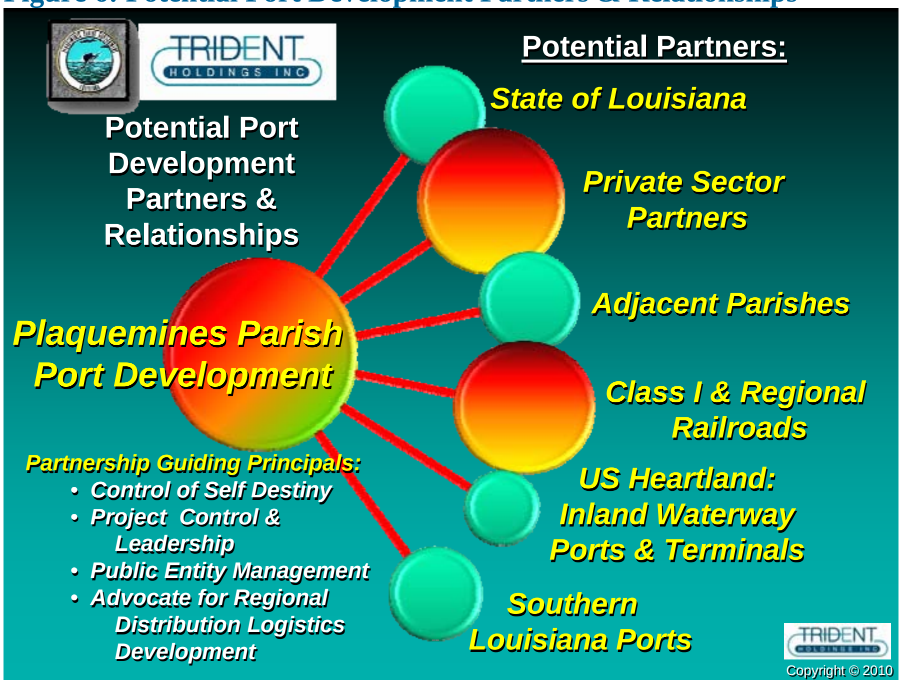
Partnerships with other added value entities would also bring worth to the development authority. These added value entities could include but are not limited to:

- Information Technology and trade facilitation groups similar to the Kansas City Smart Port consortium
- Transport security technologies and advanced cargo security screening and approval processes

- Freight Forwarding entities
- 3rd Party as well as 4th Party Logistics Provider Technology and capabilities

The illustration below in Figure 6 attempts to characterize the world of potential added value partnerships available to the Plaquemines Parish Port Development Authority.

Figure 6: Potential Port Development Partners & Relationships



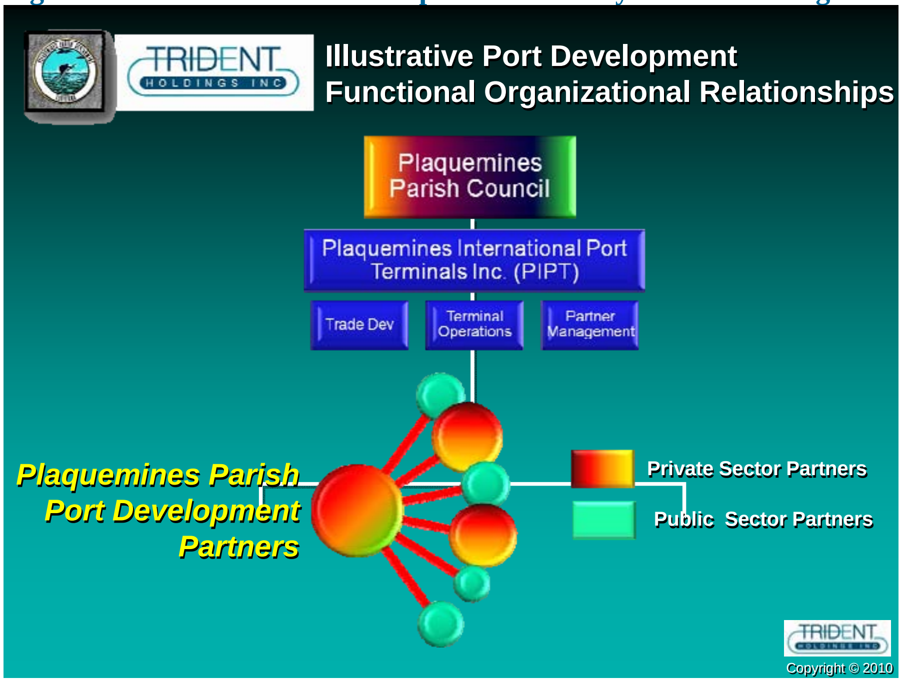
The following illustration in Figure 7 provides a conceptual framework for the potential functional organizational relationships within the Port Development Authority concept. The illustration proposes a potential name for the Port Development Authority as the *Plaquemines International Port Terminal Inc.* capitalizing on the recent world recognition of the name Plaquemines Parish post BP Horizon Platform disaster.

The illustration graphic below identifies three major roles and functions of the new organization:

- Trade Development and Marketing
- Marine and Intermodal Rail Terminal Operations and Terminal Technology
- Partner Management and Partnership Advocacy

Please note that the entire organization is under the control and management of the Plaquemines Parish Council.

Figure 7: Illustrative Port Development Authority Functional Organization Relationships

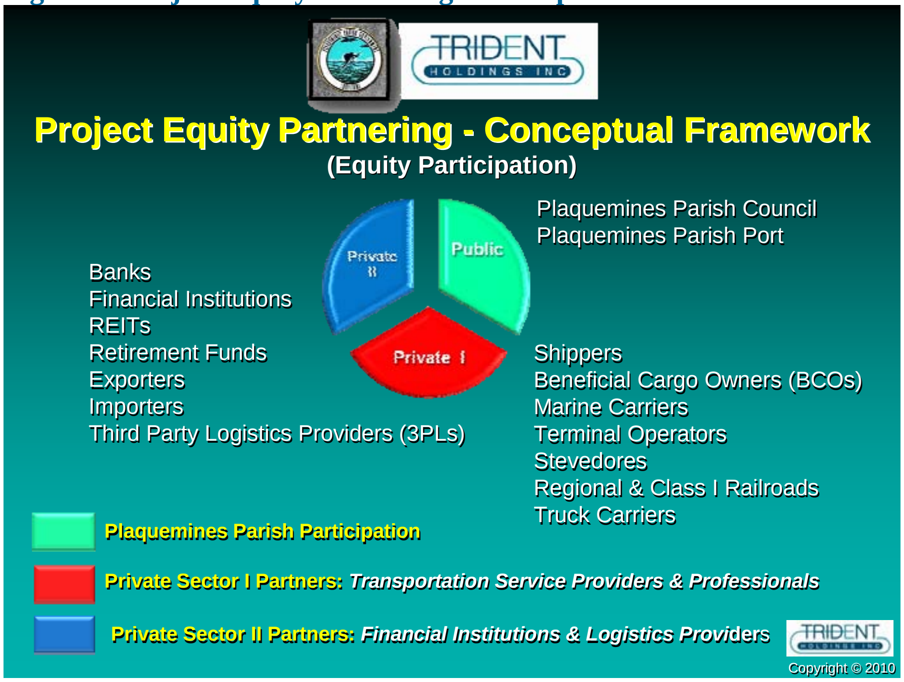


Individual Port Development Project Conceptual Equity Partnering Principles

The following illustration in Figure 8 provides additional insights into and framework and segmentation of a single port development project recommendation into the individual equity participation. The illustrated concept assumes an equal one third of partnership equity split between the following three elements.

- Public Partner - Plaquemines Parish Port Development Authority
- Private Partner - Operational and Transportation Service Provider Interests
- Private Partner - Financial Institutions and Logistics providers

Figure 8: Project Equity Partnering - Conceptual Framework



Why a Public-Private-Partnership Approach

There are numerous reasons why the Public/Private Partnership Model is recommended for consideration by the Plaquemines Parish Council. The following illustration depicts the primary reasons Trident is recommending a Public-Private-Partnership Approach they include as shown in Figure 9:

Figure 9: Why is a Public Private Partnership Approach Recommended?

Why is a "Port Development Authority" Approach Being Recommended?

Trident is also recommending a "Port Development Authority" to handle the day to day, in fact hour to hour demands of port governance, regulatory and development issues.

Illustrated in the following graphic (Figure 10) is the overarching answer to the question: Why is a "Port Development Authority" approach being recommended.

Figure 10: Why is a New Port Development Authority Recommended?

Trident recommends the establishment of an aggressive proactive Port Development Authority that acts as the catalyst for change, which challenges the status quo and promotes the potential of making Louisiana an import and export center for the US Heartland and transforms Louisiana into a "Distribution State" and assumes the role of "Champion" of the concept of the proposed port development plan.

Port Development Authority - Industry Best Practices

The Plaquemines Port Development Authority must utilize proven "best practice" economic development "seed" initiatives and creative financial and development methodologies including but not limited to the following:

- Seeking and securing Public and Private Sector funding for essential required transportation infrastructure.
- Identifying innovative economic development tools and methods available to the Public Sector or not for profit organizations that can be leveraged
- Identifying and securing Port Development Consortium participants and forming a Public Private development consortia for transportation and logistics development projects
- Acting as the liaison between the Port Development Consortium and regulators

While this type of Port Development Authority is unique in North America there is at least a "Best Practice" example: The Economic Development Corporation of Erie County (EDCEC) and their sister organization the Greater Erie Industrial Development Corporation (GEIDC) of Erie Pennsylvania. Although there are major differences and organizational distinctions between the Plaquemines Parish Port Development Authority recommendation and the EDCEC/GEIDC organization, the proactive and aggressive use of combining a variety of different development structures to accomplish the objective is something that can be accomplished regardless of the structure of the authority. The EDCEC/GEIDC model provides Plaquemines Parish with a wealth of information regarding creative solutions for economic development of multimodal transportation and logistics distribution center projects.

Formed as a 501(C)6 non-profit organization the Economic Development Corporation of Erie County sole mission is to facilitate the creation of jobs and wealth in Erie County (Figure 11).

Figure 11: CDCEC Mission Statement

The EDCEC has 7 affiliate organizations with one mission and one staff. EDCEC is the lead economic development agency for Erie County, Pennsylvania.

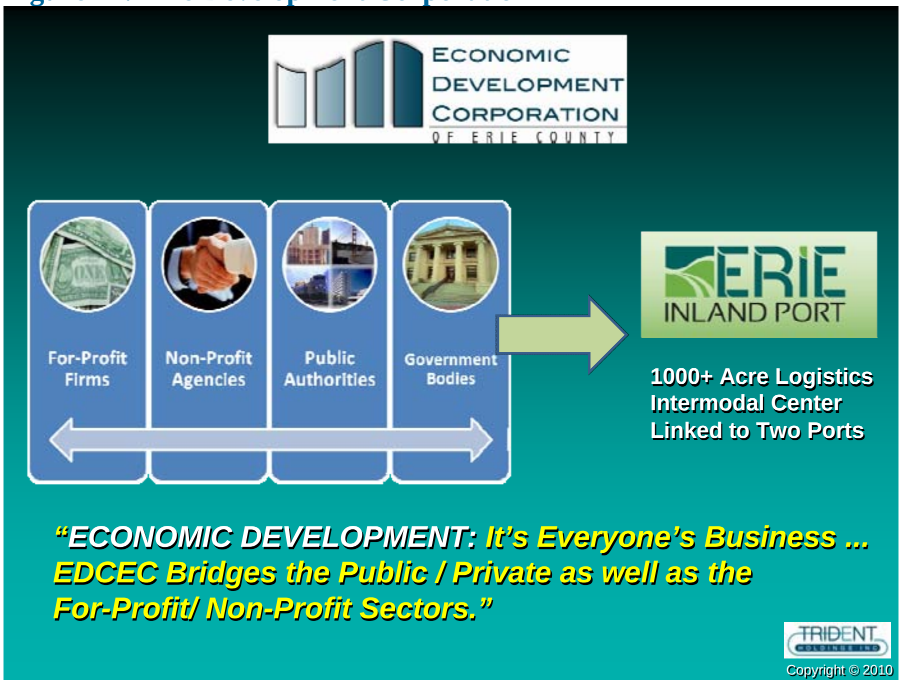
The EDCEC primary functions are:

- Real Estate Development
- Brownfield Recycling
- Bond and Grant Financing
- Technical Assistance

The EDCEC bridges the public / private and for-profit/ non-profit sectors under one economic development organization.

Trident has proposed, in the phase of port development, to assist Plaquemines Parish by facilitating strategic meetings with EDCEC/GEIDC and to foster a potential strategic alliance with the EDCEC/GEIDC (Figure 12).

Figure 12: Erie Development Corporation



The EDCEC is currently in the process of developing their tenth warehousing and logistics park. This new project dubbed the Erie Inland Port project will be the EDCEC's largest project today.

The Erie Inland Port project is a 1,000 acre +state-of-the-art intermodal rail and distribution center project involving multimodal capabilities with three Class I railroads, two industrial port terminals, and major truck and rail improvements whose sole purpose is to development the Multimodal Gateway to the Midwest through transformational economic development principles.

The principals driving the Erie Inland Port Concept are:

- Integrated Multi Modal Capabilities: Truck, Rail, Marine
- Low Cost, Reliable Operational & Logistics Advantages
- Deployment of a Full Suite of Green Technologies
- State of the Art Security Systems – 100% Inspection
- Substantial Regional Economic Transformation

Recommended Strategic Development Direction for Plaquemines Parish Council

The following illustration in Figure 13 summarizes the recommended strategic direction for the Plaquemines Parish Port Master Plan effort. The Parish has a strategic window of opportunity clearing described and articulated in the Plaquemines Parish Port Strategic Master Development Plan prepared by Trident.

Failure to focus on, properly lead, and capitalize on this emerging window of opportunity for port development in Plaquemines Parish with the ability to transform the port and intermodal economic environment of the Parish is surely an opportunity lost.

Figure 13: Strategic Port Development Plan for Plaquemines Parish

Plaquemines Parish Port Strategic Master Development Plan Implementation Recommendations

The following illustration (Figure 14) summarizes the strategic implementation recommended for the Plaquemines Parish Port Master Plan.

Figure 14: Port Development Master Plan Recommendations

Plaquemines Parish Port Strategic Master Development Plan Short Term (next twelve months) Implementation Recommendations

The following illustration in Figure 15 summarizes the strategic short term (next twelve months) implementation recommendations for the Plaquemines Parish Port Master Plan.

Figure 15: Short Term Action Plan & Implementation Next Steps

First Steps

As stated in the Assessment and Evaluation of Land Options section, the sites presented by Trident in the port master planning process to and accepted by the Plaquemines Parish Port Harbor & Terminal District for potential port development are currently owned and controlled by private property owners.

At the time of writing, the Plaquemines Parish Council is actively involved in detailed negotiations with the current land owner of the Amax Property. Trident has not been privy to nor has Trident been a part of any of those negotiations.

Trident understands that representations from Plaquemines Parish Council have been made to the Citrus II land owners for potential purchase and that consideration of expropriation has been contemplated at one time. Trident has not been privy to or been part of these representations or considerations.

Trident is of the opinion that it is essential that Plaquemines Parish Council must consider the following land options:

1. Purchase the Amax and Citrus II properties, or
2. Have some degree of control of these properties, or
3. Negotiate a go-forward arrangement with the respective property owners.

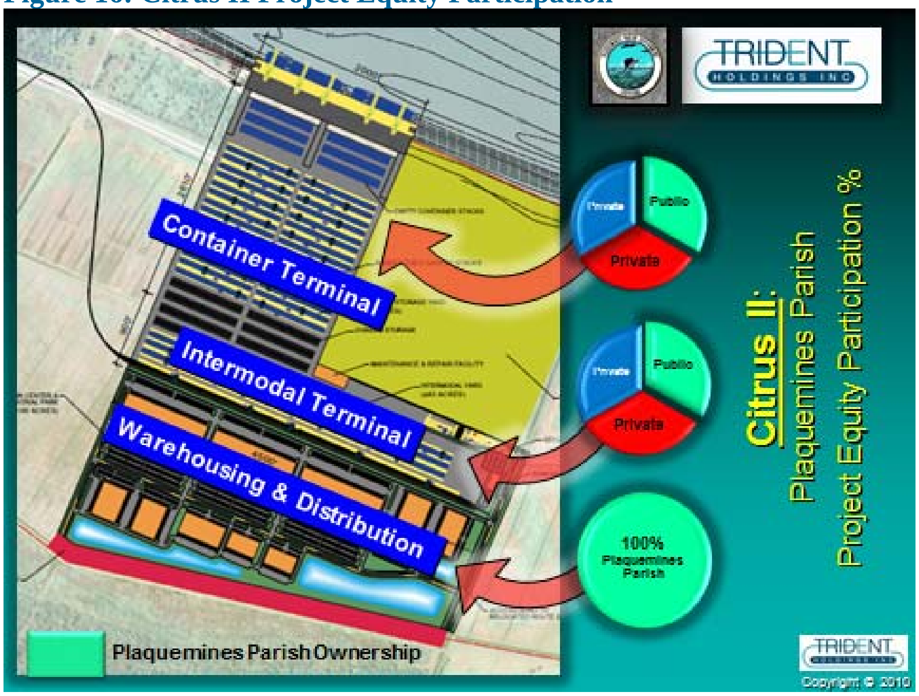
It is recommended that this go-forward arrangement be accomplished through a negotiated Expression of Interest process or through the development of a formal Public Private Partnership transaction.

Implementation through Partnership

Project Equity Partnering and Project equity partnerships could be formed for Amax development in a manner as illustrated in Figure 17 earlier in this Task. The percentages illustrated relating to various stakeholder project participants is conceptual in nature in that figure and as such does not represent exact equity participation percentages but demonstrates how the Parish could partner in advancing Amax development.

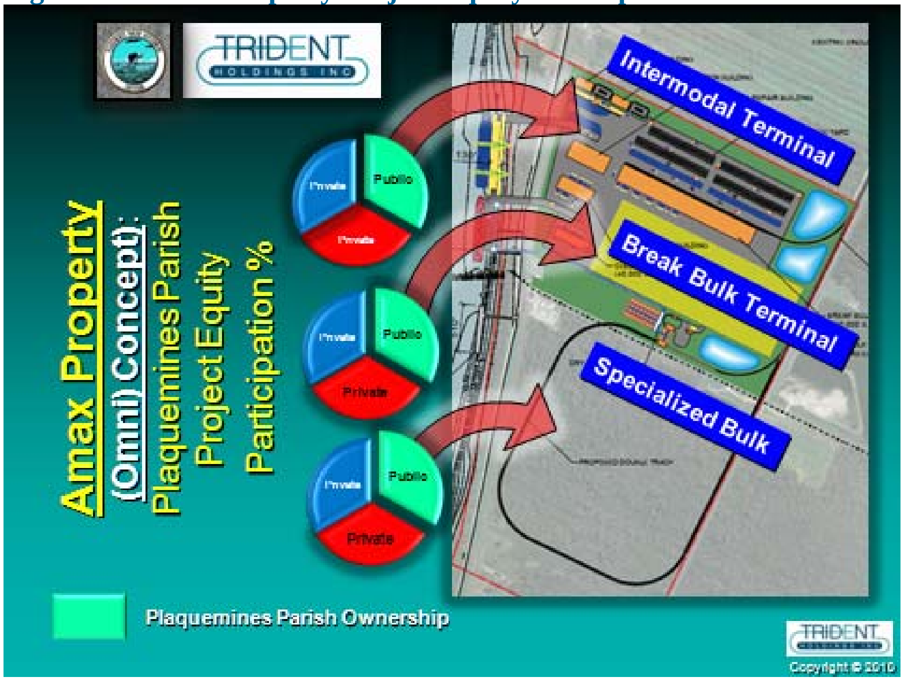
Specific application for the Citrus II port development site could be formed similar to the following illustrative in Figure 16 equity participations. Again, the percentages illustrated relating to various stakeholder project participants is conceptual in nature and as such does not represent exact equity participation percentages.

Figure 16: Citrus II Project Equity Participation



Specific application for the Amax port development site could be formed similar to the following illustrative equity participations. Again, the percentages illustrated relating to various stakeholder project participants is conceptual in nature and as such does not represent exact equity participation percentages.

Figure 17: Amax Property Project Equity Participation



The above described methodology and tactics have been employed successfully by other government entities, particularly economic development authorities, at no or little cost to the parent authority and at substantially reduced financial project risk. Given the complexity of the necessary key success factors for a viable P3 partnership that need to be developed to make the Amax and Citrus II projects work, Trident believes this approach makes considerable sense and should be adopted by the Plaquemines parish Council for planned port development in Plaquemines Parish.

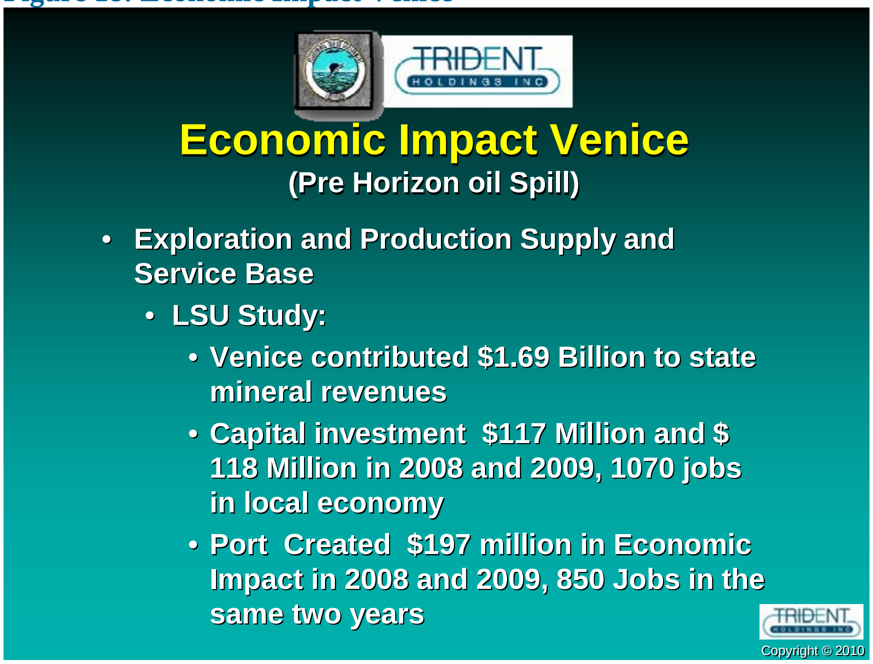
One of the primary partners in this equity partnership might be the land owners for both the Amax and Citrus II port development sites which Trident believes this possibility should be explored in greater detail as a potential model for port development in the Parish. According to the above two diagrams such a land owner would be a member of the private sector.

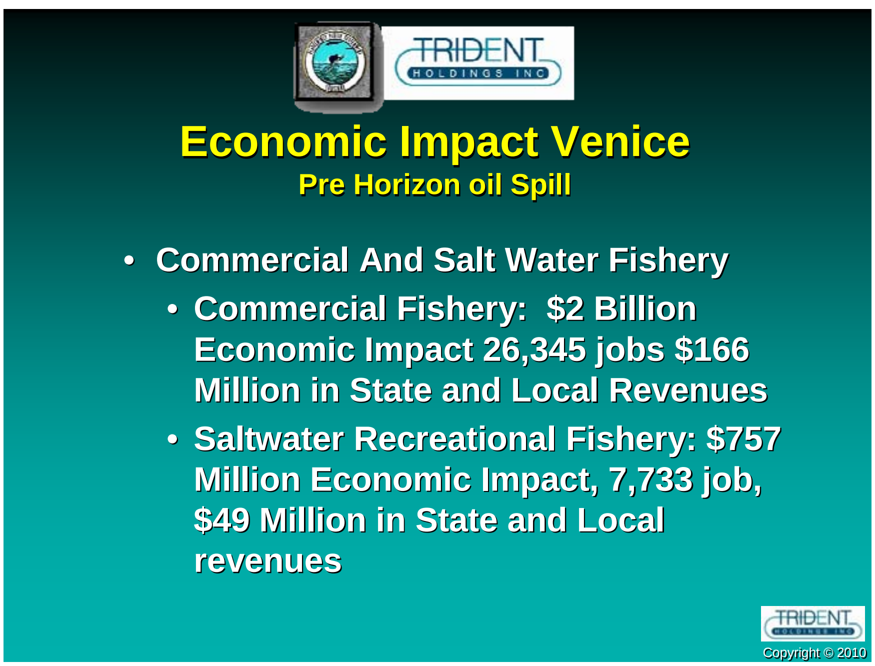
As in the Amax implementation process the decision to either pursue a traditional RFEOI/RFQ/RFP process for a designer and then solicit a bidder for construction or to pursue a Design Build designer and contractor is open for determination by the Partnership. There are advantages to both approaches given the realities of the timing in the development of Citrus II. The traditional RFQ/RFP process for design and construction usually allows time if all the money isn't present to fully commit the development of a project. Funding is therefore extended over time. The Design Build process can be beneficial if all funding is available at the time of commitment. This process allows for locking in costs and a build out timetable for delivery. This can be helpful in coordinating, schedules of payments, delivery of materials and supplies including necessary equipment. Citrus II will probably require an EIS or EA and that can take three (3) years in development including the receipt of a FONSI or ROD necessary to actually commit to construction. Given that time reality, the determination of which process to utilize should be held until such time that the EIS/EA process is better understood and its associated timeframe made more definitive.

Venice

Historically Venice has been a significant economic contributor to the economy of Plaquemines Parish and to the State of Louisiana as shown in previous tasks (see Figure 18).

Figure 18: Economic Impact Venice





Pre the Horizon Oil Spill there were initiatives to improve water access to Venice as well as expansion plans for infrastructure in Venice to increase market share potential in the Exploration and Production up stream oil and gas sector and provide greater opportunities in the Commercial Fishery and Tourism Sector including Sports Fishing and Eco Tourism.

Remediation action can not be fast enough to attempt to return the jobs (previous or replacement) and economic impact to pre spill levels.

Oil and Gas Sector

There are significant enhancements required to make and sustain Venice as one of the major support and supply bases for the Gulf Region.

As a result of the Horizon oil spill, the timing and need to accomplish these enhancements has intensified. As a result Trident recommends the following actions:

1. Identify long term service & infrastructure Requirements for the Sector including Remediation, Security, Enforcement, & Emergency Response.
2. Identify funding sources to plan, design, and build the required infrastructure.
3. Confirm, schedule, and fund the Dredging for the Baptiste Collette Channel (also Tiger Pass and Grand Pass).
4. State of Louisiana to support and promote Venice as one of the two major exploration and support bases in Southern Louisiana.

Commercial fishery and Tourism Sector

Trident believes that the Tourism sector including the sports fishery, bird hunting and eco-tourism and the commercial fishery, pending the impact of the Horizon oil spill, offers significant potential to Venice and that port and hospitality infrastructure is a key to the future development of this opportunity.

As a result Trident suggests the following:

1. Develop an <u>accelerated rehabilitation and remediation plan</u> in concert with State and Federal officials to return the current eco systems to per spill conditions.
2. Conduct a needs assessment study in concert with State and Federal officials to identify specific industry infrastructure required post the accelerated rehabilitation and remediation process.
3. Confirm funding sources to plan design and build the identified needs.
4. Include sectors in future port development planning
5. Develop a comprehensive marketing plan to support the sectors in concert with the State of Louisiana

In the short term there are specific infrastructure and service requirements that were identified as lacking or required by responses to the Horizon Oil Spill. Venice has been and will continue to be Ground Zero for the delivery and maintenance of these services for a number of years to come.

The location and development of the infrastructure and the training and staffing of these service jobs in Venice will provide some replacement for jobs and economic impact lost as a result of the spill.

To name a few potential Projects in Figure 19.

Figure 19: Venice Post Horizon Oil Spill Development

- Federal and State Headquarters for administration of all remediation and rehabilitation services
- Emergency Management and Control - Central Command Center to coordinate Federal/State/local response efforts
- Biological Testing Center for Fish and Shellfish supporting NOAA, Fish & Wildlife, the EPA, Dept of Interior, and appropriate state agencies.
- Warehousing for storage of quick response materials
- Expanded Emergency Medical Technician services and heliport capability.

Trident recommends that Plaquemines Parish Council in unity with Plaquemines Parish Administration and the Port Authority immediately develop a working group specific to re building Venice post spill and Katrina under the following objectives:

1. Coordinate Parish, State and Federal Focus for Venice Redevelopment
2. Promote the rehabilitation of Venice and Its Opportunities

Conclusion

Trident has identified and presented a very specific twelve step program for adoption of the Comprehensive Port Development Master Plan and methods on how to proceed over the next twelve critical months in the development of these sites and alternatives. Perception by the business community together with a progressive attitude will advance the Port alternatives and encourage better responsiveness by public and private sectors including potential investors/Partnerships. Trident's next steps identified the critical components of that process. As well as the formal adoption of the Master Plan recommendations, a public seminar for all interested parties should be held within the next few months. Economic conditions are constantly changing and to seize the momentum that is building, Plaquemines Parish needs to hold this seminar to demonstrate the strength the Parish possesses and what can be accomplished. This session should be followed by an outreach program to selected targets such as those identified in Task 6:

Trident also recommends that in December 2010, the newly elected officials to the Plaquemines Parish Council receive training on the Comprehensive Port Development Master Plan and receive sanctioned AAPA Port Training, usually reserved for Port Authority Officials and conducted annually by AAPA. This training could be available to new and returning members of the Council.

Near the completion of the Trident twelve-month Implementation Program recommendations the Parish should conduct a formal Expression of Interest inviting response from a variety of sources (operators, potential new port director, investors, beneficial cargo owners, carriers, etc.). A valuable tool which could be used in this process would be the Promotional 3-D Color Renderings of the alternatives and the sites along with an animation disk as described in Task 8. This promotional package would help identify what interested parties might need in order to consider involvement in the Plaquemines Parish initiative.

This process is critical to having a Comprehensive Port Development Master Plan and getting commitments to develop these Ports.

Trident has identified three critical go-forward techniques in implementing this Master Plan. Time is essential in this implementation and competitive interests whether represented by other Ports, State interests, and private sector development will potentially undermine the present opportunities in Plaquemines Parish. Those interests will not wait for the Parish to determine what to do. As stated in the beginning about skating to where the puck will be, well Plaquemines and Trident have done that however now that you have the puck you need to react otherwise you will lose it and once again the Parish will be playing catch-up. The call to act is now and the Port Development Master Plan is one of the primary vehicles for taking positive and meaningful steps forward. As stated in Trident's presentations' Plaquemines Parish is exactly in the right place and the right time to take advantage of new global trade routing, trade growth and positioning to be prime nodal distribution site in this new order but the window is competitive and fleeting and the opportunity will not remain open without decisive action for long.

The Council should adopt the recommendations of the Comprehensive Port Development Master Plan and then determine how it will proceed forward with the next steps. Recognizing that the Parish has limited time, staffing and the intensity that moving forward with the steps in the Master Plan that will be required, the Parish needs to consider how to implement with these constraints.

Task 9 Figures and Tables

Figures

Tables

Executive Summary

Table of Contents

Executive Summary Overview

Trident Holdings Inc.'s ("Trident") approach to The Comprehensive Port Development Master Plan for Plaquemines Parish was not a conventional study approach. In addition to the normal "rear view mirror" standard study approach of assessing **what has happened** and **what is happening**, Trident used the Wayne Gretzky approach, "A good hockey player goes where the puck is; a great hockey player goes where the puck is going to be", and attempts to assess what the future potential will be and what needs to be done to achieve that potential. Trident subscribed to that concept and then used private sector investment preparedness as validation to determine what the best opportunities are in order to meet demand.

To do that Trident broke the Master Plan development into nine tasks.

Task 1 Prior Port Studies, Concepts and Opportunities & Data Collection

Task 2 Market Assessment Study for the Comprehensive Port Development Master Plan for Plaquemines Parish

Task 3 Facility Assessment

Task 4 Master Plan Land and Water Use Requirements

Task 5 Intermodal Truck and Rail Access Analysis

Task 6 On-Site and Off-Site Opportunities and Constraints

Task 7 Alternative Development Plans – Recommended Port Development Master Plan

Task 8 Draft Master Plan Development

Task 9 Assessment and Evaluation of Land Options

Task 1 – Prior Port Studies, Concepts and Opportunities & Data Collection

The Plaquemines Parish Council and the Port District chose to direct that the market assessment and demand for the Plaquemines Parish Comprehensive Port Development Master Plan be based principally on publicly available port studies, industry data, and additional studies and reports in the Louisiana trade region. This task focused on local, regional and international trade, and on publicly available competitive port cargo considerations. Major task items included:

- A review of publicly available trade data currently held by the Plaquemines Parish and the State of Louisiana.
- A review of publicly available previous trade and transport studies of particular relevance to Plaquemines Parish and the US Gulf Coast.
- A review of publicly available specific marketing studies previously undertaken by Plaquemines Parish and the State of Louisiana and involving the US Gulf Coast.

- A survey of publicly available area statistics and other sources that provide insights into the potential future trade through the US Gulf Coast region.
- Conduct a review of publicly available competitive port information on US Gulf Coast ports and intermodal facilities. The emphasis is to review current trades and service programs and planned services which may offer opportunities and / or create issues for Plaquemines Parish.

Trident developed a document review form and Trident personnel were assigned to review and analyze the documents. Over **fifty** documents have been assembled by Trident, each were reviewed and analyzed for potential use in the study:

The most recent studies, whether influenced by recent recessionary downturns in Global Markets and investments, National and State economic loses, or for other reasons reported a bleak trade forecast for Southern Louisiana and any additional Port development. These reports countered older documents that reported a more robust view of the State's ability to capture market share and distribute to and from major portions of the United States. These reports dampened investment and economic development interests in the State of Louisiana and put on hold interests in new Port development on the lower Mississippi River. The reports found:

- Louisiana would have little growth due to the expansion of the Panama Canal and there would be low impact on Louisiana's economy
- Louisiana has poor market distribution capabilities and substandard ability to capture more market share
- Trade growth would only be applicable to south and central Louisiana which is too small a market to command new trade growth opportunities
- Forecasted trade growth to 2028 would only maintain 660,000 TEUs which would constitute a small albeit stable market
- Louisiana's population, spending habits and income are too small and below national average to attract growth strategies
- The State, region and Parish have no unified vision, strategy or infrastructure investment to change the economic positioning to obtain a more robust economy
- The Port of New Orleans only projects a 1% growth in trade for the foreseeable future.

Evaluation Methodology and the Master Plan Evaluation Criteria Recommendations

The Comprehensive Port Development Master Plan evaluation methodology and specific evaluation criteria are derived from the overall project goals, objectives and principles. The specific recommendations will be used to evaluate and identify the most favorable alternative port development plans. The purpose of developing these criteria is to ensure an unbiased process and documentation to support the evaluation of the Comprehensive Port Development Master Plan alternatives.

The following evaluation criteria were recommended by Trident for review, discussion and acceptance by the Plaquemines Parish Port District Council. Trident then adopted a Matrix, criteria and associated weights that were reflective of the needs of the Parish in reviewing potential Port sites.

Site Comparison Evaluation Matrix Example

No.	Hypothectical Evaluation Criteria	Weight	SITE 1	SITE 2	SITE 3	SITE 4	SITE 5
1	Flexibility	8.00	0.00	0.00	0.00	0.00	0.00
2	Expandability	8.00	0.00	0.00	0.00	0.00	0.00
3	Environmentally Responsive	9.00	0.00	0.00	0.00	0.00	0.00
4	Berth & Water/Navigational Access	10.00	0.00	0.00	0.00	0.00	0.00
5	Rail Efficiency Access (Potential)	10.00	0.00	0.00	0.00	0.00	0.00
6	Truck Efficiency Access	8.00	0.00	0.00	0.00	0.00	0.00
7	Terminal Functional Adjacency	5.00	0.00	0.00	0.00	0.00	0.00
8	Marketability	5.00	0.00	0.00	0.00	0.00	0.00
9	Conducive to Security	5.00	0.00	0.00	0.00	0.00	0.00
10	Cost Effective Construction	7.00	0.00	0.00	0.00	0.00	0.00
11	Market Driven	10.00	0.00	0.00	0.00	0.00	0.00
12	On Terminal Traffic Flow	6.00	0.00	0.00	0.00	0.00	0.00
13	Responsive to Technology	6.00	0.00	0.00	0.00	0.00	0.00
	Maximum Possible Score	970.00					
	Alternative Raw Performance Score (Sum of All Raw Scores)		0.00	0.00	0.00	0.00	0.00
	Weighted Score (Individual Criteria Weight x Raw Score)		0.00	0.00	0.00	0.00	0.00
	Percent of Max Possible Score		0.00	0.00	0.00	0.00	0.00

Conclusion:

Trident finalized the evaluation criteria and matrix and reviewed the input received from the participants of SITE Week. Utilizing all this information Trident then initiated Task 2 and 3 - Market Assessment and Competitive Port Analysis and the initial review of Facilities and Sites for Potential Port Development.

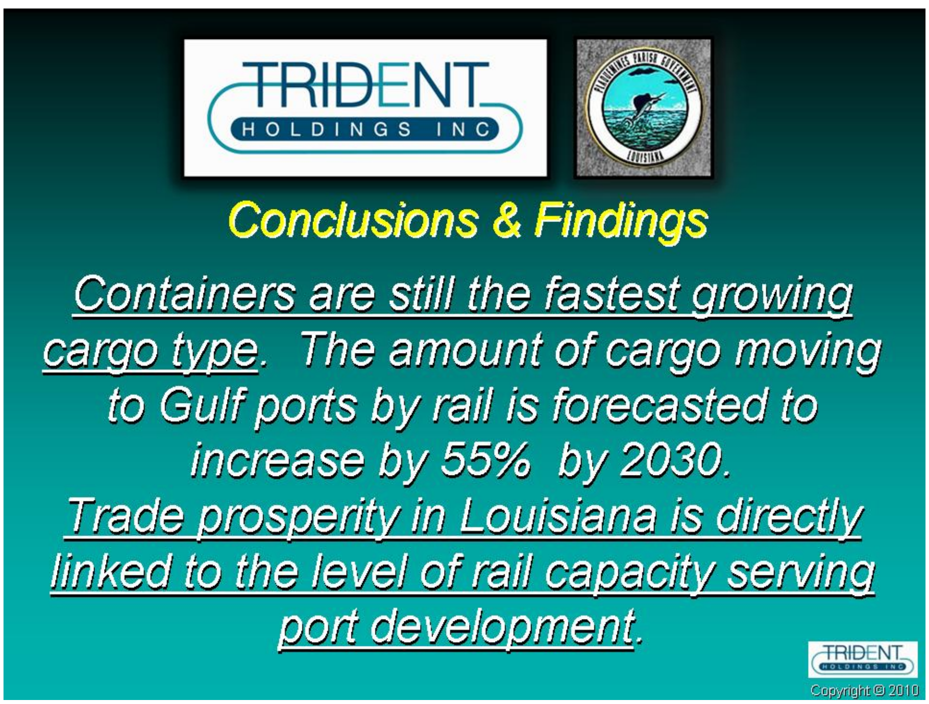
Task 2 – Market Assessment Study for the Comprehensive Port Development Master Plan for Plaquemines Parish

The Comprehensive Port Development Master Plan for Plaquemines Parish Market Assessment has been organized into the following major deliverable elements:

- Economic Outlook
- The Importance of Emerging Markets

- US Foreign Trade
- America's Ports
- Capital Expenditures at Public Ports
- Origins and Destinations Trade Trends
- Modal Transportation Preference Trends in Louisiana
- Competitive Port Dynamics
- Competition
- The Panama Canal
- East Coast Ports
- Other Competitive Data
- Modal Preference Intermodal
- Container and Intermodal Growth Forecasts
- Container Growth Forecasts for the Port of New Orleans
- Plaquemines Parish Port Potential Market Share Capture

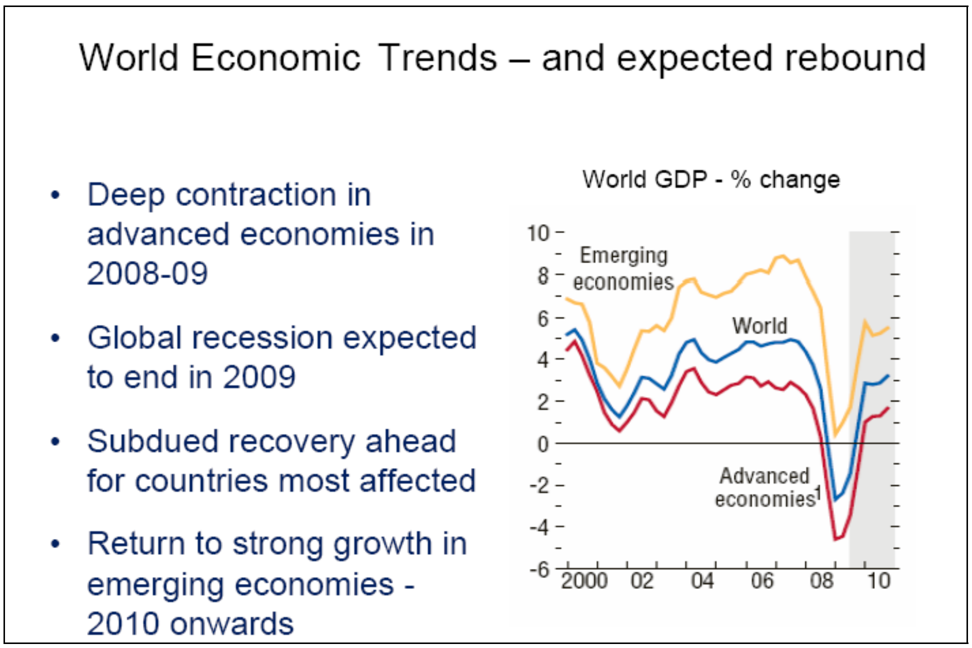
The Economic Outlook

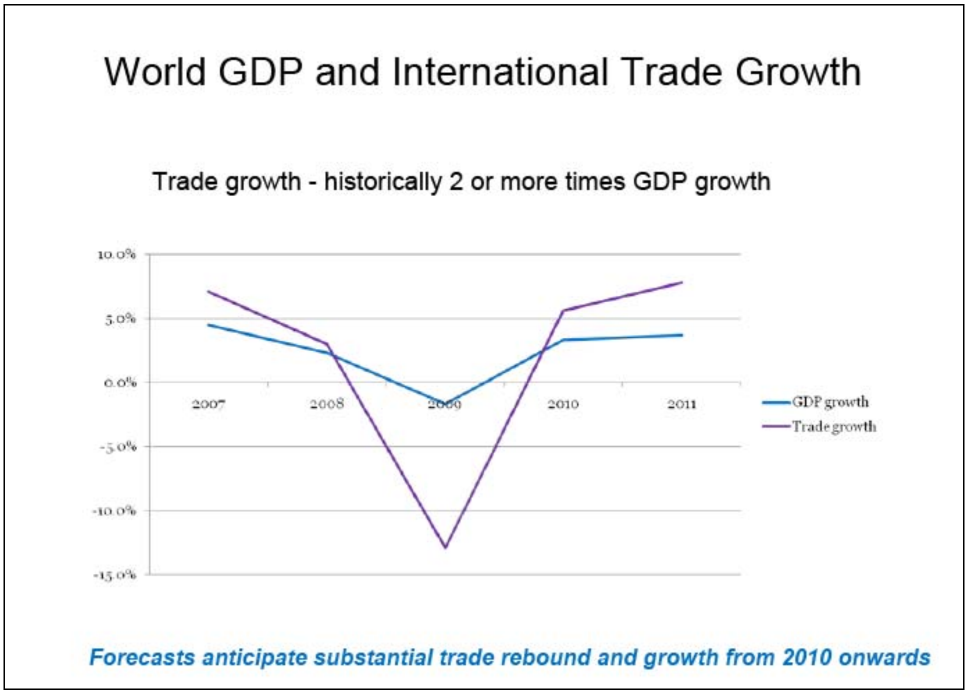


World Economy

GDP drives world trade and U.S. Trade. The 2009 downturn in world GDP is unprecedented. World GDP declined by 1.0% in 2009 and is forecasted to expand at a rate of 3.8% in 2010. This GDP growth will again expand world trade.

The “Great Recession” appears to have ended in second half of 2009, and the world economy is expected to expand by 3.8% in 2010. “But the recovery remains fraught with risks and the global recession served to exacerbate a number of imbalances. This leaves the world economy a dangerous place full of uncertainties. It also warrants close monitoring of economic developments to access the true path of the recovery”. Reports of a rebounding world economy are substantiated by multiple sources as indicated below.





Conclusion:

There appears to be substantial recovery to justify the investment in a new Plaquemines Parish port however the targeting and positioning of that port is a crucial element in its success.

The Importance of Emerging Markets

The world is evolving and it appears that the world economy is at the pivot point of a new economic era. For the advanced economies the early stage of output expansion is not going to have the typical strength of past recoveries. But emerging markets and the developing world will see the faster pace of growth, accelerating from a 1.8% in 2009 to 5.6% in 2010. Advanced economies are expected to post a 2.5% growth rate in 2010, after a 3.3% contraction in 2009.

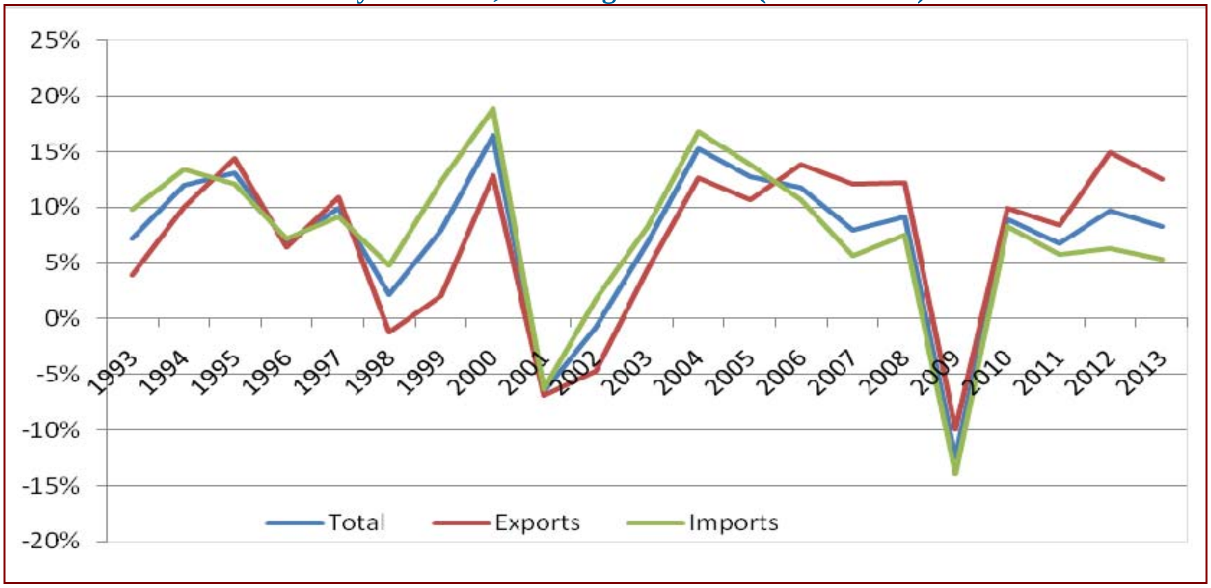
Conclusion:

Developing countries (Brazil, Russia, India, and China, "BRIC"), representing more than 40% of the world population will become the future of all freight origins and destinations.

U.S. Foreign Trade

In the U.S., recovery in 2010 and beyond is expected to be shallow relative to historic experiences due to the lingering economic costs.

U.S. Trade in Goods - history / forecast, annual growth rate (U.S. Dollars)



Going forward, due to the rapid rate of economic growth of emerging markets, it is expected that the global economy will grow for the next 20 years and therefore help drive U.S. trade and the U.S. GDP.

Conclusion:

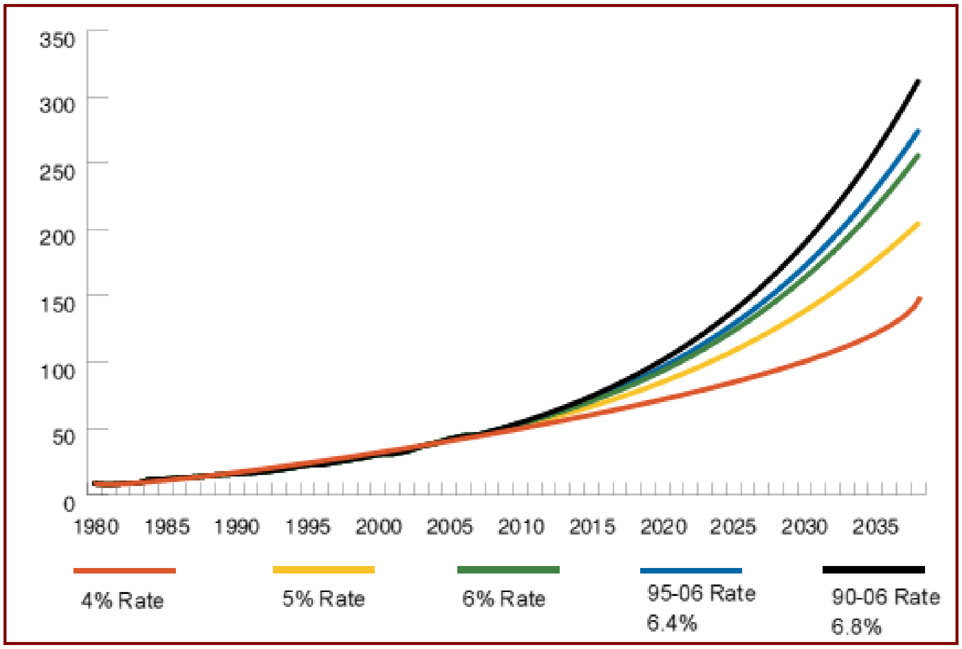
U.S. Trade and GDP are closely dependent and the value of trade is becoming a larger component of real GDP. For the U.S., the recession ended in 2009 and the recovery has commenced in 2010. Plaquemines Parish has an opportunity to participate in the growing recovery.

America's Ports

Containerization

From 1995 to 2008, the volume of containerized cargo moving through U.S. ports grew at a faster rate, 6%, than the U.S. real GDP at 3%

In March 2010 the Journal of Commerce (JOC) projected total U.S. containerized ocean imports will grow at 9.1% in 2010 after the steep decline in 2009. The JOC forecast projects containerized imports on the Trans-Pacific trade lanes will grow 12.1% in 2010.



Conclusion:

Global and U.S. containerized trade growth will continue. Based on current market projections and trade flows, there is a trend toward the return to previous pre-recession growth levels. Projected growth in the U.S. economy and historical trends at U.S. ports suggest even at lower growth levels of 4 or 5%, port container traffic could double by 2020 and triple by 2030. Recent Port of New Orleans conservative studies projects average annual growth of container volumes of 3.5-4% in the Gulf region over the 20 year forecast period ending in 2028.

Capital Expenditures at Public Ports

In all regions of the U.S., the data from 35 ports showed they spent over 40% of their capital expenditures on container facilities, and 20% on general cargo facilities. In addition the Gulf Ports spent more dollars on dry bulk facilities than any other region.

Conclusion:

To maintain or to increase market share it is essential that capital expenditures are made to meet the current market demands.

Origin –Destination Trade Trends - Virginia to Texas excluding Category 27

The Gulf Port Districts have experience a higher trade growth rate than the South Atlantic Ports The Port District of New Orleans has not experienced as much growth as the other Gulf Districts, but compared to the South Atlantic Port Districts' its growth rate is stronger.

Conclusion:

For the Gulf Port Districts there is no one commodity that accounts for more than 30% of the total trade in 2009 and there is no one dominant trading country.

Origin-Destination Trends - The State of Louisiana

Export-supported jobs linked to manufacturing account for an estimated 5.7% of Louisiana's total private-sector employment (direct). Nearly one-seventh (13.1%) of all manufacturing workers in Louisiana depend on exports for their jobs (indirect). (2006 data)

A total of 2,555 companies exported goods from Louisiana locations in 2007. Of those, 2,166 (85%) were small and medium-sized enterprises (SMEs), with fewer than 500 employees. SMEs generated almost one-third (30%) of Louisiana's total exports of merchandise in 2007.

Louisiana accounted for 6% of all U.S. vessel dollar imports in 2009 (November YTD) and only 1% of container imports. In 2003 the State accounted for 5% of the imports, and also 1% of all container imports.

Conclusion:

The State of Louisiana has become a leader in the export and import of bulk and break bulk cargoes. If Louisiana could match these strategies for containerized imports and exports, Louisiana could substantially increase its containerized cargo market share.

Rail

The State is served by 16 railroads, while Texas is served by 45 railroads, and Alabama is served by 25. The state has 2,855 miles of rail, which is about equal to the number of miles in Florida. Texas has 10,800 miles and Alabama has 3,300 miles of rail.

Based on a study by the U.S. Transportation Research Board, rail cargo volumes will exceed capacity in much of the Nation by 2035. Two exceptions are the State of Louisiana and the State of Florida, where they are forecasted to be below capacity.

Conclusion:

Louisiana is one of only two prime locations in the U.S. where six Class-I railroads are co-located. New Orleans is the only U.S. Public Port Authority with that number of Class-I Railroads available for its distribution. For Plaquemines Parish this affords a unique opportunity to capitalize on existing transportation assets for the improvement and enhancements of inland distribution networks.

The Ports of Louisiana – Competitive Port Dynamics

For the Port of New Orleans the number of loaded TEUs has not kept pace with two U.S. Gulf competitive ports, based on AAPA data.

For New Orleans the number of total loaded TEUs is down 16% from 2000 to 2008. For Houston, the total loaded TEUs are up 66%, For Gulfport, the total loaded TEUs are up 52% since 2000

Conclusion:

The Ports of Louisiana continue to exhibit strong trade growth in bulk and break bulk products but a weakness in developing and sustaining container traffic. This suggests that there is an opportunity in Plaquemines Parish to continue to develop bulk and break bulk capabilities and to seize an opportunity to develop a systemic approach to containerized cargoes.

The research indicates that there may be an opportunity in developing Roll-On/Roll-Off (Ro-Ro) capabilities to compete for the market dominance of two Gulf Coast Ports (Tampa and Houston).

Competition

There is a substantial Port activity and expansion planned or currently under way with Competitive US Gulf Ports.

Conclusion:

Neighboring ports continue to substantially invest in port infrastructure which will continue to erode market share for Louisiana Ports unless a viable strategy can be developed.

These ports have historically funded these improvements through a combination of federal, state and local funding. Emerging new public private partnership strategies afford Plaquemines Parish the opportunity to lever limited financial resources to meet this competition and dramatically change market share in the U.S. Gulf Coast.

The Panama Canal

The "new" Panama Canal will change the competitive environment at both East and Gulf Coast Ports. Between 2009 and 2012 the Canal will reach maximum sustainable capacity. Therefore, the Panama Canal Authority in March 2009 took steps to begin a $5.25 billion construction plan. In announcing bids to build locks on Panama's Atlantic and Pacific coasts, the authority set in motion an effort to assure available capacity. The project will add a third set of locks by 2014, and will allow the canal to handle ships with nominal capacities of up to 12,600 TEUs; this is more than double the approximate 4,800 TEUs which is now considered Panamax. The "new" Canal will double capacity and allow more traffic enabling the canal to meet the changing economics of ocean shipping. In recent years container shipping has become the Canal's primary income generator and main driving force of traffic growth. Between 1999 and 2004, the Canal's share of the Northeast Asia / U.S. East Coast container trade grew from 11%

to 38%. The change will shift supply chains that have built Southern California's ports into behemoths of trade.

Conclusion:

The new increase in Panama Canal capacity (vessel size and container slots) along with the proven advantages in all-water Asia to U.S. East Coast and Gulf Coast port traffic destinations offers Louisiana and Plaquemines Parish a unique window of opportunity to capture incremental discretionary cargoes in the 2014 time frame.

East Coast Ports

The canal expansion could shift the bottleneck to East and Gulf Coast ports. To handle 10,000-TEU or larger ships, the ports will need water depths up to 55 feet, cranes that can reach across 22 or 26 rows aboard ship (compared with 13 for an existing Panamax vessel), and terminals that can efficiently process surges in cargo. "East and Gulf Coast ports face a 2014 deadline to prepare to handle the post Panama ships of 8,000-10,000 TEUs. Only a few ports will be ready by then, so expect to see a proliferation of feeder services that will shuttle cargo from big ports to smaller, shallower East Coast ports".

Conclusion:

To compete with these aggressive East Coast container port proposals, Louisiana and particularly a new terminal in Plaquemines Parish will need to develop competitive infrastructure and marketing strategies to capture Louisiana's unique access to the U.S. hinterland.

Other Competitive Information and Data

Conclusion:

There is opportunity to divert West Coast cargo to the U.S. Gulf Coast Ports. This is contrary to a recent Louisiana report. Our conclusions are supported by the following facts:

1. ***With improved distribution infrastructure and supply chain networks, Louisiana is capable of competitively serving Midwest markets - the 10 hinterland States of the Mississippi River system.***

2. ***A major developing Transportation Research Board report indicates a noteworthy preference by Beneficial Cargo Owners for Gulf Coast distribution and value added service locations.***

3. ***Specific origin and destination commodity traffic originating from or destined to the Louisiana hinterland markets.***

4. ***A reported 30% savings by shippers using all-water services via the Panama Canal.***

5. ***Avoidance of the continuing high cost West Coast Gateway Ports.***

6. ***Avoidance of further west coast intermodal rate increases.***

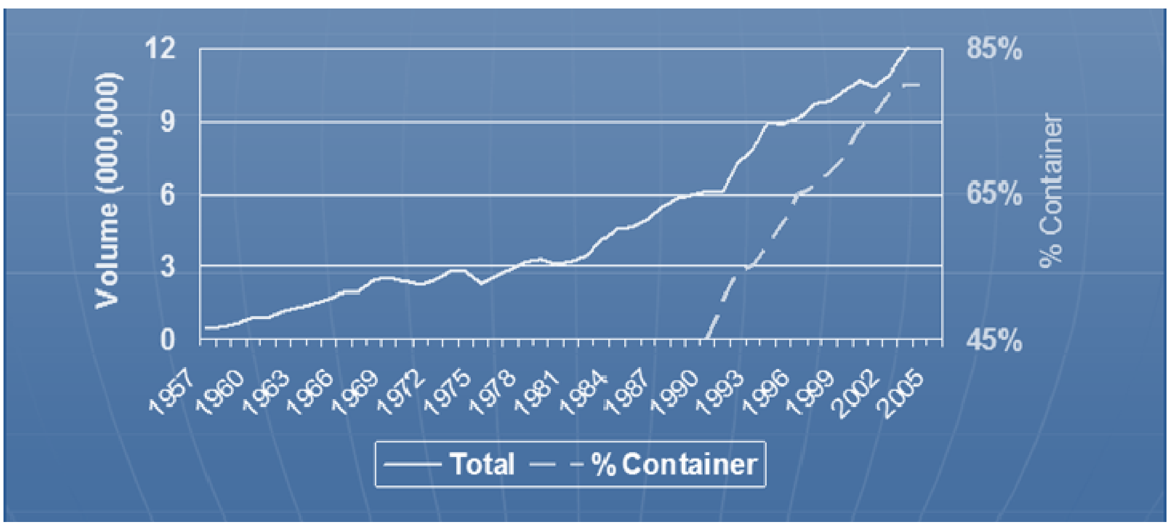
7. ***Avoidance of west coast labor instability (2002 ILWU slowdown).***

8. ***A recent Port of New Orleans report suggests a potential for growth in U.S. Gulf Coast Ports as a result of Asian traffic.***

Modal Preference - Railroads / Intermodal

Norbridge consultant Dean Wise made an important observation about the future of freight transportation in a conference call with investors in January 2009. His basic point, one with long-term implications for U.S. freight movement, is that the cost of moving goods will become increasingly cheaper for railroads while, for truckers, it will only become more expensive. "The basic gap between rail and truck in cost per ton-mile is going to continue to widen over the next 20 years," Wise said. The reason is a fundamental reality in freight transport today. “The list of productivity improvements available to railroads is "a mile long," he said, while the options available to truckers are highly limited, not only making long-term gains for their industry difficult to envision, but preventing them from beating back several forces currently conspiring to worsen their cost-competitiveness.

Remote (Port) areas trying to promote growth will have a difficult time growing without an intermodal hub, interstate access, cheap land and abundant labor.



Conclusion:

Competitive intermodal rail services are essential to the future of a Plaquemines Parish Container Port. To be competitive, the terminal will require efficient marine rail transfer and the ability to interface effectively with Class I railroads, including beltline and regional rail systems while leveraging the north-south Class I rail network.

Container and Intermodal Future Growth Forecast

As forecasted by the Maritime Administration National Advisory Council:

> *"Container volume is expected to more than double in the next 20 years, and nearly all non bulk cargo will be containerized. Ports must plan now to ensure that they have the people, training, technology, transportation, assets, and the infrastructure to provide efficient and reliable transportation services. Solutions must be flexible to accommodate changes that will inevitable occurred."*

A Seaport bulletin in 2009 stated:

> *"For the longer term, this is the 80% scenario:"*
>
> *"The governments and financial institutions of the world resolve the outstanding financial issues in 2009 and 2010 and the real economy of the world responds to fiscal stimulus. In this case we expect the world container trade to grow somewhat in 2010 (perhaps 5%) and to continue to grow in subsequent years similar to the past but a lower rates, perhaps 7% to 9% a year."*

A U.S. Maritime Report states:

> *"Projected growth in the U.S. economy and historic trends at U.S. ports suggests that port container traffic will double by 2020 and triple by 2030. This may occur even if the average annual rate of growth in container traffic falls from the 195-2006 average of 6.4% ... to 5%. Even if the growth rate falls to 4%, container traffic could still more than double by 2030."*

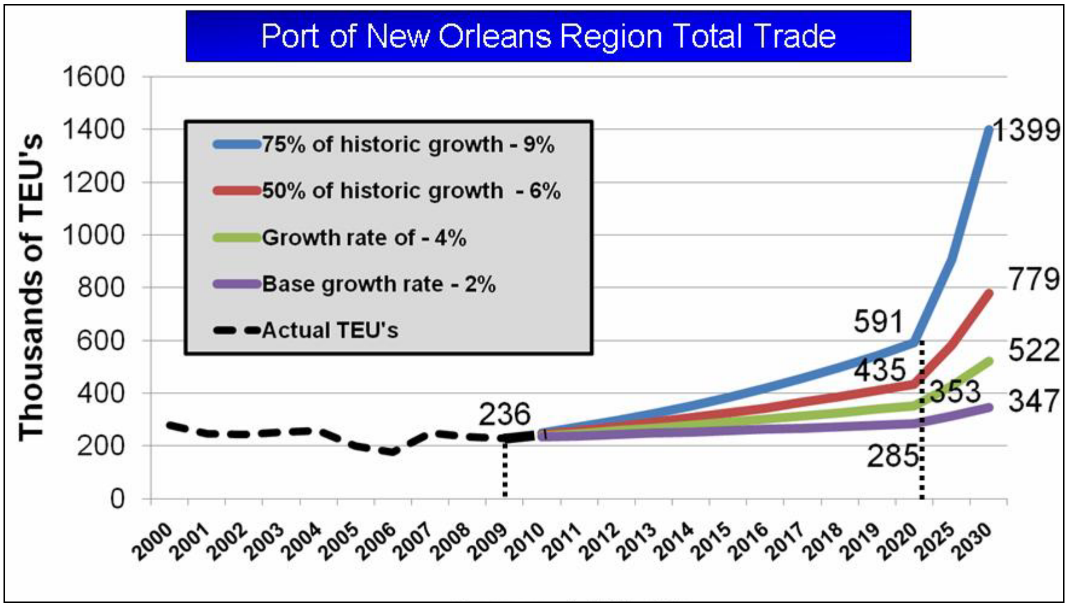
Conclusion:

There are major concerns for the capability of the Marine Transportation System to meet future cargo demands for inland transport. Major port gateways in congested urban corridors create an opportunity for Louisiana to provide unimpeded alternatives for niche cargoes destined for the Midwest.

Using the Mississippi River as a strategic highway and changing U.S. Midwest supply chain distribution networks will achieve better logistics reliability, lower transportation costs and greater market share for the potential Plaquemines Parish Port.

Plaquemines Parish Port Potential Market Share Capture

Based on current container cargo growth rates in excess of 8% for the US Gulf Coast and the apparent opportunity for the Southeast Louisiana Port Region in concert with the emerging growth of the Midwest US Heartland consumption zone and competitive port market region, Plaquemines Parish has the potential to capture a significant portion of the total excess trade beyond the forecast growth for the Port of New Orleans at long-term growth rate of one percent.



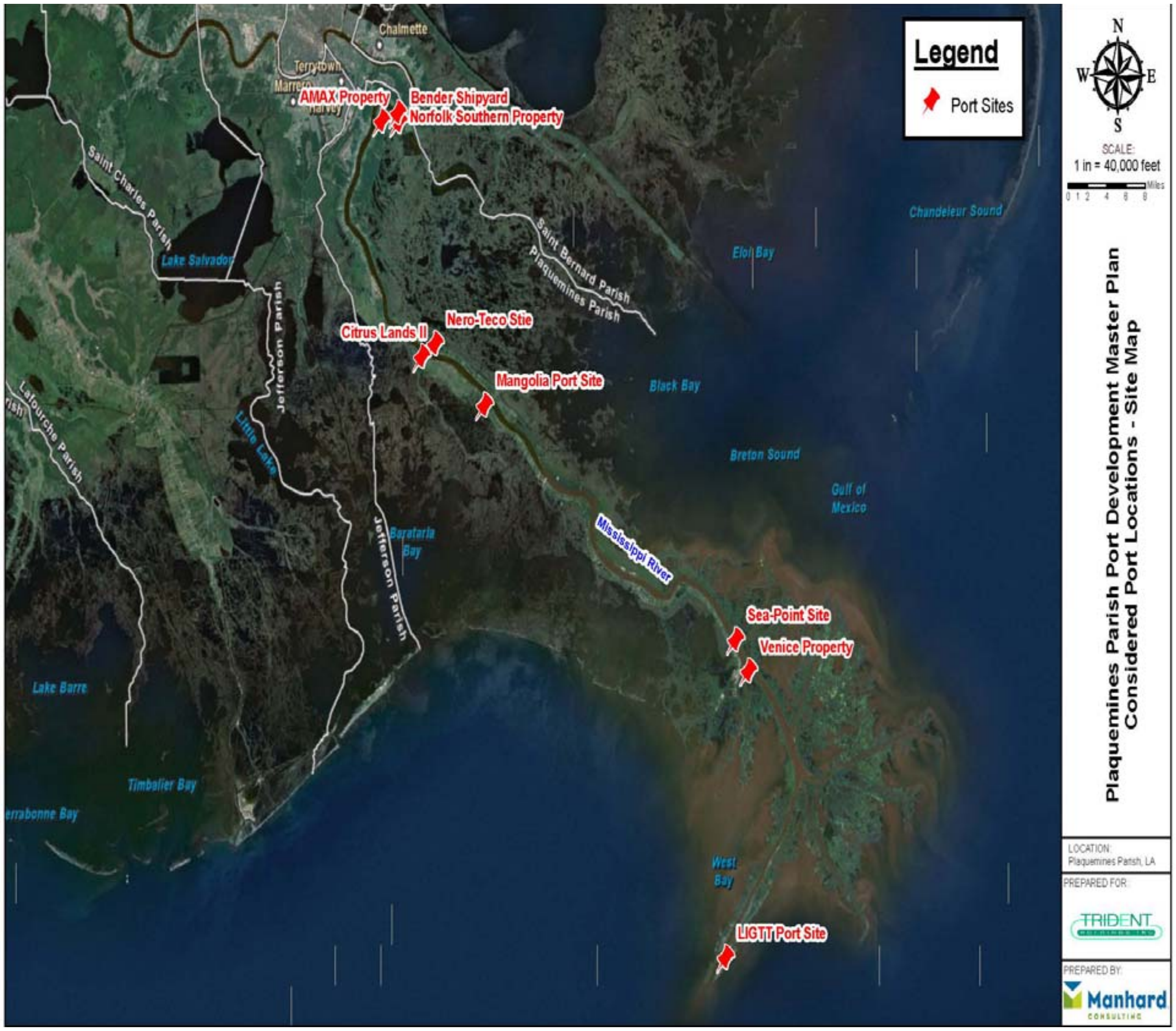
By looking at the Port of New Orleans' published Port future capacity estimates. Looking at the 50% and 75% estimates of annual growth in TEUs (Figure 33) it is clear that Port Trade within 2-3 years will exceed the ability of the Port of New Orleans to facilitate that trade even at their planned expansion rates. Therefore there will be a need for additional infrastructure.

Conclusion:

The Market Assessment suggests the recession is over, at least as it applies to world trade and shipping. The assessment also projects strong growth for Louisiana, Southern Louisiana and the Port of New Orleans. This bodes well for the attraction and growth of containerized shipping. Louisiana, Southern Louisiana and Plaquemines Parish are well situated to attract and distribute cargo to one of the fastest growing regions of the country - the Midwest and Southern states. The Southern Louisiana and Plaquemines Parish's locations, with targeted expansions and improved infrastructure, could service this growth. Building new facilities will enhance the competitive position of the entire region and excess capacity for additional Port development will remain.

Task 3 Facility Assessment

The intent of this Task is to assess all identified potential Port site locations and any accompanying facilities on those sites. These Port locations were determined through a review of past Port Studies, Parish documents and studies, and relevant State Studies. The primary list of sites included Citrus I, Citrus II, TECO, Magnolia, Amax, Sea Point, Louisiana International Gulf Transfer Terminal (LIGTT), Millennium Sites, Venice, Bender Shipyard, and the Norfolk Southern Property



One of the first steps was to eliminate certain Port site locations due to on-going activities to develop those locations. These sites have characteristics that limit their consideration as potential sites for a new port. Among these situations are locations with; development teams in place, Boards charged with their development and/or the lack of availability of the property. Magnolia, Sea Point, and the Louisiana International Gulf Transfer Terminal (LIGTT) meet those criteria and were thus removed from further consideration in this Master Plan

The sites carried forward for the review were: Citrus II, Amax, Venice, Bender Shipyard, and the Norfolk Southern Property. For our purposes, Trident labeled Citrus II as a West Shore location; Amax, Bender Shipyard, and the Norfolk Southern property as East Shore locations; and Venice as a Southern location. The assessments conducted in this Task 3 are specifically for the five aforementioned properties. The assessment included:

3.3 Geotechnical Conditions
3.4 Topographic Review
3.5 Hydrographic

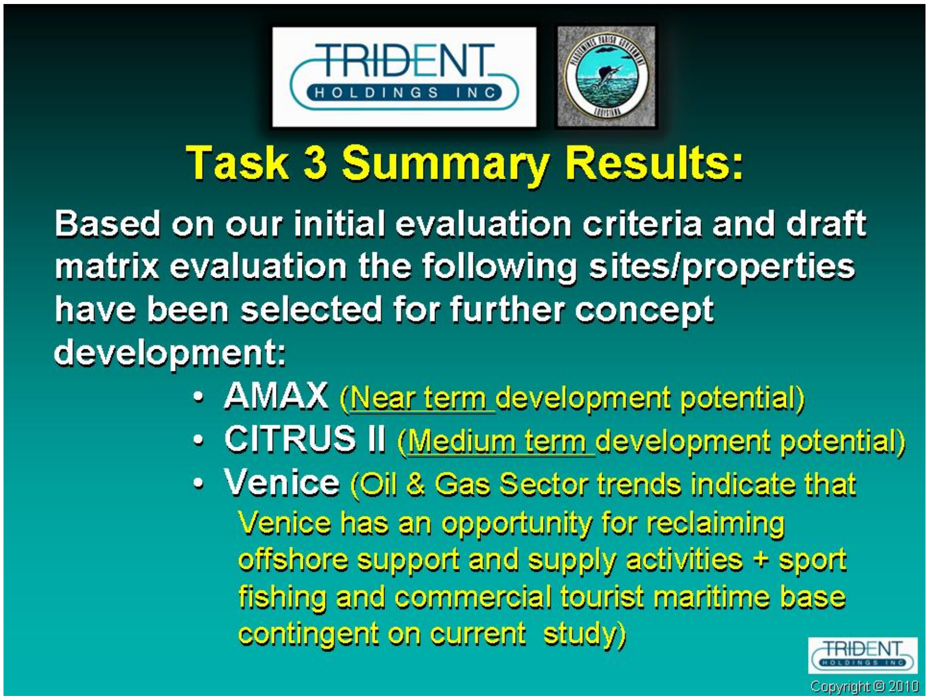
3.6 Stormwater
3.7 Terminal Circulation and Access
3.8 Highway and Rail Access
3.9 Waterside Access
3.10 Utility Infrastructure

This process considered the original ten (10) potential sites and reduced this list to five properties, namely Amax, Norfolk Southern, Bender Shipyard, Citrus II and Venice. In Task I Trident identified the evaluation matrix that would be employed for assessment of the properties. These properties are evaluated below.

No.	Evaluation Criteria	Weight	AMAX	CITRUS II	VENICE	BENDER	NS PROPERTY
1	Flexibility	8.00	8.00	9.00	8.00	6.00	4.00
2	Expandability	8.00	8.00	9.00	7.00	6.00	5.00
3	Environmentally Responsive	9.00	6.00	8.00	6.00	3.00	4.00
4	Berth & Water/Navigational Access	10.00	8.00	9.00	7.00	6.00	7.00
5	Rail Efficiency Access (Potential)	10.00	9.00	9.00	0.00	9.00	8.00
6	Truck Efficiency Access	8.00	7.00	8.00	4.00	7.00	7.00
7	Terminal Functional Adjacency	5.00	8.00	9.00	9.00	8.00	7.00
8	Marketability	5.00	8.00	9.00	9.00	7.00	6.00
9	Conducive to Security	5.00	9.00	9.00	9.00	9.00	9.00
10	Cost Effective Construction	7.00	9.00	8.00	7.00	7.00	8.00
11	Market Driven	10.00	10.00	10.00	8.00	5.00	5.00
12	On Terminal Traffic Flow	6.00	7.00	8.00	7.00	5.00	5.00
13	Responsive to Technology	6.00	8.00	8.00	8.00	8.00	8.00
	Maximum Possible Score	970.00					
	Alternative Raw Performance Score (Sum of All Raw Scores)		105.00	113.00	89.00	86.00	83.00
	Weighted Score (Individual Criteria Weight x Raw Score)		644.00	690.00	508.00	620.00	630.00
	Percent of Max Possible Score		66.39%	71.13%	52.37%	63.92%	64.95%

The final sites selected to receive further consideration in the study are Citrus II, Amax and Venice. Citrus II is considered to have the highest potential for development because of its size, location and potential to attract container traffic. It is considered to have mid-term development potential needed to extend and relocate rail road access.

Amax is considered to be the most immediately available site due to its immediate access to road and rail infrastructure. Trident consensus is that Amax can likely be developed in 1-3 years, Citrus II could take 5-10 years depending on the interest by the state, Parish governments and by the railroads providing service to the sites.
Venice was chosen despite having the lowest score. Citrus II, Amax, Bender Shipyard and the Norfolk Southern properties were all viewed as typical Port locations for possible container, bulk and break bulk facilities. Venice on the other hand represents a different opportunity for off-shore oil service, sports fishing, eco-tourism and, most recently, as a Federal and State oil-spill response center, coordinating all activities related to the recent Horizon disaster and subsequent containment and cleanup.



With the final sites selected Tasks, 4, 5 and 6 did detailed analysis of each property as stated below, the analysis in Task 4, 5 and 6 concluded findings that determined the concept recommendations in Task 7.

Task 4 – Master Plan Land and Water Use Requirements

Task 4 for the Plaquemines Parish Port Master Plan analyzed and evaluated the land and water use requirements for consideration in the recommended Master Plan sites of Amax , Citrus II and Venice and draws conclusions regarding the land and water use requirements for the final Master Plan recommended Alternatives.

Task 4 was organized into the following areas:

- Future Terminal Needs
- Idealized Terminal Modules
- Terminal Transportation Operations
- Waterside Access Requirements

Task 5 – Intermodal Truck and Rail Access Analysis

This Task assesses the transportation networks for the selected sites of Amax, Citrus II, and Venice from the perspective of railroad, roadway and barge traffic. This is accomplished by taking base assumptions of shipping volumes into each of the sites and estimating annualized and hourly volumes by each of the three (3) modes for distribution and then assessing the impacts these volumes will have on the existing and future planned transportation networks.

Operational Parameters

A total idealized throughput capacity analysis was developed in consideration of potential market share forecast for each type of operation and site which then serve as a basis for the transportation analysis in Task 5. It is important to note that these are estimates of terminal throughput based on the selected Port sites, market potential, and probable modal split of inbound and outbound trade and as such are subject to refinement. Therefore the estimates utilized in Task 5 are derived estimates based solely on the Task 4 planning modules. The derived analysis estimates throughput for Amax to be 200,000 TEUs and for Citrus II to be 700,000 TEUs.

Based on the annual estimated throughput for each determined Port site, potential ship size calling on that Port site, type of commodity or number of TEUs/ship estimated Trident was able to determine annual flow, volumes likely per ship, estimated modal splits and by calculating Port operations, determine likely hourly volumes. The market, transportation network and social demographic analysis suggest the likely modal split for all import and exporting trade.

Task 6 – On-Site and Off-Site Opportunities and Constraints

This task took the idealized concept along with transportation requirements and identifies those opportunities that exist on the chosen sites to facilitate and accommodate operational, circulation and transportation networks in a way to optimize advantages to offsite markets and beneficial cargo owners and attract expanded global and regional trade. The strengths and weaknesses identified will serve as a tool in further development of the concepts into workable and feasible site alternatives.

Task 7 – Alternative Development Plans – Recommended Port Development Master Plan

Task 7 presents the main Port Development Terminal Alternatives for each site considered. These alternatives specify build out capabilities, estimate throughput in tonnage and TEUs, present probable costs based on calculated estimates on build out quantities. Specifics are included on wharfs, buildings and warehousing, pavement areas, stormwater protection, and on-site rail and road access costs.

Once presented, these alternatives, by site are re-evaluated against build out criteria and analyzed with and without future levee construction. Venice is evaluated pre/post the BP oil spill and assessed for potential opportunities for expansion. Pro-forma financial models are presented in order to better understand the relative potential of each of developed terminal alternatives. Lastly Port security is discussed as a component of the required build out alternatives and presented not only as a required Homeland Security Standard but also as a means to attract substantial international trade.

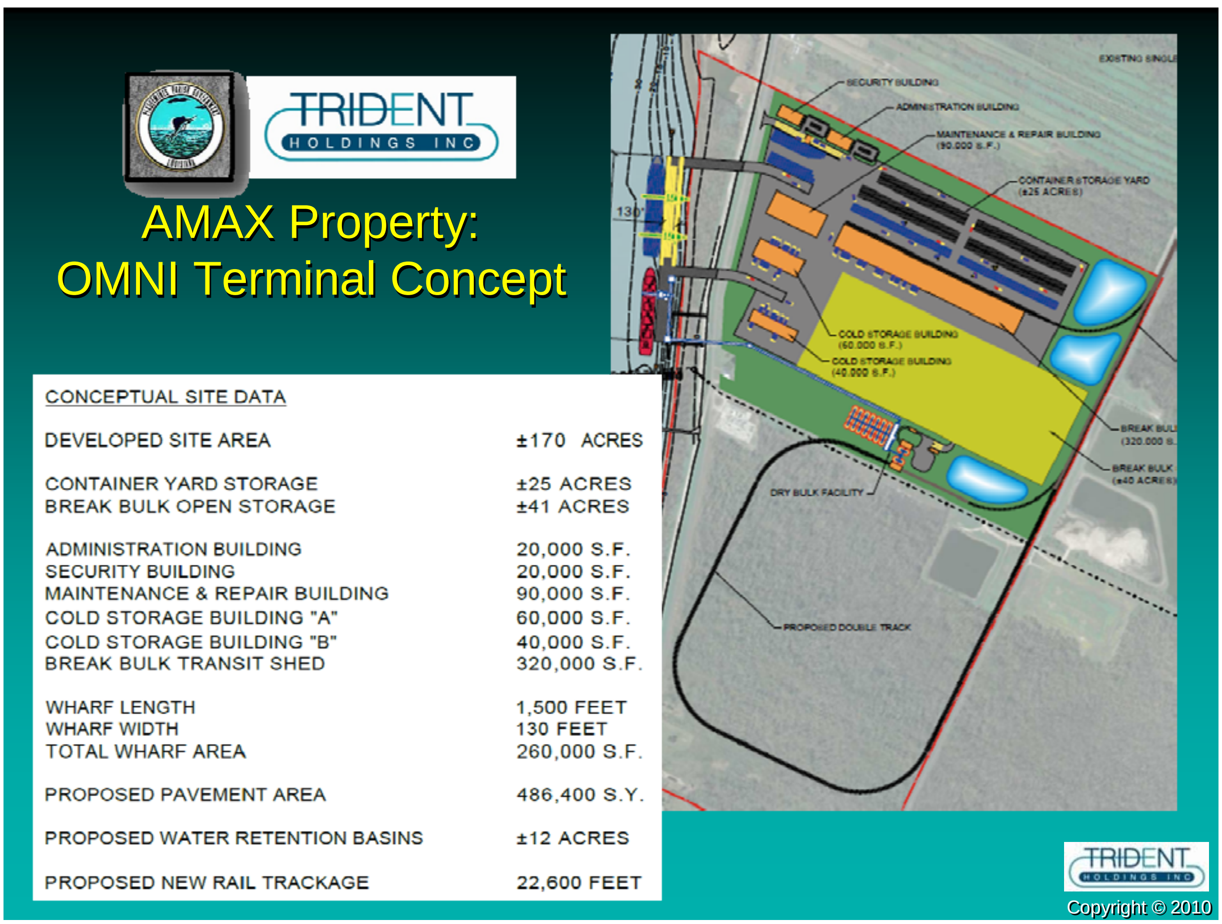
Amax Omni (Multipurpose) Terminal Concept

Because of the uncertainty of the market and potential cargoes available to Southeast Louisiana over the planning horizon of the next twenty years, a multi-purpose, multi-cargo flexible terminal strategy was adopted as the basis for the unique design of the Omni Terminal. This Omni Terminal strategy permits the Plaquemines Parish to take advantage of a wider array of market potential than would be afforded by the construction of a single focused operational facility.

The Amax Port Development is envisioned as a market driven development with the maritime and intermodal marketplace determining the specific schedule and sequence of development. The Omni terminal development concept has attempted to provide a flexible and expandable platform for accepting a wide range of market driven terminal operations at the Amax site. Adjustments in the Omni terminal layouts and plans will undoubtedly be required to synchronize the Amax terminal planning with the reality of the marketplace demands.

A significant component of the Omni terminal development is the multiple use two berth marginal wharf structure accommodating the following terminal operational modes:

- ISO Container operations (North wharf only)
- Break Bulk Cargo operations (North or South wharf)
- Neo Bulk Cargo operations (North or South wharf)
- Project Cargo operations (North or South wharf)
- Dry Bulk Cargo operations (South wharf only)



Port Master Development Alternative No. 3 (Citrus II Container & Intermodal Port) Terminal Plan

The Citrus II Port Development is envisioned as a linear sequentially developed set of interconnected market driven projects. The initial two phases of the Citrus II project were envisioned as being closely developed and are referred to as a Phase 1A and 1B. Phase 1A being the two berth marine Container Terminal project and Phase 1B being the development of the adjacent “On-Dock” Intermodal rail Terminal project.

Venice

Venice was chosen as a site for potential port development because it represents an expansion opportunity for existing industries. In particular, some of these opportunities are the upstream exploration and production supply and support service industry, the commercial and sports fishing industries and the eco-tourism industry.

As a result of the recent Horizon disaster Venice is ideally situated and suited to serve as the prime location for a Federal and State oil-spill response center, coordinating all activities including regulatory enforcement, emergency response and on-going containment, monitoring and clean up.

Lack of existing rail and with no plans for rail access to Venice, that would make economic sense eliminated the Venice location as a major cargo port location, except possibly as a transfer terminal.

Seapoint, a private sector developer is planning to develop a Transfer Terminal near Venice. However, its plans are proprietary and were not available to Trident.

Therefore, Trident concentrated its Venice analysis on infrastructure that could enhance Venice's potential in the existing industries and new infrastructure and services required as a result of the BP Horizon oil spill.

There are significant enhancements required to position and sustain Venice as one of the major support and supply bases for the Gulf Region. As a result of the Horizon oil spill the timing and need for these enhancements has intensified (Figure 18). As a result Trident recommends the following:

1. ***That Plaquemines Parish begin immediately to work with State and Federal Officials to identify the long term service and infrastructure requirements to provide security, enforcement of regulations, emergency response to all sector threats and supply and support services for the industry in the Gulf region.***

2. ***That Plaquemines Parish, with the support of the State and Federal Government Officials, conduct an assessment to identify specific industry infrastructure and service needs as a result of the Horizon oil spill and identify and confirm funding sources to plan, design and build the necessary infrastructure and to provide the services required.***

3. ***That there be confirmation (complete with a time schedule and an allocation of funding) for the dredging of the Baptiste Collette Channel from current maintenance dredging of 16 feet MLG to 26 feet MLG. There should also be dredging of Tiger Pass and Grand pass.***

4. ***That the State of Louisiana support and promote the continued development of two substantial Exploration and Production offshore supply and supply and s Southern Louisiana.***

Tourism Summary:

Trident believes that Tourism, including the sectors identified above and the commercial fishery (depending on Horizon impact), offer significant potential to Venice and that port and hospitality infrastructure is key to development to take advantage of this opportunity.

Trident suggests the following:

1. ***That Plaquemines Parish, with the support of State and Federal Government Officials identify what accelerated remediation process can be implemented to return sustainability to these industries post the Horizon oil spill.***

2. ***That Plaquemines Parish, with the support of State and Federal Government Officials identify opportunities for individuals and businesses negatively impacted by the Horizon oil spill to assist them in an accelerated remediation process of the Horizon oil spill.***

3. ***That Plaquemines Parish, with the support of State and Federal Government Officials conduct an assessment to identify specific industry infrastructure and service needs post the accelerated remediation process and identify and confirm funding sources to plan, design and build the necessary infrastructure and to provide the identified services.***

4. ***That the tourism sectors of sports fishing, bird hunting and eco-tourism, as well as the commercial fishery be included in port development planning at both the existing sport complex and at any new port development.***

5. ***That Plaquemines Parish develops a concentrated single purpose program on behalf of and with the support of all stakeholders to promote, protect and expand the tourism infrastructure in Venice.***

6. ***That Plaquemines Parish, in cooperation with the State of Louisiana, develops a comprehensive marketing plan to support the tourism industry in Venice. A telling statement is made in the advertisement of Cajun Odysea Outfitters of Venice when they state on their web page "Venice is quite possibly the last fishing village in the United States of America. There is nothing here, there is no tourism, and there is no publicity outside of South Louisiana".***

In the development process there are distinctive steps which a Public or Private developer takes and each of these steps imply ever growing commitments of time; money; risks for completing the project; receiving expected returns on investment; timing of construction, land acquisition, obtaining necessary equipment, obtaining expected rates and schedules from carriers which will coincide with a Port's opening, securing a Port Operator, having trained labor on site, and a myriad of other sub-elements all of which can affect the ultimate outcome of success in building a Port.

Plaquemines Parish has just developed its Comprehensive Port Development Master Plan which needs to be authorized. Detailed steps in development are discussed in Task 8 and 9. Many of the detailed questions pertaining to construction costs, environmental permitting and mitigation and project schedule can only be answered when Preliminary Engineering begins, which is almost always coupled with the EIS/EA Process due to similar requirements and complimentary needs to be successful.

Given that the conceptual alternatives in the Comprehensive Port Development Master Plan were extensively tested many of the risk factors have been reduced while the development alternatives have been clearly shown to have viable utility and strength.

A financial Model was developed and run for both the Amax and Citrus II sites using the estimated probable costs and assumptions identified in the model.

Disclaimer

While the financial model used for this evaluation is based on one set of stated assumptions and one of many financing options, the Internal Rate of Return (IRR) and the Return on Investment (ROI) may vary significantly with changes to the assumptions and changes to the financing structure or financing options. The purpose of the financial model was to determine the potential financial viability of the project under the assumed capital costs and financial model inputs and to determine a return on investment as a result of these assumptions

The conclusion reached from the results of both the Amax and Citrus II projects is that they both project sufficient return to justify the additional investment to complete specific project definition, detailed engineering and costing.

Task 8: Draft Master Plan Development

Task 8 offers perspectives and viewpoints from Trident Holdings on Private Sector versus Public Sector Ownership including comparative strengths and weaknesses to both approaches. Operational guidance is also presented along with insight into the needs of the private sector in today's global market and what does it take for this sector to invest in infrastructure. In this Task Trident revisits the rationale as to why Plaquemines Parish has a very distinct and timely advantage for Port Development and how that should act as determinant for the Parish to take decisive steps in determining how it sees its own governance and potential structure related to new Port facilities. A recommended Path Forward is presented.

In the past, port infrastructure development was often a "**build it and they will come**" approach. A Governing body would determine a waterfront site to be strategic, an Authority would be established to manage the development and public funds would be used to build the infrastructure justified by the economic impact of the development.

Gone are the days of "build it and they will come". Today's catalyst is not about capacity, it is about being competitive in terminal handling costs and competitive in the origin and destination (o/d) supply chain cost.

For the reasons outlined in the report, Trident believes the Private Sector or Public Private Partnership is the most practical options for Plaquemines Parish.

In the private sector model, the Port District would act as the catalyst for development of this Master Plan and the introduction of the opportunity to private sector interest. In this way, Plaquemines Parish benefits from the regulatory fees and income they produce, dividends from shareholder ownership and the enormous economic impact the projects create.

In the public private partnership model, the partnership does not need to be, and perhaps should not be, limited to two or three entities. For example, a partnership could consist of Plaquemines Parish, a world class port operator, a world class ocean carrier, a beneficial cargo owner, a railroad, equity market entity or investment bank. It could also include other political interests that would add value, limit opposition and advance the public spending for essential transportation corridor connectivity, whether rail or road.

Considering the merits of both, Trident recommends that Plaquemines Parish, together with Trident collaborate on a Public Private Partnership that includes industry stakeholders from the private sector and public sector entities that have the potential to add value, reduce opposition and encourage State and Federal spending for the purpose of creating and improving State distribution and transportation infrastructure.

Governance

The Port District must decide if it will become the Governance Body for existing port and new port developments in Plaquemines Parish. There are two options for the Parish in this regard:
Have Council approve to make the Port District responsible for port governance, and have the authority, when approved by Council, to determine ownership, management and operational involvement of the

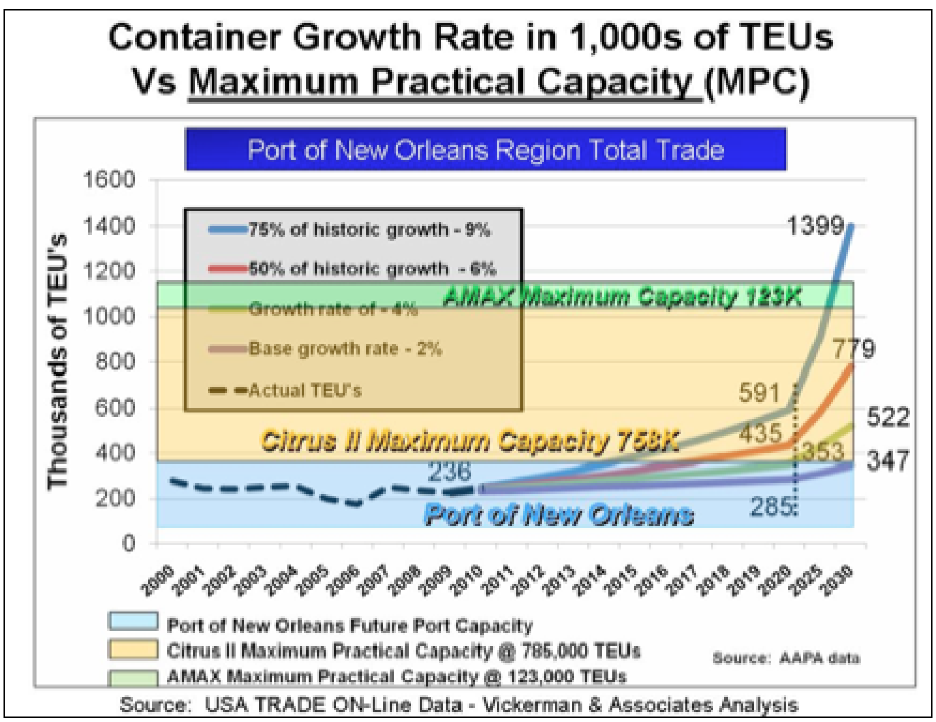
Parish in any port development. Have council make the Port District responsible, and have the authority, when approved by Council, to develop, police and administer port regulations, including the right to charge and collect fees and impose penalties.

Trident recommends that the Plaquemines Port District implement option two by creating a Port Development Authority (by whatever name) responsible to Council through the Port District and further, that the Port Development Authority have representation from Council, the administration and the community-at-large.

Trident strongly recommends the need for a dedicated Port Development Authority Executive Director with the experience and expertise in port management, port operational management, port regulatory management and port governance. It is essential to have full time, qualified leadership at the helm of any substantial Port Development opportunities in Plaquemines Parish.

Go or No Go Decision

Trident's market assessment has concluded that notwithstanding the volume expected by the Port of New Orleans in the next 20 years, and with the developments at the Amax and Citrus II sites as outlined in this report, there will be a requirement for even more capacity in Southern Louisiana. Given the interest from railroads, land owners, cargo owners, investors and carriers, it is obvious that Plaquemines Parish can realize growth in containers, bulk and break bulk markets. Trident has concluded that it is the right time for port development at Plaquemines Parish. .



Parish's Path Forward

The Comprehensive Port Development Master Plan has identified a need and opportunity, potential site locations, operational analysis, cost considerations, environmental issues, timing concerns, economic benefits, and build out options

This initial step will lead to identifying the form of administration/authority/Oversight that best suits the Parish's needs and at the same time helps develop the relationships the Parish will need to have with private sector investors and developers.

The creation of a more permanent governance model can then be accomplished and the engagement of a Port Director/Manager can occur as a result of the preliminary steps mentioned above. It will now be clear how the Parish will react to the development at each of the three sites – Amax, Citrus II and Venice.

One of the first strategic tasks that needs to be addressed is whether to determine interests by traditional means, such as Expression of Interests, Requests for Qualifications, Requests for Proposals or Design Build, Design/ Build /Operate, or Design/ Build /Own /Operate

Public/Private Partnerships to reduce financial risk. Making this determination will address how the development process can then initiate and commence through design and construction. This designation in and of itself will generate interests in going forward within the private sector and potential developers.

Conclusion

Site Specific Direction

Trident recommends the best approach for Amax is for the Parish to select a Client (Plaquemines Parish) Professional Representative to oversee a process whereby the Council and Port District would determine whether to pursue: 1) Expressions of Interest, RFQ/RFPs for developer interests; or 2) the various Design Build options and determine which is in the best interest of the Parish. The solicitation might attract a specific company for a certain type of operation or the solicitation could attract a developer interested specifically in the Omni Terminal concept.

The Citrus II Port location requires more time to develop and is most likely best served by a Public/Private Partnership (P3) that would significantly reduce the financial exposure and risk for the Parish. This property has the potential for the greatest return on investment and long term benefit for the Parish, in both revenue and employment. A consortium led by the Parish could include investors, a land owner, a rail company, the state, other Parishes, carriers and beneficial cargo owners. The Parish should consider seeking private sector development of the property's back levee system as a means to start the development of Citrus II. In order to proceed with container Port development, it will be necessary to first complete the back levee and relocate rail. Involvement by the private sector in such initiatives should be investigated. It is important to note that any real investment of any size at Citrus II is likely to require the development of the back levees regardless of what is developed since this will reduce risk, land development and operating costs. To attract Port development the extension of rail service is a necessity since truck access and volumes and cost to deliver would make any sizable Port unlikely. Barge traffic

while a component to Port development would unlikely be able to generate enough volume to support and moderate to large scale Port.

Venice has been identified in this Master Plan as one of the most remarkable locations within the entire country. It should be developed with a goal of protecting the traditional revenue generating activities (offshore support, sport fishing and hunting, etc.)

Trident has concluded that in the short to medium term, emphasis should be placed on activities associated with remedial efforts for the Horizon oil spill and crisis. This includes locating the administrative headquarters and infrastructure required to service the disaster in Plaquemines Parish. This will result in significant employment for years to come and the placement and retention of valuable infrastructure.

Task 9 Assessment and Evaluation of Land Options

Strategic Port Development Plan – Recommended Approach and Implementation Steps

Through the process of developing The Comprehensive Port Development Master Plan for Plaquemines Parish Trident has accomplished the following strategic tasks that when connected serve as a path forward for implementation of port development in Plaquemines Parish.

Strategic Port Development Tasks Accomplished:

1. A review of more than 50 previous studies and reports concerning port capacity, market forecasts, development plans and data on Louisiana ports including cargo distribution and transportation within the Gulf of Mexico region.

   The conclusion was that all of these studies looked at and based their findings on existing and traditional patterns of distribution. So capacity, future requirements and forecasts were based on the status quo. Trident "skating to where the puck will be rather than where it is" adopted the approach about "What if" Plaquemines Parish could develop a terminal, adjacent logistic services and a multi modal distribution capability to the developing, expanding and overlaying consumption and production zones north to the Mid West and Ohio Valley perhaps even to Canada and beyond.

2. The development of a market analysis and forecast based on previous studies and new trade data from **USA Trade Online Data,** sponsored by the U.S. Census Bureau using the North American Industry Classification System (NAICS) commodity classification codes, concentrating on origins and destinations both traditional and new, to and from local and north corridor states that can be competitively served by a Plaquemines Parish Port Terminals with competitive rail conductivity.

   The conclusion was that there is potential incremental market demand to support the development of additional port capacity within Plaquemines Parish providing that

competitive distribution resources and efficient landside access transportation conductivity were available.

3. The evaluation of twelve initial and five primary sites were evaluated within Plaquemines Parish to determine the optimum sites for port development. A unbiased development criteria weighted matrix tool was used to determine the sites with greatest development potential

   The conclusion was that the Amax Property at mile maker 76.5 on the east side of the Mississippi was deemed to be the best site for short term development and Citrus Land II Site at approximately mile 54 on the west side of the Mississippi was deemed to be the best long term development site. At the same time Venice was included as a prime development site because of its existing major contribution to the economy of the region in the oil and gas, commercial fishery and tourisms sectors.

   The Amax site best use was determined to be an Omni Port Terminal combining container, break bulk and specialized bulk potential. The Citrus site best use was for a multi berth container terminal, Intermodal yard and logistic park. Venice development potential was related to the existing industries and the impact and opportunities post the Horizon Oil Spill.

4. The next task was to design concepts for the two cargo development sites, complete with plans, costing, operational plans, phasing and economic evaluations. Potential rail alternative to provide the essential Intermodal conductivity were also researched.

   The conclusion was that the proposed developments on the two sites were feasible and potentially viable pending levee construction, rail conductivity and the identification of strategic proponents producing through put or through put guarantees.

The final task is to identify for Plaquemines Parish the way forward or the implementation steps necessary to transform the plan into reality.

Overarching Port Development Authority Partnering Guiding Principles

The strategic overarching guiding principles for the Plaquemines Parish Port Development Authority are:

- Plaquemines Parish Council control of self destiny over Parish port development activities
- Plaquemines Parish Council overall control, management and leadership of the entire port development program
- Plaquemines Parish Council proactive management of all public entity involvement in the port development program
- Plaquemines Parish Council role and responsibility as the advocate, promoter and sponsor for Plaquemines Parish becoming the regional distribution and logistics center hub for the US Gulf coast and the logistics gateway to the US heartland consumption zones

The following illustration summarizes the strategic implementation recommended for the Plaquemines Parish Port Master Plan.

The following illustration summarizes the strategic short term (next twelve months) implementation recommendations for the Plaquemines Parish Port Master Plan.