

Transportation Industry Issues & Trends

In 2002, the commercial transportation industry moved nearly 16 billion tons of raw materials and finished goods. The Bureau of Transportation Statistics (BTS) estimates that this large quantity of commercial freight traveled nearly 5 trillion ton-miles. The value of freight shipments in 2002, including domestic commodity shipments and domestic transportation of exports and imports, was \$11 trillion.

The volume of freight moved through the US transportation system has grown dramatically over the past few decades and is projected to nearly double by 2020. As demand for freight service grows, concerns have intensified about capacity shortfalls, congestion, safety, and the environment. Likewise, the events of September 11, 2001 have heightened concerns about the vulnerability of the freight transportation system to terrorist attacks. Consequently, understanding and improving freight flows are becoming higher priority issues among decision makers at all levels of government and in the private sector. The Freight Analysis Framework (FAF), a comprehensive national database of county-to-county freight flows developed and maintained by the Federal Highway Administration, captures these flows, which will help decision makers identify areas in need of capacity improvements and highlight regions with mismatched freight demand and system capacity.

This section will focus primarily on those issues and trends affecting the movement of freight, and secondarily passengers, via motor carriers, rail and water. FHWA has identified several key issues facing the freight transportation industry. Many of them are interrelated. These key issues include:

- Ø Congestion and expanding capacity
- Ø Improving systems operations
- Ø Planning and financing freight projects
- Ø The safety and environmental effects of freight transport
- Ø National security, and
- Ø Building professional capacity in the freight sector.

Road congestion is emerging as the key challenge. It has reached such severe levels that policymakers are pushing short sea transport as the best way to ease gridlock in several transport corridors. Substituting rail for truck transport is not a genuine alternative. As a result, policymakers view sea transport as the preferred means to relieve road congestion. To them, it is a question of how, not if. The other issues are entangled with the first, and need attention. However, relieving congestion can have a significant ripple affect on the others.

During the past decade, the U.S. freight transportation industry realized that facilities were becoming inadequate to deal with the demands of traffic growth. Trucking companies experienced the fact that highway congestion was reducing performance and profits; rail customers experienced painful service disturbances as the aftermath of mergers in the industry; and port operators wanted federal assistance to cope with unprecedented growth in international trade. Responding to capacity demands is complicated by conflicts between the requirements of passengers and freight sharing the same facilities and by the need to balance demands to maintain environmental quality, preserve communities, and accommodate economic growth.

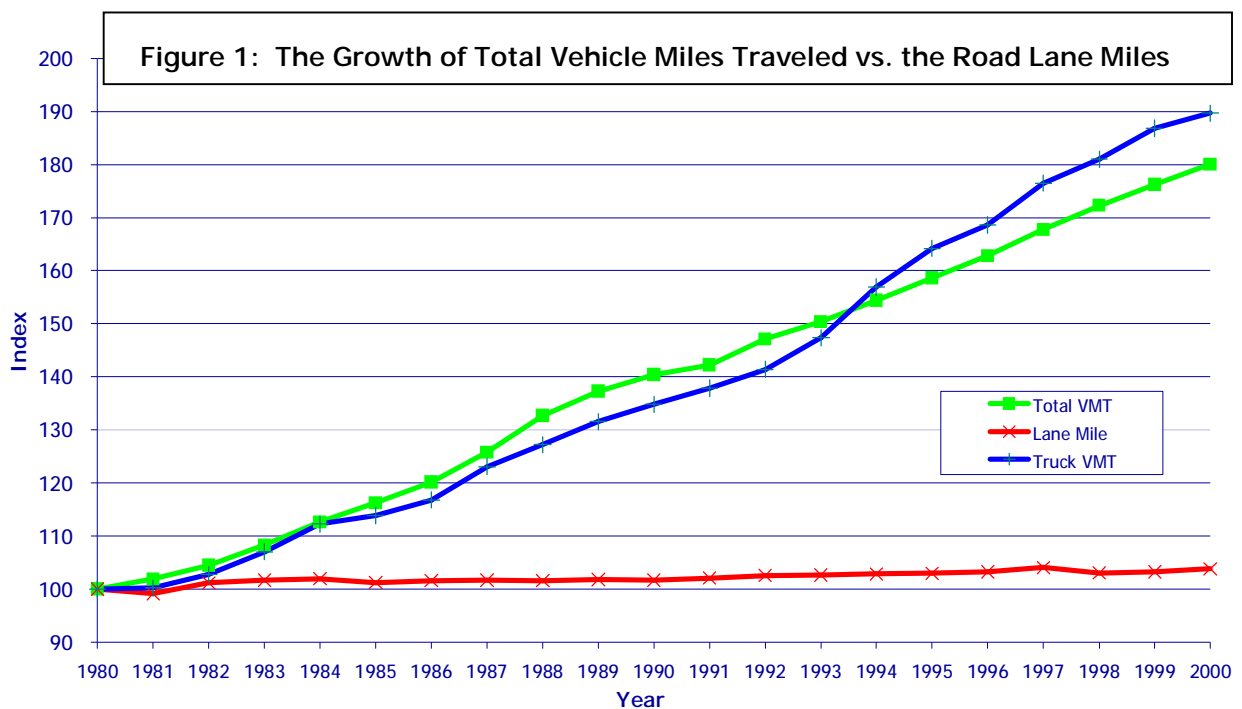
- Ø The Texas Transportation Institute (TTI) reports that urban traffic delays have tripled in the nation's largest urban areas from 1982 to 2001. TTI reports that the additional time

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needed to complete an urban trip at rush hour has increased from 13 percent in 1982 to 39 percent in 2001.

- Ø The Federal Highway Administration (FHWA) estimates that 46 percent of the nation's urban major highways will be congested during peak periods, by 2020, compared with 28 percent in 1998.
- Ø The FHWA also estimates that the percentage of urban Interstates that will carry at least 10,000 large trucks per day will increase to 69 percent by 2020, compared to 27 percent in 1998.

Based on a recent report titled *Freight Transportation Today* issued by the Federal Highway Administration (FHWA), congestion is likely to be a long-term condition requiring additional investments in freight infrastructure. The report went on to say that an annual expenditure of \$75.9 billion (2000 dollars) would be needed for the 2001-2020 period just to maintain highway infrastructure, as it existed in 2000. It concluded by saying that one of the nation's biggest challenges is closing the gap between the demand for transportation services and infrastructure capacity. Figure 1 shows that the total vehicle miles grew 80% between 1980 and 2000 while road lane miles grew only 2%.



Source: U.S. Department of Transportation, Federal Highway Administration, Highway Statistics (Washington, DC: Various years).

Department of Transportation Secretary Norman Y. Mineta highlighted the problem of increasing transport demand and the cost of expanding highway capacity as the motivation for examining ways to use short sea and coastal shipping to relieve congestion. He recently stated, "In many instances, our landside transportation system is already stressed to the limit and currently planned infrastructure improvements and expansion cannot possibly meet this escalating demand. Major expansion of rail or highway infrastructure to meet this increased demand is prohibitively expensive and often physically impossible."

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Accommodating the increasing volume of freight on the US highway system (truck traffic grows at the rate of 10% for every 1% growth in gross national product) is a matter of concern, not just for the DOT, but also for American industry. Indeed, the US Chamber of Commerce address truck congestion in a report that concluded: "The US port and intermodal freight system is now being operated in many areas at the limits of its maximum capacity. Should any component of the system breakdown, more than one-fourth of the national economy will be crippled." While this report focuses on intermodalism from an international trade perspective, it recognizes the need to look at short sea shipping options to relieve domestic congestion, too.

The most telling illustration of the coming crush is a statistic taken from a presentation by Rolf Marshall of the Coastwise Coalition at the Marine Board in Washington D.C. on May 20th, 2003. 10,000 trucks a day travel the I-95 corridor today. 58,000 trucks will try to move through the same corridor in 2020. Clearly, a solution that can take trucks off the I-95 corridor and other highways is needed.

The challenge is getting those trucks to shift from the road to the sea. During the 1990's, advances in marine technology and ship design enabled the service speed (sustained cruising speed) of large monohull ferries to rise from about 20 knots to almost 30 knots. Catamarans, which can reach service speeds of 40 knots, in calm or protected seas, are neither large enough nor reliable enough to compete with monohulls on longer routes or in more typical sea conditions.

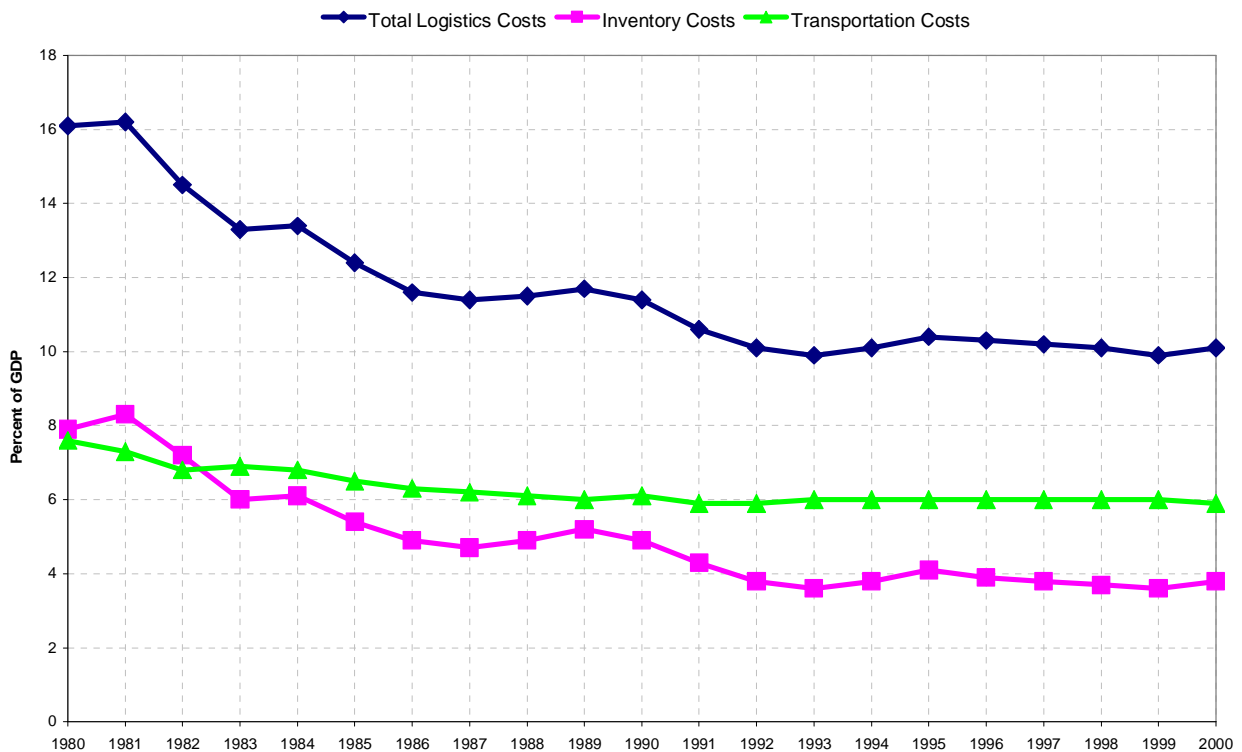
In the US, advances in ferry speed have been used principally for commuter services in major metropolitan areas. Coastal cargo or passenger services between the Northeast and Mid-Atlantic and Southern ports, in the US Gulf, or along the West Coast require larger vessels moving at higher service speeds than are now available to enable short sea transport to offer attractive alternatives to road transport.

Freight Logistics are driving the increasing demand for freight capacity

Improvements in the efficiency and reliability of freight transportation have been the engine of prosperity and competitive advantage in the U.S. The cost of moving freight dropped from 16.1 percent of U.S. Gross Domestic Product (GDP) in 1980 to approximately 10.0 percent in 2000 (Figure2).

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Figure 2: Business Logistics Expenditures as a Percent of U.S. Gross Domestic Product (GDP)



Source: Prologis and Cass Information, Inc., *12th Annual State of Logistics Report*, June 4, 2001.

The modern national and global communications and the impact of free trade in North America and elsewhere have resulted in a significant increase in freight movement, which has allowed U.S. businesses to adopt more efficient logistics practices, which have made them more efficient and competitive.

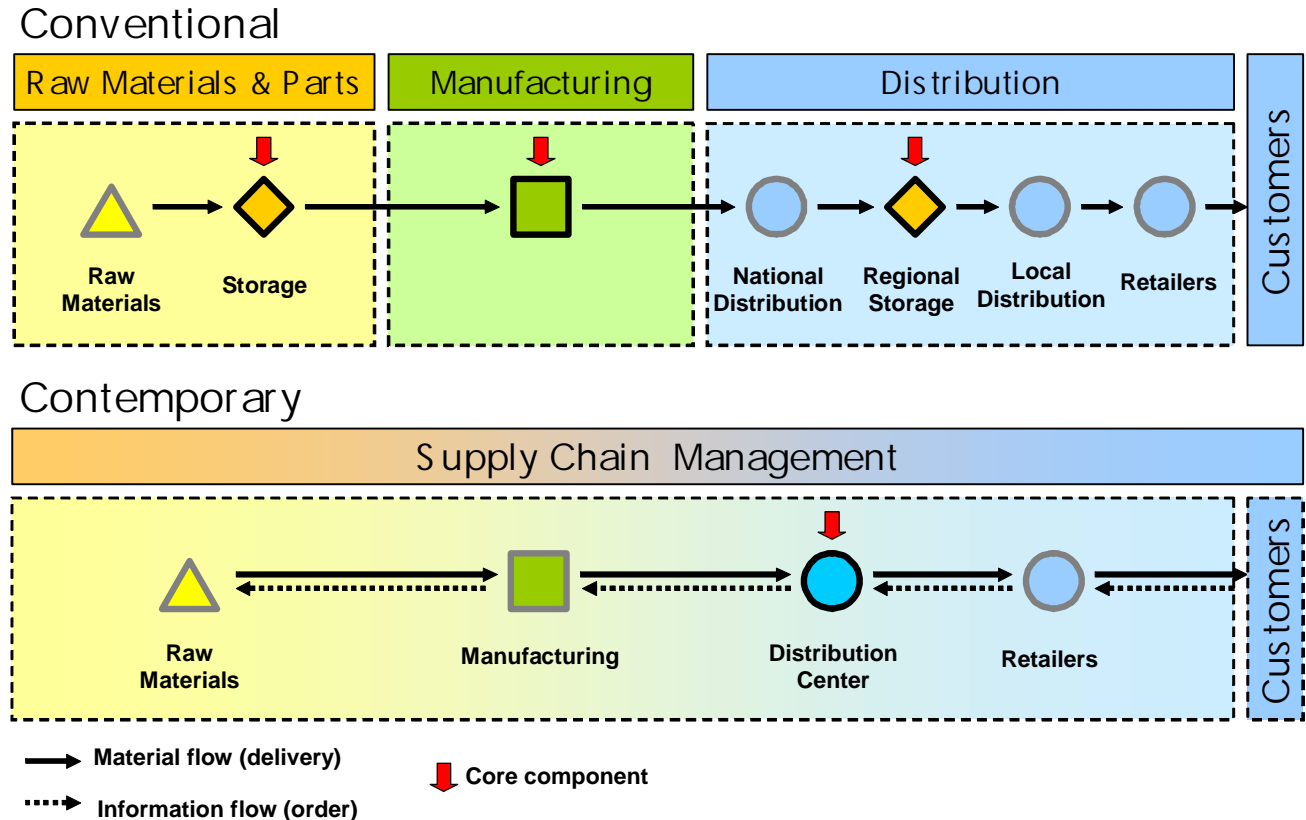
These new practices have shifted the logistics paradigm from how much inventory we have to how fast our inventory is moving. In today's rapidly changing market, having a short response time is critical for driving a sustainable competitive advantage. With lean manufacturing, the ideal goal is to make what you need, and not build anything in advance of actual requirements.

The goal for all manufacturing companies has remained constant for many years — profits now and into the future. However, there has been significant debate about what manufacturing strategy should be employed in any given environment to achieve that goal. The importance of increasing throughput, return on assets, and decreasing operating expense have led to improvements in transportation reliability and have created the possibility for service innovations such as just-in-time (JIT) logistics systems. These processes use information technology to optimize production and transportation, enabling customers to keep inventories at low levels and improving supply chain management (Figure 3). The JIT approach provides improved visibility and velocity, and reduces variability across the supply chain, resulting in improved profits. Today, 28 percent of United States production is already based on just-in-time

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practices. As more firms move toward such practices, an efficient transportation system becomes even more critical to a healthy economy.

Figure 3: Conventional versus contemporary supply chain management practices



Source: Dr. Jean-Paul Rodrigue. "Freight Gateways, Corridors and Distribution Centers: The Logistical Integration of Boston-Washington." (http://people.hofstra.edu/faculty/Jean-Paul_Rodrigue)

These new logistic strategies represent an evolutionary shift from "push" to "pull" logistics systems— from "manufacture-to-supply" or inventory-based logistics to "manufacture-to-order" or replenishment-based logistics. In a "push" system, suppliers push materials to a manufacturer, who pushes the completed product to a distributor, who supplies the retailer, who fills the customer's order. Each maintains an inventory of parts and products as a buffer against fluctuations in supply and demand.

A "pull" system relies less on expensive inventory and more on accurate information and timely transportation to match supply and demand. Point-of-sale data is used to pull products through a system that may involve two or three tiers of suppliers; a manufacturer that has spun off design and marketing functions to other firms; and a third-party-logistics provider who coordinates the movement of parts and products to distributors or directly to customers.

Pull systems are cost-effective, but they place tremendous demands on the transportation system. Shippers want reliable, timely, and visible door-to-door freight transportation. An

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accident, congestion, labor disputes, storms – even unanticipated spikes in supply and demand—can unravel these tightly strung systems.

Although efforts to improve freight transportation efficiency and reliability have been successful, the U.S. transportation system is now facing challenges that, unless addressed, may jeopardize its reliability. Allowing transportation system reliability to erode would add additional pressure to U.S. companies operating in an increasingly competitive international market and place more burdens on communities seeking to sustain their economic base and quality of life. Improved logistics has thus far been able to address the corrosive effects of the loss of system reliability. Unfortunately, the ability of logistics to provide additional offsetting savings appears to be nearing its limit.

Distributors are frequently faced with the dilemma of whether they should force a replenishment order up to a full truck load to achieve a better shipping rate. For the manufacturers and large retailers like Wal-Mart, cross docking has become a key technology in handling products and packages properly within the supply chain. For cross docking to come of age, certain technologies had to be firmly in place, including portable and fixed bar-code equipment, data collection terminals, software applications, a dedicated database, a network or a combination of network and radio frequency devices. With this equipment and good practice behind it, cross docking has become the place where supply meets demand head on, reducing the need for LTL and using more of the truckload shipments.

Coastal Market Analysis

The term short sea transport refers to movements by water where there is no (or no practical) route by land. Short is generally used to indicate that the water transport does not cross an ocean, e.g. transportation between the United States and Puerto Rico. The term coastal transport refers to travel by sea as an alternative to travel by land. SeaBridge's business model concentrates on customers that would benefit by using coastal shipping as a substitute for road travel for some or the entire route between their origins and destinations to save time, money, or both.

A successful model to serve these types of markets combines customer-focused route selection and scheduling with ships large, fast, and fuel-efficient enough to serve routes that optimize the match between savings for users and profits for the short sea operator. On coastal routes, the key to modal shift lies either in optimizing the sea portion of the connection, that is, in finding port combinations that reduce the total road miles between users' origins and their destinations; or in enabling road users to extend their range of service without increasing their cost. A sea link could be used in lieu of line haul, in which case, it is exactly like rail piggyback service.

Speed is essential to making short sea, particularly coastal, shipping profitable. Potential users have made it clear that reliability is a prime factor in evaluating any substituted line haul service. In this regard, speed will enable an operator to make up time lost in port or to bad weather. It is axiomatic that ships designed to go fast (e.g., 40 knots) can go slower if there is no need for the extra speed. However, a ship designed to go slower (e.g., 33 knots), cannot go faster than 33 knots if needed to make up time. Building in a reserve of speed is part of the equation when evaluating ships to serve coastal sea routes. One important qualifier to speed is passenger comfort and cargo security while underway, particularly in heavier sea states. Other hull forms already offer speeds in the ranges discussed above. However, they provide increasingly uncomfortable rides that are not only difficult for passengers but may damage

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freight as well. Some fast hull forms are not easily scaled to the sizes of monohulls and, therefore, may fail in terms of efficient load capacity as well as offering excessively rough rides.

Based upon preliminary analysis, the US coastal market is the right market to target for entry. The US offers almost exclusively coastal markets with transportation infrastructure needs that have been previously identified and discussed in this plan. There is virtually no coastal transport beyond the transport of bulk cargoes in US coastal markets today. And finally, there are significant political factors outside the need for a transportation alternative that create support at the federal level. Both the US ship building industry and the strength of the US merchant marine are of strategic interest to the US government. There is substantial concern regarding both of these entities within the Defense Department (DOD) and the Maritime Administration.¹ The US flag fleet has been in steady decline and is not adequate to meet the sealift needs of DOD. US merchant marine crew strength is below that needed to adequately crew the ships currently identified for sealift duties. US shipyards lag foreign builders in technical capability for commercial construction. DOD orders keep large US shipbuilders in business. A strong alternative market for commercial construction would invigorate US ship building and provide incentives to invest in new construction equipment and methods. Management believes the US is the market to target because the demand exists and there is substantial government interest in and support for creating coastal transport alternatives. See the Maritime Administration's web site for more detailed information on these policy issues at <http://www.marad.dot.gov/>.

The following sections provide more specific information on the needs of potential users in the US coastal markets and the segmentation of those users in the initial potential coastal markets in the US. The sections will also provide estimates of traffic volumes and valuations of those markets, growth rates, significant trends, and a discussion of the shape of potential competition for customers in the target markets.

Market Needs

The need to create alternatives to highway transport of freight is growing in the United States. Typically, a truck is involved at some point in all types of transportation, be it rail, water or air. Modal selection is usually dictated by a shipper's evaluation of the cost and time associated with substituting another mode (water or rail) for some part of the movement. The trucking industry is extremely competitive in the US and so usually sets the price and service base line for other modes to match or beat. Thus, short sea services must fit the trucking industry's cost and service parameters to have an impact on the highway transport of freight.

In the US, advances in maritime transport speed have been used principally for commuter services in major metropolitan areas. Coastal cargo or passenger services between Northeastern, Mid-Atlantic and Southeastern ports, in the US Gulf, or along the West Coast require larger vessels moving at higher service speeds than now available to enable short sea transport to offer attractive alternatives to road transport. The fact is that truckers and others will not substitute travel by sea for travel by road, i.e., shift modes, unless that shift benefits them, namely, unless the shift saves them time, money, or both.

Truckers have a fairly straightforward service goal, deliver a specified volume of freight to a specified location within a fixed time frame at a price dictated by a competitive market. Delivery time is determined by two variables: the speed at which they can travel and the duration of their legal driving time during the elapsed period. Road conditions, speed limits and

¹A Real Wake-Up Call: The Continuing Decline of the US Flag Merchant Fleet, Seapower Magazine, May 2002.

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the volume of traffic determine the speed that truckers can actually travel on any given route. The single most important factor in assessing total travel time from trips over 400 miles is the new regulatory limitation that requires drivers to rest a minimum of 10 consecutive hours in any 24-hour period before being able to drive again. As a practical matter truckers typically travel between 450 and 550 miles in a 24-hour time frame. Any mode of transportation that can (1) significantly exceed that distance in the same time period or (2) move the freight while the driver rests or (3) move an unaccompanied trailer that will be picked up at destination, offers truckers an opportunity to boost productivity.

Tour operators of buses/motor coaches have similar needs as truck drivers if their tours involve legs that exceed the driver limitations. The added benefit is that a ro-pax type ship allows the motor coach to embark with its passengers, includes parking for the coach and accommodations for the passengers, and allows for transport while the driver rests.

Passengers with vehicles may choose this form of transport for a variety of reasons, and not necessarily based on time or cost savings, but value. That value may include the ability to use the family vehicle instead of a rental car, a more relaxed form of travel that includes accommodations and entertainment which otherwise may not be available if traveling by land.

Travel by short sea or coastal routes will offer an attractive transport alternative to a variety of users that are otherwise limited by driver endurance, road conditions, and fixed land routes that are increasingly congested, particularly in and between metropolitan areas.

Market Segmentation

Management believes there are three primary coastal markets emerging in the Continental United States: The East Coast, Gulf Coast and West Coast. Coastal and short sea transport links to Mexico and Canada and their associated markets, will emerge over time.

Within the three primary coastal markets, SeaBridge Management believes that the primary users of their services in the US are going to be commercial freight motor carriers and private passengers with vehicles. Those two segments can be further segmented as follows:

- Ø Motor carriers, including: trucks, trailers and buses
- Ø Private Passengers, including those with vehicles and those without vehicles

In the motor carrier segment, SeaBridge has met with UPS, FedEx, Schneider National, JB Hunt, Swift Transportation, Werner Enterprises, Landstar System, Southeastern Freight Lines, and Bulldog Highway Express and with many logistics and third party logistics companies. These meetings produced uniformly positive feedback on the company's concept and its attractiveness to trucking companies. Based on these meetings/discussions, the Company believes that the primary source of customers will be private and for-hire truckload (TL) carriers. Less-than-truckload expedited services expressed interest in longer haul routes. LTL and private TL traffic use the service primarily to move unaccompanied trailers. For-hire TL carriers provided a range of reactions from those who indicated they would only move trailers to those who said they would use the service to move all of the assets, including several who mentioned moving drivers and power units in order to reposition those assets. Management believes the truck traffic will be primarily unaccompanied trailers.

The Company has also reached out to the American Trucking Associations (ATA) and some of its constituent member groups. A telephone conference call was held in March 2003 under auspices of ATA's Intermodal Committee, during which the Company was able to present its thinking on short sea shipping and gain valuable input. Further sessions like this are planned

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with the ATA's Truckload Carriers Association, Distribution & LTL Carriers Association and other groups at ATA to develop the type of direct customer input essential to business planning.

SeaBridge believes that some private and for-hire carriers with high freight volumes on selected routes will purchase fixed amounts of space (lane meters) on a daily basis to ensure accommodation for their trucks.

The data indicate that the volume of traffic is so large that modest penetration by SeaBridge on the major routes identified earlier will produce very strong financial results. The Company's financial projections assume only 50% capacity utilization on an annual basis to start, growing to 78% in the tenth year. Maximum capacity is 833,000 53 ft. trailers, which is less than 10% of the volume now moving along these lanes.

The American Bus Association produced a Survey in 2000 that reported that approximately 44,000 buses provide intercity transportation for 860 million passengers a year, and travel 2.6 billion miles. Almost half of the 2.6 billion miles traveled was generated by regularly scheduled services, 33% was attributed to charter activity and 6.7% to tours. A survey conducted by George Washington University for the American Bus Association stated that approximately 28% of bus trips are for one night or more. A separate Industry Survey from the Association indicated that the average number of passengers per coach was 40. With 860 million passengers, that estimate yields approximately 21.5 million trips, with approximately 6 million of those being overnight, carrying 240 million passengers. Assuming growth of 1.5% during the four years since that data was collected, it is reasonable to project 6.3 million trips in 2003 carrying 253 million passengers overnight or longer. Unfortunately, there is no regional data available to better match the number of overnight trips to the coastal markets SeaBridge has selected. As a conservative estimate, Management forecasts the potential market of the US in 2003 by using 20% of the overnight trips, or approximately 1.2 million overnight trips carrying almost 51 million passengers.

The Company was able to obtain some origin and destination data for travel to Florida from VISIT FLORIDA, which studies tourist activity in Florida. Data in the VISIT FLORIDA 2002 Year-in-Brief publication indicate that 12.5 million people visited Florida by air or by car from the designated market areas defined by A.C. Neilson ("DMA") for New York, Hartford, Boston, Philadelphia, and Washington D.C. during 2002. This total assumes no one from the DMA's for Boston or Hartford-New Haven drove to Florida in 2002.

In 2004, 47% of the 75 million domestic and Canadian visitors to Florida traveled by air and 53% traveled by land transport (car, RV, bus, train or other).

Market Trends

Studies of freight flows indicate that the US East Coast is facing the greatest need for a coastal transport alternative. The length of coastline from Maine to Florida is longer, curved and interspersed with major metropolitan areas with serious congestion problems. Weather is also a factor in wintertime. The Gulf Coast is shorter, has fewer and more easily bypassed population centers, and, on average, milder weather conditions. The US West Coast, although less curved than either of the other coasts, has significant and growing congestion problems due to the volume of traffic moving between the northern and southern markets, seasonal weather problems, and a single main north-south interstate route (I-5). While there are fewer major metropolitan areas to bypass, they are considerably more dispersed in area and most of them serve as gateways to major US trading partners in the Pacific Rim. Lastly, construction of

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additional capacity along the I-5 corridor has to be considered highly unlikely based on environmental issues such expanded capacity would create.

The Department of Transportation is exploring means to provide support to develop short sea and coastal shipping. Given the massively expensive and environmentally difficult alternatives of expanding existing interstate roads and rail lines, a maritime solution is considered to be a far cheaper and more scalable solution. Recent statements by the Secretary of Transportation Norman Y. Mineta and his senior deputies indicate that the DOT has moved short sea shipping to the top of its priority list as part of a new National Freight Action Plan, which is now being developed. Recent statements by Maritime Administrator Captain William Schubert reinforce the expectation that MARAD budget allocations for the fiscal year beginning October 2004 will include appropriations to support the development of coastal transport. The Company believes federal incentives will be necessary to launch any meaningful short sea shipping initiatives. It further believes that its approach to expanding freight capacity through the use of sea bridge alternatives to road travel is well positioned to benefit from any such incentives.

Consumers perceive travel and vacationing by sea transport as inherently safer than by air. Cruise ship revenues have increased dramatically over the past decade, and sharply in the last two years since 9/11. A consumer shift to travel by coastal transport is by no means assured. This is a critical area of market research that is necessary to determine the level and value of service necessary to attract passengers with and without vehicles.