



## Michigan Freight Profile

The [\*Freight Profile Technical Report\*](#) from MI Transportation Plan in 2006 detailed the movement of freight by mode, using commodity tonnage and value statistics from 2003 sources. The report also presented several barriers that hindered the movement of freight and opportunities that could facilitate goods movement. This white paper will update the tonnage and value statistics by mode with more recent source materials from 2009. It also will describe issues encountered by each mode and the strategies the Michigan Department of Transportation (MDOT) is employing to alleviate them.

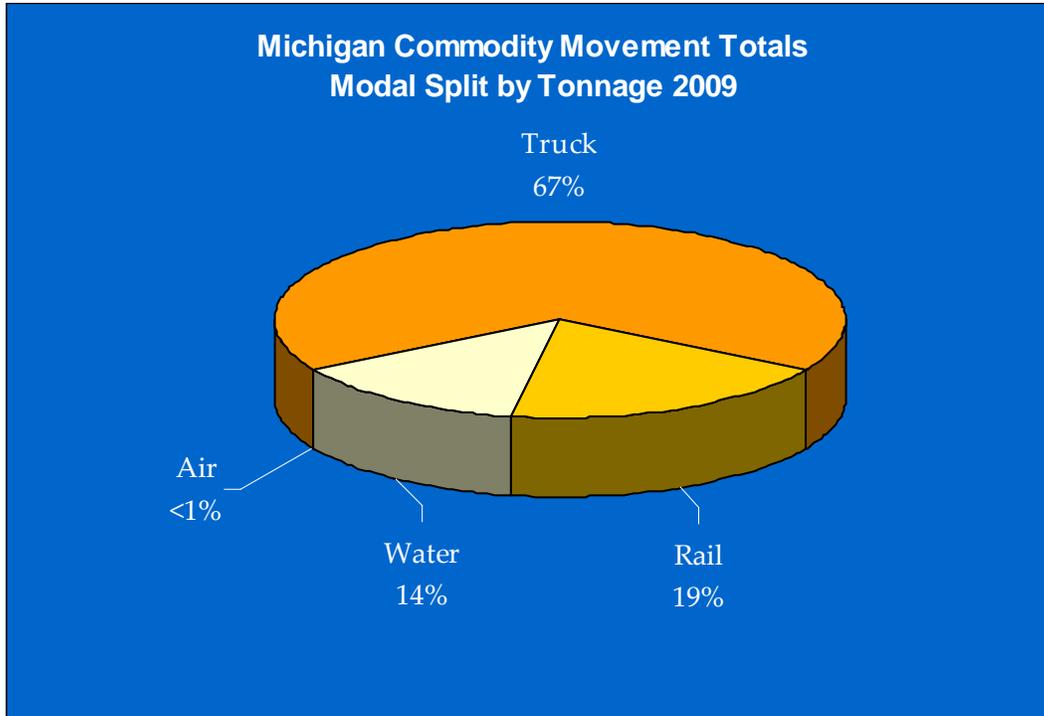
Since the last report was published, the country has experienced a significant recession. The manufacturing sector was hit especially hard, resulting in greatly reduced freight movements. In addition to the effects of the recession, there was a major restructuring of the domestic automobile industry. Auto production during this period was down to levels not seen in decades. There was a sharp decrease in freight movement by all modes and the statistics presented here will show this. The paper will describe the overall statewide totals, individual modal statistics and cross-border international trade. Within each modal section, the current issues and strategies will be detailed.

Statistics for tonnage and value movements are taken from the Transearch database, produced by IHS Global Insight. The latest version of this data set includes county-to-county movements for all modes in 2009. More recently, the economy has rebounded, albeit at a slower pace than would be desired, with indications that freight movements have started to increase. The 2009 statistics used here will likely prove to be the low point on statewide freight movements for the last several years and the foreseeable future based on all forecasts. The Transearch database includes forecasted the freight movements to the year 2030.

### Statewide Totals

Tonnage moved throughout the state has decreased substantially since 2003. The tonnage moved to, from, within, and through Michigan totaled approximately 434 million tons in 2009. This is about 240 million tons less than 2003, a drop of 35 percent. The modal shares of these movements changed slightly, with the truck share dropping to 67 percent from 70 percent (figure 1). While all modes saw a decrease in overall tonnage, trucking saw the largest drop, while shares of the water and rail modes increased from 12 percent to 14 percent, and 18 percent to 19 percent respectively.

**Figure 1**  
**Mode Share of all 2009 Michigan Freight Movements by Tonnage**



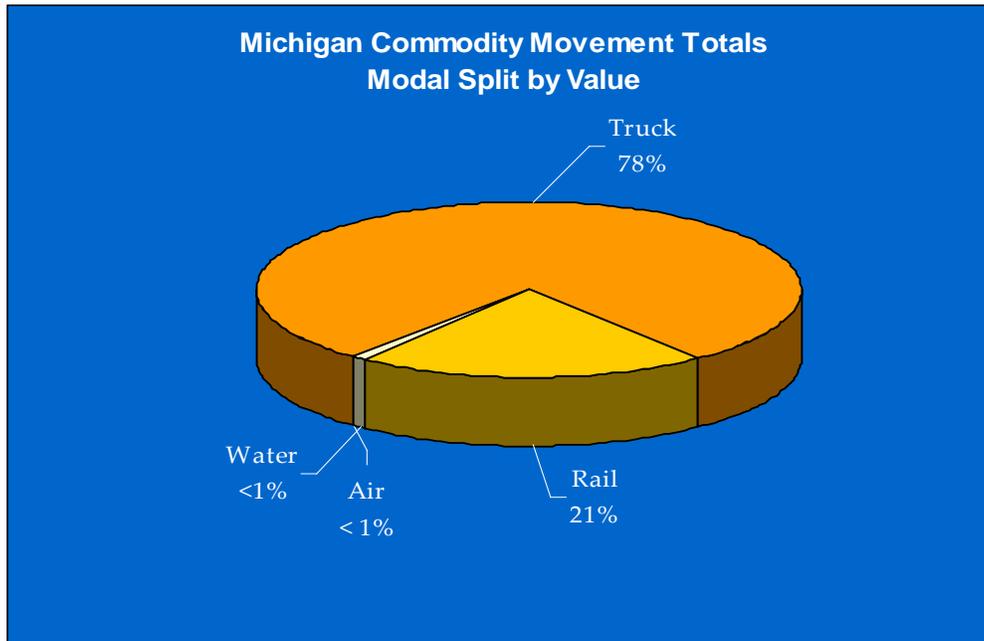
Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section

The value of all freight movements throughout Michigan in 2009 was over \$520 billion. In 2003, this total was approximately \$1 trillion. The drop in value is greater than the decrease in tonnage, most of which is attributable to fewer movements of transportation equipment and motorized vehicles, both extremely high-value products. Figure 2 shows the modal share of freight value. The trucking share of the freight value decreased noticeably from 86 percent in 2003 to 78 percent in 2009. As a result, the share for rail freight increased from 14 percent to 21 percent during this period. Air and Water continue to carry insignificant shares of freight when measured by value.

This decline in freight movement is a direct result of the economic downturn in the United States. The particular harshness of this downturn in Michigan and Michigan manufacturing employment is detailed in the [Socioeconomic Technical Report White Paper](#). Much of freight movement is tied to manufacturing. The state lost half of the employees in this sector from the period 2000 to 2010, from just over 1 million down to 500,000 (1). In particular, the automobile manufacturing sector dropped to only about 40 percent of what it once was, from over 300,000 employees added in 2001 to just over 122,000 in 2009 (2). Automobile manufacturing has recovered a little, and the economy as a whole has rebounded some from 2009, so the outlook is better. Overall, tonnage

movement in Michigan is forecasted to increase more than 50 percent by 2030, up to over 660 million tons – approximately the level seen in 2003.

**Figure 2**



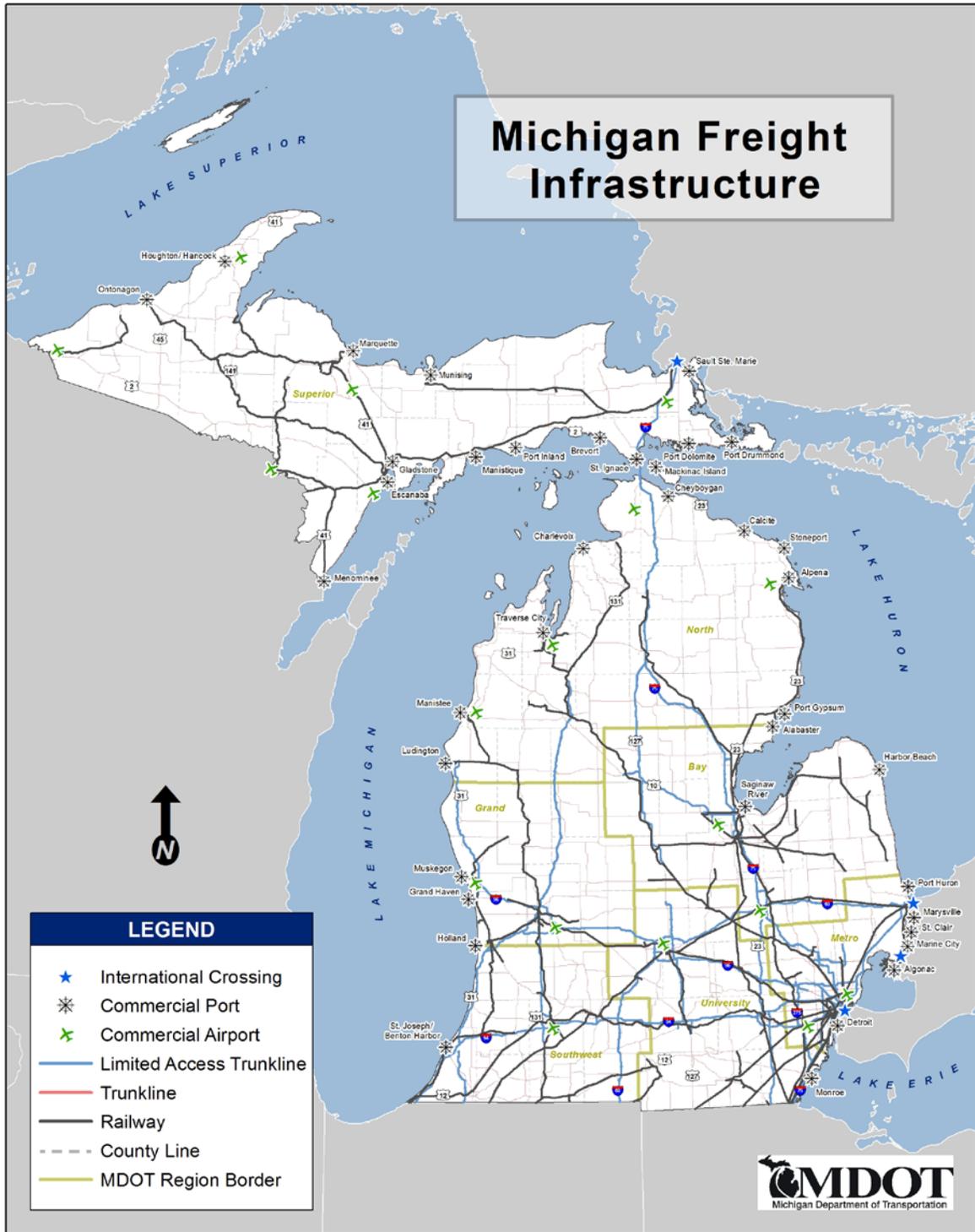
Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section

**Truck Freight**

In 2009, trucking accounted for over 290 million tons of commodity movements to, from, within, and through Michigan. Once again, this is a large decrease from the 474 million tons in 2003. By value, truck movements in Michigan total more than \$408 billion. Total commercial vehicle miles traveled statewide in 2010 was just over 3 billion miles. In 2005 this total was just under 3.9 billion, which constitutes a 20 percent drop. This may be beneficial news to more congested areas in the state, but truck volumes will assuredly increase again in line with the forecasted rebound of future freight movements. Truck volumes are projected to increase by nearly 40 percent over the next 20 years. The 2010 commercial average daily traffic map can be found at this link: [http://www.michigan.gov/mdot/1,1607,7-151-9622\\_11033\\_11149\\_11162-30009--,00.html](http://www.michigan.gov/mdot/1,1607,7-151-9622_11033_11149_11162-30009--,00.html).

While volumes may have decreased from previous years, the corridors with highest commercial volumes have not changed: I-75 between Detroit and Toledo remains the busiest corridor with 14,400 trucks per day; I-94 between Benton Harbor and the Indiana state line has 13,500; I-94 Detroit Industrial Freeway through Romulus and Taylor has 13,300; and I-275 between Novi and Plymouth carries 11,700 trucks per day.

Figure 3





Nonmetallic minerals are the top commodity moved in the state by tonnage, with 48.5 million tons. This is mostly in-state sand and gravel movements to construction locations, and is less than half of what it was in 2003. Farm products rank second with over 37 million tons. Of the leading commodities moved, only farm products and food products did not have a decrease since 2003. By value, transportation equipment is highest with over \$66 billion moved by truck, and secondary traffic next at \$42.8 billion. The transportation equipment commodity fell to rank tenth in tonnage, but its' extremely high value goods keep it ranked number one in terms of value. Secondary traffic includes movements of mixed freight to and from warehouse and distribution centers, intermodal terminals, and air cargo facilities. Table 1 shows the top 10 commodities moved in the state by tonnage and value.

**Table 1: Top Ten Commodities Moved by Truck in Michigan, 2009**

Commodity Tonnage Rank	Total Truck Tons (Millions)	Commodity Value Rank	Total Truck Value (\$Billion)
Nonmetallic Minerals	48.49	Transportation Equipment	\$66.22
Farm Products	37.17	Secondary Traffic	\$42.88
Secondary Traffic	35.42	Machinery	\$37.26
Food Products	33.57	Food Products	\$36.96
Chemical Products	19.83	Chemical Products	\$36.58
Petroleum or Coal Products	19.06	Electrical Equipment	\$27.88
Lumber or Wood Products	16.97	Primary Metal Products	\$22.02
Clay, Concrete, Glass or Stone	13.01	Fabricated Metal Products	\$20.93
Primary Metal Products	12.81	Farm Products	\$18.26
Transportation Equipment	8.20	Rubber and Plastics	\$18.00
<i>Other Commodities</i>	<i>45.82</i>	<i>Other Commodities</i>	<i>\$81.67</i>
<b>Grand Total</b>	<b>290.34</b>	<b>Grand Total</b>	<b>\$408.65</b>

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section  
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### Truck Issues/Strategies

#### *Issue:* Travel Time/Congestion

According to the Texas Transportation Institute's Urban Mobility Report 2011 (3), delay for commercial vehicles nationwide was calculated at \$23 billion in 2010. While trucks only account for six percent of the miles travelled in urban areas, they represent 26 percent of the total cost of congestion. Michigan has its share of congested corridors, mainly during peak-hour traffic in urban areas. Construction zones can tie up traffic and cause delay. Multiple construction zones within one statewide corridor add significant time to trips of greater distance.

*Strategy:* MDOT has established the I-94 Corridor Operations Partnership, which aims to improve traffic operations and system reliability along the corridor statewide. The goals of the program are to optimize the operations of I-94 by



promoting travel reliability and safe mobility, aligning employees, and engaging stakeholders to collaboratively improve the corridor operations. MDOT officials are currently measuring and taking actions to reduce user delay costs incurred by travelers and companies when slow travel speeds result due to winter weather, work zones, and traffic incidents. Goals have been set to reduce total user delay cost to \$18 million over the last seven months of 2012 (\$20 million in 2011). Subsequent reduction goals will be set in following years.

*Strategy:* MDOT is a member of the Great Lakes Regional Transportation Operations Coalition (GLRTOC) that is made up of neighboring states and Canada. GLRTOC collaborates on initiatives that improve cross-regional transportation operations in support of regional economic competitiveness and improved quality of life. Plans and strategies designed to achieve the coalition's goals include efficient freight operations, reliable mobility, and traffic incident management and emergency traffic operations.

*Strategy:* MDOT continues to rehabilitate and reconstruct poor highway pavements and bridges each year. Improvements to highway infrastructure help create travel time savings for households and businesses, and investment in construction and engineering. This investment results in economic benefits for Michigan, creating a system attractive to freight industry.

*Strategy:* Michigan has been a national leader with its Intelligent Transportation Systems (ITS) program, having created large systems in the Detroit and Grand Rapids areas. These systems are being expanded to other urban areas throughout Michigan. There are three transportation management centers located in Michigan, each center utilizes closed circuit television cameras, detection equipment, and dynamic message signs to manage traffic on regional freeways. They focus on incident management activities and traveler information with the goal of improving the safety and mobility of the traveling public. ITS helps alleviate commercial freight movement travel times by forewarning shippers of problems and providing travel options in these congested areas. These centers are located in Detroit, Grand Rapids, and Lansing.

*Strategy:* An interdepartmental committee consisting of representatives of MDOT, Michigan State Police, Federal Highway Administration, and Federal Motor Carrier Safety Administration has been established to review truck speed limits and determine if changes are justified to reduce travel time and congestion. A recommendation is expected to be made during 2012.

*Issue:* Highway Safety

In 2011, the number of crashes involving a truck in Michigan numbered over 10,500, with 69 being fatal accidents (4). This is a significant reduction from the 16,600 truck



crashes and 121 fatalities in recorded in 2004. While we have made impressive progress in improving safety to date, we believe more can be done.

*Strategy:* Since implementing a cable median barrier program in 2008, MDOT has installed 280 of the planned 350 miles of barrier. The department will continue to install the barriers in the future as needed. Results from other states that have had the barriers longer than Michigan have shown a 90 percent reduction in median-crossing crashes, involving some of the more severe and fatal accidents. MDOT expects the cable barriers to save 13 lives and prevent 51 serious injuries a year. MDOT and Wayne State University are in the middle of a three-year study of the effectiveness of cable median barrier on Michigan roadways.

*Strategy:* The department began installing rumble strips on much of Michigan's state trunkline system in 2008. Rumble strips are a proven and cost-effective countermeasure to lane departure crashes brought on by driver drowsiness, distraction, and/or inattention. To date 5,700 miles of centerline and 1,700 miles of shoulder rumble strips have been placed.

*Strategy:* The American Transportation Research Institute (ATRI) recently released the top truck rollover locations for each state (<http://atri-online.org/2012/05/09/interactive-map/>). MDOT's Operations Field Services Division is reviewing the list for Michigan and will recommend courses of action to improve these locations, including proper signage, design, sightlines, etc.

*Issue:* Truck Size and Weight

Michigan encourages efficient movement of heavy commodities. Higher capacities and reduced costs are achieved by allowing more axles while limiting the allowable weight per axle, reducing pavement damage. Overweight vehicles on the state roadways can severely harm pavement quality and reduce the life expectancy of the road.

*Strategy:* The Commercial Vehicle Strategy Team was established in 2005 to build a strong partnership between MDOT and the Michigan State Police/Commercial Vehicle Enforcement Division. The team's Infrastructure Subcommittee has investigated new practices and technologies, enabling a more efficient enforcement of overweight trucks. The team prioritizes needs for projects that advance enforcement strategies, such as weigh-in-motion (WIM) equipment, wireless WIM monitoring, the Truck Weight Information System, and weigh station infrastructure upgrades.

*Strategy:* An interdepartmental committee consisting of representatives of MDOT, Michigan State Police, Federal Highway Administration, and Federal Motor Carrier Safety Administration has been established to review trailer lengths



and axle configurations for certain commercial vehicles and determine if efficiencies can be improved while not conflicting with existing federal law. The state legislature enacted some changes in state law in early 2012 and additional recommendations will be offered by the committee during 2012.

*Issue:* Truck Parking

With the end of the recession, and increases in commercial volumes, the issue of truck parking has been reignited by the trucking industry. New hours of service rules for truckers have put more of a strain on the limited number of parking spaces available at several locations in Michigan. At popular rest times, public Rest areas are overfilled with trucks at times, while the private sector has not kept up with the demand for truck parking.

*Strategy:* MDOT has received a grant to develop the I-94 Truck Parking Management and Information System. This system will include alerts and message signs to drivers indicating parking space vacancies available in the corridor at rest areas and truck stops. The information also will be available online and through industry logistics networks. With a successful effort, the system could be initiated on other corridors in the state.

*Issue:* Jurisdictional Roadway Issues

Trucks pay taxes for use of road facilities. However, trucks are not permitted on all roadways due to local ordinances. A lack of consistency in access to trade centers with special regulations on trucks creates a barrier for the movement of goods to markets utilizing these goods.

*Strategy:* MDOT has established procedures for ensuring compliance with the federal requirements in the law. MDOT reviews complaints regarding reasonable access to the truck network on roadways under local jurisdiction and issues decisions on their findings regarding safety and size restrictions.

**Rail Freight**

Railroads carried nearly 84 million tons of freight throughout Michigan in 2009, almost a 30 percent decrease from 2003. The value of these movements totaled about \$108 billion, again a similar decrease. The same reasons cited earlier for the decrease in overall tonnage - namely the recession - apply to rail as well. Forecasts for rail show a more than 50 percent growth in tonnage and 70 percent growth in value by 2030.

Coal, chemicals, and metallic ores are the top commodities moving by rail in Michigan. Coal is entirely imported, and is destined to power generating facilities and industries throughout the state. Michigan imported nearly 19.8 million tons of coal in 2009, just slightly higher than 2003. Chemicals are ranked second in tonnage, mostly being through trip movements. Metallic ores are predominately outbound, mostly iron ore from the



mines in Marquette County. This commodity is railed to docks in Marquette and Escanaba for shipment across the Great Lakes for steel production. Some is railed directly to the steel industry in Sault Ste. Marie, Ontario. Transportation equipment is easily the most valued commodity moving by rail, with almost \$50 billion moving in the state – again, down considerably. Table 2 shows the top commodities moved by tonnage and value.

**Table 2: Top Ten Commodities Moved by Rail in Michigan, 2009**

Commodity Tonnage Rank	Total Rail Tons (Millions)	Commodity Value Rank	Total Rail Value (\$Billion)
Coal	19.77	Transportation Equipment	\$49.30
Chemical Products	11.09	Misc. or Mixed Shipments	\$18.22
Metallic Ores	9.95	Chemical Products	\$14.64
Transportation Equipment	5.61	Primary Metal Products	\$8.11
Primary Metal Products	4.74	Paper and Pulp Products	\$5.66
Petroleum or Coal Products	4.45	Petroleum or Coal Products	\$2.44
Paper and Pulp Products	4.23	Food Products	\$2.18
Food Products	4.12	Metallic Ores	\$1.24
Misc. or Mixed Shipments	4.11	Clay, Concrete, Glass or Stone	\$0.95
Farm Products	3.97	Farm Products	\$0.88
<i>Other Commodities</i>	<i>11.78</i>	<i>Other Commodities</i>	<i>\$4.30</i>
<b>Grand Total</b>	<b>83.81</b>	<b>Grand Total</b>	<b>\$107.93</b>

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section  
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### **Rail Issues/Strategies**

#### *Issue: Rail Capacity*

Like most large cities in the U.S., the Detroit region possesses historical impediments to the smooth and efficient movement of rail freight within the urbanized area. The throughput and efficiency of the multiple existing terminals are inadequate to meet future demand of intermodal rail freight. Also, the existing Detroit River Rail Tunnel cannot accommodate certain double-stack containers and taller Automax railcars. Growth in demand from the auto industry and other existing and potential customers is hampered by this inefficiency.

*Strategy:* MDOT partnered with the Class I railroads to develop the Detroit Intermodal Freight Terminal (DIFT). This project will expand through-put capacity by consolidating multiple terminals, providing equipment and infrastructure availability needed in this competitive industry.



*Strategy:* MDOT will continue to provide technical and political support for improvement to the Detroit River Rail Tunnel as the funding issues with the private rail industry and government are resolved.

*Issue:* Rail Congestion/Travel Times

Bottlenecks in the rail system have hindered movements, mainly in the urbanized communities in the Detroit region. Freight trains often wait at locations for other trains to pass before being able to continue.

*Strategy:* As part of the DIFT project, connections will be improved to alleviate long delays at several junctions in metro Detroit. Multiple train movements will be enabled at junctions where trains are frequently delayed for hours while waiting for other trains pass. Also, improved highway access to the DIFT will provide a more efficient flow of trucks into and out of the facility, contributing to improving the rail intermodal operations.

*Issue:* Safety

At-grade crossings are locations where train-auto crashes can occur, even when automated, protective barriers are functioning. While the number of crashes at railroad crossings continues to decline, car-train crashes are 30 times more likely to result in a fatality than crashes between vehicles.

*Strategy:* MDOT partners with the railroads for surface improvements to rail crossings on state trunklines and upgrades crossing devices with input from local authorities. MDOT's local grade crossing program partners with local agencies and provides funding for improvements to rail crossings identified as dangerous. MDOT also keeps an active inventory of crossings and rail infrastructure and notifies railroads of deficiencies and potential problem locations as they are identified.

*Issue:* Rail Accessibility

As a peninsula, accessibility to rail service for rail-dependent businesses in Michigan has been problematic, especially for those businesses located in the rural, northern part of the Lower Peninsula. "Through" lines, such as those situated in the southern part of the state or the Upper Peninsula, are not available in this part of the state. Many of the rural lines that existed in the past had been determined to be not economically viable by the major rail carriers and most were abandoned.

*Strategy:* MDOT has purchased some of these abandoned rail lines to continue to make rail accessible to business and has upgraded rail infrastructure in disrepair to accommodate continued service. MDOT currently owns 530 miles of active track and contracts with four private rail operators to maintain service on those lines.



Three of the lines are scheduled to be returned to the private sector over the next several years as part of a legislatively-mandated divestiture process.

*Strategy:* MDOT maintains two competitive financial assistance programs designed to enhance existing infrastructure and help rail users gain access to or make greater use of the freight rail system. The Freight Economic Development Program assists rail users in constructing new or expanded spur tracks, rail yards or transload facilities. The second program, the Michigan Rail Loan Assistance Program (MiRLAP) is geared toward preserving or improving existing infrastructure and keeping rail lines viable. Both programs are intended to improve Michigan's climate for rail-dependent businesses.

*Issue:* Rail Track Limitations

Rail cars capable of carrying 286,000 pounds are becoming the nationwide standard for certain commodities, particularly agricultural products. Some are now even moving to 315,000 pounds. This allows for more efficient handling of products for shippers, but requires upgraded infrastructure. The requirement for upgraded infrastructure is more likely to be a problem for lines owned or operated by short line or regional carriers. Without improvements, shippers may encounter an increasingly limited market for their products.

*Strategy:* MDOT's MiRLAP program is available for the improvement of infrastructure. The department's current effort to inventory all rail infrastructure also will be used to identify the location of all track deficiencies in this regard.

*Issue:* Railcar Shortage

Shippers have found that after moving their product to market, it is increasingly hard to get empty railcars returned for the next market cycle. This is primarily a problem for the agriculture industry. Often, different industries compete for the same cars. Agricultural users, with heavy seasonal needs, must compete for car supply with other shippers with more consistent demands. Covered hoppers, for instance, are also utilized to carry sand for the fracking industry.

*Strategy:* The department continues to study the extent of rail car shortage in Michigan and its cost to agricultural shippers, and is working with its partners to facilitate a resolution.

**Note:** See the Michigan State Rail Plan at <http://www.michigan.gov/mdot/0,4616,7-151-11056-242455--,00.html> for a complete assessment of system issues in Michigan and recommendations for improvements.



## Water Freight

Michigan ports handled just under 60 million tons of cargo in 2009. The value of these cargoes was about \$4.1 billion. These totals have dropped approximately 20 percent since 2003, a smaller decrease than that observed for truck and rail. The commodities shipped by water in Michigan have remained primarily the same. However, as a result of the recent recession, there has been a reduced demand for natural resource materials used in manufacturing and construction. Detroit continues to be the busiest port in the state, handling over 8.8 million tons of cargo in 2009.

Nonmetallic minerals were the leading commodity shipped by water in Michigan. Over 25 million tons were shipped, mostly outbound from the limestone quarries in Northern Michigan. Coal (16 million tons, almost all in-bound) and metallic ores (12.5 million tons, mostly outbound) were the next top commodities. Only coal and primary metal products increased since 2003. Coal went up slightly, and metal products went up due to the amount of slag being shipped. Slag, the by-product of ore smelting, is mainly imported to Michigan for use with cement in concrete production. Metallic ores had the highest value, followed by chemical products. Table 3 shows the top commodities moved by tonnage and value.

**Table 3: Top Commodities at Michigan Ports, 2009**

Commodity Tonnage Rank	Total Water Tons (Millions)	Commodity Value Rank	Total Water Value (\$Million)
Nonmetallic Minerals	25.01	Metallic Ores	\$874.49
Coal	15.90	Chemical Products	\$759.01
Metallic Ores	12.49	Coal	\$643.89
Clay, Concrete, Glass or Stone	3.81	Primary Metal Products	\$425.80
Petroleum or Coal Products	1.12	Clay, Concrete, Glass or Stone	\$373.56
Primary Metal Products	0.96	Chemical Products	\$302.96
Chemical Products	0.21	Nonmetallic Minerals	\$301.35
<i>Other Commodities</i>	<i>0.10</i>	<i>Other Commodities</i>	<i>\$441.51</i>
<b>Grand Total</b>	<b>59.59</b>	<b>Grand Total</b>	<b>\$4,122.57</b>

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section

## Water Issues/Strategies

### Issue: Navigation Policy Issues

This issue has remained unchanged from the last freight technical report. Restrictive provisions of the federal Jones Act hinder the development of short-sea-shipping (known as marine highways). Maintaining navigation channels is difficult due to a lack of adequate funding and environmental regulations. The lack of availability of funds from the Harbor Maintenance Trust Fund has contributed to the deterioration of port conditions and capacity. State regulation of ballast water discharge discourages shipping on the St. Lawrence Seaway.



**Strategy:** Most of the policies contributing to this issue are federal, but MDOT continues to promote awareness of and detail the scope of the problems. When issues of funding and regulatory problems are resolved at the national level, barriers arising for Michigan’s waterborne shippers may be alleviated.

**Issue:** Soo Locks

Congress has authorized construction of a new large lock, which will replace two functionally obsolete locks that were constructed during World War I and are now closed. This new lock will be similar in size to the existing Poe Lock, the only lock capable of accommodating 1,000 foot long vessels in the St. Mary’s Falls Canal. This will create much needed redundancy for the waterway system at the location, as delays encountered with this aging lock system could be long and financially detrimental to shippers.

**Strategy:** MDOT was involved in the planning aspects for the project, and has fulfilled the state’s role in all efforts to date. The department will continue to work with the Great Lakes community to promote the advancement of this project. Preliminary construction has begun on aspects of the project, but efforts continue to secure the remaining funding from Congress.

**Air Freight**

High-value, time-sensitive products often travel by air. Whether in cargo planes or in the belly of commercial aircraft, air freight, like other modes, has decreased in Michigan. In 2009, Michigan airports handled more than 236,000 tons of air cargo. This is about a 20 percent drop from 2003. Detroit continues to move the most air freight, with the Willow Run facility handling the most cargo. Grand Rapids, Lansing, and Flint make up the next tier. Table 4 shows the top airports in the state moving cargo.

**Table 4: Michigan Airport Tonnage, 2009**

Top Air Cargo Airports by Tonnage (2009)			
Airport	Total Tons	Inbound Tons	Outbound Tons
Detroit	164,590	71,406	93,184
Grand Rapids	38,277	19,183	19,094
Lansing	21,023	9,826	11,196
Flint	8,798	4,299	4,498
Traverse City	1,367	703	664
Escanaba	522	144	378
Iron Mountain	497	279	218
Alpena	465	206	259
Houghton/Hancock	395	184	211
Pellston	346	101	246
<i>Other Origins</i>	329	125	204
<b>Total</b>	<b>236,610</b>	<b>106,456</b>	<b>130,154</b>

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section



In addition to air cargo, Michigan airports handled more than 9,100 tons of mail. This is mostly handled at Detroit Metro Airport, and has consistently decreased every year. Wireless communication and the shrinking of the postal service continues to subtract from overall paper mail totals.

### **Air Issues/Strategies**

#### *Issue: Willow Run Airport Limitations*

Willow Run Airport in Ypsilanti is a primary freight handling aviation facility in the state. Due to the short length of the runways at this airport, fully loaded and fully fueled wide-body aircraft cannot take off. As a result, planes must take off with only enough fuel to get them off the ground and fly to Detroit Metro Airport, 10 miles away. The plane can then obtain a full tank of fuel and re-embark on its flight. This is enormously costly. Due the lack of availability of affordable surrounding land, lengthening the runways is difficult.

*Strategy:* MDOT has studied the feasibility and cost of obtaining property surrounding Willow Run needed for expansion. However, financial and political obstacles continue to be major barriers, as they have been in the past.

#### *Issue: Retaining Cargo Services*

The economic downturn and the cost of fuel have hurt air cargo services at many airports. Retaining and recruiting air services are problems for the industry.

*Strategy:* MDOT has reinstated funding for the Air Service Program, which had been discontinued the last few years. This program is a state and local program that aims to retain cargo services by giving grants to airports for capital improvements and enhancing facilities. The program also increases airport marketability for the recruitment of new business to the air cargo industry.

#### *Issue: All-Weather Airports*

Airports that are not available in bad weather hamper the facilitation of freight, as seasonal changes can reduce certain freight movements.

*Strategy:* MDOT has continued an initiative to make more Michigan airports all-weather accessible by employing GPS-based instrument approach systems and automated weather observation systems (AWOS). The GPS systems alleviate the need for expensive ground navigation aids, and the AWOS provides readily available weather information to aircraft. MDOT continues to work with the airport communities to assist those in need of accessibility. Approximately 70 percent of all eligible airports in the state are now all-weather accessible.



## **Border Crossings and International Trade**

Michigan's border crossings are vital links for international commerce and are critical to the well-being of the local, state, and national economies. The United States and Canada conduct the world's largest bilateral trade relationship, exceeding \$1.6 billion per day in 2011, (almost \$600 billion annually). (5) After a downturn in cross-border trade in 2009, imports and exports started increasing again and now are at an all-time high. Michigan again is the leading state trading with Canada, with over \$70 billion in 2011. (6) The Ambassador Bridge is the busiest commercial border crossing on the Canadian border, with over 2.6 million trucks crossing in 2011. (7) The Blue Water Bridge in Port Huron is the second busiest on the northern border, with almost 1.5 million trucks. These figures are quite a bit lower than in the early 2000s, but are on the increase since reaching a low in 2009. Transportation Equipment is the leading product crossing Michigan's border with Canada. The auto companies have several plants that move product to and from Michigan and Ontario, and in 2011 close to \$50 billion of transportation equipment passed through the border at Detroit. (8)

In 2011, President Obama and Prime Minister Harper signed a "Beyond the Border" initiative that will promote the streamlining of goods movement across the US-Canada border. This plan is a shared approach to security at the borders, and the intent is to provide easier passage of lawful trade between countries. An increase in freight movements between Michigan and Ontario is expected, and the initiative could lessen bottlenecks at the borders to expedite truck crossings. Studies and initiatives have already begun regarding border wait time information systems and the streamlining of import/export shipments.

## **Border Crossing Issues and Strategies**

*Issue:* Border Delay/Congestion

Trucks crossing the border can experience several hours of delay, waiting to clear custom's inspection and in long queues leading to the bridges. This delay costs companies that do business in the United States and Canada tremendously.

*Strategy:* The New International Trade Crossing (NITC) was just recently agreed upon between Michigan and Canada to add a new bridge between Detroit and Windsor, Ontario. This will add much needed capacity at the crossing by way of more lanes and customs booths. The crossing will also have direct freeway access on both sides, which the Ambassador Bridge does not have. The current bridge dumps traffic onto Huron Church Road in Windsor, where it takes 18 traffic lights to get to the freeway. The new bridge also will create a redundancy in the system to alleviate the risk of any potential closures of the Ambassador Bridge. The impact to facilitation of international freight improves immensely with this project.



*Strategy:* The Gateway Project to provide trucks with direct access to the freeway system in Detroit will be completed in 2012. For years, trucks were directed to Fort Street before getting on the freeway, causing delay and discord for area residents.

*Strategy:* MDOT has planned an expansion of the Blue Water Bridge plaza to expedite traffic flow at Port Huron. The proposed expansion will provide a new customs processing and inspection area for commercial vehicles, including 12 new primary inspection lanes. It also includes 15 commercial vehicle loading/unloading docks that will allow CBP officers to unload and inspect the contents of a commercial vehicle. This should drastically reduce delay at this crossing, but the project is awaiting word on funding from the Federal Government.

*Strategy:* Cross border programs. The Free and Secure Trade program (FAST) is a joint program between the United States, Canada, and Mexico. FAST allows expedited processing for commercial carriers who have completed background checks and fulfill certain eligibility requirements. Benefits include: dedicated lanes for greater speed and efficiency in processing trans-border shipments; reduced number of inspections resulting in reduced delays at the border; and priority, front-of-the-line processing for Customs and Border Patrol (CBP) inspections. Also, the Automated Commercial Environment (ACE) program continues to be expanded by the CBP. ACE modernizes and enhances trade processing with features that will consolidate and automate border processing and provides a centralized on-line access point to connect the CBP and the trade community. While both are federal programs, MDOT promotes their benefits in order to reduce border delays.

## **Conclusion**

This update of the Freight Technical Report is offered as a resource for understanding the movement of freight pertaining to Michigan's transportation system, and as an input to the updating of an integrated MITP. The findings highlight changes in tonnages and values by mode, and in policies aimed at alleviating issues and bottlenecks in the system.

Notable changes since the last report were identified. The economic downturn resulted in a major decrease in freight tonnage moved by all modes. The trucking sector saw its modal share of tonnage moved decrease to 67 percent, but recently has been back on the rise and is expected to settle at over 70 percent. Rail, water, and air modes also saw decreases in movements, but like truck are expected to increase steadily in the future. The auto industry continues to play a crucial role in the overall totals of freight movements in the state. Two of the major freight related projects in the state (the DIFT and the NITC) have made progress and should alleviate some of the issues presented in this paper.



The department recently completed the Michigan State Rail Plan, which provides a comprehensive assessment of the state’s rail transportation network, including strategies for freight rail improvements and future investment needs. This document was created to identify future investment needs based on input received from industry groups and key stakeholder groups in order to be adequately prepared to handle the future freight demands on Michigan’s rail infrastructure assets.

The “Moving Ahead for Progress in the 21st Century Act” (MAP-21), signed into law July 6, 2012, authorizes federal transportation programs and funding through September 30, 2014. MAP-21 is a 24-month transportation authorization bill. Folded into the bill is an extension of SAFETEA-LU for another three months, until September 30, 2012. The impacts and implications of pending policy changes won’t be fully known for some time and therefore can’t be considered and prepared for immediately. Freight provisions within the bill include the establishment of a national freight transportation policy, a national freight network, and a national freight strategic plan. Performance measures and standards regarding freight movement will be established by the United States Department of Transportation (USDOT). Fortunately, MDOT already maintains several databases that can be readily used for performance measures, which will alleviate new regulations and changes presented by USDOT. The overall impacts of the bill to Michigan are currently being assessed.

In recent years, there has been more emphasis put on the efficient movement of freight at the department level, as well as by other stakeholder groups and state agencies. In response to the issues of system demand and future projections for freight growth, a collaboration among MDOT, the Michigan Economic Development Corporation (MEDC), the Michigan Department of Agriculture and Rural Development (MDARD), and many other stakeholder groups has been established to leverage existing efforts in order to elevate Michigan’s Transportation Distribution and Logistics (TDL) profile on a national and global scale. The Statewide TDL Strategy includes a project charter, statement of work, focus areas, and metrics to gauge the effectiveness of the partnership moving forward.

In addition to the creation of the Statewide TDL Strategy, MDOT has been involved in promoting the state as a regional supply chain hub in partnership with Michigan State University Department of Supply Chain Management, and the Great Lakes Intermodal Trade and Transport Hub (GLITTH), as well as the Southeast Michigan Council of Governments (SEMCOG), the Detroit Regional Chamber of Commerce, and Wayne State University, among others. Various studies have been conducted to highlight Michigan’s infrastructure advantages, including the identification specific industry sectors for potential future economic expansion.



MDOT has created an internal freight committee. The purpose of the group is to provide an opportunity for the exchange of information on the topic of freight activities within the Department, in order to facilitate coordination among staff on the various projects throughout the state. The group meets quarterly, and since its inception two years ago has proved to be a beneficial platform, keeping those dealing with freight aspects on the same course and eliminating duplication of efforts.

**End Notes:**

(1) Bureau of Economic Analysis

<http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1&isuri=1&acrnd=4>

(2) Bureau of Labor Statistics

[http://www.bls.gov/iag/tgs/iagauto.htm#emp\\_state](http://www.bls.gov/iag/tgs/iagauto.htm#emp_state)

(3) Texas Transportation Institute Urban Mobility Report 2011

<http://tti.tamu.edu/documents/mobility-report-2011.pdf>

(4) Michigan Traffic Crash Facts

<http://www.michigantrafficcrashfacts.org/>

(5, 6, 8) Research and Innovative Technology Administration – Bureau of Transportation Statistics

[http://www.bts.gov/programs/international/transborder/TBDR\\_QA.html](http://www.bts.gov/programs/international/transborder/TBDR_QA.html)

(7) Public Border Operators Association

<http://www.publicborderoperators.org/index.php>