



Great Lakes Maritime Research Institute

*A University of Wisconsin - Superior and
University of Minnesota Duluth Consortium*

Economic Impact of the Great Lakes and St. Lawrence Seaway System (GLSLS): Phase II

Final Report

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Economic Impact of the Great Lakes and St. Lawrence Seaway System (GLSLS): Phase II

Executive Summary

Project goals include plans to make use of economic impact analysis to estimate the economic value of the Great Lakes and St. Lawrence Seaway (GLSLS) system for different regions of interest. These study areas include individual port communities, the eight states bordering the Great Lakes, the Great Lakes and St. Lawrence Seaway System (GLSLS) region, and the nation. A second project goal is to report impact results in terms useful to a range of stakeholders, including port authorities, government agencies, policy makers, and the general public, industry contributions to employment, incomes, value added (contribution to GDP or GSP), and tax revenues. It is also a project goal to enable updated economic impact(s) on a regular basis. The economic variables of interest in such analysis include measures of employment, industrial output, incomes, value added (contribution to GDP or GSP), and tax revenues.

This project uses input-output (IO) modeling, which depends on inter-sectoral linkages across a region's economy. Summing over the direct, indirect, and induced effects gives the total impact on a region's economy. Typical IO models use links between hundreds of industrial sectors (517 in MARAD model). However, IO models require underlying data to be representative of the region of analysis. These models also require direct effects as inputs to the model to determine total economic impact. After careful consideration, the project team chose the MARAD Port Kit model over the IMPLAN model for the initial pilot study. However, problems have become apparent, and the choice was made to also include IMPLAN. The MARAD Port Kit seemed the best option because it provides a port-specific interface that generates direct effects from data on shipments and inland movements. It also has minimal survey requirements. The major problem with this model is that even the version that was customizable by region is outdated. This model came out in 2000 and is based on 1992/1998 RIMSII multipliers. It is also based on SIC codes instead of more recent NAICS codes. An updated version based on NAICS is recently available, but unfortunately the MARAD funded version is only offered on a national basis, and is therefore not appropriate for analysis of the GLSLS. Also, to pursue the Great Lakes impact, it would be necessary to order regionally customized versions from the Rutgers source, which would be very expensive if not beyond the funding scope of this project. The strength of this model remains its underlying industry linkages based on national averages for port-related costs.

The MARAD Port Kit requires input data such as cargo and transportation mode information as well as itemized costs for services, fees and other charges. Specifically, these data include shipments by cargo type, including containerized cargo; breakbulk—cargo in individual pieces or on pallets, such as forest products, paper, and steel; liquid bulk—such as petroleum and petrochemicals; dry bulk—such as grain or coal; autos and other vehicles; and project cargo—such as wind turbine components. Required port kit data also includes specifying inland modes of transportation. The MARAD model can be adjusted to reflect local conditions by accounting for

the following costs in relation to each cargo type: costs of waterside services including tugs, pilots, line hauling and launch fees, dockage fees; government requirements; customs, entrance/clearance fees, immigration, quarantine; loading/discharging; stevedoring, clerking, security, cleaning/fitting, and equipment rental. Costs related to the following can also be adjusted in the model: suppliers, including chandlers/provisions, laundry, medical, waste handling charges; bunkers; oil, water; in-transit storage; wharfage fees, yard handling, demurrage, warehousing and other storage; cargo packing; export packing, container stuffing/stripping, cargo movement and adjustment. Again, inland movement needs to be tracked, as well as long- and short-distance trucking, barge, rail, and pipeline. Our survey is gathering the required data. The initial survey went out to 24 Twin Ports dock/terminal operators and shipping agents on August 12th. Surveys also went out to 14 Green Bay terminals.

Given the difficulties discovered for the MARAD model, the project team determined that IMPLAN must be considered a viable alternative. IMPLAN uses up-to-date underlying data and the model is updated annually. Also, the model is NAICS based, and relatively inexpensive. However, there are potential difficulties: we find that the port-related sectors of interest are overly aggregated, and to model port activity researchers will need to input employment or output data from all port-related industries as direct effects. To collect these input data will require extensive surveying. We expanded the initial survey to collect employment data for input into IMPLAN. However, it is important to note that for the IMPLAN model we need to collect as close to 100% of the data as possible in order to generate good impact analyses.

The selected initial pilot study region is the Twin Ports of Duluth/Superior (to which Green Bay has been added). This pilot will be expanded to include 16 ports in eight states. These study regions will include the definition of separate port regions by the counties in which they lie. Potential further expansion of the study region will include additional ports and docks.

Conclusions, to date are as follows: the updated MARAD model is not a good tool for meeting the objectives of this research. Problems include mounting difficulties with ordering, the presence of too many bugs in the software, and evidence that the model builders are still using the old version's national average cost data. It is expected that further project impact models will use IMPLAN as we move forward. However, the survey process in either case is more involved than expected. Given the necessity of collecting more data for the IMPLAN model than anticipated for the MARAD model, a limited survey response becomes a particular problem for use of IMPLAN. Data collection is underway but is proving to require much follow-up.

The next steps will be to continue current data collection in order to complete the pilot study, acquire a revised updated version of the MARAD model for the Twin Ports, and complete the IMPLAN analysis of the Twin Ports. The project team will compare results from these two models and present recommendations for how to move forward with surveys of additional ports and to assess 2010 economic impact for the GLSLS.

Economic Impact of the Great Lakes and St. Lawrence Seaway System (GLSLS): Phase II

1. Introduction

This project represents the second phase of a study undertaken to develop an economic impact analysis of the Great Lakes and St. Lawrence Seaway (GLSLS) system. The goal of an economic impact study is to determine the effect of a given economic activity, or group of activities, on the overall economy of a region of interest, be it a city, county, state, nation, or some chosen combination of areas. The larger project has intended to evaluate the impacts associated with the existence of current GLSLS maritime industry facilities and associated activities and to develop a procedure through which such impact analysis can be regularly updated in subsequent periods.

The activities completed in Phase I included: 1) determination of the particular ports and areas to be considered in the broader economic impact analysis; 2) multiple model assessment and selection of the updated and revised MARAD Port Kit model, as developed by Rutgers University, to conduct the analysis; 3) determination of data needs for the MARAD Port Kit, and 4) a decision to conduct a pilot study using the port of Duluth/Superior as the beta test for the larger study. All of these goals were addressed and detailed in a previous report, but we provide a brief summary here, including a short description of the modeling procedure.

2. Phase I summary and description of IO

The GLSLS area to be analyzed initially included sixteen port regions in the eight states bordering the Great Lakes and St. Lawrence Seaway – Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, and New York. For the purposes of this study, port regions are defined as the counties containing the particular ports to be considered in the analysis.

Economic impact analysis focuses on the use of input-output (IO) modeling, which is a standard methodology for studies such as this. IO modeling depends on inter-sectoral linkages that exist across a region's economy and is driven by final demand, representing sales to end users of finished goods and services. An important aspect of such modeling is tracking of the value that an industry of interest adds to the goods and services it uses as intermediate inputs in its production process. This includes accounting for generation of wages and salaries, profit-type income, interest, dividends, rents, capital consumption allowances, and taxes. In doing so, the value added measure gauges each industry's contribution to gross regional product for the particular area being modeled (GDP, gross state product, etc.).

In determining the economic impact of some particular activity, IO modeling involves a data driven mathematical procedure that translates direct economic effects of an event into total economic effects on a modeled economy, taking into account "ripple effects" across different industries and sectors of the economy. The overall impact is typically comprised of three stages:

1) The *direct effect* is the initial change in economic activity that affects demand in the economy. This influences the directly affected industry's production decisions, and therefore its employment, value added, and demand for inputs from other firms. 2) The *indirect effect* accounts for any additional impact due to changes in demand on industries providing inputs to the directly impacted sectors, which causes additional effects on their suppliers as well. 3) The *induced effect* accounts for the resulting changes in employment and incomes causing additional changes in demand for consumer goods and services, affecting additional industries. Summing over the direct, indirect, and induced effects will give the total impact on a region's economy resulting from some economic event of interest, which in this case is port and maritime activity.

The data needs involved in undertaking IO analyses are defined by a model's input requirements. In general, these tend to include measures of output and/or employment as the direct effects of the industry of interest. However, these may also include other elements, depending on the particular model chosen for use in the analysis. One important outcome of Phase I of the project was to decide upon the MARAD Port Kit as the preferred model for conducting the analysis. This choice was based upon thorough analysis of alternatives, as well as information from the model's developers that promised availability of an updated version of the model built from the latest available underlying data.

The MARAD Port Kit seemed the best option because it provides a port-specific interface that generates direct employment/output effects for input into the underlying IO model from data on shipments and inland movements, thus having minimal survey requirements for input data collection. Previously the major problem with this model was that the publicly available version that was customizable by region was outdated. It had come out in 2000 and was based on 1992/1998 RIMSII multipliers. It was also based on Standard Industrial Classification (SIC) codes instead of the more recent North American Industry Classification System (NAICS) coding. An updated version based on NAICS has ostensibly become available, but unfortunately the MARAD funded version is only offered on a national basis and is therefore not appropriate for analysis of the GLSLS. In order to pursue the Great Lakes impact, it has become necessary to order regionally customized versions from the Rutgers source.

The potential cost involved with obtaining a customized version of the MARAD Port Kit directly from the developers turned out to be quite substantial, so it was decided that a pilot study would be undertaken to test the efficacy of the model and design the procedures necessary to collect the required input data and generate the impact analysis. The region chosen for the pilot study is the Twin Ports of Duluth, MN, and Superior, WI. The second phase of the project has involved significant activities aimed at completing this pilot study and laying the groundwork for the impact analysis of the whole GLSLS region.

3. Phase II

After significant communication with the MARAD Port Kit developers at Rutgers to establish the details of what was needed for our customized version of the model, the ordering process was begun in mid-December 2009. As Rutgers could only accept a check for payment, it was necessary to go through the University of Minnesota's ordering procedure, which involved several bureaucratic steps. As it turns out, there were potential licensing issues that had to be

ironed out between Rutgers and the University of Minnesota and both legal departments got involved. It was mid-February of 2010 before a check was issued and the order was placed. After not receiving the model within a couple of weeks, Rutgers was contacted and it was learned that they had misplaced the check and the order was not yet in the process of being filled. The model was finally received towards the end of March. Unfortunately, the provided installation file was corrupt and the model would not install. After much back and forth with the developers, a working version of the software package was finally received in April and work began on developing the procedures for collecting the necessary data to run the model.

4. Data needs and survey design

MARAD Port Kit

The MARAD Port Kit requires input data on shipments and inland transportation mode. Specifically, these data include shipments by cargo type, including containerized cargo; breakbulk—cargo in individual pieces or on pallets, such as forest products, paper, and steel; liquid bulk—such as petroleum and petrochemicals; dry bulk—such as grain or coal; autos and other vehicles; and project cargo—such as wind turbine components. Required port kit input also includes specifying inland modes of transportation of cargo to and from the ports, with a necessary breakdown by long- and short-distance trucking, barge, rail, and pipeline. In addition, the MARAD model can be adjusted to reflect local conditions by accounting for itemized costs for services, fees, and other charges in relation to each cargo type, including: costs of waterside services such as tugs, pilots, line hauling and launch fees, dockage fees; government requirements; customs, entrance/clearance fees, immigration, quarantine; loading/discharging; stevedoring, clerking, security, cleaning/fitting, and equipment rental. Costs related to the following can also be adjusted in the model: suppliers, including chandlers/provisions, laundry, medical, waste handling charges; bunkers; oil, water; in-transit storage; wharfage fees, yard handling, demurrage, warehousing and other storage; cargo packing; export packing, container stuffing/stripping, cargo movement and adjustment.

While total shipments by cargo type could be obtained from the Port Authority, they do not track data on inland modes of transportation or the costs of operations and other activities. Survey design for collection of this data from the Twin Ports began in late May. The team needed to determine the best sources for the required data, and ideally for the cost components as well. With the help of Jim Sharrow, Facilities Manager of the Duluth Seaway Port Authority, and the Duluth Seaway Port Authority, meetings were set up with representatives from several firms and other organizations in the port, including Lake Superior Warehousing, Great Lakes Fleet/Key Lakes, and Midwest Energy Resources. Based on these meetings, rather than design separate surveys for different maritime industry organizations, it was decided to use a single survey with separate sections. The resulting survey is in the appendix.

While the Twin Ports survey was in the design process, the team was contacted by Dean Haen, the Port Manager for the Port of Green Bay, WI, and it was decided to expand the pilot study to include that port. This required ordering an additional component to our customized

version of the MARAD Port Kit, which was received at the end of July. Accompanied by a letter from the Port Director, Adolph Ojard, the initial survey went out to 24 Twin Ports dock/terminal operators and shipping agents on August 12th. Surveys also went out to 14 Green Bay terminals, with those accompanied by letters from Dean Haen. A representative example letter can be found in the appendix.

Initial survey response for the Twin Ports was seven surveys received by the end of August. Follow-up phone calls were made to all non-respondents in early September and one additional survey was received, despite several promises of survey returns. In addition to being only a 33% response rate, most of the surveys received reported very little additional data that would allow the research team to adequately recalibrate the model to reflect local conditions. (Survey response for Green Bay also did not surpass 33%.) Most respondents gave no information on their costs of operation at all and few gave any information on other expenditures. Despite this, the MARAD Port Kit ostensibly could be used based on national averages for the costs of operations instead, which is built into the model. While not ideal, this was an acceptable alternative.

Moving forward with the impact analysis using the MARAD Port Kit thus required only shipments by cargo type and inland mode of transportation. The former had already been obtained from the Port Authority and was partially confirmed by the survey responses that were received. The transportation mode breakdown could be estimated based on cargo type and information garnered from the previously mentioned meetings with industry representatives, as well as some of the survey response data that was obtained. With this information in hand, the model was employed to generate the impact analysis.

It was at this stage that another difficulty was encountered. Analysis of the output from the MARAD Port Kit revealed serious flaws in its operation. One of the effects of an economic activity that is tracked and reported by most IO models is impact on income and wages in the region being modeled, which is a component of value added, i.e. additions to gross regional product. The impact report based on actual shipments through the Twin Ports gave a large negative value for wages and incomes in the region. This is clearly *not* correct and indicates a serious flaw in the design of the model. This leads all other reported results to be suspect as well. The developers at Rutgers were contacted in early September and promised to look into the problem and provide a solution. Having not heard back by November, the research team again contacted Rutgers, who again promised to provide a solution ASAP. New model components were finally received in December. However, once the model was reconfigured with the new components, it turned out that the problem with negative wages had not been fixed. Once again the developers were contacted and once again they promised a fix to the problem. The last supposedly revised model components were received in January. Despite the claimed fix, the model was rerun in February and is still generating negative results for wages. For all these reasons we were unable to use the MARAD Port Kit.

In addition to the problems with the incorrect output being generated by the model, it was also discovered that the underlying national average cost data that the model makes available had not been updated along with the other model components. It turns out they were exactly the same values that the obsolete version of the MARAD Port Kit contained. This means it is likely based on industry costs from the 1990s. So even if the model IO analysis worked correctly, lack of sufficient survey responses to input the latest local cost data would have led to questionable results either way.

IMPLAN Model

In the meantime, it was decided to attempt use of the IMPLAN model to conduct an economic impact analysis of the Twin Ports. Recall that the minimal input requirements for use of the MARAD Port Kit model was a primary reason behind its choice over IMPLAN and the lack of response to the initial survey supported this reasoning. Unfortunately, the use of IMPLAN required a much greater number of firms to be surveyed in order to collect the necessary data for inputs into the model. This is because it is a general IO model without a port-specific interface that could take data on shipments and convert it to employment/output data for inputs into the IO analysis. One advantage to this is that the minimum data input required is information on employment. Unfortunately, this information needed to be gathered from every firm and/or organization that was in any way directly port-related in its activities. For IMPLAN to generate satisfactory results, survey response would need to be as close to 100%, as possible in order to generate good impact analyses.

A new and simpler survey was designed for a second round of surveying, a copy of which is in the appendix. Another letter from the Port Authority was obtained and the survey went out in mid-September to more than ninety firms and other organizations. Follow-up calls were made in October and November to try to boost the response rate, but unfortunately only 27 surveys were returned in this round. Once again the overall response rate was barely over 30%. In this case, however, that is not good enough to conduct a complete economic impact analysis. It may have been possible with a significantly higher survey response rate to estimate employment for non-respondents, but for some sectors we obtained no representative sample at all with which to do this.

5. Conclusions

Conclusions, to date are as follows: the updated MARAD model is not a good tool for meeting the objectives of this research. Problems include mounting difficulties with ordering, the presence of too many bugs in the software, and evidence that the model builders are still using the old version's national average cost data. It is expected that further project impact models will use IMPLAN as we move forward. However, the survey process in either case is more involved than expected. Given the necessity of collecting more data for the IMPLAN model than anticipated for the MARAD model, a limited survey response becomes a particular problem for use of IMPLAN. Data collection is underway but is proving to require much follow-up.

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Appendix

Letter from the port director



1200 Port Terminal Drive
Duluth, Minnesota 55802-2609 U.S.A.
218-727-8525 • Fax 218-727-6888
E-Mail: admin@duluthport.com • www.duluthport.com

September 13, 2010

Dear _____,

The Labovitz School of Business and Economics at the University of Minnesota Duluth and I are requesting your help. By answering the questions on the attached survey and returning it to the UMD Bureau of Business and Economic Research in the envelope provided, your data will permit us to model the economic impact of the Duluth-Superior port. This effort is the pilot project for a larger economic impact analysis of Great Lakes shipping, funded by the Great Lakes Maritime Research Institute.

This impact study will increase the visibility of port activity, contribute to policy decisions, and provide the first step in what is planned as annual reporting on the continuing economic importance of the port.

Please be confident that the data you supply will remain confidential and that no information from any respondent will be shared with anyone outside the Labovitz School's project team.

Questions about the objectives and methodology of this study can be addressed to Bureau Director Jim Skurla atjskurla@umn.edu, or the Principal Investigator, Dr. David Doorn of the UMD Economics Department, at ddoorn@umn.edu.

UMD will present preliminary impact results at a meeting scheduled for September 24, 2010. Therefore we ask you to return your survey data as soon as possible.

Thanking you in advance for your much appreciated time and effort!

Sincerely,

Adolph N. Ojard
Executive Director

Data Survey for Port Economic Impact Analysis

Please provide the information requested below. While not all of the data categories covered necessarily pertain to all firms being surveyed, please carefully work through each section and fill in any information that does apply to your operation.

Responses will be aggregated across respondents in order to model the economic impact of the port. All survey responses will be held with strict confidentiality by the project team and no individual data will be released in any form.

If you have any questions or concerns, please contact Jim Skurla, Director of UMD's Bureau of Business and Economic Research, at jskurla@umn.edu, or Dr. David Doorn of the UMD Economics Department, at ddoorn@umn.edu.

I. Firm Information:

Business Name: _____

Address: _____

Contact Name and Phone Number: _____

Primary business activity: _____

Primary North American Industry Classification System ID (NAICS Code): _____
(If NAICS code is unknown, but you have an SIC code, please enter that and indicate it is the SIC code.)

Employment – Please enter the number of people employed by your company at this port in each of the following shipping seasons:

2007: Full-time: _____ Part-time: _____

2008: Full-time: _____ Part-time: _____

2009: Full-time: _____ Part-time: _____

Please provide the following information for your operations at this port (optional):

2007: Gross revenues: \$ _____ Total Payroll: \$ _____

2008: Gross revenues: \$ _____ Total Payroll: \$ _____

2009: Gross revenues: \$ _____ Total Payroll: \$ _____

II. Shipments (If you are not a dock or terminal operator please skip to the next section.)

Please fill in the shipping information by cargo type that was handled by your operation at this port for each of the designated shipping seasons in the tables below.

Shipments	2007		Cargo Type				
			Breakbulk (Short Tons)	Dry Bulk (Short Tons)	Liquid Bulk (Short Tons)	Project Cargo (Short Tons)	Containerized Cargo (# Containers in TEUs)
	Loaded						
	Unloaded						
Inland Movement			Cargo Type				
			Breakbulk	Dry Bulk	Liquid Bulk	Project Cargo	Containerized Cargo
	Inbound to port						
	% of above tonnage moved by:	Long Distance Truck					
		Short Distance Truck					
		Rail					
		Barge					
		Air					
		Pipeline					
	Outbound from port						
	% of above tonnage moved by:	Long Distance Truck					
		Short Distance Truck					
		Rail					
Barge							
Air							
	Pipeline						

Shipments	2008	Cargo Type				
		Breakbulk (Short Tons)	Dry Bulk (Short Tons)	Liquid Bulk (Short Tons)	Project Cargo (Short Tons)	Containerized Cargo (# Containers in TEUs)
	Loaded					
	Unloaded					

Inland Movement			Cargo Type				
			Breakbulk	Dry Bulk	Liquid Bulk	Project Cargo	Containerized Cargo
	Inbound to port						
	% of above tonnage moved by:	Long Distance Truck					
		Short Distance Truck					
		Rail					
		Barge					
		Air					
		Pipeline					
	Outbound from port						
	% of above tonnage moved by:	Long Distance Truck					
		Short Distance Truck					
		Rail					
		Barge					
Air							
Pipeline							

Shipments	2009	Cargo Type				
		Breakbulk (Short Tons)	Dry Bulk (Short Tons)	Liquid Bulk (Short Tons)	Project Cargo (Short Tons)	Containerized Cargo (# Containers in TEUs)
	Loaded					
	Unloaded					

Inland Movement			Cargo Type				
			Breakbulk	Dry Bulk	Liquid Bulk	Project Cargo	Containerized Cargo
	Inbound to port						
	% of above tonnage moved by:	Long Distance Truck					
		Short Distance Truck					
		Rail					
		Barge					
		Air					
		Pipeline					
	Outbound from port						
	% of above tonnage moved by:	Long Distance Truck					
		Short Distance Truck					
		Rail					
		Barge					
Air							
Pipeline							

III. Associated Costs

The tables below contain national averages for costs per specified unit associated with cargo handling and port activities by cargo type. To enable our study to more accurately reflect local conditions, please fill in any of the local costs that your firm has information on in terms of the appropriate cost per specified unit. If these costs have differed significantly by shipping season, please indicate this as well. (Note that national averages are not available for some costs. Please fill in any local cost data you have available for these.)

		Cargo Type									
		Breakbulk (Cost per Short Ton)		Dry Bulk (Cost per Short Ton)		Liquid Bulk (Cost per Short Ton)		Project Cargo (Cost per Short Ton)		Containerized Cargo (Cost per Container)	
		National Average	Local Cost	National Average	Local Cost	National Average	Local Cost	National Average	Local Cost	National Average	Local Cost
Loading/Discharging	Stevedoring	\$9.00	\$	\$0.34	\$	\$0.00	\$	\$20.00	\$	\$93.68	\$
	Clerking and checking	\$0.40	\$	\$0.00	\$	\$0.00	\$	\$0.04	\$	\$0.88	\$
	Watching	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.11	\$
	Cleaning/fitting	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.30	\$	\$0.00	\$
	Equipment Rental	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$1.10	\$
	Agency Fee	\$0.03	\$	\$0.03	\$	\$0.03	\$	\$0.03	\$	\$0.26	\$
	Other (Please Specify)	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
In-Transit Storage	Wharfage	\$2.05	\$	\$0.00	\$	\$0.12	\$	\$3.00	\$	\$17.00	\$
	Yard Handling	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$20.00	\$	\$0.77	\$
	Demurrage	\$0.85	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.07	\$
	Warehousing	\$0.50	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.02	\$
	Auto & Truck Storage	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
	Grain Storage	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
	Refrigerated Storage	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.04	\$
	Other (Please Specify)	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
Cargo Packing	Export Packing	\$0.02	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.13	\$
	Container Stuffing/Stripping	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$5.32	\$
	Cargo Manipulation*	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.15	\$
	Other (Please Specify)	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$

* For example: strapping, breaking pallets for inspection, etc.

		Cargo Type									
		Breakbulk (Cost per Short Ton)		Dry Bulk (Cost per Short Ton)		Liquid Bulk (Cost per Short Ton)		Project Cargo (Cost per Short Ton)		Containerized Cargo (Cost per Container)	
		National Average	Local Cost	National Average	Local Cost	National Average	Local Cost	National Average	Local Cost	National Average	Local Cost
Navigational Service	Tugs	\$0.45	\$	\$0.29	\$	\$0.29	\$	\$0.45	\$	\$2.85	\$
	Pilots	\$0.40	\$	\$0.38	\$	\$0.31	\$	\$0.40	\$	\$3.74	\$
	Line Handling	\$0.60	\$	\$0.02	\$	\$0.01	\$	\$0.26	\$	\$1.47	\$
	Launch	\$0.24	\$	\$0.03	\$	\$0.02	\$	\$0.24	\$	\$0.64	\$
	Radio/Radar	\$0.05	\$	\$0.05	\$	\$0.00	\$	\$0.05	\$	\$0.04	\$
	Surveyors	\$0.04	\$	\$0.06	\$	\$0.01	\$	\$0.04	\$	\$0.13	\$
	Dockage	\$0.16	\$	\$0.75	\$	\$0.01	\$	\$0.16	\$	\$2.46	\$
	Lighterage	\$0.00	\$	\$0.00	\$	\$0.01	\$	\$0.00	\$	\$0.00	\$
	Other (Please Specify)	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
Gov't Requirement	Customs	\$0.60	\$	\$0.27	\$	\$0.10	\$	\$0.60	\$	\$1.10	\$
	Entrance/Clearance	\$0.25	\$	\$0.39	\$	\$0.00	\$	\$0.25	\$	\$0.50	\$
	Immigration	\$0.30	\$	\$0.00	\$	\$0.00	\$	\$0.03	\$	\$0.08	\$
	Quarantine	\$0.40	\$	\$0.00	\$	\$0.00	\$	\$0.04	\$	\$0.04	\$
	Fumigation	\$0.10	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.14	\$
	Federal Harbor Tax	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
	Other (Please Specify)	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
Supplies	Chandler/Provisions	\$0.06	\$	\$0.03	\$	\$0.04	\$	\$0.06	\$	\$0.92	\$
	Laundry	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.04	\$
	Medical	\$0.03	\$	\$0.01	\$	\$0.00	\$	\$0.03	\$	\$0.24	\$
	Waste	\$0.08	\$	\$0.00	\$	\$0.00	\$	\$0.08	\$	\$0.02	\$
	Security	\$6.00	\$	\$0.00	\$	\$0.00	\$	\$6.00	\$	\$0.00	\$
	Dunnage	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
	Oil	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
	Water	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$
	Other (Please Specify)	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$	\$0.00	\$

IV. Port Investment and Expenditures

Please complete the following table to indicate any investment activities and/or capital expenditures that were undertaken by your firm at this port in the years of interest.

Construction/Capital Activity		Expenditures		
		2007	2008	2009
Equipment	Dockside:			
	Cranes			
	Gangways			
	Conveyors			
	Inland:			
	Switch/yard locomotives			
	Chassis			
	Gate Equipment:			
	Gates			
	Booths			
	Signaling			
	Variable Signs			
	Security Systems			
	Yard Equipment:			
	Fork Lifts			
	Straddle Loaders			
	Side Loaders			
	Yard Hostellers			
	Overhead Cranes			
	Conveyors			
	Switching Engines			
	Container Racking Systems			
	Bulldozers			
	Spiralveyors			
	Concrete Pods/Curb Strips			
	Telecommunications and Computer Equipment:			
	Fiber			
	Cable			
	Computers			
	Radio Frequency Equipment			
	Telecommunications Equipment			
	Electronic Tags			
	Lighting/Electrical:			
Yard and Gate Lighting				
Plugs/outlets for "Reefer" containers and trailers				
Waterborne:				
Ferries, Tugs, and other marine vehicles				

Construction/Capital Activity		Expenditures		
		2007	2008	2009
Property Acquisition/Site Purchase				
Bulkheads/Dockside/Berths work				
Site Preparation	Fill			
	Paving			
	Demolition			
Structures	Administration Buildings			
	Sheds and Warehouses			
	Passenger Terminals			
On- and near-dock rail terminals (including intermodal yards, track within port facilities, and regional rail directly related to movement of waterborne cargo)				
Dredging	Channel deepening			
	Maintenance dredging			
Services	Port Agency Overhead			
	Engineering, Architectural, and Contingency			
	Legal Services			

Thank you for your cooperation!

Data Survey for Port Economic Impact Analysis

The Twin Ports of Duluth and Superior provide significant economic benefits to the surrounding communities and the states of Minnesota and Wisconsin. This includes providing employment and income to a wide range of workers across several industries and also generating tax revenues to aid in the financing of the operations of government at all levels. Measurement of these benefits is useful in providing information to a variety of stakeholders and policy makers, as well as to government agencies who determine funding for maintenance projects and other capital expenditures at the port. This also helps to inform the public on the importance of the port to their community.

In order to assess the economic benefits provided by the existence of the port it is necessary to collect data on those operations that are directly related to port activities in some way, be it cargo handling at the docks, the provision of services to vessels, or any other activity that contributes to or is directly involved with the maritime activity of the port. To aid us in this endeavor, please provide the information requested below.

Responses will be aggregated across respondents in order to model the economic impact of the port as a whole. All survey responses will be held with strict confidentiality by the project team and no individual data will be released in any form.

If you have any questions or concerns, please contact Jim Skurla, Director of UMD's Bureau of Business and Economic Research, at jskurla@umn.edu, or Dr. David Doorn of the UMD Economics Department, at ddoorn@umn.edu.

Business Name: _____

Address: _____

Contact Name and Phone Number: _____

Primary business activity: _____

Primary North American Industry Classification System ID (NAICS Code): _____

(If NAICS code is unknown, but you have an SIC code, please enter that and indicate it is the SIC code.)

Employment:

While it is understood that for some firms being surveyed port related activities only account for a portion of their overall operations, it is important that the researchers get as accurate a view of port related employment as possible. Please provide the following information on your organization.

Please enter the overall number of people employed by your company's operations in Douglas County, WI, and/or St. Louis County, MN, in each year. In addition, indicate the percent of this total employment that is due to port related activities conducted by your firm.

(Alternatively, if there are no jobs within your organization that are exclusively due to port related activities, please estimate the cumulative number of hours per year that are spent on port related activities by employees at your firm.)

2007: Full-time: _____ Part-time: _____ Percent port-related: _____

Alternative – cumulative number of employee hours spent on port related activities over the year: _____

2008: Full-time: _____ Part-time: _____ Percent port-related: _____

Alternative – cumulative number of employee hours spent on port related activities over the year: _____

2009: Full-time: _____ Part-time: _____ Percent port-related: _____

Alternative – cumulative number of employee hours spent on port related activities over the year: _____

Additional Information (optional):

Please provide the following information for your operations in Douglas County, WI, and/or St. Louis County, MN:

2007: Gross revenues: \$ _____ Total Payroll: \$ _____

Percent due to port-related activities: _____

2008: Gross revenues: \$ _____ Total Payroll: \$ _____

Percent due to port-related activities: _____

2009: Gross revenues: \$ _____ Total Payroll: \$ _____

Percent due to port-related activities: _____

Thank you for your cooperation!