Heartland Port Authority of Central Missouri
Board of Commissioners

Jefferson City Area Chamber of Commerce

Tuesday, April 9, 2019 7:30am

Tentative Agenda

1. Roll Call
2. Approval of Agenda
3. Approve Minutes
4. Public Comment
5. Old Business
    5.1. USDA Grant-Allen
    5.2. Special Meeting to Focus on Port Development-Bonnot
    5.3. MASBDA Grant – Bonnot
6. New Business
7. Staff Report
    7.1. Land Conveyance Bills HB 813 and SB 869 – Allen
    7.2. MPAA meeting update-Bonnot
8. Commissioners Reports & Invited Guests
    8.1. Commissioner Reports
9. CLOSED SESSION: Pursuant to Section 610.021(2), RSMo, the Chair will entertain a motion to go into Closed Session to discuss leasing, purchase or sale of real estate (Action by Roll Call Vote).
10. Adjournment

Next Meeting Tuesday, May 14th - 7:30am

MINUTES **Heartland Port Authority of Central Missouri**

Board of Commissioners Meeting
Tuesday, March 12, 2019 7:30am.
Arthur P. Grimshaw Board Room

PRESENT:

BOARD:

Rick Mihalevich	Jim Jordan
Roger Fischer	Kris Scheperle
Roger Schwartze	Gary Wheeler

EXCUSED:

Doug Mertens
Hank Stratman
Calvin Broughton

STAFF:
Randy Allen, Missy Bonnot, Duane Schreimann

REGULAR BUSINESS:

1. Roll Call: Missy Bonnot
All Board members were present with the exception of Doug Mertens, Hank Stratman and Calvin Broughton.

2. Approval of Agenda: Chairman Mihalevich
Jim Jordan made a motion to approve agenda and Kris Scheperle seconded. Motion passed.

3. Approve Minutes: Chairman Mihalevich
Roger Schwartze made a motion to approve and Jim Jordan seconded. Motion passed.

4. Public Comments: Chairman Mihalevich
There were no public comments

5. Old Business: Chairman Mihalevich

5.1. USDA Grant - Randy spoke about applying for the USDA-RBDG Planning Grant. We would apply for $175,400 and also go to Cole County, City of Jefferson and Callaway County and request a local share of $105, 240, $105,240 and $52,620 respectively. The total project cost would be $438,500. Roger Schwartze made a motion and Jim Jordan seconded for staff to go to all entities and request funding. Motion passed.

5.2 MASBDA Grant - Missy reported the RFP for a comprehensive Market Study was completed and send to four firms to potentially bid on the work. 3 of the firms expressed interest and plan to submit a proposal. The deadline for submittal is COB March 15. After the proposals have been received a small group will review. After a firm is selected the MASBSA Grant application will be submitted. Gray Wheeler off for the Mo Soybean Assn will contribute $5,000 for go towards the local match which is $20,000.

6. New Business: Chairman Mihalevich

6.1 Special Meeting to Focus on Port Development-Missy discussed meeting with Brandon Criman who is the Director, Inland Waterways Gateway, Maritime Administration for the US Department of Transportation and Randy Allen recently. Brandon has a wealth of Port Experience and knowledge. Roger Fischer made a motion and Roger Schwartze seconded to invite Brandon to Jefferson City for a working lunch. Motion passed. Staff will coordinate with Brandon to identify a date in the near future.

7. Staff Report:

7.1 HB 813 Land Conveyance-Randy discussed the recent hearing and provided a brief summary.

8. **Commissioners Reports and Invited Guests:**

8.1 Commissioner Reports-Roger Fischer introduce David Shorr with Lathrop and Gage. David has 21 years' experience and specializes in environmental work. His office is located in Jefferson City and David discussed his experience in working with Ports in the State of Missouri.

9. Closed Session: Chairman Mihalevich

A motion was made by Kris Scheperle and seconded by Roger Fischer to adjourn the public meeting and go into Closed Session Pursuant to Section 610.021(2), RSMo, to discuss leasing, purchase or sale of real estate. By roll call vote motion passed. Stratman joined the meeting.

A motion was made by Kris Scheperle to adjourn closed session. Roger Fischer seconded. Motion passed.

10. Adjournment: Chairman Mihalevich

A motion was made to adjourn by Kris Scheperle and seconded by Roger Fischer. Motion passed.

Next meeting Tuesday, April 9th-7:30am.

Minutes submitted by: _____

Missy Bonnot, Director of Economic Development
Jefferson City Area Chamber of Commerce

Jefferson City Area Chamber of Commerce

Comprehensive market study for a multimodal port facility in Central Missouri

Proposal

Randy Allen, President/CEO
Missy Bonnot, Director Economic Development
Jefferson City Area Chamber of Commerce
Heartland Port Authority of Central Missouri
213 Adams Street, Jefferson City, MO 65102

Mar 15, 2019

RE: Comprehensive market study for a multimodal port facility in Central Missouri

Dear Mr. Allen and Ms Bonnot,

Decision Innovation Solutions (DIS) and its subcontractor Mercator International LLC (Mercator), collectively the Project Team, are pleased to submit this proposal in response to a request for proposal (RFP) from the Heartland Port Authority of Central Missouri for the *Comprehensive Market Study for a Multimodal Port Facility in Central Missouri* (the Project).

We believe in the importance of building a team with comprehensive and complementary skills honed throughout years of solid industry experience. Our team is led by DIS, a firm specialized in agricultural economic research Based in Iowa, and is supported by Mercator is a global advisory firm serving public and private sector clients in the global logistics and freight transportation domains, with particular focus on transportation infrastructure. Both firms have successfully participated on similar engagements, and provide years of solid experience, combined with innovation and effective execution—which will be carefully tailored to meet the specific requirements of each task under this strategic advisory.

The main strengths of our team can be summarized as follows: ***experience, innovation, independence***, ***dedication,*** and ***cost effectiveness***. As this proposal will demonstrate, our team has honored these core values in work previously performed for ports, barge companies, railroads, and similar clients around the world. Our deep knowledge and strong experience in these sectors will allow us to hit the ground running, saving time and cost without compromising quality.

Our project management philosophy can be summed up in the phrase "multi-disciplinary collaboration"—leveraging the strengths of an experienced team working together with full support from the highest levels of each of our organizations—to provide the high level of service and responsiveness to this project. We are excited about the opportunity to build on the strong foundations of your Division and becoming an extension of your internal resources. If you have any questions, please contact Spencer Parkinson at spence@decision-innovation.com or Arturo Bujanda via email at abujanda@mercatorintl.com.

Sincerely,

Spence Parkinson
Spencer Parkinson, Director
Decision Innovation Solutions

Michael Petro
Michael Petro, Partner
Mercator International LLC

Arturo Bujanda
Arturo Bujanda, Transportation Economist
Mercator International LLC

Contents

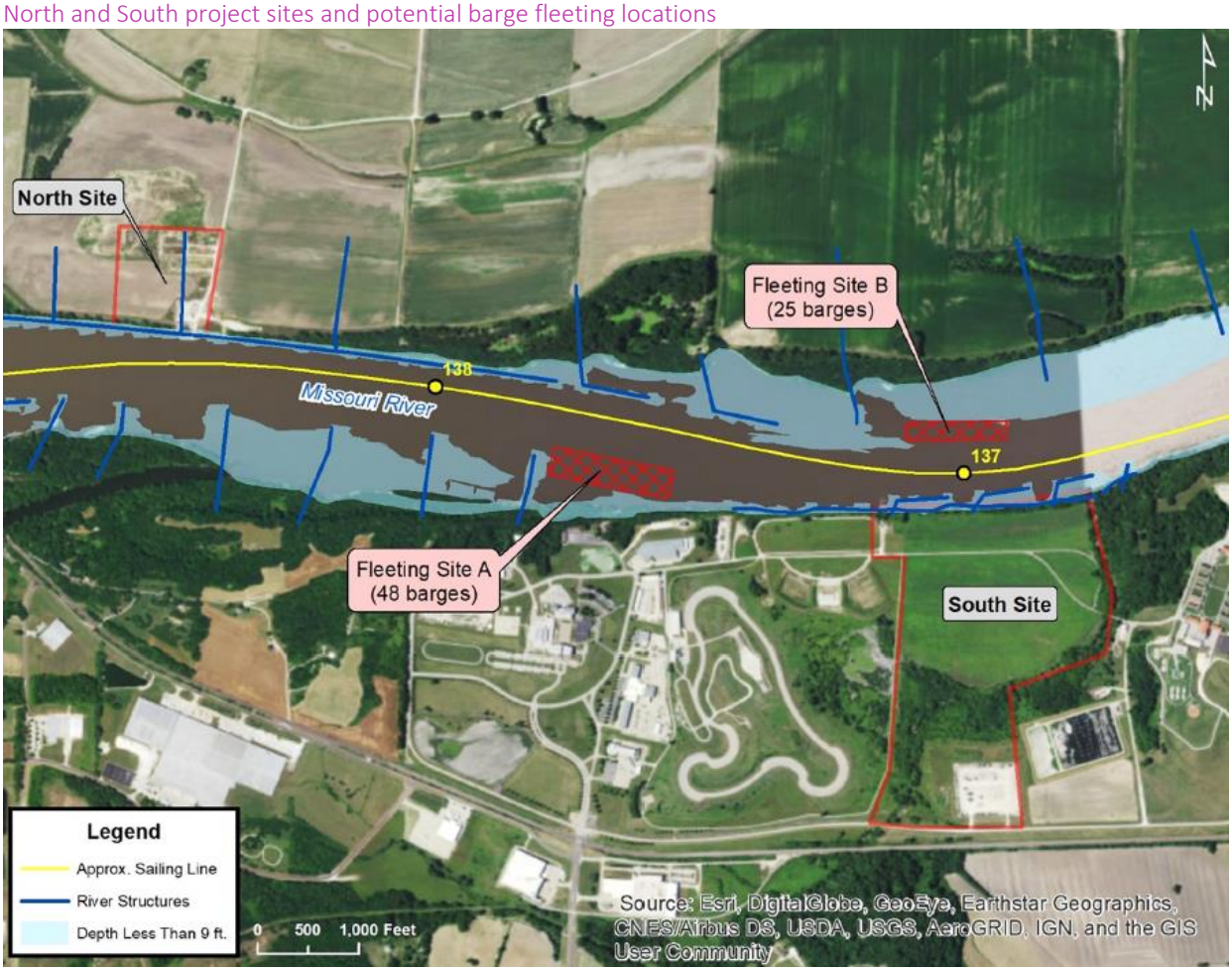
I. Project background and understanding

In coordination with the project stakeholders, the Jefferson City Area Chamber of Commerce have identified two preliminary potential sites for investigation and feasibility study for development of a river terminal. One site is located on the south side of the Missouri River in Cole County, and the other is located on the north side in Callaway County.

Like many other Midwestern states reliant upon infrastructure to move agricultural commodities, manufactured goods and raw materials to markets, Missouri's transportation system needs to be expanded and, in some cases, upgraded and modernized. The interstate highway system is more than fifty years old, many of the locks and dams on key river systems date back over seventy years, and the rail network system was originally built in the late 1800s. Agricultural commodities are often transported multi-modally and in many cases over a long distance. The same can be said for raw materials (i.e. agri-bulk and mineral-bulk commodities) and manufactured goods of many types.

The Project would potentially have one or more barge terminals on the Missouri River to help spur economic development in central Missouri region. The South Site is about 125 acres located at about River Mile 137.0 (RM 137.0), Right Descending Bank (RDB), and is controlled by the Missouri National Guard. The North Site about 23 acres and is located at about RM 138.6, Left Descending Bank (LDB), and is owned by OCCI, Inc. with a portion of the site near the riverfront that is about 3 acres.

North and South project sites and potential barge fleeting locations



Objective

Most, if not all, greenfield projects involve an inherent level of uncertainty that require the identification and mitigation of potential risks for the project (i.e. unknown cargo prospects or volume commitments for the project, uncertainty in micro- and macro-econometric variables, uncertainty in the development competitive market environment). Hence, to better understand the viability of this project, it is critical for the Heartland Port Authority and any other project stakeholder to have an analytical framework that allows them to quantify the potential levels of demand that could realistically be attracted by the Project and their relationship with its potential financial viability.

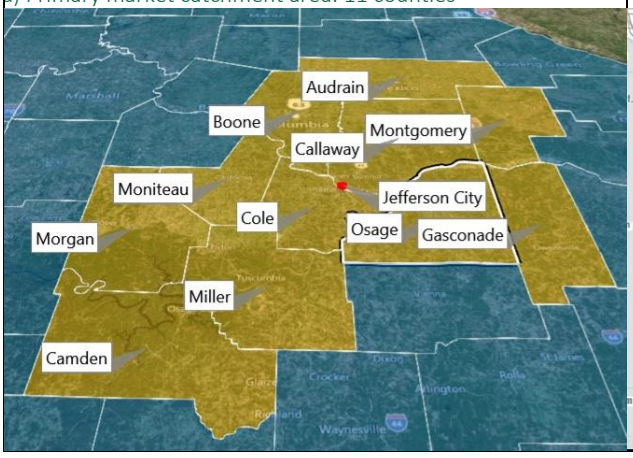
To assist the Heartland Port Authority, our proposed scope of work (SoW) involves several tasks broken down in two phases as directed by the RFP:

- **Phase 1: Comprehensive market study.** The overall objective of this phase is to identify all companies in a 11-county area that could potentially utilize the port for outbound and/or inbound shipments of commodities, products, and raw materials.
- **Phase 2: Preliminary assessment of the financial feasibility of the Project.** The objective of this phase is to develop a detailed business model for the port that includes a preliminary, but comprehensive, analysis of the potential financial viability of the project.

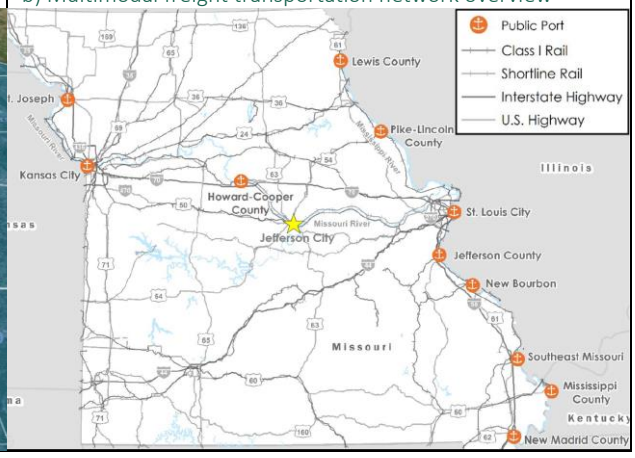
A key component of this study will be to identify commodity markets and understand how commodities, manufactured goods and raw materials flow from producers to markets. This will be done by analyzing the patterns, methods, and flow of commodities within the 11-county study area (i.e. the primary catchment area). The study will also identify those obstacles, bottlenecks, and challenges in the commodity transportation system in the study area and provide data for better understanding future needs.

Primary market catchment area and Missouri's multimodal freight transportation network

a) Primary market catchment area: 11 counties



b) Multimodal freight transportation network overview



Structure of the proposal

The balance of this proposal presents our project background and understanding, followed by our proposed scope of work, which includes Phase 1, the tasks for the Comprehensive Market Study, and Phase 2, the tasks for the preliminary assessment of the financial feasibility of the project. Next our proposal presents the project timeline and budget, followed by the project team, which provides the background of each firm. Subsequently, professional qualifications and representative projects are included. This proposal concludes with a list of project staff available to participate in this project.

II. Scope of Work

Below is an outline of how we would proceed to conduct the "Comprehensive Market Study". We have summarized our proposed methodology first by phase and then by each of the tasks required by the RFP. The following outline is based on our understanding of the Heartland Port Authority's stated needs and our experience in working with non-profit organizations, state departments and private companies.

Phase 1: Comprehensive Market Study

Phase 1 has been structured as a four-task pronged effort, which will support two major work blocks: (i) primary research with identified potential users of the port (as prescribed in the RFP) and (ii) validation, verification and addition of context to the primary research, which will be based upon the collective experience of the team.

Task 1. Organize kick-off meeting and stakeholder coordination

1.1. **Organize kick-off meeting.** Organize an inception meeting with the Heartland Port Authority and other relevant project stakeholders (e.g. Jefferson City Area Chamber of Commerce, Callaway County, Cole County and Jefferson City) to discuss relevant sub-sectors to be targeted, identify potential data sources, and any other aspects relevant to the Project to successfully achieve the objectives of each task comprising this scope of work.

1.2. **Coordinate regular update conference calls** to discuss data availability, data interpretation, potential contacts, present and review of the different value chains, and build consensus for the proposed study. This will ensure the validity of the findings from the study.

1.3. **Data sharing.** The Team uses a secure cloud-based Microsoft SharePoint environment to facilitate a collaborative approach for projects of this nature. We can include designated client representatives as external users thereby enabling them to contribute to the process and gain real time understanding of project status. It should be noted this collaborative environment is optional depending on the needs and desires of the client.

1.4. **Stakeholder coordination.** Follow-up with public and private stakeholders under the direction of the Heartland Port Authority and discuss priorities and next steps.

Task 2. Collect and analyze relevant data and review available information.

2.1. **Collect and analyze relevant data and review available information**. The Project Team will collect and review information regarding the potential cargo markets and the cargo operations at the Project historical cargo traffic flows by barge, rail, and truck, publicly available studies regarding the project, as well as the necessary historical statistics for key cargo commodities. The scope of Phase 1 is identified as all companies in an 11-county[1] area in and surrounding Jefferson City, MO. Relevant companies are identified as those containing the following 2-digit NAICS codes:

- Agriculture, Forestry, Fishing and Hunting (NAICS 11)
- Mining (NAICS 21)
- Manufacturing (NAICS 31-33)
- Wholesale Trade (NAICS 42)
- Transportation and Warehousing (NAICS 48-49)

[1] The following eleven counties will be included in this analysis: Audrain, Boone, Callaway, Camden, Cole, Gasconade, Miller, Moniteau, Morgan, Montgomery and Osage.

2.2. **Prioritize NAICS classification by order of relevance**. While the above NAICS codes are of initial interest, some NAICS classifications may not prove to be as relevant as others (expectations are that at least NAICS 11 and 31-33 will be relevant). As work commences, a prioritized list, if appropriate, will be approved with the Heartland Port Authority.

Task 3. Primary Research

With geographic and industrial scope determined, a series of questions will be answered through a survey of potential users of the port. These questions, once answered (or as they're answered in a few instances), will inform Phase 2 of the project. A significant portion of the data for this phase will be gathered through direct contacts (primary research) with producers, manufacturers and consumers of incoming commodities. Depending on the number of identified businesses, a representative sample of the group may be contacted for input on these questions.

The primary research component of the market study (the "questions") will be organized into three logical groups. The first group will include data collected about the content of inbound and outbound shipments in the study area. The second group will focus on the current status of inbound and outbound shipments to and from businesses in the study area. The third group will examine the potential changes to the current status resulting from adding a new port to the infrastructure of the study area. The three groups along with the questions assigned to those groups are listed below; as a survey instrument is developed, we will likely include additional questions to increase understanding of potential users of the port.

3.1 Content:

a. Identify the commodities, products, and raw materials the businesses ship and receive.
b. What markets does your commodities, products, and raw materials get shipped to?
c. What form (bulk, containerized, dry, liquid, etc.) is your commodity, product, or raw material in when received and when shipped outbound?
d. Are commodity, products, and raw materials inbound and outbound shipments time sensitive, seasonal, consistent (i.e. weekly, monthly, etc.) and what is the stability of the markets?

3.2 Current Status:

a. How are the commodities, products, and raw materials currently shipped to or received from the markets or suppliers?
b. Who are the current transportation providers of your commodities, products, and raw materials?
c. What are the current transportation costs of outbound and inbound shipments?

3.3 Potential changes:

a. What is the current and potential volume and weight of commodities, products, and raw materials shipped and/or received?
b. What transportation obstacles do you currently face getting your products to market?
c. Are there opportunities for partial load shipments inbound or outbound?
d. Are there other entities that might utilize the port facility, i.e. military, federal, state or local governments? If so, what would be their needs?

Task 4. Conduct validation, verification, and addition of context information

Conducting primary research with potential users of the port in Jefferson City will undoubtedly yield important insights which will provide a basis for Phase 2 of the research. Notwithstanding these valuable insights gained from primary research, the Team will be able to add significant context to the overall goal of the research. For instance, DIS will leverage current and past projects and our expertise in production and value-added agriculture and industrial economic analysis, work with private and government produced reports and lean on our own internal database of relevant industry participants to ensure the best understanding of port use is provided to the Heartland Port Authority. Below are our additional thoughts on how to enhance the insights gained from primary research.

4.1. Content:

a. To supplement and validate the data obtained through business contacts, a port flow analysis will be conducted relative to the study area. Representative primary sources of data for conducting a Port Flow Analysis will be data from the U.S. Army Corp of Engineers (USACE) and, with regard to agricultural production, U.S. Department of Agriculture's (USDA) reports such as the Grain Transportation Report. We have communicated with contacts within USACE and have used their data; similarly, we are familiar with the many reports published by the USDA so the data source learning curve for DIS in this area is not an issue.

b. Other potential sources of data for the content group will be the Freight Analysis Framework tool developed by the Center for Transportation Analysis, US Census Bureau, and the Economic Impact Analysis for Planning dataset (IMPLAN).

c. DIS maintains a database with key information on many businesses within the study area. This database has been populated and kept current through data purchases, an extensive web alert process and interaction with contacts in the industries tracked. We intend to use this database as additional input to the information gathered through contacts with businesses in the study area. We have included the anticipated expense of keeping the database current through a monthly subscription to SalesGenie.

d. One of the objectives of Phase 1 is to understand the costs associated with different modes of travel and what impact having an alternative place to ship from has on movement of goods up and down the Missouri River. A primary measure of this impact from an agricultural production standpoint is what is called Basis". Basis is defined as the difference between local cash price and the nearby future contract price (i.e. Chicago Board of Trade) for a given commodity. In our experience, the availability of an additional port will have a favorable (from a crop producer's standpoint) impact on basis. We intend to analyze this and incorporate our findings.

4.2. Current Status.

a. Market type has implications for distance, quantity and mode of travel. Furthermore, most markets will have differing infrastructure needs for inputs versus outputs. For example, public policy, such as livestock zoning and renewable fuels legislation, also have significant implications for movement of commodities and finished goods in the study area.

b. Movement of processed grain and oilseeds is largely determined by location of ethanol/biodiesel plants, local livestock and poultry production and size, location and nature of export markets. Due to our work for other clients in Missouri, we have a sound understanding of local demand for farm commodity usage by ethanol/biodiesel plants and local livestock and poultry demand.

c. In our work for clients such as Iowa Farm Bureau, Iowa State University and the United Soybean Board, we have data and experience to assist us in understanding volumes, forms and timing of shipments to international destinations.

d. In nearly all cases, farm-produced commodities produced in the study area are likely to be delivered via the road system, primarily by truck. As a result of current and previous work for business entities in Missouri (see examples of project work) DIS has accumulated information regarding on-farm and commercial grain storage in the study area. Our understanding of the movement of grain from these storage locations to the processing or shipping facilities will enhance the data collected from interviews.

e. More variation in transportation mode occurs at the primary and secondary stages of processing. This is primarily due to a processor generally having few (in number) inputs but several co-products, for example:

- Soybean processors purchase soybeans and sell soybean oil, soybean meal and soy hulls. If local demand (food processors or biodiesel plants for the oil, livestock for the meal and hulls) is less than the commodity it produces, the excess production must be shipped to other markets via truck, rail or barge.
- An ethanol plant will likely receive the majority of its inputs (i.e., corn) by truck, effectively acting as an elevator, from farms within about 75-100 miles. Depending on location of the ethanol plant, ethanol, corn oil and DDGS can be shipped to their intermediary or final consumption point via truck, rail or barge. The decisions related to how to ship product from an ethanol plant is typically influenced by presence of local demand (livestock and poultry demand for DDGS, etc.), options for export (either domestically or internationally), and management preferences. In all cases, economics of competing alternatives influences these decisions. Other commodities may be shipped or received by rail or river waterway.

f. Other products or materials that are likely candidates for outbound shipment are aggregates (at least four quarries in the study area) and manufactured products. The Team will use the port flow analysis mentioned in the Content section to identify the current transportation modes used that may be located or operating outside of the study area. This will include:

- What are the commodities that are currently being produced within the study area and being shipped out of state for further processing?
- What are the commodities which are produced outside the study area which could be further-processed in the study area?
- What commodities are transported into the study area for processing?
- What are the current transportation costs of outbound and/or inbound shipments?

4.3. Potential changes.

a. The process flow analysis mentioned above will provide additional data to include with the interview data in evaluating the potential for utilization of the Heartland Port Authority of Central Missouri port.

b. There are two major military bases located near to the study area. The information available from USACE should include existing utilization of existing ports by these bases. It is possible that, at least, liquid fuels are shipped into the state by barge and then transported to these bases. The Team will evaluate the potential of the new port being a preferred choice for these and other government entities.

Phase 2: Preliminary assessment of the financial feasibility of the project

The objective of Phase 2 is to conduct a preliminary assessment of the economic and financial feasibility of the project. To achieve this objective, the DIS-Mercator Project Team has structured our proposed SoW for Phase 2 to provide the client with a practical analytical framework that would allow testing different levels of market demand, business cases, operational models, and their associated potential impacts on the expected levels of cost-recovery, payback periods, and ultimately the financial success of this project.

Task 1. Assess potential levels of market demand

1.1 **Review critical freight transportation infrastructure in central Missouri.** To save time and cost for this project, the Team will leverage on previously developed studies recommended by the client[2] and any available datasets for this project. The Team will then proceed to create an inventory of highways, rail routes, waterways, peer river ports, and intermodal facilities critical for the movement of freight in central Missouri, with particular attention to the hinterland area of the proposed port.

1.2 **Analyze route and modal choice costs and the overall competitiveness of the port.** The Team will review the collected data on cargo flows by transportation mode and available origin-destination (O-D) pairs to identify the infrastructure networks and examine the modal trends for each of the supply chains identified in Phase 1.

a. By integrating this analysis with the outputs of Task 1.1, the team will evaluate for which set of commodity flows the proposed port can provide a potential commercial or logistical advantage as compared to existing modes.

b. The Team will evaluate the competitiveness (in terms of logistics costs and time to market) of logistics chains that utilize the new port as the existing alternatives/modes serving the same cargo markets. This analysis will address the question as to how much shippers or receivers could expect to save if using a new Heartland Port facility, and what the transit time advantage (or disadvantage) would be.

Modal trends and infrastructure implications

In this analysis, the term "modal share" describes that portion of the total volumes moved by each mode of transport. Trucks, trains and barges compete and complement one another—with shipping location and distance to destination often the determining factor:

- **Trucks** have cost advantages for shorter distances (less than 250 to 500 miles) and function primarily as the short haul mode.
- **Railroads** have a cost advantage in moving grain or other bulk cargoes over longer distances, although barges have an even greater advantage where a waterway is available.
- **Barges** can carry the equivalent of roughly 15 rail cars (or 60-75trucks) at a fraction of the cost of these modes; the availability of barge transportation helps to foster competition on rates with the railroads.[3, 4]

[2] Examples of previously developed relevant studies include: *MoDOT Port Authority Application*, *Missouri State Freight Plan*, *MoDOT Economic Impacts from Public Ports*, *Central Missouri Multimodal Port Feasibility Study*, and *Missouri River Freight Corridor Assessment Plan*, among others.

[3] Mary J Bolle, *Trade in the U.S. Gulf Region: Hurricanes Katrina, Rita and Beyond*, CRS Report for Congress, Nov 12, 2005, p.3.

[4] Christensen Associates, *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition,* report to the Surface Transportation Board, November 2008, Chapter 13.

1.3 **Identify the commodity flows with the highest potential to be attracted by the port.** The Team will identify the commodities with the highest potential (i.e. the commodities for which the port offers a competitive advantage) that can successfully be attracted by the port (by commodity, O-D pair, current mode or routing) and estimate tonnage that could be captured.

1.4 **Construct econometric forecasts and model target capture rates.** The Team will identify key micro- and macro-economic drivers of outbound and inbound cargo flows. Particular attention will be paid to key commodity subsectors with the highest potential to become regular users of the proposed facility, as identified in Task 1.1. Given the greenfield nature of the project, the Team will breakdown the forecasting into the following two periods:

a. *Short-to-medium term (10-years)*—emphasis will be based heavily on our understanding of key business factors to determine growth of the cargo market, the potential share of this market that the project can capture, and the client mix likely to use the project.

b. *Longer-term (10-30 years)*—the forecast will be based on econometric trends. We will seek to establish correlations between historical growth in cargo volumes in key markets and in key commodities, and economic drivers, and use this correlation to project future levels of demand to forecast tonnage in 2020-2050.

Task 2. Design conceptual organizational structure and operational model

2.1. **Design conceptual organizational structure.** The Team will develop a conceptual business management structure for the hypothetical case of an "operating port", in which the port Authority is responsible for the management and operation of the facility, including the handling of cargo. The Team will identify the scope of the organization and expertise that the port would need to have and maintain to effectively operate and market the facility, including both general management and management for the operations, maintenance, and marketing functions. We will draft job descriptions for the key operating positions for the port. This will be a critical input for the preliminary estimation of operating expenditures (opex).

2.2. **Develop conceptual operational model.** Based on the target markets/commodities with the highest potential to use the facility, the Team will develop a conceptual model for the day-to-day operations of the facility and its different elements (e.g. equipment, yards, wharves, storage areas, conveyors, mixers, dry-bulk elevators, scales, energy consumption, etc). Work under this task will not be an engineering study, but rather a conceptual framework that allows to explore expected levels of cost-recovery from a business and financial perspective for the potential mix of different services to be offered by the port. This design will be a critical input for the preliminary estimation of capital expenditures (capex).

Task 3. Conduct high level analysis of indicative capex

3.1. **Identify potential capital investments required.** Based on the cargo outlook and conceptual operational model designed prepared in Tasks 1 and 2 of Phase 2, the Team will describe the infrastructure and equipment required for the proposed port to handle the forecasted cargo flows (e.g. storage facilities, cranes, ship-loaders, top-picks, fork-lifts, tractors, etc).

3.2. **Review and estimate *short- and long-term* capex requirements.** The Team will review the initial infrastructure costs previously developed, for the port, and establish sensitivity bands around the initial estimates. These high/low capital estimates will be used for the initial investment analysis to be undertaken in Task 7.

Task 4. Conduct high level analysis of indicative opex

4.1. **Quantify indicative *fixed* opex**. The Team will obtain data representative for a project of similar scale and estimate the terminal's fixed staffing requirements, and fixed (non-volume-dependent) annual operating costs for the baseline cargo and facility development scenario.

4.2. **Quantify indicative *variable* opex**. The Team will obtain data representative for a project of this similar scale and estimate the terminal's expected productivity performance levels, variable staffing, and unit operating costs, for each business lines (commodity types) defined in the baseline plan.

Task 5. Exploratory analysis of handling rates

5.1. **Collect information about handling rates.** The Team will collect information from barge operators and other sources about market rates for comparable services at barge ports within the region, and also discuss how and why these rate levels have trended over the past years.

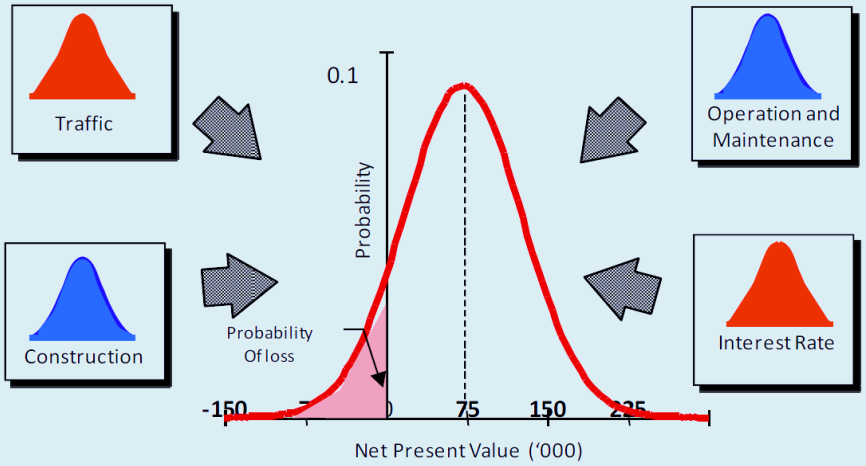
5.2. **Define expected range of current and future handling rates**. Considering its location and logistical advantages created by a Jefferson City port facility, identify for each target commodity flow the expected range of handling rates that the Heartland Port could realistically command.

Task 6. Construct financial modelling and scenario development tool

6.1. **Construct financial model.** The Team will integrate indicative volume, pricing, revenue, opex, and capex forecasts into a proforma discounted cash-flow (DCF) model. The Team will estimate the expected net-present value (NPV) and internal rate of return (IRR) for the baseline scenario and generate two additional upside and downside scenarios.

A sophisticated financial modeling approach for greenfield projects

Given the inherent level of uncertainty typical of greenfield projects (i.e. unknown cargo prospects or volume commitments for the project, uncertainty in micro- and macro-econometric variables, uncertainty in the development competitive market environment, and uncertainty in both capital development costs, and operational costs), Mercator will utilize tools based on Monte Carlo simulation techniques to analyze the potential range of outcomes for the project (as expressed by payback periods, NPV, or IRR), These tools would also allow the Team or the port to conduct sensitivity analyses.



Source: Bujanda, et al (2010).[5]

[5] Bujanda, et al (2010). *Valuing Public Sector Risk Exposure in Transportation Public-Private Partnerships.* UTCM Project 08-41-01, **Department of Transportation** Research Innovative Technology Administration. Washington, DC.

6.2. **Construct forecast scenarios.** The Team will estimate the expected NPV and IRR for the baseline scenario and generate two additional upside and downside scenarios.

Task 7. Identify environmental regulatory requirements

7.1. **Identify the environmental regulatory requirements.** The Team will summarize the expected characteristics of the project make a preliminary identification of the environmental and regulatory requirements that would need to be satisfied in order for the project to move forward. This task will provide a roadmap for the different types of factors that would need to be considered in an Environmental Impact Review process typical for a project of this magnitude. Such roadmap will consider the roles of agencies and rules such as:

- National Environmental Policy Act (NEPA)
- The Council on Environmental Quality (CEQ)
- The U.S. Army Corps of Engineers (USACE)
- The Missouri Department of Natural Resources (DNR), and
- Any other agency deemed relevant by the client.

Task 8. Prepare final report

8.1. **Draft Report.** The DIS-Mercator Team will produce a draft report of our findings which will then be reviewed and discussed with the client. This draft report will include a summary of conclusions and strategic considerations relative to the project.

8.2. **Presentation of findings.** If requested by the client, the Project Team can be available to make a presentation of major findings to the client and incorporate its feedback into the Final Report.

8.3. **Final Report.** Following the receipt of feedback on the draft report from management, the Team will produce a final report.

Optional tasks on-demand

The DIS-Mercator Project Team will normally include a few additional analysis options for our client's consideration to have us undertake. In our opinion, these options will enhance the foundational research requested. If any of the optional components are of interest, we will provide additional details on methodology, timeline and financial commitment.

Focus groups

In many cases businesses contacted in person or by some type of survey are reluctant or unable to provide complete or accurate responses. A viable alternative is to conduct one or more focus groups where business representatives would be invited to participate in a focus group in exchange for a nominal payment. The way these focus groups are conducted ensure the data collected is relevant and accurate.

Economic Impact of the Heartland Port Authority of Central Missouri

The benefit to conducting an economic impact study on the new port is that it will reflect current material and labor costs for construction plus the effects of annual average operating/maintenance costs. While perhaps a bit early (capital and operating costs are not known yet), we offer this for future consideration.

Transportation

DIS is working on a project for the Missouri Soybean Association and Missouri Corn Growers Association on a commodity flow and infrastructure study. This project requests a review of the current status of the state's transportation system. An additional component could be a set of recommendations for enhancing transportation to support business growth in the study area. If of interest, we will provide an estimate to determine these recommendations.

County summary sheets

Through our work for MASBDA in late 2016, we provided a large amount of results at a high level. Subsequently, we created one-page summary sheets for the soybean industry. These can be found here. If desired, data could be pulled from that same study to create similar summary sheets for each of the counties in the study area. If of interest, we will provide an estimate to create these summary sheets.

Impact on freight rates

While not a requirement in this RFP, the impact on freight rates when suppliers have the option of using many types of infrastructure is manifest. Given the large quantities of agricultural commodities utilizing all modes of transportation in the Midwest, we will use grain and other agricultural commodities (collectively called "grains") as an example here. Where applicable, the same methodology will be adopted/adapted for other major users of transportation network in Missouri. Within this optional component, the following variables by mode of transportation will be among those quantified:

a. Freight rates
b. Availability
c. Flexibility (i.e. origination and destination points)
d. Time to delivery
e. Capability to handle different types of cargo
f. Total transport weight of cargo

Analysis of international shipping markets

The largest grain exporter is the US, holding a share of about 25%, as per data of 2014/15 crop year, followed by Europe, Argentina, Ukraine, Russia, Brazil, Canada and Australia. A lot of grain and shipments of other commodities are done via the Mississippi outlet in Louisiana. The Team will analyze which are the major international markets for the movement of grains and other similar commodities that use the Mississippi as the key outlet. Similarly, rail shipments done form the primary market to Mexico via railroad will be analyzed for the most relevant commodities found in Phase 1.

Dynamic and online visualizations tools

The DIS-Mercator team can develop static and interactive visualizations created and shared through Tableau and ArcGIS as appropriate if requested by the client.

III. Project timeline and budget

Given the amount of work required to complete the project, we estimate the above deliverables will be delivered to the Heartland Port Authority of Central Missouri within twenty-four weeks of coming to agreement on the scope and terms of the project. Milestones with an estimated timeline follows.

Phase/task	Timeline	Budget
Phase 1, Comprehensive Market Study	1-11 Weeks Post Agreement	$82,500
Phase 2, Preliminary Assessment of the Financial Feasibility of the Project	9-24 Weeks Post Agreement	$ 101,200
Total	24 weeks	$183,700

Other considerations

We are very flexible in terms of the scope and components associated with partnering on this project and want to ensure you receive the best value possible. Our estimates are presented under the assumption that we understand your needs and our understanding of those needs are aligned with your expectations. As such, further clarification may be necessary to refine our estimates; if this turns out to be the case, we politely request further dialogue to more closely align our understanding with your needs.

Our experience in projects of this nature provides us with the expertise to exceed the requirements of your project. We greatly enjoy this type of work and look forward to assisting you as you work towards your goals of developing the Heartland Port Authority of Central Missouri. Please let us know if you have any questions – we look forward to hearing back from you.

IV. Project team

Decision Innovation Solutions

Based in Iowa, the largest state producer of corn, soybeans, pork, and eggs in the US, Decision Innovation Solutions (DIS) is an economic research and analysis firm. Our clients, who are agricultural businesses, organizations and producers, need the right information, interpreted correctly to make the best business decisions possible. We bridge the decision-making process by adding our economic and agribusiness insight to gather the right information.

Decision Innovation Solutions
Bridging Your Information Research Needs

DIS' proprietary approach to evaluate spatial and time series data, taking complex data and presenting it in a way that clearly identifies trends, gaps or seasonal patterns so organizations can make better, more informed business decisions. DIS has extensively worked with agribusinesses in evaluating their community impacts for grant applications, tax subsidies, and to improve community relations; furthermore, DIS develops strategies to retain businesses and promote agriculture-related industries.

DIS uses proprietary modelling to study the links among industries and quantify their contributions to the overall economy. First, existing economic relationships are assessed and then a variety of tools are used to evaluate the expansion or contraction of specific economic activities. DIS goes beyond traditional mapping by investigating the potential interactions between locations and examining the trade-offs of a particular decision. Consultants at DIS have experience conducting evaluations in environments with poor or sub-par data infrastructure.

DIS uses a proven five-step client interaction process

- These steps are normally clearly defined and represent varying degrees of skill and involvement on our part to satisfy your unique needs.
- DIS can anticipate and quantify potential impacts from government policies through a variety of approaches that provide stakeholders with all relevant information for policy making. Areas of typical research include agricultural policy analysis and economic modelling for the U.S. Department of Agriculture.
- DIS design its projects to empower public agencies, government authorities, and policymakers to create positive change, helping community, rural, agricultural, and industry organizations and companies to evaluate their economic contributions.

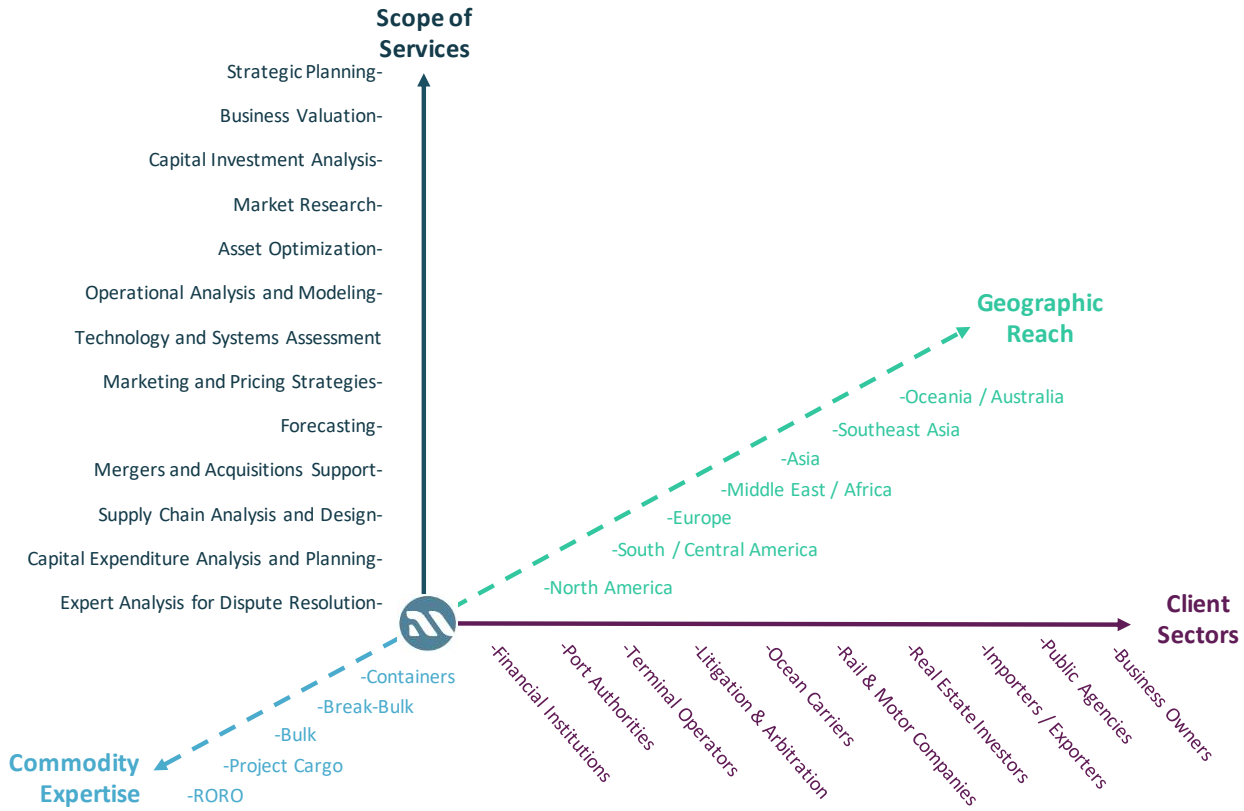
Mercator International LLC

Mercator International LLC is a global specialist advisory firm serving public and private sector clients in the global logistics and freight transportation domains, with particular focus on transportation infrastructure, market research, financial and economic analyses, transaction due diligence, commercial strategies, and operational improvements. Headquartered in Seattle, Mercator has undertaken assignments involving waterborne cargoes, barge and tug operations, and agribulk, mineral-bulk, break-bulk, and roll-on roll-off (RoRo) terminals, not only in the United States, but across multiple continents.

Formed by former executives of Macquarie Capital, Sea Land, Maersk, SSA Marine, and APL, Mercator International LLC originally commenced operations as Mercator Transport Group (MTG) in 2000. After successfully providing consulting services to various shipping lines, beneficial cargo owners, terminal operators, logistic providers, and financial institutions, MTG was acquired by and became the Global Ports Advisory Group for Macquarie Bank Limited at the end of 2005.

This Global Ports Group helped acquire and manage thirteen marine terminal concessions for five Macquarie-managed infrastructure funds until December 2008, when Macquarie curtailed investments in the port sector due to the global financial crisis. The three original MTG partners, along with two new partners, who were formerly executives at Maersk and APL, founded Mercator International in December 2008. Since then, Mercator has completed more than 350 consulting assignments involving ports, terminals, and ocean transportation operations across North America, Latin America, Europe, the Middle East/Subcontinent, the Far East, and Australia/New Zealand.

Mercator's scope and reach



V. Representative projects

Decision Innovation Solutions

Missouri's agriculture, manufactured goods and raw materials industries are an important and ever-changing piece of Missouri's economy. A study such as the one requested will quantify the infrastructure components that have direct and indirect impacts on this set of industries and the degree to which they are either contributing to or inhibiting the safe, efficient delivery of these goods to market. Decision Innovation Solutions (DIS) has significant experience in conducting such in-depth analyses. Some recent examples include:

- In 2015, 2016 and 2017, 2018 and underway again in 2019, DIS is working with the United Soybean Board (USB) on the Soybean Meal Demand Analysis project (see here[6] and here[7]).
  - Relevant portions of this large multi-year project deals with quantifying the volume of soy-related ingredients fed to major livestock, poultry and aquaculture by species, by stage of life by state and region.
  - Combined with the AFIA "Animal Food Consumption" project completed in late 2017, this project for USB puts DIS in a unique position to understand how and where commodities are transported in and outside of Missouri.
  - These USB projects require substantial relationship management with some of the nation's top animal nutritionists. Similar relationship management, although not necessarily with nutritionists, will be necessary for this project.
- In 2015 and 2018 and underway again in 2019, DIS is working with USB to quantify the value and volume of soybean meal exported as meat and poultry.
  - As we continue our research in this area, we are able to provide context to the Heartland Port Authority surrounding the degree to which soybean meal leaves Missouri as a livestock or poultry product. Using similar methodology, the option to do similar analysis for other commodities (primarily corn) is possible.
- In 2017, DIS worked with the American Feed Industry Association (AFIA) and IFEEDER to complete two studies. The first was the U.S. Animal Food Consumption Report[8]. The objective of this analysis was to estimate manufactured animal food usage by animal species by life stage by state and region.
  - Many of the questions listed in the RFP are indirectly related to the production and consumption of farm commodities. Our previous experience will allow us to readily address these questions that rely upon a sound understanding of this aspect of commodity movement.
- The second project commissioned by AFIA and IFEEDER, also in 2017, was the Economic Contribution of the Animal Feed and Pet Food Manufacturing Industries[9] which analyzed the economic contribution of the 5,715 U.S. feed mills and 517 pet food manufacturing facilities.

[6] http://www.animal.ag/economics/
[7] http://unitedsoybean.org/wp-content/uploads/Economic-Analysis-of-Animal-Agriculture-FINAL-Low-Resolution.pdf
[8] http://www.decision-innovation.com/market-analytics/animal-food-consumption/
[9] http://www.decision-innovation.com/economic-impact/afia-economicreport/

  - Completing this study for AFIA allowed the DIS team to understand relative size and scope of the nation's feed mills and pet food manufacturers. Considering Missouri is home to approximately 47 feed mills, this understanding will prove useful in this project.
- In 2013 and again in 2017, DIS completed the Multi-State Land Use Study[10].
  - Conducting both of these studies has given DIS the experience to better understand the location of certain crops, crop rotations and the degree to which land use change has and is occurring in the Midwest since 2007. This experience will inform our approach to handling the research in this proposal.
- DIS has authored the Renewable Energy Report for the Agricultural Marketing Resource Center (part of Iowa State University) for three years. The landing page for this monthly report on a wide range of renewable energy topics is here[11].
  - Having provided two monthly white papers for more thirty-six months puts the DIS team in a position to incorporate our renewable fuels expertise into a commodity flow project such as the one described here.
- In 2016, DIS worked with a combination of the Missouri Agricultural and Small Business Development Authority (housed within the Missouri Department of Agriculture), the University of Missouri and Missouri Farm Bureau to conduct an analysis entitled, "Economic Contributions of Agriculture, Forestry, and Related Industries in Missouri[12]".
  - While the requested project described here is not an economic contribution study, as with many other projects of this type (i.e. Iowa, South Dakota, Illinois, Alabama, etc.[13]), having done this project in Missouri strengthens our core understanding of Missouri agriculture and related industries.

[10] http://www.decision-innovation.com/spatial-time-series-analysis/case-study--multistate-land-use-study/
[11] https://www.agmrc.org/renewable-energy/renewable-energy-climate-change-report/renewable-energy-climate-change-report/
[12] http://www.decision-innovation.com/economic-impact/economic-contributions-of-missouri-agriculture-and-forestry/
13 http://www.decision-innovation.com/economic-impact/

Assessment of bulk grain export terminals on the Mississippi River

Project highlights:

- Mercator conducted commercial and operational due diligence on four grain export terminals located on the Mississippi River in Louisiana for an international infrastructure fund.
- This work encompassed a review, analysis, and forecast of export grain volumes from the Mississippi River Valley (with particular focus on shipments from Midwest states)
- In addition, for shipments originating in Minnesota, the Dakotas, and Nebraska, Mercator evaluated the comparative supply chain costs of grain shipments to Asia routed via barge movements to these Louisiana terminals (with transfers to ocean-going ships) versus routings via unit trains to Pacific Northwest ports
- Mercator also analyzed a proprietary tug/barge operation moving export grain shipments downriver to the four terminals and assessed the feasibility of transporting fertilizers and other bulk products in the back-haul direction.

Alternative Financing of Illinois Waterway Capital Improvement Projects

Project highlights:

- Mercator analyzed the incremental economic costs and benefits of a set of lock and dam improvement projects for the Illinois River Waterway that have experienced major delays in securing federal funding, for the purpose of assessing the financial viability of funding those projects through one or more public/private partnerships, on behalf of a group of grain grower associations in Illinois.
- We identified, analyzed and forecasted the major commodity flows utilizing portions or all of this waterway system.
- We obtained and analyzed statistics on waiting times and lockage times for barge tows transiting through each of the target locks over a multi-year period.
- We assessed how much rail transport rates might potentially increase should the lower Illinois Waterway (IWW) cease to be viable, due to a lack of re-investment in the system and a corollary failure of the infrastructure.
- Mercator constructed a financial model to evaluate two distinct capital improvement plans for the IWW for the locks that would be replaced and rehabilitated.

Assessment of bulk grain export terminals on Parana River

Project highlights:

- Mercator conducted commercial and operational due diligence on two grain export terminals located on the Parana River in Argentina for an international infrastructure fund.
- This work encompassed a review, analysis, and forecast of export grain volumes from Argentina and Paraguay, as well as an evaluation of the competitiveness of barge shipments from upstream loading points versus rail/truck shipments from those points.
- For one of the terminals, Mercator also evaluated the operational and economic viability of developing a berth for ships to discharge liquid fertilizers and storage tanks for those fertilizers. This entailed an assessment of the demand for liquid fertilizers in northern Argentina and Paraguay.

Alternative Financing of Tennessee Waterway Capital Projects

Project highlights:

- Mercator analyzed the incremental economic costs and benefits of a set of lock and dam improvement projects on the Tennessee River Waterway for the purpose of assessing the financial viability of funding those projects through one or more public/private partnerships, on behalf of Ingram Barge Company.
- We identified current volumes and projected future volumes of the major commodity flows utilizing this waterway and compared the costs of moving these flows by barge versus rail, in order to assess the economic value of the waterway to the beneficial cargo owners using it.
- Mercator assessed and designed the ownership structure of a P-3 entity that would hold a long-term concession on the locks of the waterway to be rehabilitated and the operating revenues this entity would be able to collect from the asset.

Columbia/Snake River Business Assessment

Project highlights:

- Mercator analyzed and quantified all the major commodity flows moving by tug/barge operators on the Columbia Snake River System (CSRS), on behalf of one of the service providers on the waterway, to assist that company in formulating its capital spending strategies.
- We evaluated the capacities of the main lines of the Union Pacific Railroad and the Burlington Northern Santa Fe Railroad in the Columbia River Valley in order to assess the limitations on those two rail carriers for diverting volumes away from the barge mode.
- We also compared the economics of two alternative routings for new movements of bulk minerals from mines in Montana and Wyoming for export to Asia – one entailing unit train movements directly to deep-water terminals on the lower and upper Columbia River, with downriver barge movements to the same deep-water terminals.

Valuation of 12 Agri-bulk Maritime Terminals Worldwide

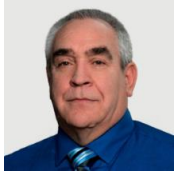
Project highlights:

- As one of the world's leading agricultural processors, our confidential client plays a pivotal role in the production of food ingredients, animal feeds and feed ingredients, biofuels and other agricultural products that manufacturers around the world use to provide wholesome food and a better life to millions of people around the globe.
- Mercator analysed the value chain of agricultural commodities and fertilizers to discover additional value creation opportunities for the company. The portfolio of maritime terminals covered every continent and included terminals in Turkey.
- Analyzed global value chain that included crop procurement locations, ingredient manufacturing facilities, innovation centers and the world’s premier crop transportation network.

VI. List of project staff

Decision Innovation Solutions

The table below provides detail on the DIS team members available to contribute to this project. Additional detail can be found in the **About Us** section of our website.

Name	Education	Experience
Spencer Parkinson 	▪ **B.S. Accounting and Economics** – *Utah State University* ▪ **International M.B.A. Food and Agribusiness** - *Royal Agriculture College, Cirencester, England*	▪ Utah State University (Logan, UT) ▪ Royal Agriculture College (Cirencester, England) ▪ Executive Director, Decision Innovation Solutions Iowa Farm Bureau Federation ▪ Utah State University Extension ▪ Woodlee Dairy
Merlin Siefken 	▪ **B.S. Mechanized Ag, Minor in Business Administration** – *University of Nebraska*	▪ 35 years with John Deere, Deere & Company and John Deere Financial (Led feasibility study team for consolidation of US sales finance operations in Des Moines metro.) ▪ Business Development Manager, Decision Innovation Solutions
Michelle Mensing 	▪ **B.S. Finance, Minor in Agricultural Business** – *Iowa State University* ▪ **Master of Agribusiness (MAB)** – *Kansas State University*	▪ Council for Agricultural Science and Technology (CAST) ▪ Research Analyst, Decision Innovation Solutions ▪ Operation Director, Decision Innovation Solutions
Patricia Batres-Marquez 	▪ **B.S. Business Admin** – *Universidad Centroamericana UCA, El Salvador* ▪ **M.S. Agricultural Economics** – *Kansas State University*	▪ Center for Agricultural and Rural Development (CARD) ▪ Senior Research Analyst, Decision Innovation Solutions
Sampath Jayasinghe 	▪ **M.S. Agricultural Economics** – *University of Guelph, Canada* ▪ **B.S. Agricultural Economics** - *Iowa State University* ▪ **Ph.D. Economics (ABD) –** *Iowa State University*	▪ Estimation of Identity Preserved (IP) Non-GM Soybean Export Demand, Grant Recipient ▪ Senior Research Analyst, Decision Innovation Solutions
David Miller 	▪ **PhD, Ag Economics,** ▪ **MBA, Finance, B.S. Agriculture-** ▪ *University of Missouri-Columbia* ▪ *Brigham Young University* ▪ *Valparaiso University*	▪ 28+ years with Farm Bureau Organization ▪ 8 years with American Farm Bureau Federation ▪ Served on the Executive Committee of the U.S. Meat Export Federation & the Extension Section of the American Agricultural Economics Association ▪ Chief Economist, Decision Innovation Solutions

Jing Tang 	▪ **M.S., Food Science** ▪ **MA, Statistics-** ▪ *University of Missouri* ▪ **B.S., Food and Science Technology** ▪ *Beijing Business and Technology University*	▪ Area of Expertise: Statistical Methods & Data Analyzing & Prediction ▪ Statistician, Decision Innovation Solutions
Chris Mandt 	▪ **B.S., Animal Science, Economics-** ▪ *Iowa State University*	▪ Ag Lending Intern, BankIowa ▪ Production Intern, Wakefield Pork ▪ Production Intern, CCPC Swine LP ▪ Undergraduate Researcher, Economics Department, Iowa State University ▪ Research Analyst, Decision Innovation Solutions
Rachel Sonnabend 	▪ **Agricultural Business** ▪ **Agronomy** ▪ **Iowa State University**	▪ ▪ Agronomic Intern, Cedar Family Farms ▪ Production Intern, New Fashion Pork ▪ Marketing-Communications Intern, Decision Innovation Solutions

Mercator International

Jim Leonard | Partner

mercator

Pre-Mercator Employment:

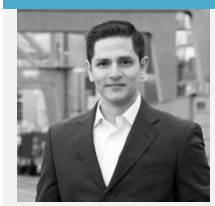
- **Vice President and Port Sector Specialist**
  Macquarie Capital Funds
- **Founding Partner**
  Mercator Transport Group
- **Director of Network Planning**
  Sea-Land Service
- **Director of Development**
  Brazil/Latin Amr, Sea-Land Service
- **Manager of Operations Planning**
  Sea-Land Service
- **Manager of Naval Architecture**
  American President Lines
- **Naval Architect / Marine Engineer**
  Petrochem Marine Consultants

Based in Seattle, Mr. Leonard has **36 years** of experience in ocean shipping, capital investment analysis, terminal planning, and marine engineering. He has conducted operational and financial evaluations of numerous marine terminals around the world, to support expansion, development, or acquisition initiatives. He has examined the economics of inland waterway operations and infrastructure within North America. Prior to founding Mercator, he was most recently a Vice President for Ports with Macquarie Capital Funds and previously was a partner at Mercator Transport Group for five years.

Education:

- B.S. in Mechanical Engineering, University of California at Berkeley
- M.S. in Management, the Sloan School, Massachusetts Institute of Technology

Arturo Bujanda | Senior Associate



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Pre-Mercator Employment:

- **Transportation Economist | Project Lead**
  Texas A&M Transportation Institute, TX-MX
- **Research Engineer**
  Center for Transportation and Infrastructure Systems, El Paso TX
- **Research Assistant**
  Laboratory of Advanced Dynamic Transportation Systems, El Paso TX
- **Business Owner**
  Comercial ABA SA de CV, Chih. Mex

Based in Seattle, Mr. Bujanda is an infrastructure development executive with expertise in feasibility studies, cost-benefit analyses, financial modelling and analysis, M&A, demand forecasting, business strategy, and operations with **14 years** of global experience with focus in the NAFTA Region and Latin America. His project experience includes ports, railroads, logistic zones, and trucking companies. He has led several feasibility and market studies about agricultural markets to develop rail, ocean, and barge fleet projections as well as statewide freight master plans for DOTs. He currently serves as a member of the Aviation Economics and Forecasting Committee and is actively involved in the freight data, rail and agricultural committees of the *Transportation Research Board of the National Academies*. He has published numerous scientific articles and technical reports.

Education:

- B.S. in Civil Engineering, University of Texas at El Paso
- M.S. in Economics, University of Texas at El Paso
- Management Development Certificate, LBJ School of Public Affairs, University of Texas at Austin

P.B. "Kaj" Shah | Senior barge consultant

mercator

Pre-Mercator Employment:

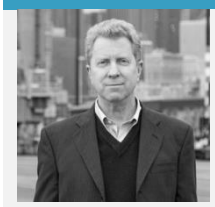
- **President and Chief Operating Officer**
  SVP, Customer Service and Logistics
  VP, Customer Service and Logistics
  Ingram Marine Group
- **President and Chief Transition Officer**
  Midland Enterprises
- **VP, Corporate Development**
  Ingram Industries
- **VP, Strategy and Planning**
  Ingram Barge Company
- **Director, Strategy and Planning**
  AVP, IT
- **Senior positions**
  Several barge industries

Based in Brentwood, TN, Mr. Shah has been an Ingram executive since 1989 and has spent time in several companies under the umbrella of the Ingram Group.
Most recently, Kaj, served as President at Ingram Barge Company. Mr. Shah served as the Senior Vice President of Dry Cargo Customer Service of Ingram Barge Company and was responsible for economic analyses, rate, operational studies, and equipment leases. He managed logistics and transportation needs for dry cargo customers of Ingram Barge Company. Since joining Ingram in 1989, he has held various positions in Logistics, Corporate Development, Planning and Strategy, and Information Technology with several Ingram Industries companies. He served as the Vice President of Customer Service of Ingram Barge Company. Mr. Shah has held various positions with Ingram Barge and affiliated companies. Mr. Shah holds bachelor's degree from Indian Institute of Technology and masters' degrees from SUNY, Stony Brook and Vanderbilt.

Education:

- Vanderbilt University, Nashville, TN, M.B.A.
- Stony Brook University, Stony Brook, NY, M.S.
- Indian Institute of Technology, Bombay, India, B. Engr.

Steve Rothberg | Partner



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Pre-Mercator Employment:

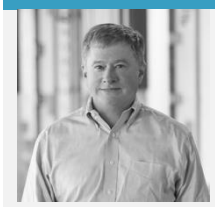
- **Senior Vice President and Managing Director**
  Macquarie Capital Funds
- **Founder and Managing Director**
  Mercator Transport Group
- **Vice President and General Manager**
  Sea-Land Service Southeast Asia-Australia
- **Vice President of Strategic Planning**
  Sea-Land Service
- **Vice President of Pacific Finance**
  Sea-Land Service
- **Director of Corporate Planning**
  United Airlines
- **Manager of Operations Planning**
  Southern Pacific Railroad

Based in Seattle, Mr. Rothberg has **39 years** of experience in transportation infrastructure investments, ocean shipping economics, cargo market analyses, port infrastructure development, asset valuations and strategic planning. Mr. Rothberg has led or participated in numerous infrastructure planning and privatization projects on six continents for port authorities, terminal operators, and financial institutions. He has designed and managed transportation networks and services as well as asset sharing agreements for multiple international shipping lines and railroads. He has also developed strategic business plans for an array of transport service providers and infrastructure operators. He has completed consulting assignments involving ports, terminals, and ocean/river transportation operations across Europe, the Middle East/Subcontinent, the Far East, Australia/New Zealand, North America, and Latin America.

Education:

- M.S. in Transportation Systems, Massachusetts Institute of Technology
- B.S. in Industrial Engineering, Cornell University

Todd Gray | Partner



mercator

Pre-Mercator Employment:

- **Vice President Global Ports Group**
  Macquarie Capital Funds
- **Founding Partner and Principal**
  Mercator Transport Group
- **Direct Yield Revenue Management**
  Sea-Land Services
- **Director Ocean Services**
  Danzas USA
- **Director Refrigerated Logistics**
  Australia New Zealand Direct Line
- **Marketing and pricing**
  Hapag Lloyd, U.S. Lines and ACT Pace Lines

Based in Seattle, Mr. Gray has **37 years** of experience in export/import market research and international logistics/shipping operations. Mr. Gray has analyzed international and domestic cargo flows and developed volume/revenue forecasts for ocean transportation operations in multiple trade lanes. Over the years, he has build a wide repository of trade databases, including for countries in LatAm trading with the US. He has a strong expertise analyzing and treating most products offered by trade data providers. Prior to founding Mercator, he was most recently a Vice President for Ports with Macquarie Capital Funds Inc. and previously was a partner at Mercator Transport Group for five years.

Education:

- B.S. in Marketing, University of Connecticut

Mike Petro | Partner

mercator

Pre-Mercator Employment:

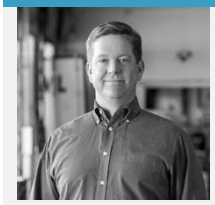
- **Vice President, Transportation Advisory**
  Ausenco
- **Global Practice Lead, Transport & Logistics**
  Advisian/WorleyParsons
- **Founding Member & Managing Partner** Point B Logistics
- **Rail and Logistics Practice Lead**
  Kingsley Group
- **Managing Director Service Design**
  CSX Transportation
- **Int'l Marketing & Product Manager**
  CSX Intermodal
- **Sales & Marketing**
  American President Lines

Mr. Petro has over **30 years** of experience in transportation and logistics, with extensive experience in the intermodal, steamship, rail, and trucking industries. His areas of expertise include business strategy, operations management, service design, organizational transformation, process improvement, systems design and implementation, and fleet management. His first-hand industry experience includes operations and commercial roles for leading firms in the transportation industry including APL, CSXT and CSX Intermodal. Prior to joining Mercator, he was VP Transportation & Logistics for Ausenco, the global engineering firm, where he established and managed their T&L Advisory Practice. Since 2000, he has been an advisor in the transportation industry for firms across the industry including port authorities, terminal operators, railways, intermodal companies, trucking firms, logistics service providers, resource shippers, governments and financial institutions.

Education:

- BS Finance, McIntire School of Commerce, University of Virginia

Derik Andreoli | Principal



mercator

Pre-Mercator Employment:

- **Researcher & Instructor**
  University of Washington
- **Faculty Affiliate - microeconomics of competitiveness**
  Harvard Business School

Based in Seattle, Mr. Andreoli has **17 years** of experience in transportation economics, international trade dynamics, and energy logistics. He has conducted numerous economic and international trade forecasts for private and public-sector clients. He has performed economic impact studies on freight transportation networks, cargo flows, and transport infrastructure for regional and state governments and developed and applied geographic information systems to support these projects. In addition to publishing original research in peer reviewed academic journals, Mr. Andreoli has written feature articles on the intersection of global container trade and oil and fuel markets that have published in *Logistics Management*, *Supply Chain Management Review*, and *Containerization International*. He regularly gives keynote presentations on these subjects at logistics conferences and through webcasts.

Education:

- B.A. in Geography, University of Washington
- M.A. in Geography with focus on economic geography and GIS, University of Washington
- Graduate Certificate in Global Trade and Transportation, University of Washington

Monica Isbell | Senior Consultant

mercator

Pre-Mercator Employment:

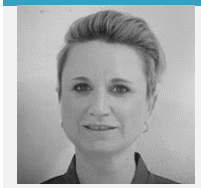
- **Supply Chain and Logistics Practice Leader**
  Cambridge Systematics, Medford, MA
- **Founder and President**
  Starboard Alliance Company LLC, Portland, OR
- **Director, Corporate Logistics and Trade**
  Columbia Sportswear, Portland, OR
- **Vice President and Manager of Corporate Customers**
  Direct Line Cargo Management Services/DHL Global, Los Angeles, CA
- **Manager, Purchasing and Inventory Control**
  Asics Tiger Corp., Los Angeles, CA
- **Western Regional Manager, Pacific Division**
  Sea-Land Service, Long Beach, CA

Based in Seattle, Ms. Isbell has **38 years** of experience in operations, business development management, and consulting in international trade. She has optimized intricate international supply chains of beneficial cargo owners and helped government entities understand how freight stakeholders use multimodal transportation networks. Her work has enabled policy-makers implement strategies to effectively redesign and increase capacity of transportation infrastructure to enhance freight mobility. Ms. Isbell has consulted for numerous port authorities and 3PLs. She led the market study for the *Due Diligence of a Portfolio of Cold-Storage Facilities, Alaskan, and Chilean seafood markets*—all for top-global players. She is well published in the industry including *Supply Chain Management Review*, *Journal of Commerce*, *American Shipper*, Council of Supply Chain Management Professionals, among others.

Education and professional credentials:

- A.B. Politics, Princeton University
- Degree of Proficiency in Russian Studies, Princeton University
- U.S. National Cooperative Freight Research Program, Washington, D.C., Panel Chair

Sharon C. Crowland | Environmental Consultant



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Relevant project experience:

- **U.S. Army:** EA, U.S. Army National Training Center, Fort Irwin, CA.
- **Virginia Army National Guard (VaARNG)**: EA of the Fort Pickett Real Property Management Plan (RPMP), Blackstone, VA.
- **National Guard Bureau:** EIS for Proposed Expansion of Oregon Air Guard Airspace, Multiple Locations
- **Oregon Department of Transportation:** US 20 Pioneer Mountain to Eddyville Project, Lincoln County, OR
- **National Guard Bureau: EIS for Proposed Expansion of Oregon Air Guard Airspace**
  Direct Line Cargo Management Services/DHL Global, Los Angeles, CA

Based in Seattle, Ms. Crowland has 26 years of experience in environmental assessment, planning, and environmental project management. Conducted numerous NEPA investigations for a range of clients and projects. Prepared technical documents such as categorical exclusions, environmental assessments (EAs), environmental impact statements (EISs), and joint permit applications for a variety of projects. Also conducts public involvement activities for a wide range of projects. Ms. Crowland led the completion of a 5-year Environmental Management Plan for Whiteman Air Force Base (AFB) in Missouri. The Project included SOW elements, such as revisions of the National Environmental Protection Agency (NEPA), Integrated Cultural Resources Management Plan (ICRMP), the Integrated Natural Resources Management Plan (INRMP) and Regulatory coordination.

Education and professional credentials:

- B.S. Civil and Environmental Engineering, Clarkson University, 1992
- Master's Public Affairs, Environmental Policy concentration, 2013

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