APPENDIX A
FREIGHT SYSTEM BACKGROUND

This section provides an overview of the existing freight system and freight movements.

THE ROLE OF FREIGHT IN SOUTHEAST MICHIGAN

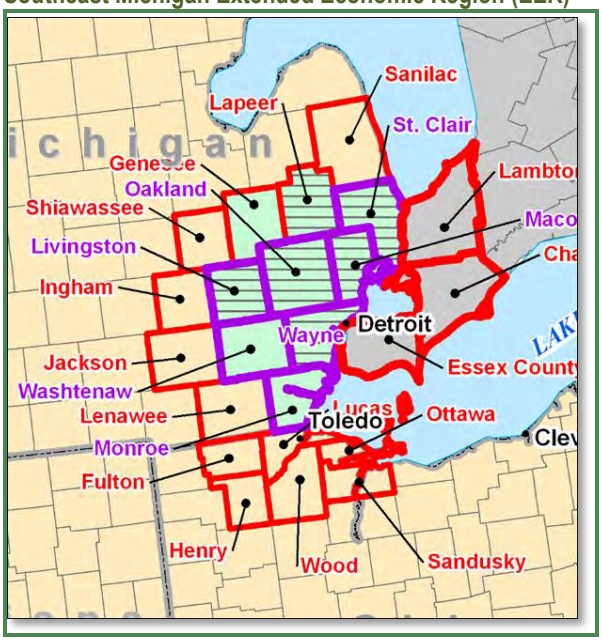
Today, freight transportation systems are more important to business than ever before. Increased global competition and new inventory methods require a highly reliable transportation system. If the freight system becomes unreliable or inefficient, the cost of doing business increases, which then threatens jobs and damages the business climate in the Southeast Michigan Extended Economic Region. Sustaining a careful balance between community needs and freight needs is essential.

The freight system transports agricultural products from farms to distribution centers, then to grocery stores. The freight system brings wholesale and retail merchandise to local stores. The U.S. Postal Service and courier services, like UPS, use the freight system to transport mail and packages. Industry relies on the freight system to deliver and export commercial goods. The freight system also transports refuse and hazardous waste.

Southeast Michigan's unique geographic position, existing transportation infrastructure and economic base combine to form an integral gateway to Canada, the Great Lakes/St. Lawrence Seaway, Chicago and the Midwest, Mexico, and the world. The region's transportation system, therefore, plays a vital role in the movement of both people and goods at the regional, national and global levels. In turn, this system is important to the growth and health of Southeast Michigan's regional economy.

This document now presents an overview of freight activity in Southeast Michigan.

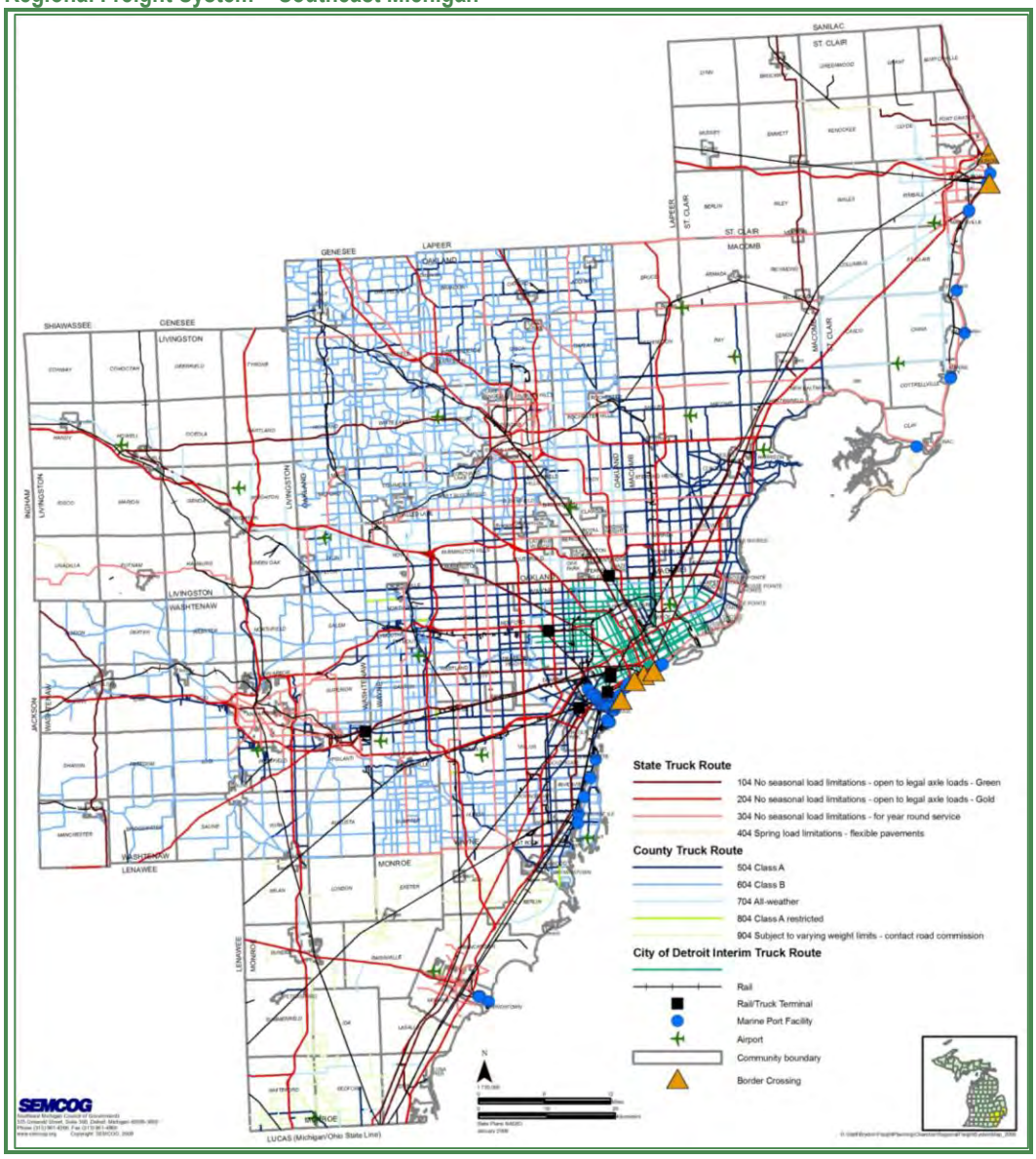
Southeast Michigan Extended Economic Region (EER)



THE EXISTING FREIGHT SYSTEM

The Southeast Michigan regional freight transportation system is a key component of a much larger national and international freight network (Figure A-1). Southeast Michigan is a large manufacturing center and its location provides immediate access to the Great Lakes waterways and Canada, as well as other Midwestern production centers, such as Chicago. The region's multi-modal freight system is comprised of several elements:

Figure A-1
Regional Freight System – Southeast Michigan



ROADS. The road freight system is made up of the National Highway System, intermodal connectors, and locally-designated truck routes. These roads are the backbone of the regional freight network. The truck route network connects the region's marine ports, airports, and intermodal rail terminals.

RAILROADS. Railways in Southeast Michigan are privately owned and operated primarily by four Class I rail companies: Canadian National, Canadian Pacific, CSX, and Norfolk Southern. Amtrak provides passenger rail service on some of these lines. There are also six short line rail companies which own track and operate in the region.

AIRPORTS. Four of the 36 airports in Southeast Michigan carry the bulk of the region's air cargo: Detroit Metropolitan Airport, Oakland County International Airport, Willow Run Airport, and Coleman A. Young International Airport. Airports located in Flint, Lansing, Toledo (Ohio), and Windsor (Ontario) are significant contributors to regional air cargo access.

MARINE PORTS. Five marine ports located in the region are linked to the world market via the Great Lakes/St. Lawrence Seaway (Table A-1). The largest port in Southeast Michigan and the state, the Port of Detroit, located on the Detroit and Rogue Rivers, handles over half of Southeast Michigan's marine cargo tons. Toledo, OH and Windsor, ON both feature regionally significant marine ports.

Table A-1
Top Five Land Ports by Value for North American Trade: 2011 (Billions of U.S. Dollars)

Rank	Port Name	State	Total U.S. Trade	Exports	Imports
1	Laredo	TX	$145	$68	$77
2	Detroit	MI	$121	$66	$55
3	Port Huron	MI	$83	$40	$43
4	Buffalo-Niagara Falls	MY	$82	$44	$38
5	El Paso	TX	$60	$27	$33

Source: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, TransBorder Freight Data.

INTERMODAL TRANSFER FACILITIES. Facilities at which freight moves from one transport mode to another are scattered throughout the region. There are six active terminals operating in Southeast Michigan that transfer shipping containers with its cargo intact between rail and truck.

BORDER CROSSINGS. Southeast Michigan shares an 87 mile border with Southwest Ontario. Crossings include the Blue Water Bridge and the Paul M. Tellier Tunnel, a double-stack rail tunnel owned by Canadian National at Port Huron/Sarnia and the Detroit-Windsor Tunnel, the Ambassador Bridge, and the Detroit River Rail Tunnel co-owned by Canadian Pacific and Borealis Transportation at Detroit-Windsor. The Detroit-Windsor Truck Ferry operates on the Detroit River primarily serving trucks carrying hazardous cargo.

These elements must all function cohesively for the region's freight system to operate efficiently. With the prevalence of just-in-time production and inventory control techniques, disruptions in the flow of goods and services increasingly lead to negative impacts on manufacturers, distributors, retailers, and consumers.

MODE SELECTION

Table A-2 illustrates the variations in freight movements by mode for the state. Movements are broken down by mode for percent of value and percent of weight of the total freight carried in the state. At 72 percent of total freight value and 78 percent of weight, truck transportation is by far the most common mode in Michigan. While the bulk of freight originating in the United States is also shipped by truck (67 percent of all tonnage and 74 percent of all value), Michigan relies more on trucks than the national average.

Table A-2
Modes of Transportation for Shipments Originating in Michigan, 2009

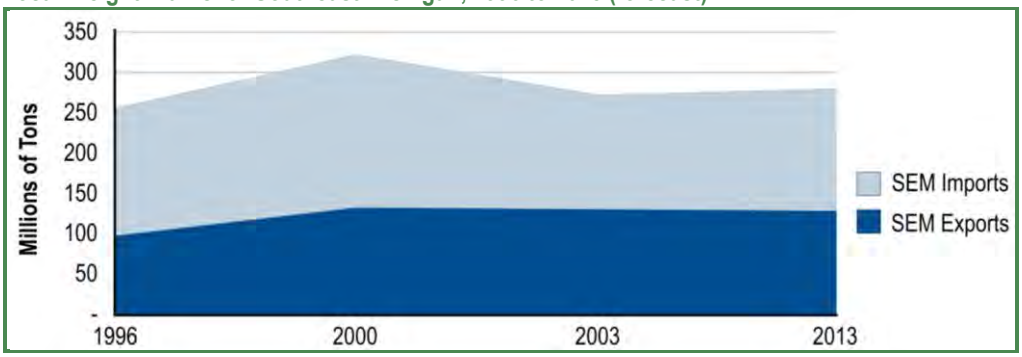
Modes	Percent of Value	Percent of Weight
Truck	72.3	77.5
Rail	14.0	11.0
Water	TBD	TBD
Air (include truck-air)	1.1	-
Multiple modes and mail	9.5	1.7
Pipeline	2.1	7.7
Other and unknown	1.0	2.0

Source: U.S. Department of Transportation, Freight Analyses Framework, V3.

LOCAL FREIGHT TRAFFIC IN SOUTHEAST MICHIGAN

Previous to the deep national recession of 2008 to 2009, there was much anticipation of large increases in freight transportation to support an expanding economy with more global links, continuing trends that the U.S. experienced through much of the 1990s and 2000s (Figure A-2). Contrary to national trends of rapidly growing freight volumes, freight traffic originating in and destined for Southeast Michigan remained relatively stable over this long period. Freight movements to and from Southeast Michigan increased six percent between 1996 and 2003, from 258 million tons to 274 million tons. The effect of the 2008/2009 recession was especially severe to Southeast Michigan's core manufacturing industry. Nonetheless, freight movement has begun to rebound.

Figure A-2
Local Freight Traffic for Southeast Michigan, 1996 to 2013 (forecast)



Source: Global Insight, Inc., TRANSEARCH data and economic forecast.

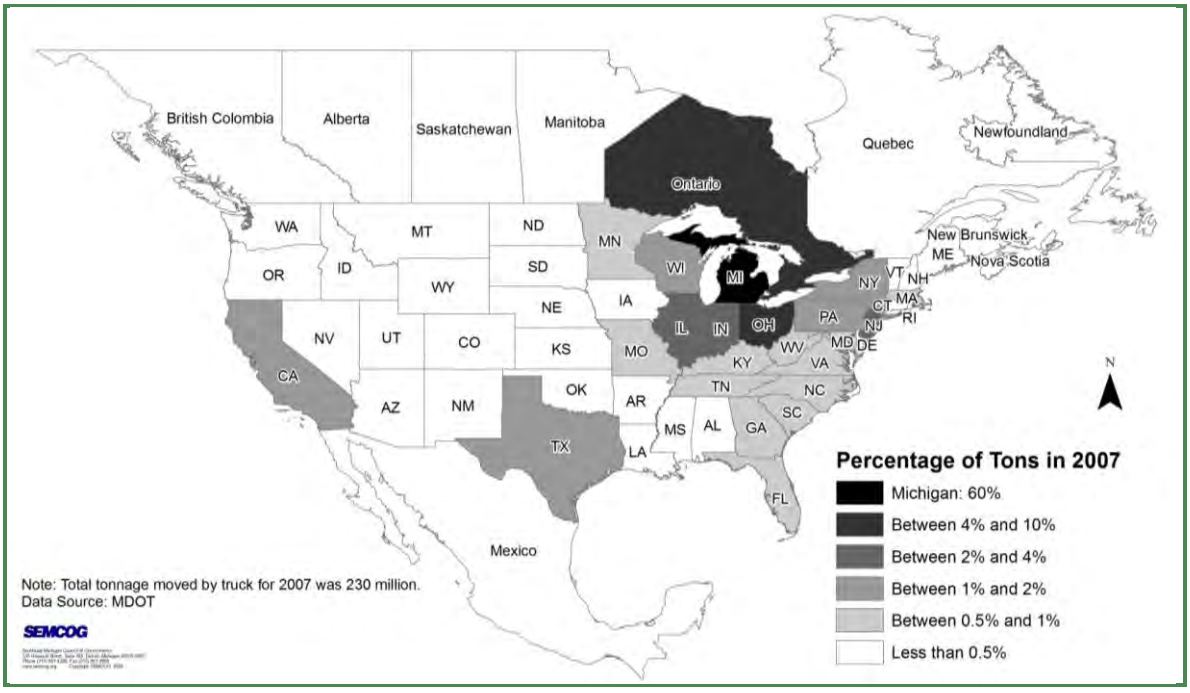
Future rises in freight traffic will depend on the rate of recovery for Michigan's economy, and the extent to which Michigan participates in national population and economic growth, and national growth in international trade.

Trucking is the dominant mode accounting for three quarters of all freight movements by weight in Southeast Michigan (Figure A-3). Rail accounts for around 14 percent. Air is responsible for less than one percent of freight movement by weight.

Differences between modes become apparent when the distance between origins and destinations of freight movements is examined.

- More than 90 percent of all freight moving between Southeast Michigan and another part of Michigan is transported by truck. At the same time, rail and water become increasingly important when goods are transported longer distances.
- Over sixty percent of all truck freight by weight moves between Southeast Michigan and other parts of Michigan. In contrast, less than one percent of rail freight moves between Southeast Michigan and other parts of Michigan.
- Thirty-five percent of all truck freight moves between Southeast Michigan and other states and around four percent moves between Southeast Michigan and Canada.
- Eighty-seven percent of rail freight moves between Southeast Michigan and other states and 11 percent moves between Southeast Michigan and Canada.

Figure A-3
Truck Freight Traffic to and from Southeast Michigan
North America



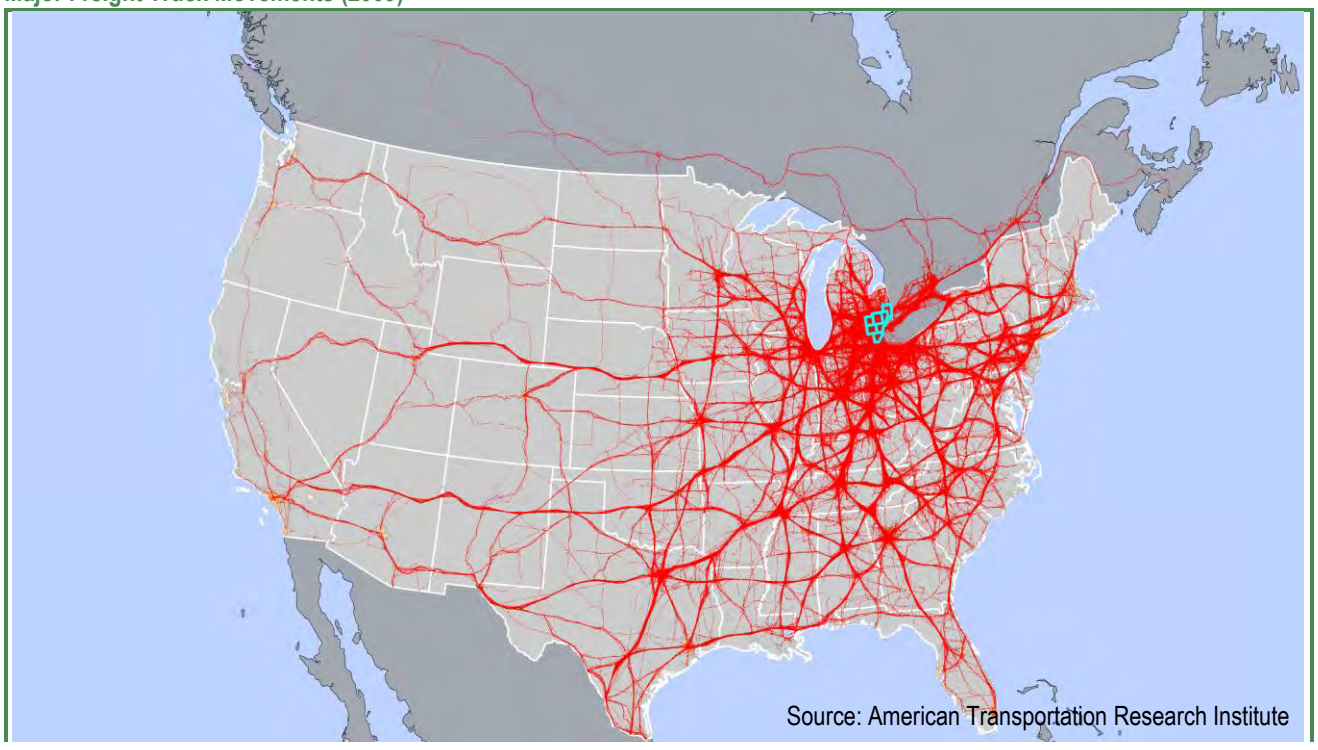
PASS-THROUGH FREIGHT TRAFFIC

Pass-through freight includes cargo that neither originates in, nor is destined for, Southeast Michigan, but moves through the region on its way to somewhere else. Because Southeast Michigan is home to two of the most valuable crossings for international surface freight in the United States, the region experiences a high volume of international truck and train pass-through freight traffic, compared with the rest of the state. Pass-through traffic has broad national benefits, and emphasizes the importance of the access Southeast Michigan provides to our nation's largest two-way trading partner (Figure A-3). There are service providers located in Southeast Michigan that specialize in facilitating cross border movements.

Southeast Michigan's freight system is an important part of the state, national and international economy.

- More than half of all freight to and from Southeast Michigan is exchanged with other parts of Michigan.
- Even in the midst of the recent recession, in 2009 Michigan accounted for over nine percent of the U.S. international trade with Canada.[1]

Figure A-3
Major Freight Truck Movements (2009)



[1] Freight Analysis Framework version 3 (FAF3), Federal Highway Administration, 2011.

- The highest local freight traffic volumes are observed between Southeast Michigan and its neighboring states and provinces such as Ohio, Indiana, Illinois, and Ontario), ranging from 2 to 10 percent of total mass

INTERNATIONAL FREIGHT TRAFFIC

The flow of goods, services and capital between the United States and Canada is the largest bilateral trading relationship in the world. Trade between the United States and Canada had grown by more that 245 percent from $243 billion in 1994 to $596.9 billion in 2008.[2] Due to the worldwide economic downturn, trade between the U.S. and Canada has in fact been affected such that in September 2009 the trade value was $311 billion (USD), compared to the September 2008 trade value of $472 billion, a one-year decline of 34 percent

Michigan is the top trading partner with Canada and accounted for over $67 billion (USD) in trade in 2008 (trade that has an origin or destination in the state)

The historical annual commercial vehicular traffic of the three Southeast Michigan crossings increased significantly between 1972 and 1999, but leveled off in 1999. Nonetheless, the Ambassador Bridge's overall commercial vehicle market across the frontier experienced a positive average annual growth of 3.2 percent between 1972 and 2009.

The trade value across the U.S.-Canada border has historically ranged between $1.2 and $1.9 billion (USD) daily. Over 40 percent of this trade traverses the Detroit-Windsor crossings. The automotive industry-related trade between the United States and Canada historically amounted to 20 percent of the overall local Detroit-Windsor vehicular crossings (excluding the Blue Water Bridge),and about three quarters of the truck freight trade value at the Detroit-Windsor crossings had an origin or destination outside of Michigan.[3]

The Detroit-Windsor crossing trade is estimated to support over 7.1 million jobs in the United States and over 220,000 jobs within Michigan. In Canada, the crossing trade historically supported over three million jobs in the Windsor region and Canada combined.

[2] U.S. Bureau of Transportation Statistics
[3] Source: Federal Highway Administration, March 23, 2006