

# **Port Utilization Measurement of Mississippi's Intermodal Ports**

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## **ABSTRACT**

This project focused on enhancing the transportation efficiency within Mississippi's intermodal transportation industry. This was accomplished by developing a port assessment tool that identified current methods and data used at each port in Mississippi to record its operating statistics. The assessment tool was tested on two ports in order to gauge its adequacy in measuring port capacity and utilization of operation. Port participants were asked a series of quantitative questions dealing with port activities and current measures being used. The ultimate goal was to enhance the region's economic competitiveness through greater efficiency across transportation modes. The project targeted over \$25,000 in tangible economic impact annually, which will fully return the federal award. The need for a set of common measures for port activities was recognized during a previous MSU project funded by the Mississippi Economic Council. MDOT concurred with the need, but was unable to undertake the project at that time. This project determined what reporting is done currently, what information is being reported (or gathered), and what information is deemed most needed by the ports and MDOT in its role as overseer of the Mississippi ports. The project resulted in a reporting tool that may be utilized at all of Mississippi's intermodal sites in future projects. Mississippi State University (CAVS – Extension) personnel conducted this research.

Key words: transportation, intermodal, port, economic competitiveness, reporting.



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## INTRODUCTION

Many businesses within Mississippi utilize various transportation modes in order to either bring in raw materials or to distribute finished products. There are few opportunities for transportation professionals from various stakeholders (e.g., manufacturers, trucking companies, barge carriers, port operators, rail lines, and transportation agencies) to collect and assess relevant data which may be compared to one another in efforts to gain insight concerning which port has greater facility utility and where opportunities for improvement exist. This type of cooperation is needed in order to lower overall transportation costs, resulting in a more economically competitive region. Economic competitiveness is increased when businesses, located throughout the state, are able to meet the transportation challenges of time sensitivity, load weight restrictions, transportation regulations/restrictions, and height/width restrictions through more efficient use of the intermodal infrastructure. In many ways, this program strengthens the beginning of an Intermodal Transportation cluster.<sup>1</sup>

To address this need, this project proposed to develop an assessment tool for use in comparing ports with each other, based upon certain agreed upon criteria and measures. This will provide an opportunity to foster cooperation among professionals from various transportation modes (e.g., truck, rail, water) when striving to improve the port's statistics in quickly and efficiently serving its customers. These assessments will gather same data types from each port in order that valid and meaningful comparisons are made.

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<sup>1</sup> The clustering concept, which has been used strongly by the industrial sector, is becoming more popular within the logistics and transportation sectors. This evidenced by Sheffi's recent 2012 book Logistics Clusters: Delivering Value and Driving Growth.



## **OBJECTIVE**

The program's objective is to do the following:

- Identify and develop meaningful criteria, common to all ports, by which to evaluate various functions and results of port operation.
- Test the assessment tool on two ports to assist in fine-tuning the assessment instrument.

## **SCOPE**

This short project entailed developing a tool for gathering baseline data from ports that has future use by Mississippi Department of Transportation (MDOT) and the ports authorities in helping determine how best to gain maximum benefit from repairs and improvements being considered.

## **METHODOLOGY**

A search of literature was undertaken to determine what information is collected about ports located in surrounding states.

A qualitative research plan consisting of interviewing a broad set of stakeholders was employed. Officials at MDOT were interviewed regarding the information they would like collected, and reported, about Mississippi ports. Several port directors or managers were interviewed regarding current statistics captured for the freight moving through their respective ports.

Several of these stakeholders were met while attending the Inland Rivers, Ports, and Terminals (IRPT) Annual Conference in Natchez, MS May 3-4, 2016. One conference attendee, Mr. Jimmy Yeager, the president of the Rosedale-Bolivar County Port Commission, suggested that Mr. Robert Maxwell be interviewed. Mr. Maxwell is the Port

Director at the Port of Rosedale. He is responsible for the day to day activities and is intimately familiar with the issues at the port. Mr. Maxwell was interviewed by telephone. Mr. Tom Podany, Director of the Waterborne Commerce Statistics Center for the US Army Corps of Engineers (USACE) presented at the IRPT conference. He provided several data sources by email for this project.

Mr. Wayne Mansfield, Warren County Port Commission Executive Director agreed to be interviewed by telephone for this project. Mr. Mansfield pointed out that since the port of Vicksburg was a designated Foreign Trade Zone and Port of Entry, he did not experience as many of the problems as other ports that did not have these designations. Mr. Mansfield also recommended an interview with Will Sanders, the Lowndes County Port Director but Mr. Sanders could not be reached via email or telephone.

Mr. Robby Burt, Ports and Waterways Director for MS Dept. of Transportation (MDOT) agreed to be interviewed by telephone.

The questions asked of the port directors and MDOT were as follows:

1. What statistics are currently captured and reported?

Robert Maxwell (RM): “The public terminal currently captures number of barges per year, tons of each commodity per year, and the types of commodities moved through the port. We have recently started collecting data on where the commodity came from, which county. We currently have issues getting the other port tenants to report their data due to fear of higher fees.”

Robby Burt (RB): “We don’t really get too many port statistics reported to us. Most are reported to the Department of Commerce.”

Wayne Mansfield (WM): “Tonnage reports are given to the USACE. The reports are used to determine which ports get dredging money. Dredging money has become very competitive. Tonnage is the only factor considered. They should be looking at other economic indicators. Like the number of jobs created by that port. A port may have low tonnage but it creates a lot of jobs. If that port isn’t dredged, those jobs are in jeopardy. There needs to be a re-evaluation of how dredging money is distributed.”

2. What statistics should be included in the reporting?

RM: “We would like to be able to track where the commodity is going. This would help to see if the MS Delta region is trending along with the rest of the US. It would also be helpful if the other tenants reported their numbers so that the Port of Rosedale can have a single number for the whole port that shows the tonnage transported. Another statistic to be captured would be value of the commodity. The data currently only shows tonnage, not how much that commodity is worth.”

RB: “Reporting value would be a good thing. Tonnage is not enough. Having more current data would be good. A 2 year delay is a long time. Correct commodity codes would also be better for determining the economic impact for that region.”

WM: “Reporting the value of the commodity would be good. Also reporting the number of jobs associated with each port. The overall economic impact should be reported. For example, Ergon brings in oil. There are 230 people working there but that doesn’t include all the jobs associated with the rail or trucking components.”

3. Why are the additional statistics not included?

RM: “The port tenants are worried about sharing data for confidentiality reasons. They are also worried about extra fees or taxes if they report their true tonnage or value.”

RB: “The USACE looks at the tonnage data, not value so value isn’t usually reported or it’s not reported correctly. The commodity codes that are used are not specific enough to correctly report the value of the commodity.”

WM: “Tonnage is easy to report but it is short sided. We have resource limitations so we cannot go out and do the analysis needed to report economic impact. We have the data and can provide that but someone like CAVS-E could do the analysis.”

4. What are issues you face in determining port capacity or utilization?

RM: “Any tonnage that is reported goes to the Dept of Commerce. That data is several years old before it is released to the public. It is hard to see the true amount of material that flows through the entire port since the tenants don’t report the actual numbers. We think the Port of Rosedale has been steadily trending upward but don’t have the numbers to prove it. If we had correct numbers, we would be higher on the USACE list for dredging but the tenants don’t understand that. We try to explain that we need to be dredged for their barges to get out but they are more worried about higher fees. If there was a way for them to anonymously submit their numbers; that might be a good idea.”

RB: “We know there are issues with port capacity and utilization and we have attempted to better determine those numbers.”

WM: “Port capacity and utilization is a problem everywhere. All the ports are full and there is not extra land available. There are places where a port could be located and create jobs, but there may not be people to support the port. Money needs to be allocated to create the port and build it, but there is no guarantee that industry will come. However, they certainly won’t come if you don’t build it.

Most ports do not have a plan for expansion. Currently, I think the Multi-Modal program is broken. \$3.8 million is not enough to support 16 ports, nor is it fair how the money is distributed. The economic impact should be taken into consideration. MDOT needs to develop a 10 year plan, including ports, rails, trucking, and potentially airports. Then each port can create a plan that is in line with the MDOT overall plan. When a port asks for money, the decision can be made to fund the project as long as it is in agreement with the overall plan. Additionally, I think a marketing aspect needs to be included when determining a new port location or expansion of current port. This should include information on the economic impact, including number of jobs created, industries that can be supported, when the investment will be paid off.

There would be a large benefit by improving the current efficiencies at the ports. Since most ports are out of space, and additional land is not available, the only way to expand is become more efficient. Current infrastructure, cranes, etc., is outdated and needs to be improved.

Availability of land is a major problem.”

These interviews took place over the telephone over the course of several days. Notes were taken but the conversations were not recorded.

## **DISCUSSION OF RESULTS**

The project was kicked off by conducting research on statistics currently captured by ports in Mississippi and surrounding states. During this research, a report for the Cargo Handling Cooperative Program entitled “Improving Marine Container Terminal Productivity: Development of Productivity Measures, Proposed Sources of Data, and Initial Collection of Data from Proposed Sources”<sup>2</sup> was referenced. This report, while focused on container terminals, provided a great deal of data regarding the statistics that are currently captured at ports and what the sources of those statistics are.

Several key findings were explored during this project. Those will be discussed in the following sections.

### **Validity of Tonnage Reports**

An issue that repeatedly came up during discussions with port managers and with MDOT representatives was the validity of tonnage reports submitted by each tenant at the ports. There is an assumption among public port managers that the tenants at each of their terminals are not reporting correct tonnage values for multiple reasons. The tenants are fearful that higher fees or taxes would be imposed if the actual tonnage numbers were provided. In addition to the validity of reporting, the issue of report completeness arose. The reports only contain tonnage data. They do not contain data relative to the value of the tonnage or the data provided is inaccurate. This can present a misleading picture of the economic impact of the material flowing through each port. For example, at a port in Oklahoma, a type of sand is frequently handled. The sand is a specialized sand that is valued at \$1000/ton, however the commodity code that is used has a value of \$8/ton. This value can be corrected by using

correct commodity codes or using more specific codes, rather than the more generalized codes.

### **Maintenance Dredging**

According to the port managers interviewed, the largest issue they face is maintenance dredging. Officially, the USACE is responsible for dredging the ports. However, there is limited funding for the dredging. The USACE prioritizes which ports get dredged and in what order the dredging is completed. The ports with higher tonnages are at the top of the prioritization list. If reported tonnages are lower than actual, the ports that need dredging will be lower on the list and may not get dredged in a timely manner or at all.

Another dredging issue is that the USACE does not get near pier structures. To cover funding for this dredging, eligible ports request money from the Multi-Modal Transportation Improvement Program. The port managers feel that it is hard for MDOT to adequately fund the port requests because they are being compared to a road project. For example, getting a barge mounted crane for maintenance is much more expensive than using a traditional crane.

### **Outdated Statistics**

In addition to the validity of tonnage reports, a problem exists with the timeliness of the reports. Each port submits their annual tonnage to the Department of Commerce. It then takes several years for the Dept. of Commerce to analyze the numbers and product their report. The latest numbers available are from 2013. The USACE has figures from 2014. According to MDOT, more current numbers would be very helpful in determining the economic impact each port has on their respective areas.

### **Lack of Understanding of Port Importance**

Several port directors indicated problems with the way ports are perceived. Many people do not think of ports as being important or worthy of the money they are requesting for improvements or expansions. Ports are very good economic indicators as well as economic engines for the areas where they are located. Ports create jobs at the port site, but that job creation can be traced back through the supply chain for the particular commodity.

There is also no mention of ports in the state transportation plan. The general culture and mindset of transportation is highways because that is what most people are familiar with. A marketing plan to increase the knowledge and perception of port importance is a step in the right direction.

## **CONCLUSIONS AND RECOMMENDATIONS**

After discussions with both MDOT and various port managers around the state, having a better way to capture the value and amount of materials that flow through Mississippi's waterways is important for many reasons. Correct figures will allow for better prioritization for dredging from the USACE. Knowing the true values of what is being shipped provides a clearer picture of the economy in Mississippi. Being able to accurately calculate the capacity and port utilization will allow economic developers to better discuss location options and benefits for potential industry partners.

For each port that has commercial tenants, an anonymous submission of data would greatly increase the validity and completeness of the data currently collected. This could be a website or online survey.

Possibilities for a standardized measurement/reporting criteria include tons shipped daily/hourly, number of vehicles loaded/unloaded per day or per hour, machine hours by the loading/unloading equipment available, and daily turns on dock storage space. Although work has been done to evaluate and implement standardized evaluation criteria, there is further work to be done.<sup>3</sup>



## **ACRONYMS, ABBREVIATIONS, AND SYMBOLS**

MDOT      Mississippi Department of Transportation

USACE     United States Corps of Engineers



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