Corridors and International Borders

The 2005-2030 *MI Transportation Plan: Moving Michigan Forward* (2030 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 was completed. The 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. The sheer volume of data for an equivalent undertaking at the level of the 2007 version is not feasible at this time. What this document will do is highlight certain important facets that have changed since the last iteration of the report. Corridor system performance also has been updated and may be found in the companion document *MITP Corridors of Highest Significance - Performance Measures*.

Background

The *Corridors and International Borders Report*, includes supporting documentation and analysis conducted for the MITP. Appendix B of the *Corridor and International Border 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, taking an analytical approach to identify corridors, and corridor nomenclature. The corridor component of the 2030 MITP was not to be detailed down to the project level. Rather, it would provide strategic policy and corridor-level analysis to ensure that the integrated system would operate safely and more efficiently. The focus of the 2005-2030 corridor analysis is on value and the safe, efficient movement of people, goods, and services.

The 2030 MITP vision is one of 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 belief that specific corridors serve and support specific economic sectors. The *2035 MI Transportation Plan* (2035 MITP) reaffirms this belief 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. MDOT's Corridors of Highest Significance include facilities that also serve sub-state regional travel and economies.

Corridors of Highest Significance (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 2)

Table 1:

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

Table 2:

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

Regionally and Locally Significant Corridors

Michigan's economy includes local and regional economic activity centers throughout the state. In identifying the Corridors of Highest Significance (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 Corridors of Highest Significance and serve the movements of people and goods within or between activity centers.*

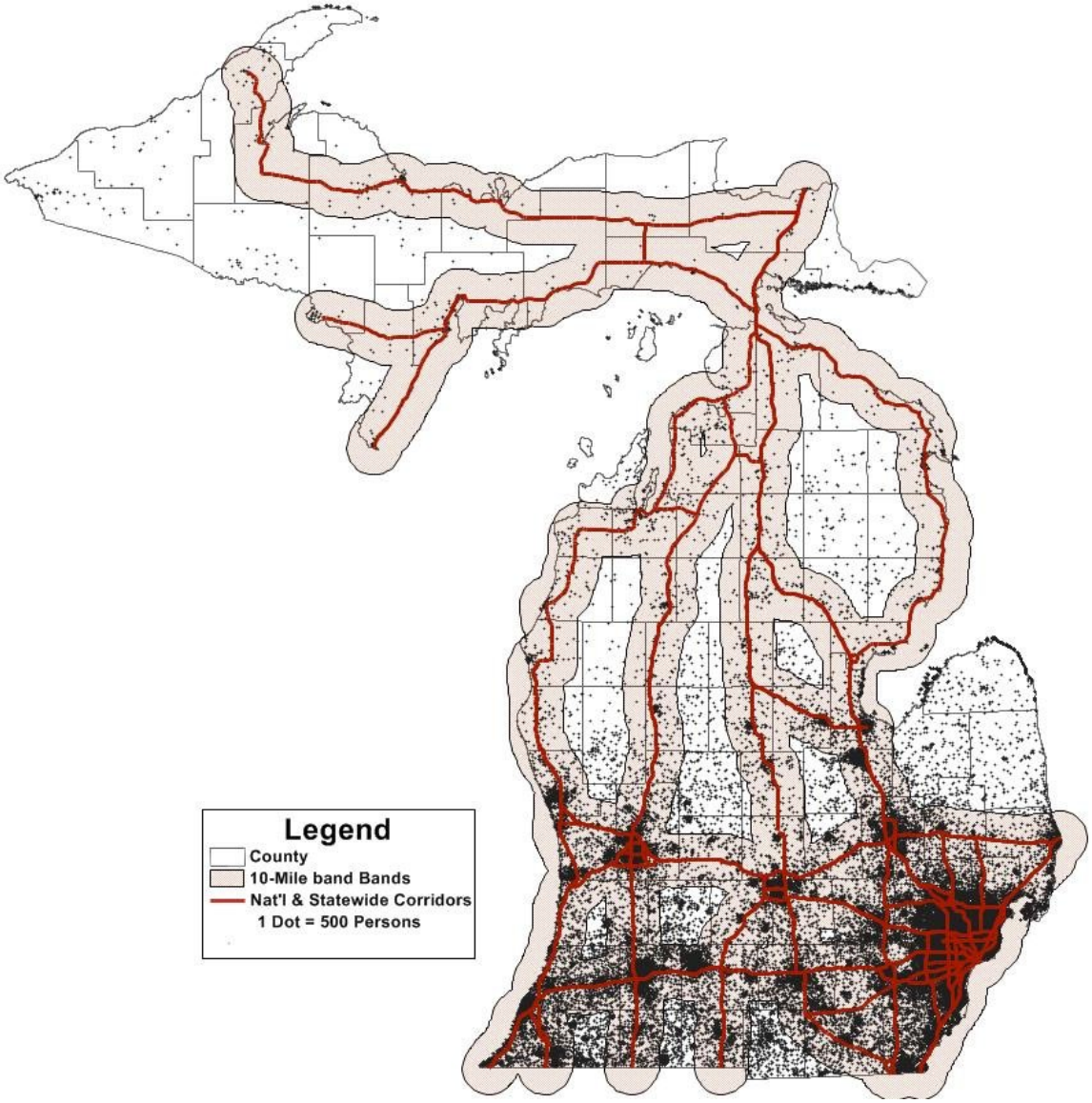
Because the corridors are multi-modal and not limited to the highways, their service areas are defined as including the population and employment within a 20-mile geographic area around the corridor. COHS are not ranked, but are defined based on the type of travel they carry. While they include only 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)

These 11 national/international and eight statewide corridors have a major impact on supporting both the state's population and economy. Approximately 93.2 percent vs. 92.8

percent (previously) of Michigan's population resides within a 20-mile geographic area around a COHS. Additionally, approximately 98.7 percent vs. 95.1 percent (previously) 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 Corridors of Highest Significance



Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section, 2012
U.S. Census 2010 block data

The percentage of the population that fell within a 20-mile corridor band of significance fluctuated depending on the corridor involved. Only three corridors showed an increase in population when compared with the 2030 MITP analysis: Sault St. Marie/Bay City, Mackinaw City/St. Ignace/Alpena, and Flint/Toledo. With Michigan losing population since the original analysis, it is logical to conclude that the percent of the state's population that is within the 20-mile corridor band is less. 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.

Similar to the population component, the percent of jobs located within the 20-mile wide corridor of significance are a mixed bag. Jobs in seven corridors increased, while 12 corridors experienced a decrease in the percentage of jobs located within each of the 19 corridors of significance. Table 3 provides a comparison of COHS characteristics.

Table 3: Comparison of COHS characteristics

	% Population w/in 20 mile buffer zone	*% Jobs w/in 20 mile buffer zone*	*Avg. ADT*	*Student Pop*	*Commercial Enplanements*	*Number of Border Crossings*
Mackinaw City–St. Ignace/Wisconsin	**0.50%**	**1.00%**	**5,400**	**2,414**	**16,200**	
Sault Ste. Marie / Bay City	**3.20%**	**4.20%**	**14,300**	**12,882**	**14,400**	**1**
Bay City–Midland–Saginaw/Flint/Detroit	**25.00%**	**33.80%**	**78,800**	**130,526**	**627,500**	**4**
Muskegon/Grand Rapids/Lansing/Detroit	**32.50%**	**42.00%**	**61,000**	**296,162**	**1,242,000**	**4**
Detroit/Chicago	**25.70%**	**30.30%**	**54,200**	**259,228**	**16,248,000**	**4**
Grand Rapids/Chicago	**6.80%**	**10.70%**	**32,200**	**74,187**	**1,241,000**	
Port Huron/Detroit/Toledo	**20.60%**	**23.70%**	**71,000**	**140,483**	**0**	**8**
Port Huron/Lansing/Indianapolis	**8.00%**	**11.00%**	**27,000**	**84,664**	**628,000**	**4**
Port Huron/Chicago	**10.50%**	**14.60%**	**34,300**	**123,566**	**771,000**	**4**
I-696	**21.70%**	**39.20%**	**140,300**	**27,479**	**0**	
I-275	**6.40%**	**12.90%**	**84,800**	**36,114**	**16,205,000**	
Houghton/Marquette/Sault Ste. Marie	**1.00%**	**1.20%**	**5,000**	**19,737**	**93,500**	**1**
Petoskey/Grand Rapids/Indiana	**9.00%**	**11.70%**	**21,700**	**141,615**	**1,238,000**	
Mackinaw City–St. Ignace/Holland	**9.00%**	**6.20%**	**13,700**	**19,308**	**186,000**	
Benton Harbor/Indiana	**1.00%**	**1.30%**	**13,400**	**3,262**	**2,800**	
Flint/Toledo	**11.60%**	**9.40%**	**52,100**	**67,531**	**497,000**	
Mackinaw City–St. Ignace /Alpena/ Standish	**0.70%**	**0.80%**	**4,300**	**2,080**	**8,600**	
Grayling/Jackson	**4.70%**	**6.80%**	**17,900**	**94,781**	**131,000**	
Jackson/Toledo	**2.00%**	**2.00%**	**11,700**	**15,398**	**0**	

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section, 2012

Comparison of annual daily traffic (ADT) totals shows an overall seven percent decrease from the previous analysis. The postsecondary student population that resides within all of Michigan's corridors of significance dropped overall by seven percent as well. Overall, commercial enplanements for Michigan fell 12 percent as compared to the previous totals.

Value of Corridors

Michigan's economy changed significantly between 2005 and 2010. Michigan experienced a major recession that included major restructuring of the domestic automobile industry and the supporting suppliers that have traditionally been the mainstay of Michigan's overall economy. The decade-long recession speaks to the economic malaise that increased its grip on the U.S. economy since late 2008. These economic changes resulted in extraordinary employment losses within Michigan's automotive sectors. It is through this economic lens that these changes are quantified. Table 4 provides a comparison of the COHS mode share to the statewide total.

Table 4: Comparisons – Existing Statewide Infrastructure Totals to Corridors of Highest Significance including International Border Crossings

Mode		*Statewide Total*	*National and Statewide Corridors*	*% National and Statewide Corridors*
Highway	State Highway Miles	9,653	3,375	35%
	Total Vehicle Miles (Annual)	49.8 billion	35.9 billion	72%
	Passenger Vehicle Miles (Annual)	46.1 billion	32.8 billion	72%
	Commercial Vehicle Miles (Annual)	3.7 billion	3.1 billion	83%
	Truck Ton Miles (Annual)	29.8 billion	28.7 billion	96%
	Truck Value Miles (Annual)	50.8 trillion	49.8 trillion	98%
Rail	Rail Track Miles	3,966	2,735	68%
	Rail-Ton Miles	10.1 billion	9.8 billion	97%
	Rail-Value Miles	13.7 trillion	13.3 trillion	97%
Aviation	Commercial Airports	18	17	94%
	General Aviation Airports	217	178	82%
Marine	Ferry Services	21	12	57%
	Cargo Ports	40	34	85%
	Waterborne Tonnage	59.6 million	56.2 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, 2012

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 2009 Transearch database and 2030 forecasts from IHS Global Insight, Inc. 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.*

Table 5: Corridor Freight Totals

	Truck				Rail			
	2009 Truck Tons	2030 Truck Tons	2009 Truck Value	2030 Truck Value	2009 Rail Tons	2030 Rail Tons	2009 Rail Value	2030 Rail Value
Mackinaw City-St. Ignace/Wisconsin								
Avg	2,660,249	4,369,799	$2,692,664,921	$4,945,255,714	2,607,347	4,462,634	$1,297,136,385	$1,870,017,659
High	3,527,815	5,830,614	$3,462,405,228	$6,393,874,429	6,153,511	13,773,499	$2,496,859,828	$3,419,865,891
Low	1,666,005	2,637,368	$2,328,835,739	$4,323,544,916	3,480	3,229	$3,748,581	$4,743,947
Sault Ste. Marie / Bay City								
Avg	6,734,578	12,263,320	$7,450,495,982	$15,555,024,260	124,580	167,486	$37,845,303	$50,278,754
High	9,334,042	17,062,505	$11,235,955,090	$22,735,449,348	450,756	572,510	$289,046,459	$374,252,064
Low	3,702,939	6,541,130	$3,822,862,327	$8,789,285,610	18,400	27,587	$4,834,329	$6,077,747
Bay City-Midland-Saginaw/Flint/Detro								
Avg	11,746,538	17,706,635	$15,075,215,886	$26,677,223,665	1,290,728	1,625,883	$1,316,018,263	$2,098,571,308
High	19,038,018	27,553,052	$26,352,206,570	$49,017,862,414	7,139,690	12,482,575	$9,918,878,482	$18,996,897,171
Low	5,533,412	9,179,571	$8,214,831,923	$15,638,762,710	29,280	36,714	$44,528,581	$48,728,455
Muskegon/Grand Rapids/Lansing/Detroit								
Avg	11,769,723	18,570,788	$18,372,535,885	$31,812,992,343	8,936,245	16,131,734	$15,829,152,905	$30,572,351,484
High	30,992,640	50,753,231	$58,378,141,182	$126,623,301,596	17,629,366	29,811,598	$27,140,952,449	$50,316,189,069
Low	3,339,092	5,249,511	$3,813,609,952	$6,303,895,372	33,200	57,496	$39,770,086	$62,665,631
Detroit/Chicago								
Avg	36,675,049	64,477,246	$86,222,747,067	$183,146,428,436	676,514	994,955	$1,047,719,146	$1,668,406,078
High	60,962,846	101,822,701	$127,660,417,205	$261,319,006,461	18,268,690	30,691,932	$43,578,371,541	$73,293,952,660
Low	740,291	1,084,271	$424,860,051	$696,057,538	1,520	3,452	$6,743,628	$15,314,360
GrandRapids/Chicago								
Avg	28,794,460	46,302,667	$57,438,093,616	$112,699,093,509	12,047,235	17,586,680	$13,534,457,560	$26,323,206,602
High	60,962,846	101,822,701	$127,660,417,205	$261,319,006,461	14,403,769	20,171,303	$14,838,490,563	$28,777,566,600
Low	4,593,295	6,778,095	$7,912,015,300	$14,228,590,921	23,920	31,928	$8,272,958	$11,151,876

Table 5: Corridor Freight Totals, cont.

	Truck				Rail			
	2009 Truck Tons	2030 Truck Tons	2009 Truck Value	2030 Truck Value	2009 Rail Tons	2030 Rail Tons	2009 Rail Value	2030 Rail Value
Mackinaw City-St. Ignace/Wisconsin								
Avg	2,660,249	4,369,799	$2,692,664,921	$4,945,255,714	2,607,347	4,462,634	$1,297,136,385	$1,870,017,659
High	3,527,815	5,830,614	$3,462,405,228	$6,393,874,429	6,153,511	13,773,499	$2,496,859,828	$3,419,865,891
Low	1,666,005	2,637,368	$2,328,835,739	$4,323,544,916	3,480	3,229	$3,748,581	$4,743,947
Port Huron/ Detroit/Toledo								
Avg	28,306,575	47,471,535	$56,629,294,463	$121,806,823,125	7,976,478	12,167,143	$13,953,590,861	$23,391,804,043
High	57,300,786	99,939,250	$125,934,084,221	$278,093,685,606	20,268,461	38,404,558	$42,356,349,936	$72,096,225,370
Low	14,008,867	25,052,176	$20,219,229,212	$48,104,941,745	3,880	6,926	$1,252,660	$2,236,056
Port Huron/ Lansing/Indianapolis								
Avg	19,197,872	31,967,284	$32,633,451,424	$67,662,495,548				
High	30,992,640	52,970,190	$52,412,234,564	$102,757,276,552				
Low	12,490,299	22,160,995	$21,376,481,482	$48,904,536,210				
Port Huron/Chicago								
Avg	30,439,026	51,995,412	$59,713,388,091	$126,721,165,247	15,612,633	27,417,656	$23,653,287,253	$46,362,883,276
High	60,962,846	101,822,701	$127,660,417,205	$261,319,006,461	20,268,461	38,404,558	$31,471,084,109	$63,437,184,390
Low	12,490,299	22,160,995	$21,376,481,482	$48,904,536,210	70,200	95,250	$103,546,808	$165,596,768
I-696								
Avg	12,651,635	20,030,723	$25,375,318,589	$46,171,002,215				
High	14,078,217	22,289,515	$29,857,427,837	$54,483,390,610				
Low	9,978,310	15,849,416	$17,336,829,221	$31,330,706,326				
I-275								
Avg	4,327,021	6,675,560	$6,959,327,330	$12,778,105,197	6,997,921	9,105,863	$12,034,126,571	$19,640,863,170
High	16,005,077	25,718,193	$32,131,795,834	$59,371,295,712	9,062,002	11,916,760	$18,841,556,336	$31,425,697,892
Low	1,234,333	1,632,520	$292,928,604	$438,878,875	2,725,574	3,668,307	$1,678,814,069	$2,714,437,204
Houghton/Marquette/ Sault Ste. Marie								
Avg	1,330,259	2,440,741	$1,194,016,071	$2,492,676,007	1,903,385	4,526,034	$289,981,299	$563,169,301
High	4,472,392	8,366,941	$4,324,983,685	$9,809,828,749	8,738,177	24,972,497	$1,082,195,316	$1,758,330,833
Low	442,457	656,627	$365,308,032	$606,228,233	800	1,174	$483,849	$710,089

Table 5: Corridor Freight Totals, cont.

	Truck				Rail			
	2009 Truck Tons	2030 Truck Tons	2009 Truck Value	2030 Truck Value	2009 Rail Tons	2030 Rail Tons	2009 Rail Value	2030 Rail Value
Petoskey/Grand Rapids/Indiana								
Avg	4,253,128	6,486,262	$5,472,213,022	$9,259,268,235	445,245	482,478	$273,338,759	$320,562,929
High	12,056,580	18,416,825	$19,426,133,730	$33,386,068,720	8,225,867	15,328,975	$14,564,156,087	$28,453,138,950
Low	180,858	301,383	$278,268,729	$519,048,477	65,280	82,050	$802,479	$1,033,116
Mackinaw City-St. Ignace/ Holland								
Avg	1,947,696	2,831,343	$2,098,342,979	$3,447,244,542	1,174,738	886,099	$93,435,685	$114,647,022
High	10,943,349	15,463,202	$12,434,954,562	$19,503,476,450	5,810,200	4,236,052	$324,212,323	$344,708,773
Low	202,988	372,266	$55,018,368	$103,553,592	6,312	5,298	$801,428	$672,671
BentonHarbor/Indiana								
Avg	5,578,975	8,082,297	$7,273,463,060	$11,357,180,108				
High	7,899,054	11,513,754	$8,978,518,155	$14,079,714,270				
Low	3,173,269	4,446,347	$5,533,755,231	$8,582,731,908				
Flint/Toledo								
Avg	13,056,126	18,653,816	$23,805,368,199	$40,922,858,963	2,922,465	3,842,385	$4,691,946,360	$7,697,418,796
High	21,943,000	33,575,690	$51,331,637,311	$91,632,244,464	9,066,002	11,923,279	$18,841,668,336	$31,425,880,431
Low	7,958,923	10,255,391	$11,216,845,681	$17,401,605,815	16,520	14,938	$1,071,760	$937,753
Mackinaw City-St. Ignace/ Alpena/ Standish								
Avg	474,707	707,736	$238,224,065	$410,283,630	329,044	393,176	$3,578,740	$4,234,345
High	1,571,266	2,423,819	$996,417,448	$1,795,468,817	348,556	416,851	$4,262,054	$5,063,465
Low	165,208	268,821	$41,176,997	$72,985,258	264,556	314,927	$1,320,295	$1,493,996
Grayling/Jackson								
Avg	2,856,537	4,505,020	$3,123,855,101	$5,312,899,413	332,728	397,459	$376,539,602	$545,120,230
High	9,334,042	17,062,505	$11,235,955,090	$22,735,449,348	9,751,274	16,454,326	$14,344,897,202	$28,112,861,623
Low	1,122,795	2,198,997	$1,395,413,565	$1,883,922,842	138,400	100,489	$72,135,107	$62,665,631
Jackson/Toledo								
Avg	3,449,323	4,878,369	$3,527,474,004	$5,761,774,425	65,849	53,825	$10,547,815	$9,489,189
High	19,427,470	28,492,688	$33,806,117,486	$59,709,207,800	243,204	218,071	$35,192,707	$35,390,249
Low	1,082,913	1,409,913	$920,223,302	$1,300,809,395	22,996	14,140	$4,593,099	$3,230,957

Source: Michigan Department of Transportation Statewide and Urban Travel Analysis Section, 2012

Findings

There are three elements that embody the results of the Infrastructure Totals in Table 4. First there is a decrease; second, stagnation; and finally and most importantly, the increased percentage use of the COHS for passenger and commercial travel. These are:

- Commercial and personal travel were altered significantly since the 2030 MITP was adopted, as Michigan experienced a major recession that included major restructuring of its domestic automobile industry (traditionally the mainstay of Michigan's economic base). These changes resulted in unprecedented employment losses. The reaction to such a traumatic economic downturn resulted in large reductions to both the passenger and commercial miles elements of the highway and rail modes. Although we see growth for the state in the long-term future, the growth is slower and less dependent on the auto industry.

- Overall, the annual Statewide and National/International highway corridor values were less than before, yet the percent of National/International and Statewide corridor usage increased. This increased percentage of corridor use points out the fact that those that did travel chose to use Michigan's corridors more often, for both personal travel and commerce. The *Transportation and the Economy Report* (August 2007) discusses the important link between Michigan's transportation infrastructure and the state's economy. Transportation is closely tied to economic development and is a vital part of the nation's and Michigan's overall economic competitiveness.

- A number of values were stagnant when compared to the previous report. Rail-values miles remained unchanged; the marine component saw ferry services and cargo ports remain unchanged. Transit saw a reduction of 47 passenger rail miles; yet, the percentage of use on the National/International and Statewide Corridors remained unchanged. Inter-City Bus also was unchanged.

- As for Highway mode increases, the percent of usage of the National/International and Statewide Corridors based on 2006 total annual vehicle miles traveled, as compared to the updated 2011 total annual vehicle miles traveled, are higher. The updated percentages are one and two percent, respectively. Commercial vehicle miles that use the National/International and Statewide Corridors increased their usage percentage by two percent.

- Michigan's transportation system, including roads, transit, non-motorized facilities, aviation, marine, and inter-modal facilities, plays an integral role in supporting the state and region's economy and the quality of life for residents. The increased percentage values of corridor use confirm the vision that MDOT embraced, which is that corridors of significance are the main pathways that move the people, goods and services throughout the state.

- Annual truck ton miles and truck value miles totals also declined from the previous MITP iteration. Again, the percent of usage for truck ton/value miles that did use the network increased. Truck ton miles increased its percentage of use by eight percent, while truck values miles increased its use of corridor travel by five percent. As Michigan struggled with a prolonged recession, the corridors of significance saw an increase in total usage. For highway and rail, this signifies the relevance of these designated corridors for commerce and passenger travel. They truly are the main arteries that carry the lifeblood of people, goods and services in Michigan. Due to the recession, businesses became more efficient in the way they shipped goods. There may have been fewer commercial trucks on the system, but these trucks were more apt to travel on corridors of significance. The *Mackinac Bridge Comparison Report* identifies this trend in its supporting tables regarding truck movement origins, destinations and capacities.

- The rail mode reflects the theme that there are fewer rail ton miles being traveled and that rail value miles also are reduced. Yet, the miles that are being driven are being logged more often on Michigan's corridors of significance. The statewide total of rail track miles increased. This increase in rail track miles is due to the use of better and more accurate rail networks in the calculation process. Both the rail track miles and the rail ton miles increased their percent usage of National/International and Statewide corridors by one percent. Rail values miles held steady at 97 percent.

- Aviation comparison numbers were varied as compared with the previous results. The percentage of commercial airports changed, but only due to the recoding of a single facility. The percent of usage of National/International and Statewide inclusive airports increased seven percent. Specific details regarding airports and their specific destinations are available in the Aviation White Paper.

- Overall, water cargo tonnage decreased almost 25 percent from 2003 to 2009. The percentage of the overall statewide total, within the COHS, increased from 85 to 94 percent.

- Passenger rail consists of 521 route miles.

- Truck and rail freight tonnages, and values by corridor, are consistently lower than in the 2007 report. The economic recession and large decrease in the state's manufacturing output explain the drop from 2003 to 2009. The corridors moving the most freight continue to be the same, with the Detroit/Chicago corridor averaging the most truck freight, and the Port Huron/Chicago corridor averaging the most rail freight. See the updated Freight Technical Report for details.

- According to the Michigan Freight Profile White Paper, the 2009 freight statistics may prove to be the low from the recent recession. Growth in freight movements has been occurring since then, and overall freight movements for truck and rail are expected to increase by 40 to 50 percent over the next 20 years for both truck and rail. This growth is captured by the corridor increases from 2009 to 2030 listed in Table 5. Again, refer to the Michigan Freight Profile White Paper for additional information regarding specific freight trends and profiles.

One item of comparison from Table 4 that could no longer be collected is visitor-days-per-year. This fact was verified by Sarah Nicholls, Ph.D. of the Michigan State University Department of Community, Agriculture, Recreation & Resource Studies (CARRS) and Geography Department. The 2010 Michigan Visitor Profile report, prepared for the Michigan Economic Development Corporation, provides detailed travel background information for 2010. Michigan hosted 187 million leisure person-days statewide in 2010, a four percent increase from 2009, and the first positive year-over-year change in this visitor metric since 2006. Michigan also realized great gains in leisure visitor spending this year. Leisure travel in the state represented $12.6 billion dollars in direct-spending from leisure visits. This is a 13 percent increase from 2009 spending. (By comparison, U.S only-travel shows a negligible decrease in leisure person-days and a 4.5 percent increase in leisure direct-spending for the same period.)

About 78 percent of Michigan's leisure person-days come from overnight leisure in this reporting year. This figure is fairly consistent over time. One critical factor in understanding the changes in 2010 visitor volume is the impact of the travelers visiting Michigan who reside outside of the state. In 2010, there was a 24 percent increase in the out-of-state leisure person-days, and a 30 percent increase in out-of-state leisure trip-dollar spending. Non-residents are making the difference, supplanting Michiganders who represent a decrease in leisure person-days and spending for the year.

Border Crossings

Border crossings by passenger vehicles have declined since 2001. In large part, this is due to increased security inspections at the border and changing requirements for identification documents. The recent recession had a negative impact on both cross-border passenger car traffic (commuters and recreational trips) and commercial (truck) traffic. However, since January of 2009, combined passenger car traffic at Michigan's border crossings has been increasing at the rate of 0.66% per month, or 7.89% per year, and combined truck traffic has been increasing at the rate of 0.70% per month (8.5% per year) while the value of trade carried by those trucks has been increasing at an average rate of 1.5% per month (18% per year). Earlier this year, President Obama and Prime Minister Harper issued a joint Border Action Plan. One of the items in the action plan is to encourage greater participation in the existing trusted traveler programs while another element of the plan is to improve the efficiency of handling passenger car traffic at the busiest border crossings.

Overall, U.S./Canada trade moved by truck is up $16 billion (five percent) from 2006 to 2011. Current forecasts indicate a continued slow improvement in passenger car traffic over the next 20 years. Commercial traffic over the next 20 years is expected to reach volumes double that observed in the pre-recession period. The Border Action Plan includes several initiatives aimed at coordinating and streamlining customs processing and cross-border regulatory compliance. Efforts to increase participation in trusted trader programs is another element in the plan

The value of the cross border rail shipments at Michigan border crossings are virtually unchanged over the five years, but the share of U.S./Canada trade dropped 3 percentage points at Port Huron and Detroit, and 0.1 percentage points at Sault Ste. Marie due to increased activity at other rail crossings (overall U.S./Canada trade by rail is up $9 billion (10.5 percent).

As noted in the 2007 Corridors and International Borders Report, there is a need for improvements to border connections at all three locations. Details of those improvements that are currently being pursued are included in the Michigan Freight Profile white paper.

Conclusion

This white paper is offered as a snapshot of the values pertaining to Michigan's usage of the corridors of National/International and Statewide significance, and as a supplement to the Corridors and International Borders Report prepared for the 2005-2030 *MI Transportation Plan*. At first glance, Statewide and National/International corridor values were down for all modes when compared to 2006 values used in that report. This report quantified the increased usage of Michigan's corridors as a percentage of entire movements across all modes of transportation. Today, more than ever before, Michigan relies on its corridors to move an increasing amount of people, goods and services. It is from these corridors of significance that Michigan will continue to grow and reinvent itself, as it moves towards a more sustainable economy.

Early on, MDOT recognized that passengers and freight travel must pass seamlessly along geographic corridors on multiple modes between locations or activity centers both within and outside Michigan. To validate this concept, Michigan's corridors are now moving an even larger percentage of people, goods and services as compared in the last the State Long-Range Transportation Plan, the *2005-2030 MI Transportation Plan*. The resulting data that came out of this plan tells how MDOT's initial concept of corridor planning was not only correct but critical in helping to support the changing face of growth within our own borders.

The *Corridors and International Borders Report* summarized the integrated, multi-modal journey of people, goods and services which occurs on a daily basis along the 19 Corridors of Highest Significance within Michigan and also discussed strategies. In the

report, Appendix D: Corridor Strategies and Compatibility Screening, presents and describes 13 broad strategy groups and the respective policies, activities, projects, and programs that could be used for their implementation. The strategy groups discussed are consistent with the goals, objectives, and input from the MITP stakeholders, MITP Economic Advisory Group, and the public, and can be applied to individual corridors identified as Corridors of Highest Significance in the MITP. This appendix includes:

- A menu of traditional and non-traditional transportation strategy groups.
- Example policies, programs, activities, and projects that could be used to implement the strategies.
- A compatibility screening for each strategy group and its applicability to Michigan.
- A matrix summarizing the menu and compatibility screening evaluation.

Specific corridor policy-based recommendations are presented for each National/International and Statewide Corridor of Highest Significance in the *MI Corridors of High Significance Profile Summary - Executive Summary I* and in the *Economic Regions Corridor Summary - Executive Summary II*. The recommended strategies for each corridor address its unique character, performance-based needs, and objectives as articulated during the public participation processes, input for the Economic Advisory Group, stakeholder workshops, and "Attitudes and Perceptions of Transportation in Michigan: A Survey of Michigan Adults," March 2006, conducted for the MITP. The recommended corridor strategies also consider the opportunities, barriers, or limitations within each corridor.

Corridors were not re-designated for this interim update of the state's long-range transportation plan, the *2035 MI Transportation Plan*. The inclusion of any corridor beyond those previously identified is beyond the scope of this interim plan revision.

Unlike the original 17 technical reports prepared as part of the MITP that focus on a single issue or mode, the *Corridors and International Borders Report* provides a unique perspective. It presents an integrated, multi-modal analysis of the journey of people and the supply-chain movement of goods along Michigan's transportation corridors. It is the culmination of that extensive analysis that went into defining the corridors and their value to the state's economy.