

Corridors and International Borders White Paper

The 2005-2030 [MI Transportation Plan: Moving Michigan Forward](#) (MITP) development contained several key items, including:

“A high-level corridor approach will be used as a blueprint to talk about our vision and priorities for program development and investment, not specific projects. Corridors will be identified and evaluated to consider goods movement and value versus volume.”

The purpose of this white paper is to provide a brief background and update of corridor values since the 2030 MITP and the 2035 MITP were completed. This report defines the value of these corridors to the state’s economy. It should be noted that this white paper does not act as a replacement of the [Corridors and International Borders Report](#) (March 1, 2007) prepared for the 2030 MITP, but serves as a supplement. This white paper highlights certain important facets that have changed since the last iteration of the report, and serves as an updated replacement for the [Corridors and International Borders White Paper](#) (September 2012) created for the 2035 MITP. Corridor system performance also has been updated and can be found in the companion document [MITP Corridors of Highest Significance - Performance Metrics](#).

Background

The *Corridors and International Borders Report* includes supporting documentation and analysis conducted for the MITP. Appendix B of the report details the process to identify corridors and activity centers. It discusses the peer state review, Michigan Department of Transportation (MDOT) region listening sessions, lessons learned and ideas worth considering, the analytical approach used to identify corridors, and corridor nomenclature. The corridor component of the 2030 MITP was not to be studied and analyzed at the project level. Rather, it provided strategic policy and corridor-level analysis to ensure that the integrated system operates safely and more efficiently. The focus of the 2005-2030 corridor analysis was on value and the safe, efficient movement of people, goods, and services.

The 2030 MITP vision provides an integrated transportation system that is the foundation of the state’s economic vitality and sustains quality of life for its residents. In order to safely and efficiently support the movement of people, goods, and services, MDOT recognized that passengers and freight travel must pass seamlessly along geographic corridors on multiple modes, between locations or activity centers, within and outside Michigan. The corridor-based analysis conducted during 2030 MITP development is grounded in the understanding that specific corridors serve and support specific economic sectors. The *2040 MI Transportation Plan* (2040 MITP) reaffirms this understanding and [vision](#). By improving specific corridors, the people, businesses and industries dependent on these corridors will be strengthened, as well as Michigan’s economic competitiveness.

Corridor Definitions

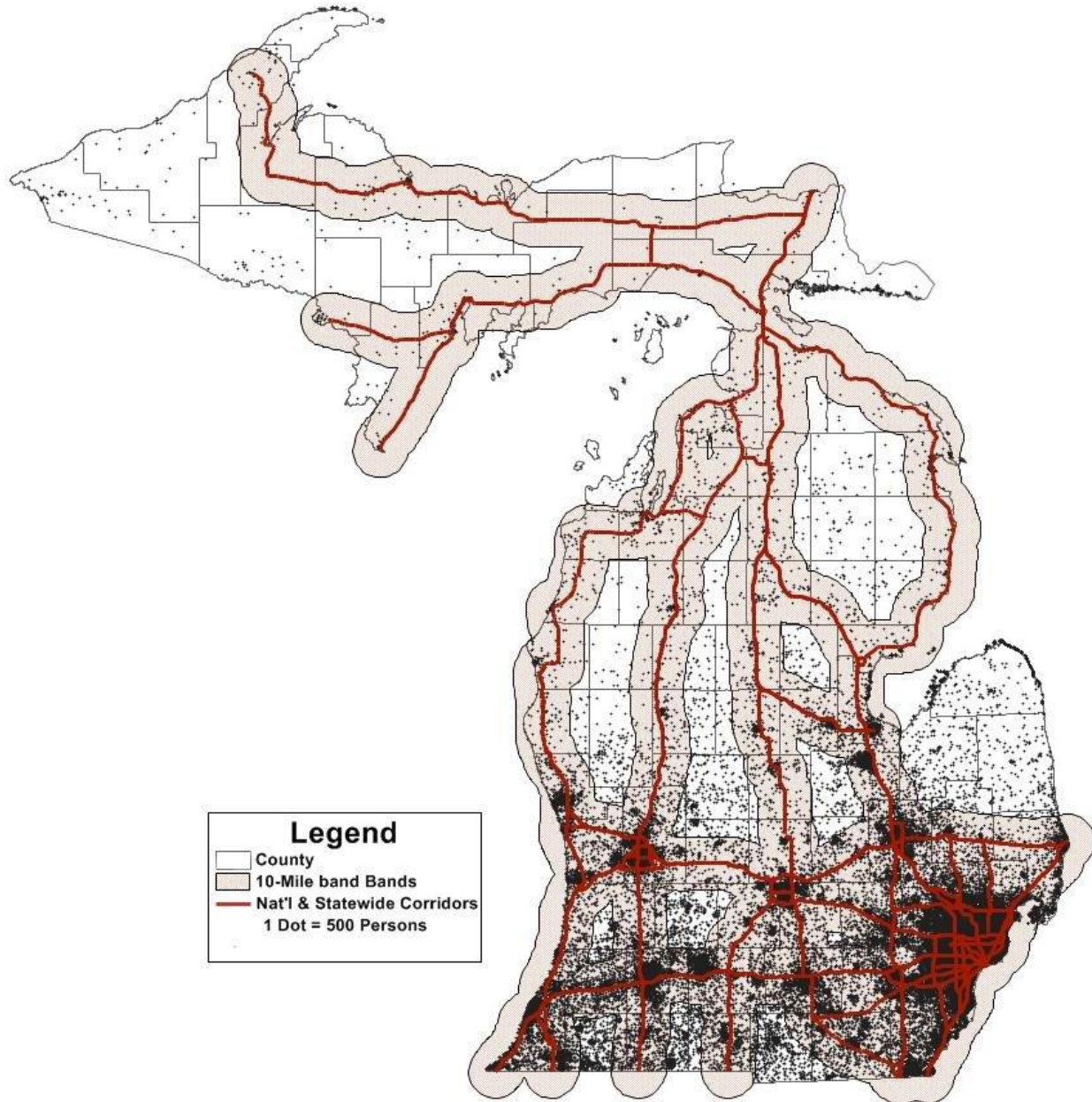
Corridors were designated, named, and labeled based on the primary travel origin/destination they serve: international/national, statewide, regional, and local. The top two tiers (international/national and statewide) make up MDOT's corridors of highest significance (COHS). The COHS are not ranked, but are defined based on the type of travel they carry. MDOT's COHS include facilities that also serve sub-state regional travel and economies.

COHS are defined as:

An integrated, multi-modal system of transportation infrastructure along geographic corridors that provide a high level of support for the international, national, and state economies. These corridors connect activity centers within and outside Michigan and serve the movements of people, services, and goods vital to the economic prosperity of the state. (Table 1 and Table 2)

The [*Corridors and International Borders Technical Report \(2007\)*](#) explains the process that MDOT undertook to establish the corridors and their designations. An activity center approach was used to designate these corridors. As a result of this effort, 11 national/international corridors and eight statewide corridors were established. These 19 corridors have a major impact on supporting both the state's population and economy. Approximately 93.2 percent of Michigan's population resides within a 20-mile geographic area around a COHS. Additionally, approximately 98.7 percent of Michigan's employment base is located within the 20-mile geographic area. Figure 1 presents the population within the 20-mile wide geographic areas associated with the COHS.

Figure 1: Population within a 20-mile geographic area around the COHS



Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section
 2015 U.S. Census 2010 block data

Table 1 and Table 2 describe the 11 international/national COHS and the eight statewide COHS.

Table 1: COHS – International/National

| <u>Corridors of International / National Significance</u> | |
|--|---|
| Corridor: | General Description: |
| Mackinaw City-St. Ignace/Wisconsin | Starts in St. Ignace, follows US-2 to M-35 in Escanaba, follows M-35 to Menominee, and ends at the Wisconsin border. |
| Sault Ste. Marie/Bay City | Starts at the Canadian border in Sault Ste. Marie, follows I-75, and ends at Bay City. |
| Bay City–Midland–Saginaw/Flint/Detroit | Starts in Bay City and follows I-75 to Detroit. |
| Muskegon/Grand Rapids/Lansing/Detroit | Starts in Muskegon, follows I-96 through Grand Rapids, Lansing, and Livonia, and ends in Detroit. |
| Detroit/Chicago | Starts in Detroit, follows I-94 through Ann Arbor and ends at the Indiana border. |
| Grand Rapids/Chicago | Starts in Grand Rapids, follows I-196 through Holland to I-94, follows I-94, and ends at the Indiana border. |
| Port Huron/Detroit/Toledo | Starts at the Canadian border in Port Huron, follows I-94 to I-75 in Detroit, follows I-75, and ends at the Ohio border. |
| Port Huron/Lansing/Indianapolis | Starts at the Canadian border in Port Huron, follows I-69 through Lansing and ends at the Indiana border. |
| Port Huron/Chicago | Starts at the Canadian border in Port Huron, follows I-69 through Lansing to I-94, follows I-94 and ends at the Indiana border. |
| I-696 | Starts at I-96 in Farmington Hills, follows I-696 and ends at I-94. |
| I-275 | Starts at the I-96/I-696 interchange in Farmington Hills, follows I-275 and ends at I-75. |

Source: Michigan Department of Transportation

Table 2: COHS - Statewide

| <u>Corridors of Statewide Significance</u> | |
|---|--|
| Corridor: | General Description: |
| Houghton/Marquette/Sault Ste. Marie | Starts in Houghton, follows US-41 to Marquette, follows M-28 to I-75, follows I-75, and ends at the Canadian border. |
| Petoskey/Grand Rapids/Indiana | Starts in Petoskey, follows US-131 through Grand Rapids and ends at the Indiana border. |
| Mackinaw City–St. Ignace/Holland | Starts in Mackinaw City, follows US-31 through Petoskey, Traverse City, and Muskegon, and ends in Holland. |
| Benton Harbor/Indiana | Starts in Benton Harbor, follows US-31 through Niles and ends at the Indiana border. |
| Flint/Toledo | Starts in Flint, follows US-23 through Ann Arbor and ends at the Ohio border. |
| Mackinaw City-St. Ignace/Alpena/Standish | Starts in Mackinaw City, follows US-23 through Alpena and ends at Standish. |
| Grayling/Jackson | Starts in Grayling, follows I-75 to US-127 through Lansing and ends in Jackson. |
| Jackson/Toledo | Starts in Jackson, follows US-127 to US-223 through Adrian to US-23, follows US-23, and ends at the Ohio border. |

Source: Michigan Department of Transportation

Regionally and Locally Significant Corridors

Michigan’s economy includes local and regional economic activity centers throughout the state. In identifying the COHS, it became clear that certain corridors support regional economies and are vital components of the transportation network and the state’s economic health. These corridors were identified as regionally and locally significant corridors and are defined as:

An integrated, multi-modal system of transportation infrastructure along geographic corridors that provide a high level of support for a specific sub-state region of Michigan’s economy. These corridors connect to and augment the COHS and serve the movements of people and goods within or between activity centers.

Because the corridors are multi-modal and not limited to highways, their service areas are defined as including the population and employment within a 20-mile geographic area around the corridor. COHS are not ranked, but are defined based on the type of travel they carry. While they include only part of the state’s system, they serve a large segment of the travel needs of Michigan’s businesses and citizens.

Corridor of Highest Significance (COHS)

Since the [2035 MITP](#) was developed, population and employment has seen a very moderate rebound after the recession of 2008. Michigan statewide population experienced a 0.2 percent increase between 2010 and 2014, according to the U.S. Census Bureau. Michigan statewide employment has experienced a 7.6 percent increase since 2010, according to the U.S. Bureau of Economic Analysis (BEA). Population and employment for 2014 were still well below the 2006 totals, when the 2030 MITP was developed, and forecasts to 2040 are well below the original estimates set in the 2030 MITP, but the state is now seeing growth again. For specific statistics, please refer to the [Socioeconomics Technical Report White Paper](#). It identifies significant changes in trends and projections of state-level socioeconomic variables since the 2030 MITP was completed. Table 3 provides a summary of COHS characteristics.

Table 3 provides both population and employment percentages along each corridor based on 2010 statewide totals. As Figure 1 displays, there is an overlap between the different coverage areas for the corridors. A large percentage of the state's population and jobs are included in multiple corridors, so the individual percentages for each corridor do not add up to the statewide percentages (as discussed on page 2).

Table 3: Summary of COHS Characteristics

| | Percent of Population within 20-mile buffer zone | Percent of Jobs within 20-mile buffer zone | Annual Average Daily Traffic | Student Population | Commercial Enplanements | Number of Border Crossings |
|---|--|--|------------------------------|--------------------|-------------------------|----------------------------|
| | 2010 | 2010 | 2014 | 2014 | 2014 | 2014 |
| Mackinaw City-St. Ignace/Wisconsin | 0.50% | 1.00% | 5,015 | 2,414 | 17,200 | 0 |
| Sault Ste. Marie/Saginaw | 3.20% | 4.20% | 10,030 | 12,882 | 21,200 | 1 |
| Bay City-Midland-Saginaw/Flint/Detroit | 25.00% | 33.80% | 81,650 | 130,526 | 543,800 | 4 |
| Muskegon/Grand Rapids/Lansing/Detroit | 32.50% | 42.00% | 63,370 | 296,162 | 1,378,800 | 4 |
| Detroit/Chicago (I-96) | 25.70% | 30.30% | 57,540 | 259,228 | 16,347,900 | 4 |
| Grand Rapids/Chicago | 6.80% | 10.70% | 34,500 | 74,187 | 1,171,800 | 0 |
| Port Huron/Detroit/Toledo | 20.60% | 23.70% | 66,120 | 140,483 | 0 | 8 |
| Port Huron/Lansing/Indiana polis (I-69) | 8.00% | 11.00% | 25,900 | 84,664 | 609,100 | 4 |
| Port Huron/Chicago | 10.50% | 14.60% | 35,060 | 123,566 | 743,300 | 4 |
| I-696 | 21.70% | 39.20% | 148,140 | 27,479 | 0 | 0 |
| I-275 | 6.40% | 12.90% | 104,400 | 36,114 | 16,213,700 | 0 |
| Houghton/Marquette/Sault Ste. Marie | 1.00% | 1.20% | 4,800 | 19,737 | 86,700 | 1 |
| Petoskey/Grand Rapids/Indiana | 9.00% | 11.70% | 22,200 | 141,615 | 1,306,000 | 0 |
| Mackinaw City-St. Ignace/Holland | 9.00% | 6.20% | 13,600 | 19,308 | 248,500 | 0 |
| Benton Harbor/Indiana | 1.00% | 1.30% | 14,100 | 3,262 | 2,800 | 0 |
| Flint/Toledo | 11.60% | 9.40% | 54,600 | 67,531 | 418,700 | 0 |
| Mackinaw City-St. Ignace /Alpena/Standish | 0.70% | 0.80% | 4,160 | 2,080 | 12,600 | 0 |
| Grayling/Jackson | 4.70% | 6.80% | 19,300 | 94,781 | 190,400 | 0 |
| Jackson/Toledo | 2.00% | 2.00% | 12,100 | 15,398 | 0 | 0 |

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section, 2014

A comparison of annual daily traffic (ADT) totals in 2014 shows an overall 4.5 percent increase from the previous analysis in 2011. Initial projections for 2015 show that the ADT is still increasing. These figures are also consistent with the national trends, as discussed in a February 2016 report by [Federal Highway Administration \(FHWA\)](#). In addition, commercial enplanements for Michigan increased 0.5 percent since 2010. Since the 2010 census, there has been no new data at the level of geography needed to establish the total population, student population, or jobs, so the data in Table 3 still reflects of the 2010 numbers.

Value of Corridors

Michigan’s economy has experienced a modest resurgence since the 2008 recession. Table 4 provides a comparison of the COHS mode share to the statewide total. The findings with comparisons to the [2035 MITP](#) are found following the corridor freight totals in Table 5.

Table 4: Comparisons - Existing Statewide Infrastructure Totals to Corridors of Highest Significance including International Border Crossings (2013-2014)

| Mode | | Statewide Total | National and Statewide Corridors | Percent National and Statewide Corridors |
|----------|-----------------------------------|-----------------|----------------------------------|--|
| Highway | State Highway Miles | 9,668 | 3,375 | 35% |
| | Total Vehicle Miles (Annual) | 50.6 billion | 36.8 billion | 73% |
| | Passenger Vehicle Miles (Annual) | 46.7 billion | 33.5 billion | 72% |
| | Commercial Vehicle Miles (Annual) | 3.9 billion | 3.3 billion | 85% |
| | Truck Ton Miles (Annual) | 32.4 billion | 28.8 billion | 89% |
| | Truck Value Miles (Annual) | 58.9 trillion | 54.6 trillion | 93% |
| Rail | Rail Track Miles | 3,674 | 2,276 | 62% |
| | Rail-Ton Miles | 12.0 billion | 11.7 billion | 97% |
| | Rail-Value Miles | 19.4 trillion | 18.7 trillion | 96% |
| Aviation | Commercial Airports | 18 | 17 | 94% |
| | General Aviation Airports | 233 | 186 | 80% |
| Marine | Ferry Services | 21 | 12 | 57% |
| | Cargo Ports | 39 | 33 | 85% |
| | Waterborne Tonnage | 63.8 million | 59.1 million | 94% |
| Transit | Passenger Rail Miles | 521 | 521 | 100% |
| | Intercity Bus Stations | 39 | 37 | 95% |

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section, 2015



The [*MI Corridors of High Significance Profile Summary - Executive Summary I*](#) defines in detail each of the 19 COHS. The values provided in each corridor profile are corridor-specific. Because corridors cross each other and share activity centers, corridor values and conditions cannot be combined to create a statewide total. Table 5 provides values on truck and rail freight information based on the 2013 IHS Transearch database and accompanying 2040 forecasts. To calculate statistics for each COHS, the Statewide and Urban Travel Analysis section at MDOT used the primary highway that connects all activity centers within each corridor. Using GIS tools, 10-mile buffer zones were established around each side of these highways to create the 20-mile wide buffer zones running the length of these corridors. The amount of truck freight was calculated using the truck model. The rail freight statistics were compiled using the rail network.¹

¹ Details on methodology may be found in the *MI Corridors of High Significance Profile Summary - Executive Summary I, February 14, 2007*.