



U.S. Department of Transportation
Maritime Administration

Industry Survey Series: Great Lakes Operators 2005



**Industry Survey Series
Great Lakes Operators
2005**

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Report At a Glance

- # The U.S. Maritime Administration (MARAD) surveyed U.S.-flag carriers who account for 93 percent of the 2004 domestic (Lakewise) Great Lakes traffic.
- # Survey participants expressed optimism for growth in historically bellwether bulk cargoes of iron ore, coal, limestone and cement essential to regional manufacturing, construction and utilities. (In 2004, these commodities accounted for 95 percent of Lakewise traffic.)
- # The majority of respondents indicated that there is potential for new bulk trades on the Great Lakes such as iron ore briquettes, plastic pellets and scrubbing stone.
- # Cross-Lakes traffic with Canada represented only 7 percent of the respondents' 2004 cargo.
- # 80 percent of respondents' annual cargo volume moved under long-term contracts, indicating a mature and stable market.
- # Among the most important issues facing Great Lakes operators is insufficient water depth at both load and discharge ports, revealing the critical need for dredging in the region.
- # Most cargo moves less than 50 miles to or from ports.
- # Carriers indicated that they were likely to invest in new vessels over the next five years. Most respondents preferred integrated tug barge units, suggesting continued growth in Great Lakes barge traffic.
- # Carriers stated that fuel costs, labor supply, and vessel costs are major operational factors that could affect their investment decisions.
- # Respondents ranked insufficient dredging of deep-draft ports and lock maintenance and repair as infrastructure issues that could affect their investment decisions.
- # Regulatory uncertainties associated with new ballast water management rules and the Jones Act were also cited as factors that could negatively affect their investment decisions.

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✚ All operators indicated that they expect significant public investment in lock maintenance and repair.

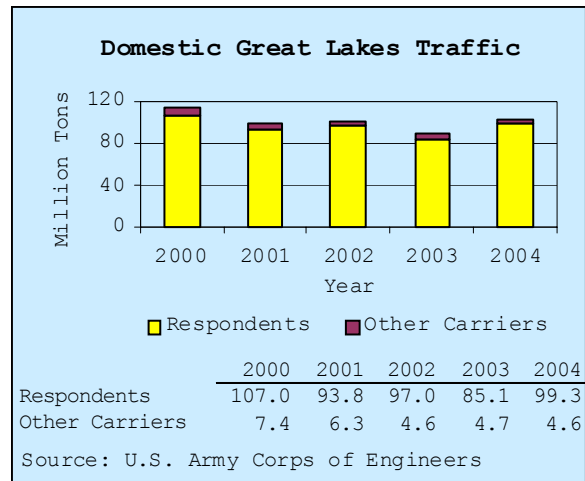
The *Great Lakes Operators 2005* Report is available at http://www.marad.dot.gov/marad_statistics/ and can also be requested by contacting the U.S. Maritime Administration, Office of Data & Economic Analysis, 400 Seventh Street, SW, Room 8107, Washington, DC 20590, Telephone: (202) 366-2267, FAX: (202) 366-8886, E-mail: data.marad@dot.gov.

Introduction

This report summarizes data collected in a Maritime Administration (MARAD) survey of operators of U.S.-flag dry bulk vessels on the Great Lakes.

The objective of the survey was to learn more about the Great Lakes operations and the critical issues faced by the operators, as well as to obtain important information that is not available from existing data. Sidebars are used throughout the report to present salient data that was not collected as part of the survey but which can provide the reader with background information relevant to the survey.

For example, data available to MARAD indicates that the seven survey respondents accounted for 93 percent of Great Lakes domestic (Lakewise) traffic in 2004 (Sidebar 1). For the same period, the respondents operated 51 dry bulk vessels (including 4 integrated tug barge units (ITB's)). The remaining traffic was carried by tankers and conventional barges.



Sidebar 1

The data also indicate a highly volatile trade, fluctuating between 114 and 90 million tons per year over the last five years. Respondents attributed this volatility primarily to economic and seasonal factors.

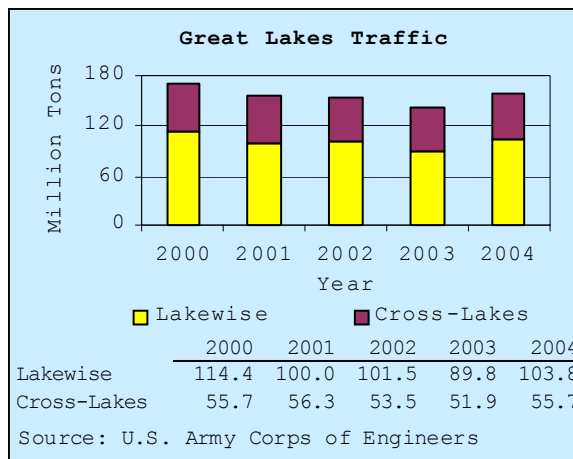
In some cases the carrier's answers were weighted by their 2004 traffic figures to derive meaningful average responses for use in this report.

The survey was designed and conducted in September, 2005 by staff of MARAD's Office of Statistical and Economic Analysis (OSEA). OSEA received valuable input and advice from James Weakley and Glen Nekvasil of the Lake Carriers' Association and Floyd Miras of MARAD's Great Lakes Region office. The questionnaire is appended.

Respondent Characteristics

Respondents were asked a series of questions that would enable MARAD to categorize their responses. These dealt with the importance of U.S. Lakewise trade (as opposed to Cross-Lakes) to their operations, their annual cargo volumes, and the industries they serve.

Lakewise cargo amounted to 65 percent of total Great Lakes traffic in 2004 (Sidebar 2). For each of the respondents, at least 90 percent of their annual cargo

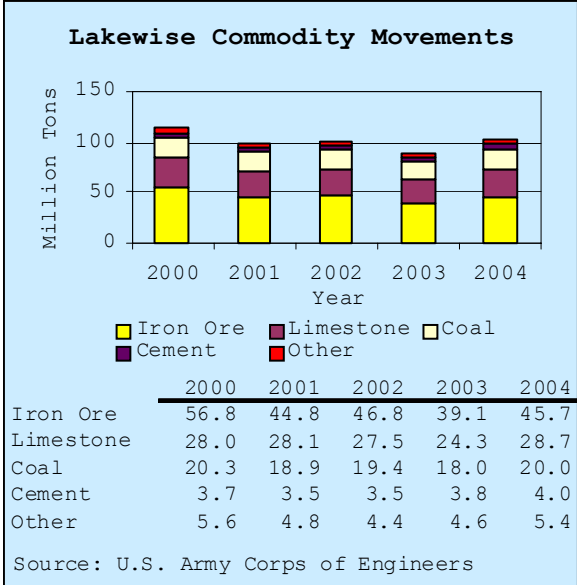


Sidebar 2

was carried in Lakewise trades. Cross-Lakes traffic with Canada represented only 7 percent of the respondents' 2004 total cargo.

There is an extremely large concentration in the carriage of dry bulk cargoes on the Great Lakes, with the three largest operators surveyed accounting for 77 percent of the total Lakewise traffic in 2004. Each described their annual cargo volume as being larger than 15 million tons. The other operators surveyed each indicated that they carried less than five million tons per year. Together they accounted for 16 percent of the trade in 2004.

Iron ore, coal, limestone and cement are the principal commodities moving on the Great Lakes and accounted for 95 percent of the total Lakewise traffic in 2004 (Sidebar 3). Coal is used by the steel industry (with iron ore and limestone) and utilities. Limestone is used by the steel and construction industries. The carriers' weighted responses indicated that 46 percent of their annual traffic is carried in support of the steel industry (Figure 1).



Sidebar 3

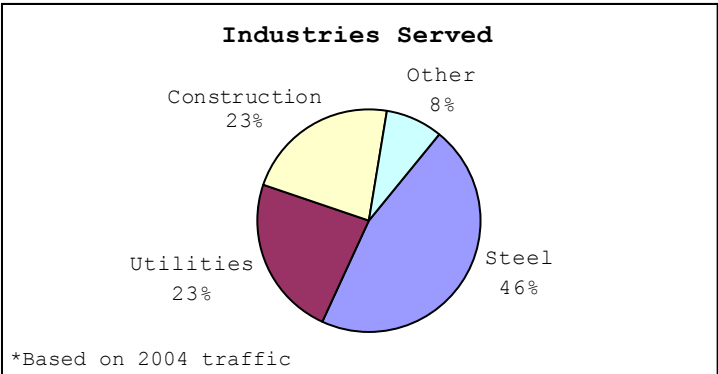


Figure 1

Respondent Attitudes and Perceptions

The remainder of the survey was devoted to determining the respondents' attitudes and perceptions regarding operational issues, industry trends, new investment, infrastructure, and regulatory issues.

The operators were asked about their cargo trends over the last five years and their expectations for the next five. The respondents indicated that cargo carried for all industries had grown over the last five years (reflecting 2005 growth not shown in Sidebar 2). The growth in cargo volume for the utility industry was significantly higher than for the others (Figure 2).

The respondents indicated that they expected their annual cargo volumes to continue to grow over the next five years, with cargo for utilities leading the way (Figure 3).

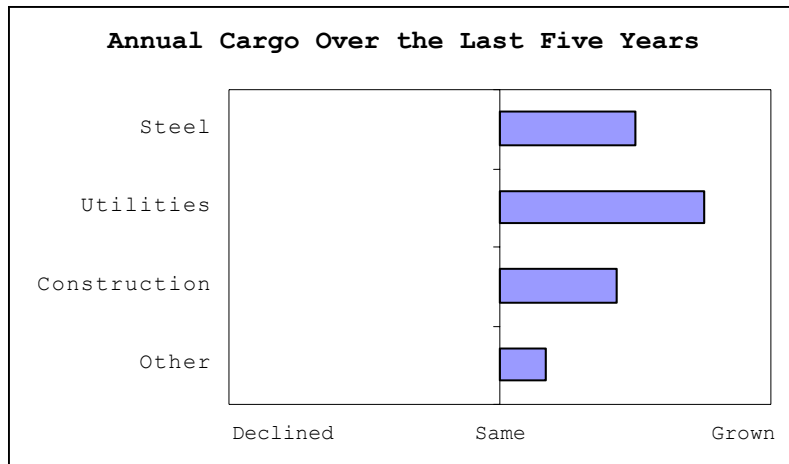


Figure 2

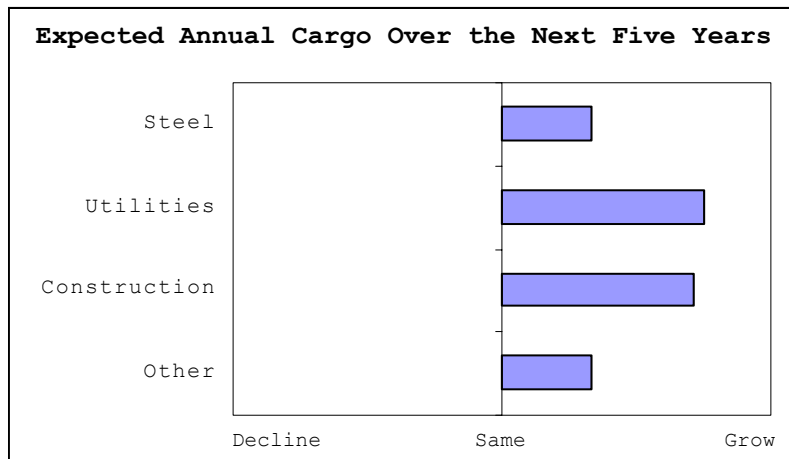


Figure 3

As previously mentioned, Cross-Lakes traffic with Canada represented only 7 percent of the respondents' 2004 annual cargo. Respondents were asked to indicate whether they expected their share to grow over the next five years. Three operators stated that they expected their share to grow, while the other four expected it to remain the same. The most cited factor that tends to limit the growth of the U.S.-flag share of the Cross-Lakes trade was the difficulty of entry into a mature trade with long-established contractual relationships. Canadian fees and tax incentives, and high U.S. costs were other factors mentioned.

Turning to operational issues, all seven respondents indicated that at least 80 percent of their annual cargo volume moves under affreightment contracts or period charters. Four indicated that 100 percent of their business is conducted under such arrangements. Recognizing that contract length is a good indicator of market strength and stability, the operators were asked to indicate what percentage of their annual cargo volume moves under contracts of various lengths (Figure 4). Sixty percent of the respondents' 2004 cargo volume moved under affreightment contracts or period charters that were of 3-5 years in duration. The remainder was split evenly between 1-3 year contracts and those of longer than 5 years. Respondents commented that contracts to move commodities for the steel and construction industries tended to be for longer than 3 years.

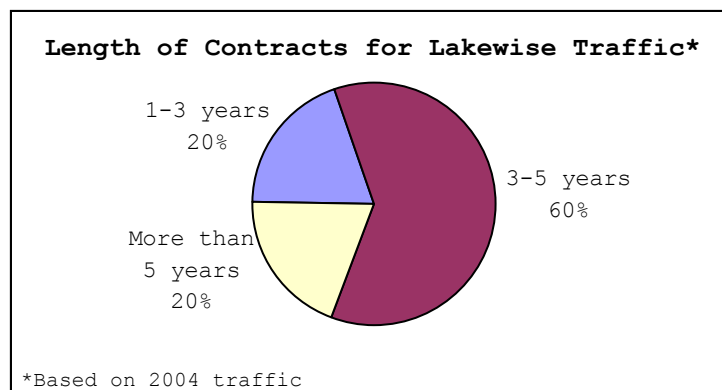


Figure 4

Among the most important issues facing Great Lakes operators is insufficient water depth at both load and discharge ports. Due to a lack of dredging at certain ports, the operators have been forced to "light-load." The respondents were asked a series of questions to explore this issue.

Every respondent encountered the need to light-load, with the severity depending on where they served. Five of the operators indicated that over 75 percent of their voyages over the last five years had been light-loaded because of insufficient water depth.¹

The respondents were asked to identify the ports at which they have been precluded from loading or discharging full cargoes over the last five years, and to indicate the maximum extent of the impact. The maximum draft loss for each port mentioned is displayed in Figure 5. The responses clearly indicate the magnitude of the problem. The 18 ports mentioned accounted for 53 percent of the total Lakewise traffic in 2004, with the top 5 ports representing 40 percent (Sidebar 4).

Top 5 Respondent Cited Ports Shipment and Receipts, 2004*			
(Million Tons)			
	Shipments	Receipts	Total
Duluth-Superior	27.8	3.8	31.6
Indiana (Burns Harbor)	1.5	20.0	21.5
Stoneport (Presque Isle)	13.8	2.2	16.0
Calcite	8.0	0.0	8.0
Ashtabula	0.0	5.4	5.8
Total Top 5	51.1	31.4	82.9
Total Cited Ports	58.3	51.2	109.5
Total Lakewise	103.8	103.8	207.6

*One ports shipments are another's receipts

Source: U.S. Army Corps of Engineers

Sidebar 4



Figure 5

To confirm that the light loading was the result of water depth and not market factors, all seven operators stated that more than 50 percent of their light-loaded voyages would otherwise have had full cargoes available.

¹Lakers (Great Lakes bulk vessels) in the 1,000-foot class forfeit as much as 267 tons of cargo for each inch of reduced draft.

The respondents were also asked a series of questions in order to obtain information about modal choice and intermodal issues. The first dealt with identifying cargoes that have a significant land journey before or after the water movement. The operators were asked what percent of their cargo originated more than 50 miles from the load port, and/or was moved inland more than 50 miles from the discharge port. The respondents indicated that most of the cargo moves less than 50 miles to or from the ports (Figure 6 and 7).

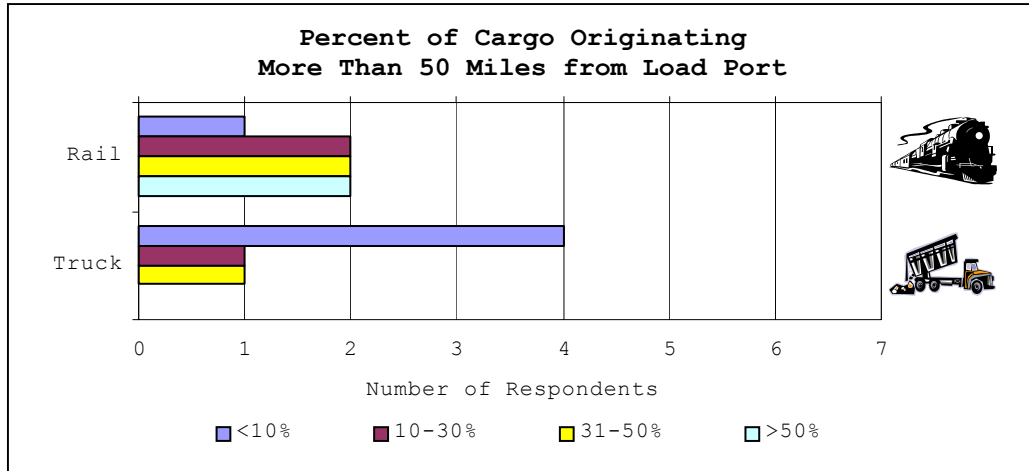


Figure 6

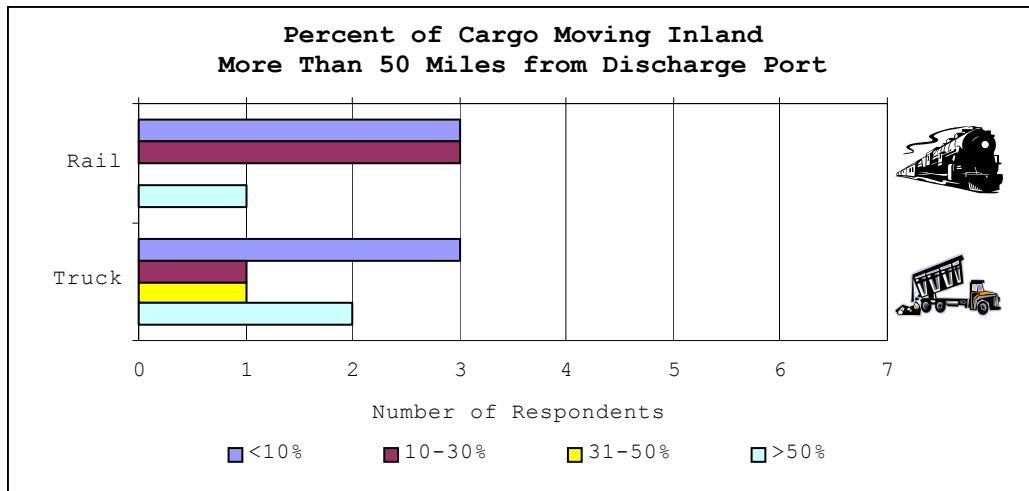


Figure 7

Next, to identify the extent to which there is rail or truck competition for Great Lakes dry bulk cargo (whether substitution of one mode for another is practical), the operators were asked to estimate how much of their existing cargo could be realistically captured by rail or truck. The survey confirmed the existence of some competition and revealed the potential for more. The respondents indicated that iron ore was the commodity most susceptible to capture by another mode (Figure 8).

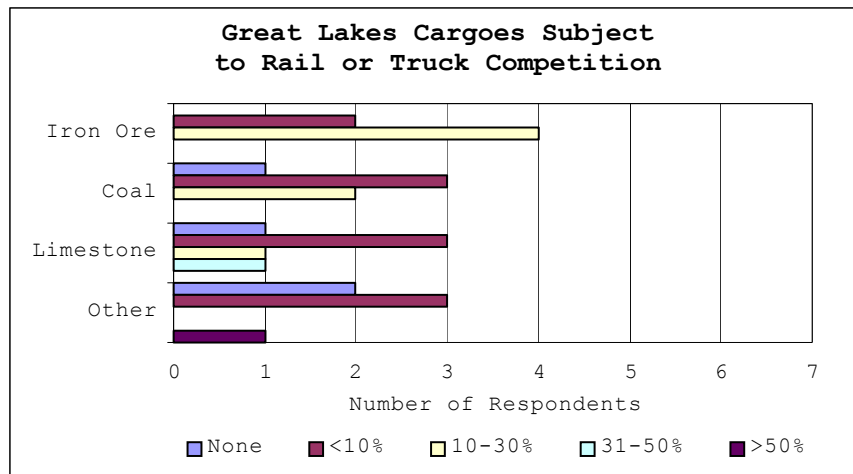


Figure 8

Conversely, the carriers were asked how much of existing rail or truck cargo they thought could be realistically captured by water services on the Great Lakes. The respondents indicated that coal was the commodity most likely to be captured by Great Lakes water services (Figure 9). The respondents also indicated that they could capture more cargo from the other modes than they could lose.

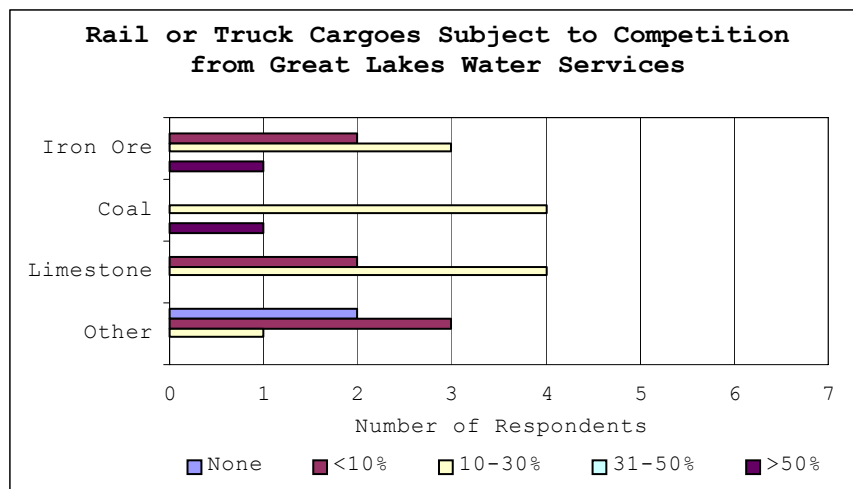


Figure 9

The questions about relative freight rates, transit times, and technological and operational changes in the other modes did not produce enough information to report.

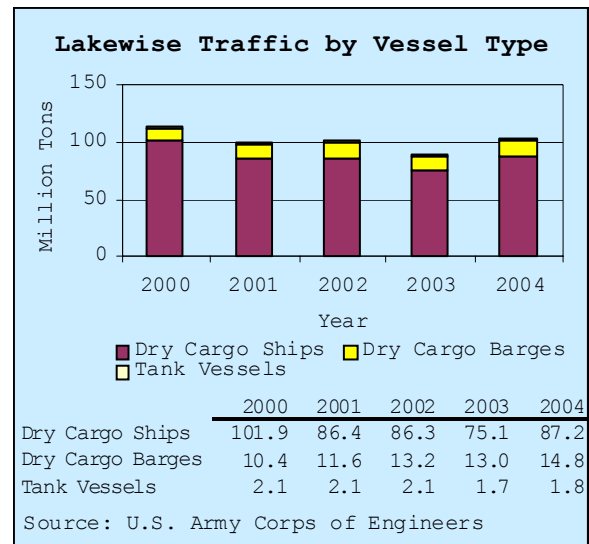
Four of the operators indicated that there is potential for new bulk trades on the Great Lakes over the next five years. Commodities mentioned included iron ore briquettes, plastic pellets, and scrubbing stone.

The respondents were then asked about their expectations for new investment in order to support future trades.

They were first asked the types of ancillary services, such as terminal, truck, and rail, that they offer. None of the operators indicated that they currently offer or plan to offer these services, suggesting a lack of vertical integration by Great Lakes dry bulk carriers. Three of the carriers currently offer barge services.

With respect to new investment in vessels, all but one of the operators surveyed indicated that they were at least somewhat likely to invest over the next five years.

As to the type of vessels that they are likely to be built, respondents showed a clear preference for integrated tug-barges. The survey confirmed the growth in traffic carried by dry cargo barges. Sidebar 4, shows Lakewise traffic by vessel type. Dry cargo barge traffic increased by 42 percent from 2000 to 2004.



Sidebar 5

Regarding the use of public versus private port facilities, the respondents' weighted responses indicated that 85 percent of their cargo was loaded and 93 percent was discharged at private (customer-owned) port facilities.

The respondents were asked to rank eight infrastructure elements that affect their operations on the Great Lakes (Figure 10). Depth at docks and harbor depth were clearly the most important, while truck access roads and rail connections were of minimal interest to the respondents.

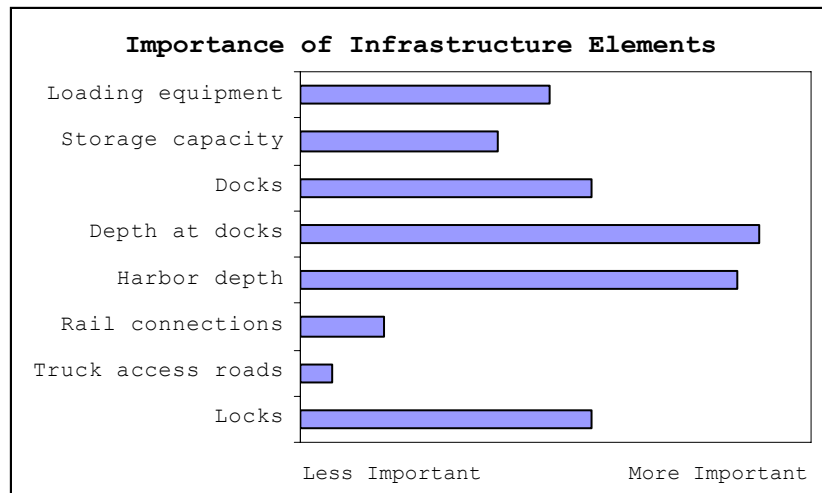


Figure 10

For the same eight infrastructure elements, the respondents were asked to indicate whether the quality has improved, remained the same, or worsened over the last five years. In the respondents' view, harbor depth and depth at docks were the only two elements that had gotten worse, while loading equipment and truck access roads had improved (Figure 11).

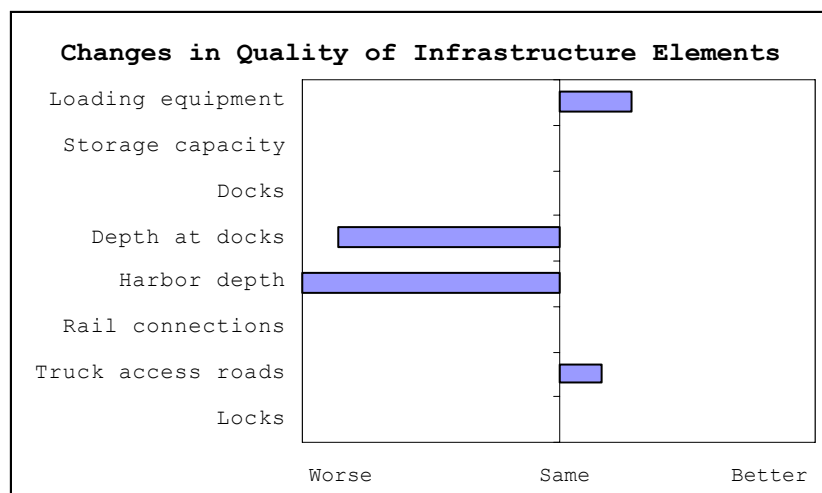


Figure 11

Overwhelmingly, the respondents believe that the worsening of harbor depths and depth at docks in the last five years has significantly reduced their overall efficiency.

The respondents were also asked to indicate those elements for which they expect significant public or private investment to be made in the next five years. All of the operators indicated that they expect significant public investment in the locks, while most if not all new investment in loading equipment, storage capacity and docks is expected to come from the private sector (Figure 12).

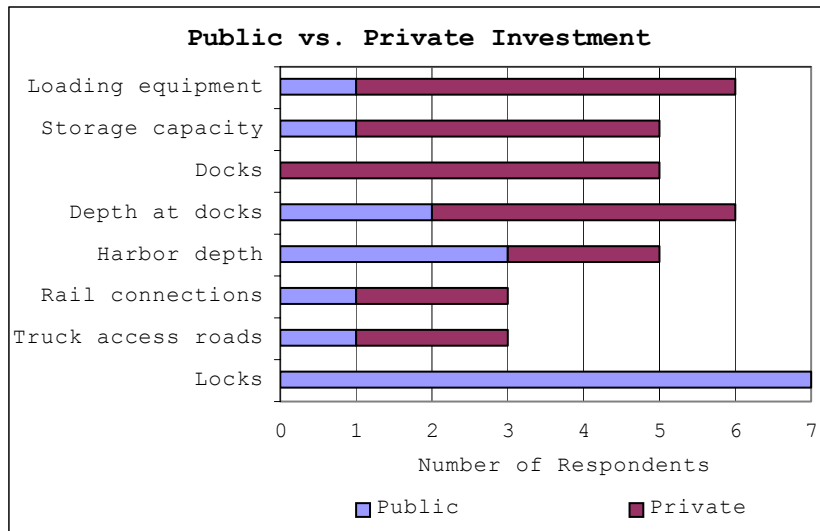


Figure 12

In order to better understand the impact certain issues have on their plans to invest in new vessels and/or other marine transportation assets, the respondents were presented with a series of regulatory, infrastructure and operational issues, and asked to rank each group as a whole in terms of their impact. The operators were then asked to rank the issues within each group in the order of their influence.

Overwhelmingly, the carriers ranked operational concerns as having the greatest impact on their investment decisions. Of the three groups, the respondents were least concerned about regulatory issues in arriving at their investment decisions.

Mirroring global concerns about trends in the cost of fuel, the respondents ranked fuel costs as the most important operational issue. The supply of labor and the cost of new vessels were also considered to have a significant impact on investment decisions. The importance attached to these factors may explain the trend towards new tug-barge units as the next generation of Great Lakes vessels, with their lower fuel consumption, crew size and construction cost (Figure 13).

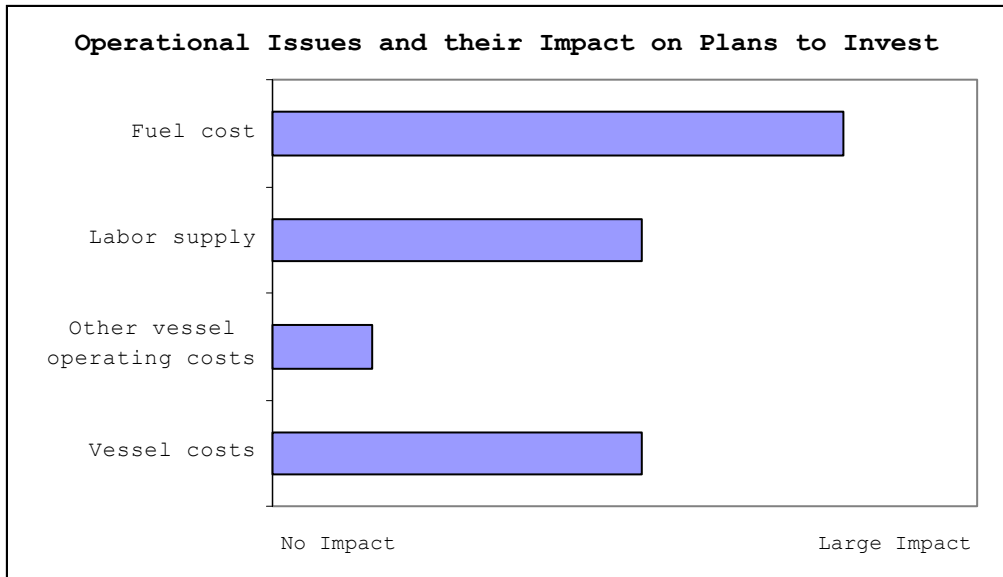


Figure 13

The respondents unanimously ranked insufficient dredging of deep-draft ports as the infrastructure issue which had the greatest impact on their investment decisions (Figure 14). Again, however, the trend towards tug-barge units with less draft than conventional vessels may be a subtle hedge against the possibility of insufficient dredging resources. This is a good example of private response to the need for increased efficiency, regardless of the availability of public resources.

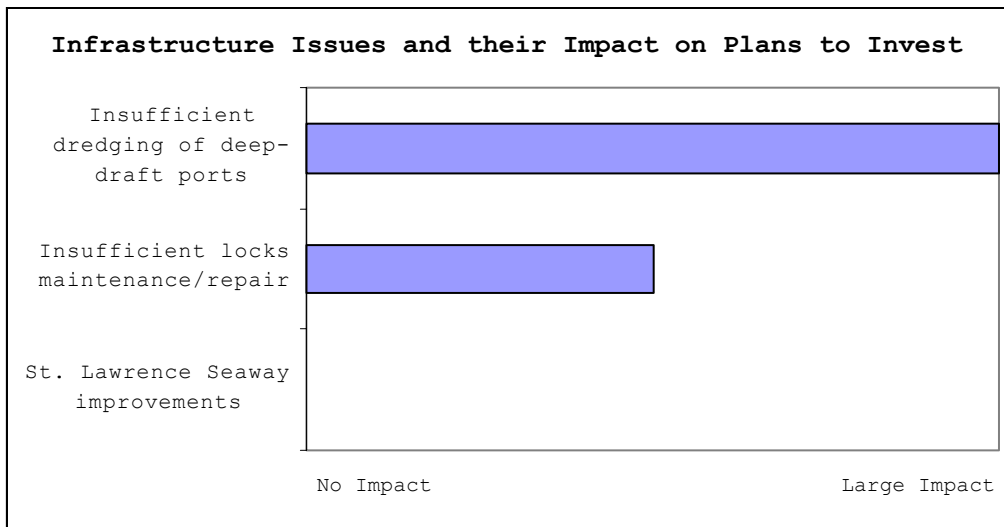


Figure 14

Potential new ballast water management rules and potential changes to the Jones Act ranked as the regulatory issues which are of greatest concern to the respondents, and have the greatest impact on investment decisions (Figure 15).

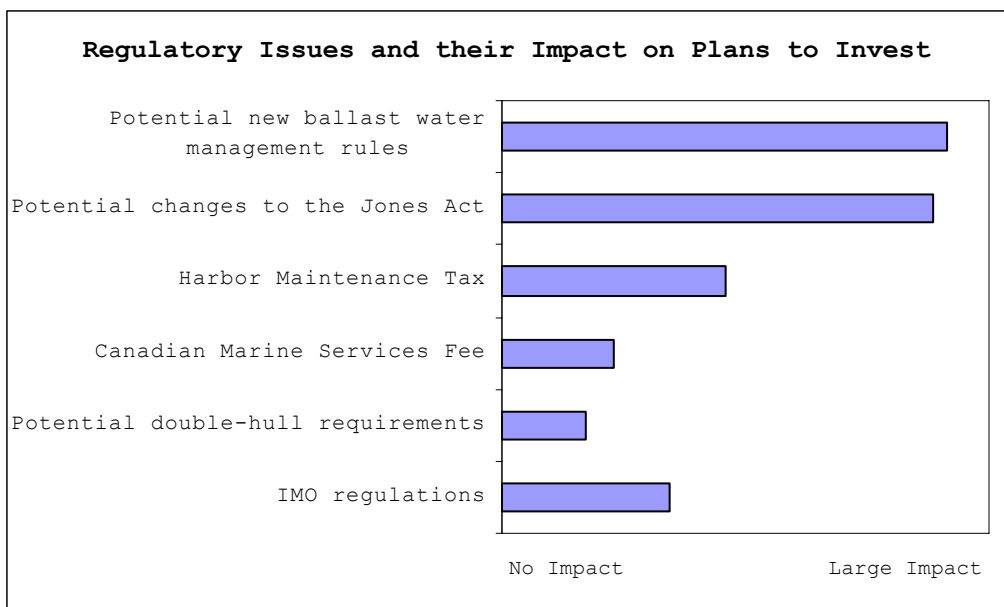


Figure 15

Having described at length their operations, plans and major concerns, the respondents were then asked their views as to where the Federal Government should invest resources in the Great Lakes area. They were presented with a series of options, and asked to prioritize their preferences. Operators overwhelmingly indicated that the government should focus its direct investment upon dredging and lock improvement or replacement (Figure 16). Not surprisingly, the operators, who are only engaged in Great Lakes bulk vessel operations, showed little interest in St. Lawrence Seaway improvement and port connector infrastructure. However, water quality issues, which were the greatest concern among regulatory issues, ranked last in terms of interest in federal investment, perhaps reflecting their concern over pending ballast water permitting regulations that could impact their ability to fully utilize their vessels.

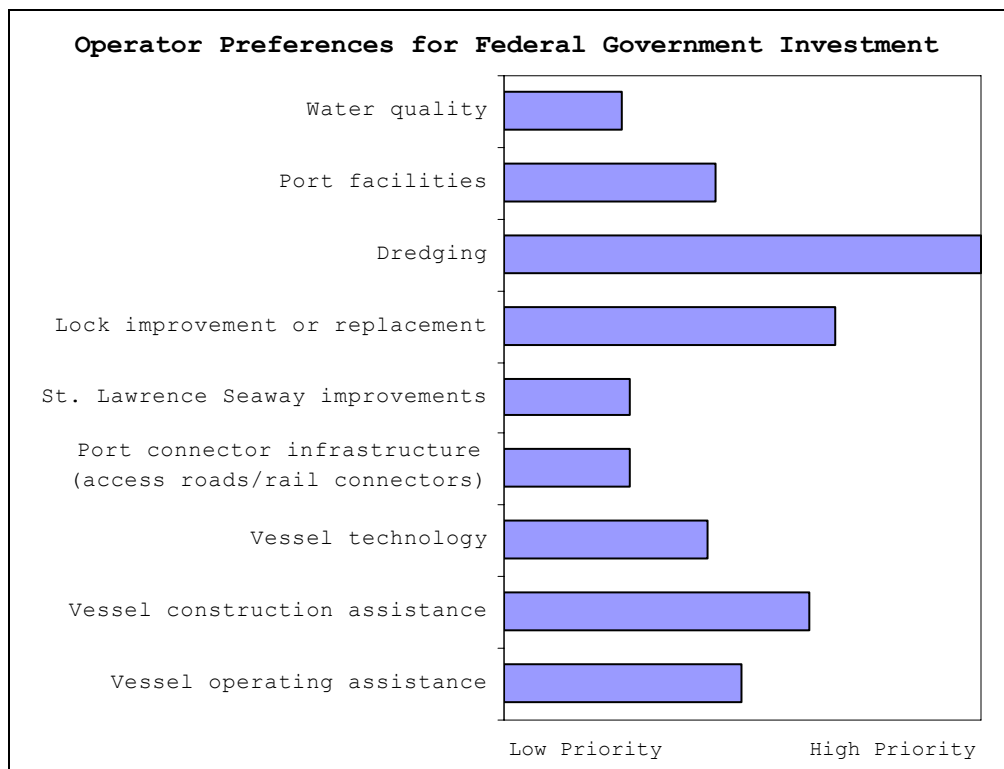


Figure 16

Among the areas for potential Federal Government investment that were not among the choices, but were mentioned by the respondents, included the attracting and training of new recruits. This is consistent with respondents' earlier expression of concern for their supply of labor.

Concluding Observations

The seven survey respondents accounted for 93 percent of the total Lakewise traffic in 2004. In an industry that experiences volatile traffic volumes, yet is so essential to American industry, all information provided by the carriers is useful and important. This work is expected to provide a baseline for future dialog or surveys with this segment of the maritime industry on the critical issues that it faces. It may also prove useful for defining future survey work with ports and other Great Lakes interests.

MARAD is extremely grateful to the respondents for their assistance.

Appendix

MARAD Great Lakes Carrier Questionnaire

1. Which best describes the annual cargo (net tons) your company carries on the Great Lakes?

< 5 million	5-10	10-15	>15 million
[]	[]	[]	[]

2. What percentage of your annual cargo is carried in the U.S. domestic trades?

3. What percentage of your annual cargo is for the following industries (should add to 100)

Steel	_____
Utilities	_____
Construction	_____
Other	_____

4. Over the last five years, has annual cargo you carry for each of the following industries grown, declined or remained the same?

	Grown	Decline	Same
Steel	[]	[]	[]
Utilities	[]	[]	[]
Construction	[]	[]	[]
Other	[]	[]	[]

5. Over the next five years, do you expect your annual cargo volume to grow, decline or remain the same, for each of these industries:

	Grown	Decline	Same
Steel	[]	[]	[]
Utilities	[]	[]	[]
Construction	[]	[]	[]
Other	[]	[]	[]

6. Over the next five years, do you expect to carry more, less, or the same amount of cross-lakes trade with Canada?

More [] Less [] Same []

7. What percentage of your total annual cargo volume moves are under affreightment contracts or period charters?

8. What percentage of your annual cargo volume moving under affreightment contracts or period charters involves contracts of the following duration: (should add to 100)

1 - 3 years	_____
3 - 5 years	_____
More than 5 years	_____

Are there any significant differences in contract length among the commodities carried? Yes [] No []

If yes, please explain:

To help us understand dredging requirements and the light-loading problem, please answer the following:

9. About what percentage of your voyages over the last five years have been light-loaded because of insufficient water depth?

10. Please list up to five ports at which you have been precluded, during the last five years, from full loading by insufficient water depth, and indicate the maximum extent (in feet and inches in lost draft) to which you are unable to load at these ports:

<u>Port</u>	<u>Lost Draft</u>

11. What percentage of your voyages that must light-loaded would otherwise have full cargoes available?

[<15] [15-50] [51-85] [>85]

12. What percentage of your annual cargo loaded arrives from more than 50 miles away by:

	<u>[<10]</u>	<u>[10-30]</u>	<u>[31-50]</u>	<u>[>50]</u>
Rail	_____	_____	_____	_____
Truck	_____	_____	_____	_____

13. What percentage of your annual cargo discharged is moved inland more than 50 miles by:

	[<10]	[10-30]	[31-50]	[>50]
Rail	_____	_____	_____	_____
Truck	_____	_____	_____	_____

14. What percent of the total existing Lakes cargoes could be realistically carried by rail or truck? Select from the following:

None	<10%	10-30%	31-50%	>50%
------	------	--------	--------	------

Rail/Truck

Iron ore	_____
Coal	_____
Limestone	_____
Other	_____

15. How much of existing rail and truck cargoes could be realistically carried by Lakes services. Please express as a percent of existing Lakes cargoes.

None	<10%	10-30%	31-50%	>50%
------	------	--------	--------	------

Rail/Truck

Iron ore	_____
Coal	_____
Limestone	_____
Other	_____

16. In those areas where rail and truck competition exists, please indicate the extent to which freight rates exceed that of water transportation. Please choose from the following:

None	<10%	10-30%	31-50%	>50%
------	------	--------	--------	------

Rail

Truck

Freight Rates	_____	_____
---------------	-------	-------

17. In those areas where rail and truck competition exists, please indicate the extent to which transit time are shorter than that of water transportation. Please choose from the following:

None	<10%	10-30%	31-50%	>50%
------	------	--------	--------	------

Rail

Truck

Transit time	_____	_____
--------------	-------	-------

18. Over the next five years, do you expect technology or operational changes in the rail and trucking industries (such as longer trains, larger freight cars or changes in road size and weight restrictions) to produce a decline in your market share in those trades in which you compete with other transport modes?

Yes [] No []

If yes, please list up to three changes (in order of impact) that you believe are most likely to occur

- 1. _____
- 2. _____
- 3. _____

19. Over the next five years, do you expect any new bulk trades on the Great Lakes?

Yes [] No [] No opinion []

If yes, please specify commodity and potential area of movement.

20. With regard to the following services, which does your firm currently offer or plan to offer in the next five years?

	<u>Currently Offer</u>		<u>Future Plans</u>	
	Yes	No	Yes	No
Terminal services	[]	[]	[]	[]
Truck services	[]	[]	[]	[]
Rail services	[]	[]	[]	[]
Barge services	[]	[]	[]	[]
Other port services (Specify) _____	[]	[]	[]	[]

21. What is the prospect that you will make any new investment in self-propelled vessels or barges and/or new services over the next five years?

Highly likely [] Somewhat likely [] Somewhat unlikely []
 Highly unlikely [] Don't know []

If you did not answer highly likely or somewhat likely, please list up to three reasons (in order of importance) that led you to your conclusion.

- 1. _____
- 2. _____
- 3. _____

22. With respect to new vessels, can you indicate something about how their characteristics will differ from current vessels in your fleet?

23. What percentage of your cargo is loaded at private port facilities?

24. What percentage of your cargo is discharged at private port facilities?

25. Please rank the importance of each of the following infrastructure elements, (as they affect your operations in the Great Lakes) and indicate whether they have improved, remained the same or gotten worse over the last five years? Also, please indicate those elements for which you expect significant investment to be made in the next five years.

	Rank	Better	Same	Worse	Expected Investment	
Loading equipment	_____	[]	[]	[]	Public []	Private []
Storage capacity	_____	[]	[]	[]	Public []	Private []
Docks	_____	[]	[]	[]	Public []	Private []
Depth at docks	_____	[]	[]	[]	Public []	Private []
Harbor depth	_____	[]	[]	[]	Public []	Private []
Rail connections	_____	[]	[]	[]	Public []	Private []
Truck access roads	_____	[]	[]	[]	Public []	Private []
Locks	_____	[]	[]	[]	Public []	Private []

26. For any infrastructure elements that have gotten worse, to what degree have they reduced your overall efficiency?

	Not at All	Somewhat	Significant Extent
Loading equipment	[]	[]	[]
Storage capacity	[]	[]	[]
Docks	[]	[]	[]
Depth at docks	[]	[]	[]
Harbor depth	[]	[]	[]
Rail connections	[]	[]	[]
Truck access roads	[]	[]	[]
Locks	[]	[]	[]

27. Please rank each of the following issues in terms of their impact on your plans to invest in new vessels and/or other marine transportation assets:

Regulatory (rank 1-6)	Rank
Potential new Ballast Water Management rules	_____
Potential changes to the Jones Act	_____
Harbor Maintenance Tax	_____
Canadian Marine Services Fee	_____
Potential Double-Hull Requirements	_____
IMO Regulations	_____
Infrastructure (rank 1-3)	Rank
Insufficient dredging of deep-draft ports	_____
Insufficient locks maintenance/repair	_____
St Lawrence Seaway improvements	_____
Operational (rank 1-4)	Rank
Fuel cost	_____
Labor supply	_____
Other Vessel Operating Costs	_____
Vessel Cost	_____

28. Thinking of the issues in question 26 as groups, which group has the greatest impact on your plans to invest in new vessels and/or other marine transportation assets?

	Rank
Regulatory	_____
Infrastructure	_____
Operational	_____

Is there any comment you would like to make about this question?

29. Please rank the order of priority in which you believe the federal government should invest in the following:

	Rank
Water quality	_____
Port facilities	_____
Dredging	_____
Lock improvement or replacement	_____
St. Lawrence Seaway improvements	_____
Port connector infrastructure (access roads/rail connectors)	_____
Vessel technology	_____
Vessel construction assistance	_____
Vessel operating assistance	_____

Are there any other areas the federal government should invest in? _____

30. Please rank the following in terms of impact on overall annual Great Lakes cargo volumes:

	Rank
Seasonal factors	_____
Stock levels	_____
Economic factors	_____
Infrastructure factors	_____

31. Please list up to three factors (in order of importance) that you believe limit the growth of U.S.-flag carriage of cross-Lakes trade with Canada:

1. _____
2. _____
3. _____

That concludes our survey. We would like to thank you for your participation and ask if we may contact you again if we have any small follow-up questions that may arise during tabulation.

Yes _____ No _____