WEST MICHIGAN EXPRESS STUDY

Prepared for:

Hudsonville
good people good living

GVMC

Holland
MICHIGAN

The City of Grandville

ZEELAND

Macatawa Area Coordinating Council
A Cooperative Effort Among Units of Government

Mobile GR & Parking Services
CITY OF GRAND RAPIDS

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Executive Summary

The purpose of this study was to gather information to determine whether express bus or rail transit service in the Chicago Drive corridor is feasible. There are several factors that suggest both options should continue to be considered. These include:

- There has been strong interest expressed by public, private, and quasi-public entities to continue working together to further explore and possibly implement commuter bus and/or rail service in the Chicago Drive corridor.

- Demographic projections show growth in the corridor and region. Ridership projections show the potential to create the level of trip activity that could justify commuter bus service now and, possibly commuter rail service in the future.

- Large employers located in the region (and near the corridor) have expressed a desire to attract workers through means that are both transportation-based (e.g., commuter express transit) and non-transportation based (e.g., cool communities).

- It is believed that funding resources may exist through partnerships among public sector entities, non-profit agencies, and the private sector to realize express bus service in the near term, which could be a precursor to commuter rail.

- MDOT has expressed a willingness to support planning efforts for the project and may be willing to support a pilot project through an arrangement to use their fleet of bi-level vehicles.

- CSX is in the middle of organizational and operational changes in its management strategy. It operates more track that is shared with passenger rail than any other carrier in the United States and has indicated a willingness to discuss the possibility of commuter rail in the Chicago Drive corridor.

With the above in mind, it is recommended that the concept of commuter express bus or train service in the Chicago Drive corridor be further explored. The following "road map" presents a set of steps for Hudsonville and its partners to follow. These should be coordinated and put into place with the guidance and support of MDOT, CSX, and in recognition of FTA requirements.

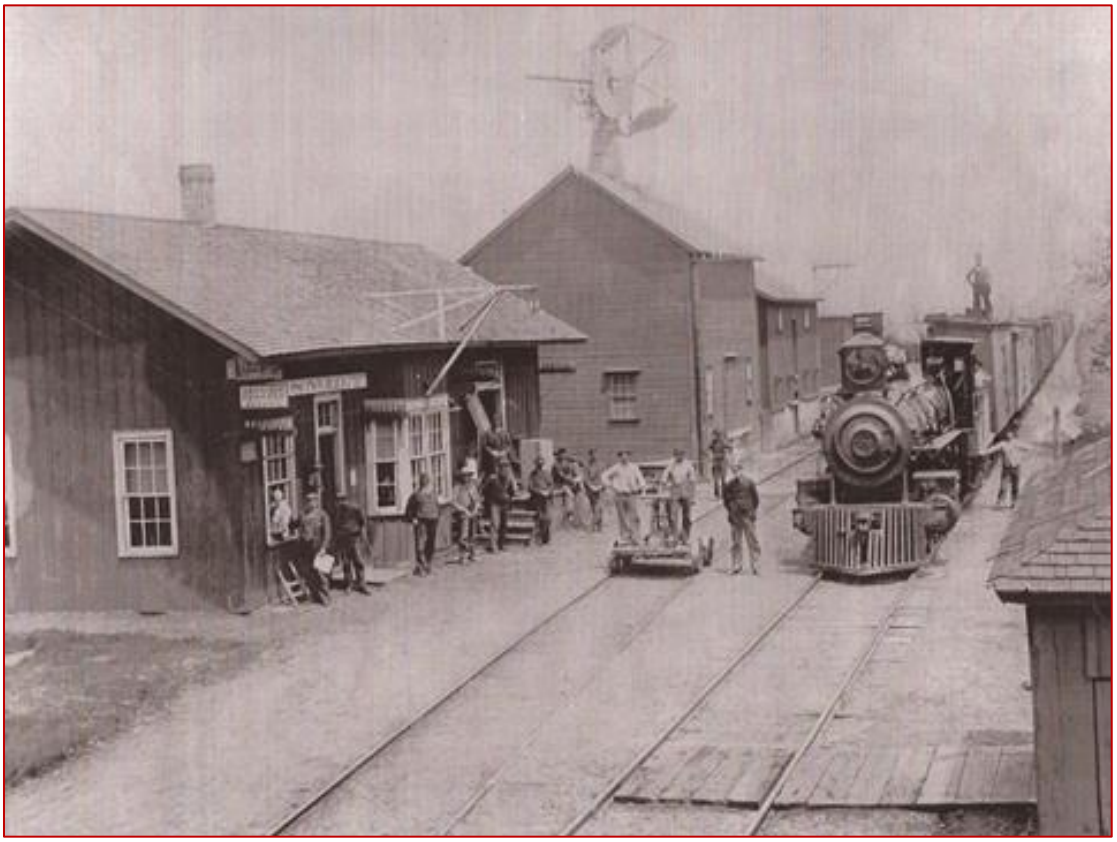
YEAR 1

1. **Organization:** Establish the current West Michigan Express stakeholder group as an "official" Working Group dedicated to exploring express transit service in the Chicago Drive corridor. It is recommended that this group be formalized under the operating framework of either the Grand Valley Metro Council or the Macatawa Area Coordinating Council.
2. **Objective:** Define the overall objective as being to develop commuter rail service in the Chicago Drive corridor but that it is recognized a stepwise process (i.e., bus first) is needed to get there.
3. **Grants to Explore:** Apply for appropriate grants to continue to explore commuter express transit in the corridor, including a survey to determine interest in commuter transit, particularly rail. It is possible that such a survey be both targeted at the general public and employer/employee-based because workforce issues have motivated special attention and funding for other regional issues.

4. **Partnerships:** Help facilitate a partnership between identified agencies that provide transportation services in the region, such as Hope Network's Wheels to Work program, and employers in the corridor to provide/enhance employee transportation services.
5. **Prosperity Corridor:** Work with the MPO's to designate Chicago Drive between Grand Rapids and Holland as a "Prosperity Corridor," and create an overlay concept/district that can be adopted by jurisdictions along the corridor and include a set of principles to guide future development in a way that supports transportation, skilled training, and workforce housing.
6. **Public Leaders:** Broaden the stakeholder circle to include more public leaders in this region so that as more information is acquired and concrete transit proposals are generated, these leaders will be in a position to consider, and hopefully, provide local political and funding support for the best regional transit options.

YEARS 2-5

1. **Express Bus:** Depending on the survey results work with local bus agencies for express bus service in the Chicago Drive corridor with appropriate private sector shuttles established as a demonstration service.
2. **Results:** Monitor the express bus service to determine when appropriate ridership thresholds are met to move towards commuter rail.
3. **Capital Campaign:** Based on survey results and progress on express bus efforts, initiate a capital campaign to raise private funds to be used as local matching funds in a future commuter service.
4. **Rail Funding:** When ridership reaches a predetermined threshold, request state and federal funding for a demonstration commuter rail service in the corridor.



First train in Hudsonville, MI, circa 1870; source: City of Hudsonville

1. Introduction

The City of Hudsonville, Michigan, has contracted with Mp2planning to prepare an assessment of the feasibility of rail or bus express transportation service in the Chicago Drive corridor running between Grand Rapids and Holland in order to enhance connectivity in the region. The concept is to serve a very linear, well-traveled corridor that: has experienced continuing residential, commercial, and industrial development; has good functioning rail tracks currently dedicated to freight service and passenger service; and, connects through the generally urbanized west Michigan region. With continuing advances in transportation technologies (autonomous/self-driving vehicles, Uber, etc.) that can help supplement traditional trunk-line rail or bus express services (e.g., help provide a solution to the "last mile" issue that often is a detriment to transit use), this study is an initial look at the feasibility of this proposal.

Key issues to be addressed are:

1. New demographic data in the corridor – updated with 2015 Census estimates.
2. New potential transit ridership forecasts.
3. Testing mode splits - bus & rail - of that ridership (especially rail will be important).
4. A description of possible service levels in the corridor… for example, does five round trips/day provide enough service for people to choose the transit option over their personal vehicle.
5. Train controls - what are the current train/separation controls in the corridor and will new passenger rail services require Automatic or Positive Train Controls (ATC, PTC).
6. Rolling stock - the high-level tradeoffs between locomotive-hauled trainsets and diesel multiple units (DMU).
7. Approximate capital and annual operating cost projections over a five-year pilot period.
8. An explanation of the overall state and federal processes to obtain new rail service and the obstacles to obtaining rail service in the corridor.
9. The feasibility/receptivity of Amtrak and CSX to additional passenger rail services between Holland-Hudsonville-Grand Rapids and the entity(ies) which could operate the new rail services. Also, would CSX consider selling this corridor to MDOT, as was done in the Chicago-Detroit corridor?.

Participants

This study is being led by the City of Hudsonville, and includes a group of government entities including, but not limited to: the Grand Valley Metro Council, the Macatawa Area Coordinating Council, the City of Holland, the City of Zeeland, the City of Grandville, the City of Grand Rapids, and other interested individuals. The City of Hudsonville convened a meeting on October 31, 2017 to initiate the discussion of the feasibility of express transit service in the Chicago Drive corridor. Representatives of the following attended the meeting:

- City of Hudsonville
- City of Holland
- City of Grandville
- Grand Valley Metro Council
- Macatawa Area Coordinating Council
- The Rapid
- Georgetown Township
- Lakeshore Advantage
- The Right Place
- MDOT – Rail, Lansing
- MDOT – Grand Rapids
- Urban Innovations

A follow-up meeting was held on November 28 with the purpose of determining next steps. This meeting included representatives of:

- City of Hudsonville
- Grand Valley Metro Council
- Macatawa Area Coordinating Council
- Ottawa County Planning and Performance Improvement
- Mp2planning
- Urban Innovations

Summary of Prior Studies

Three recent transportation studies have been reviewed to provide information for this report.

- The West Michigan Transit Linkages Study,[1] conducted in 2012 by Mp2planning, llc for Ottawa County was funded by a grant from the Michigan Department of Transportation. It focused on the feasibility of commuter express bus service as defined by the Federal Transit Administration (FTA).[2] The study recommended that the service should not be implemented because of projected low ridership, lack of local funding commitments, and other constraints such as available vehicles and facilities. The study indicated that as times and circumstances change stakeholders may want to reconsider express transit services. The study did not consider rail.

- The Coast-to-Coast Study[3] focused specifically on passenger rail statewide in Michigan. It examined an array of operational, cost, funding, economic, and other factors. It concluded that there were two viable routes across the state connecting to Chicago with one passing through Grand Rapids and Holland. The study further stated that the route with the Grand Rapids-to-Holland option would be the least risky and produce an operating surplus, which may make it attractive to the private sector. The study also commented on the issue of Passenger Train Control (PTC) technology: *"…Cost estimates for installation of PTC and signaling systems have recently experienced a rapid escalation as a result of the FRA's PTC mandate for all passenger services. Michigan DOT must also ascertain CSX's plans not only for retaining signaling, but also for installing PTC on its Plymouth to Grand Rapids line."* A key question that has been raised by those interested in this issue for the Chicago Drive corridor has been the need for PTC, and whether or not it would be needed for all technologies (such as Diesel Multiple Unit (DMU) vehicles.

- The "WALLY" study (North-South Commuter Rail)[4] is a proposed 27-mile commuter rail service that would connect Ann Arbor and Howell, with intermediate stops. It was evaluated as a way

[1] West Michigan Transit Linkages Study, prepared by Mp2planning, prepared for Ottawa County, Michigan, August 2012.
[2] Commuter express bus service means fixed route bus service, characterized by service predominantly in one direction during peak periods, limited stops, use of multi-ride tickets, and routes of extended length, usually between the central business district and outlying suburbs.
[3] Coast-to-Coast Passenger Rail Ridership and Cost Estimate Study, prepared by Transportation Economics & Management Systems, Inc., prepared for Michigan Environmental Council (Grant Fiduciary: Ann Arbor Transportation Authority), February 2016.
[4] North South Commuter Rail Feasibility Study, Summary Report, prepared for TheRide/MDOT, prepared by SMITHGROUPJJR, May 2017.

to improve mobility along US 23 and to promote economic development and job creation in the region.

The consultant, SmithGroup/JJR's report offered three preferred options:

1. A minimum service option: $21.9 million in capital costs, $5.7 million in annual operating costs. This option would provide service between the Whitmore Lake area and Barton Drive in Ann Arbor, an 18-minute travel time, no intermediate stops, and an estimated 800 daily round trips, amounting to 400 people served. This option would require a federal waiver as it does not involve the use of Positive Train Control.

2. A shuttle service option involving two train sets: $65.2 million in capital costs, $7 million in annual operating costs. This option would provide service between the Whitmore Lake area and downtown Ann Arbor with one stop. It would have a 21-minute travel time and carry an estimated 1,670 daily round trips, amounting to 835 people served.

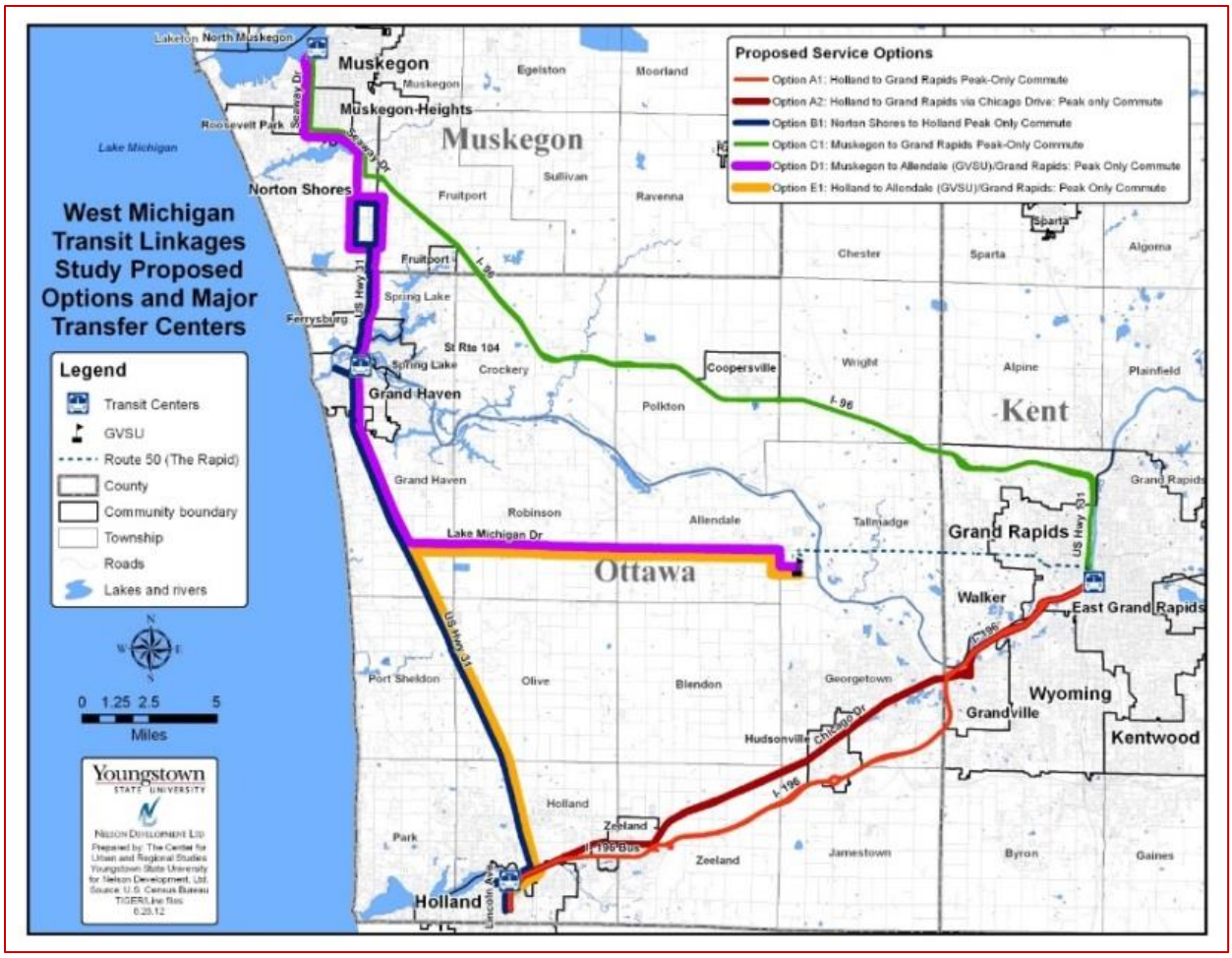
3. A full service option consisting of four trains: service provided between Howell and Ann Arbor with four intermediate stops in Genoa, Hamburg, and Whitmore Lake. Capital costs for this option were estimated at $122.3 million while the annual operating cost forecast was $13.2 million.

The study has been completed. There are currently no plans for implementation.

2. Data Collection

This section provides updated demographics in the West Michigan region from Grand Rapids over to Lake Michigan as well as updated transit ridership projections for transit service focusing on the Chicago Drive corridor, as described below. The 2012 West Michigan Transit Linkages Study identified several alternatives as shown in Figure 2-1. Chicago Drive parallels I-196 from Grand Rapids to Holland.

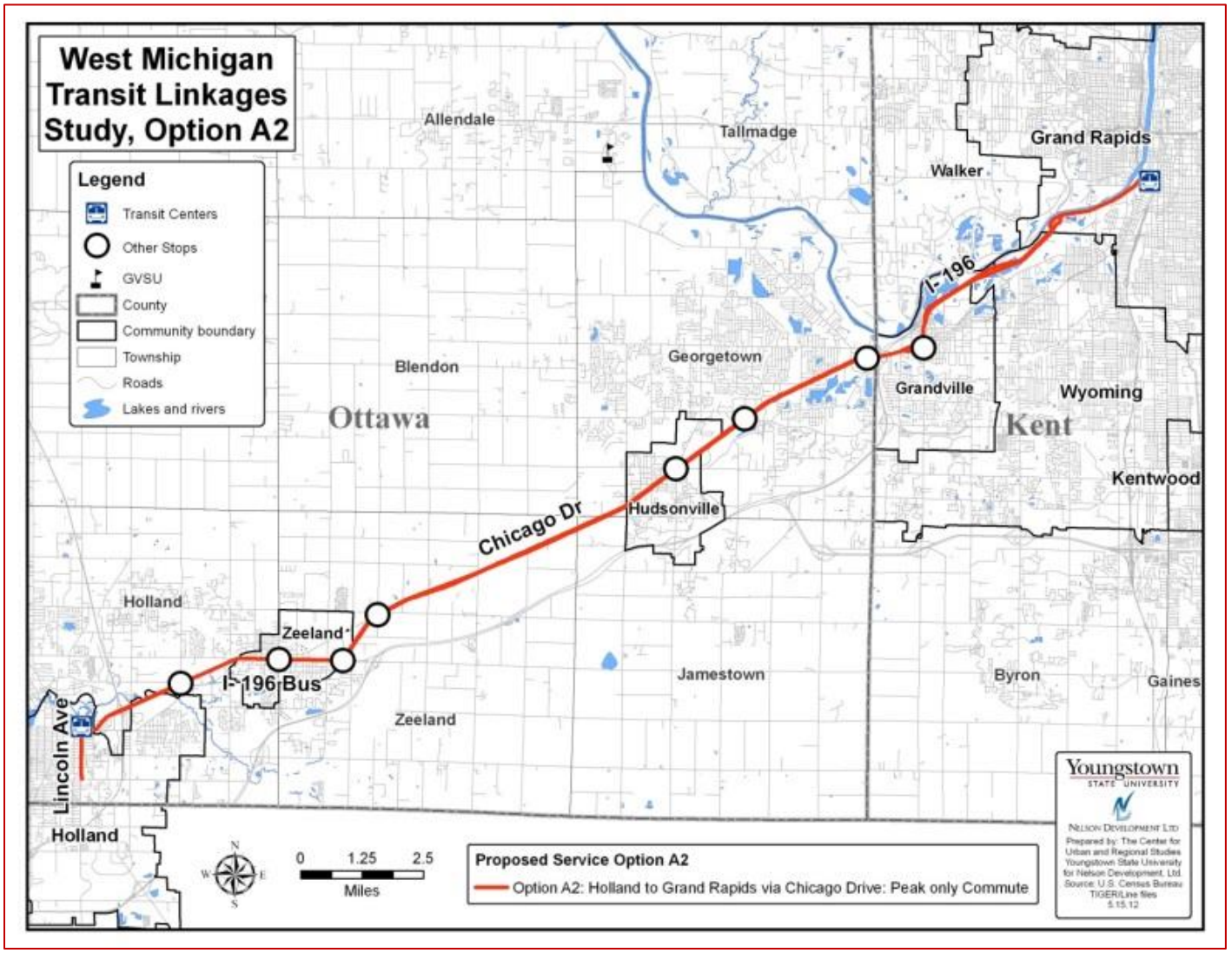
Figure 2-1: West Michigan Transit Linkages Study Alternatives (2012)



Source: West Michigan Transit Linkages Study, 2012

Options A1 and A2, which generally travel along I-196 and Chicago Drive respectively, are the focus of this study. The Chicago Drive option is shown in Figure 2-2.

Figure 2-2: Option A2 – Chicago Drive



Demographic Update

Population

Population and population density are key factors in transit planning. Table 2-1 shows changes in population in the West Michigan region between 2000 and 2016. While this analysis focuses primarily on one narrow area, the feasibility of an investment like rail there will impact the region and, eventually, have impacts on residential growth, inter- and intra-county residential movements, and economic development.

Table 2-1: Area Population Growth Trends (2000 – 2016)

Geography	Population 2000	Population 2010	Population 2016	Change 2000-16	Change 2010-16
Kent County, Michigan	574,335	602,622	629,352	9.6%	4.4%
Muskegon County, Michigan	170,200	172,188	172,148	1.1%	0.0%
Ottawa County, Michigan	238,314	263,801	276,583	16.1%	4.8%
Byron township, Kent County, Michigan	17,611	20,317	22,071	25.3%	8.6%
Gaines charter township, Kent County, Michigan	20,054	25,146	26,122	30.3%	3.9%
Grand Rapids city, Michigan	197,846	188,040	193,887	-2.0%	3.1%
Kentwood city, Michigan	45,239	48,707	50,761	12.2%	4.2%
Plainfield charter township, Kent County, Michigan	30,104	30,952	32,547	8.1%	5.2%
Walker city, Kent County, Michigan	21,795	23,537	24,458	12.2%	3.9%
Wyoming city, Kent County, Michigan	69,366	72,125	74,692	7.7%	3.6%
Muskegon city, Michigan	40,136	38,401	38,086	-5.1%	-0.8%
Norton Shores city, Michigan	22,524	23,994	24,091	7.0%	0.4%
Allendale charter township, Ottawa County, Michigan	13,141	20,708	23,060	75.5%	11.4%
Georgetown charter township, Ottawa County, Michigan	41,661	46,985	49,455	18.7%	5.3%
Holland city, Michigan	35,048	33,051	33,581	-4.2%	1.6%
Holland charter township, Ottawa County, Michigan	28,614	35,636	37,193	30.0%	4.4%
2000 data: 2000 Census Summary File 3					
2010 data: 2000 Census Summary File 1					
2016 data: 2016 American Community Survey 5-year estimates					

As can be seen, the changes from 2010 to 2016 are generally positive, and, with the exception of Allendale Charter Township, not dramatic. It is not likely in and of itself, that these growth changes would push local governments to dedicate the resources required for express bus service, as defined in the 2012 study, much less rail.

Journey-to-Work

Information about where people live and work is essential to understanding local and regional travel patterns. Therefore, the U.S. Census Bureau has formed the Longitudinal Employer-Household Dynamics (LEHD) program, and partnered with state labor market information agencies to collect information about local labor markets on a quarterly basis. This partnership produces Quarterly Workforce Indicators (QWI), and includes sets of economic indicators that can be queried at various geographic levels, such as counties, cities, villages, and townships. QWI data are built on state unemployment insurance system records, but also include civilian federal workers, excluding those redacted for security purposes, in the 2010 data series. Over 90% of civilian wage and salary jobs are included in QWI data, although some farmers and agricultural employees, domestic workers, self-employed non-agricultural workers, Armed Services members, some state and local government workers, and some types of nonprofit employers and religious organizations, who do not participate in state unemployment insurance systems, are excluded.

The LEHD program includes an online mapping and reporting application known as “On the Map” that shows where people live and work. Due to its extensive geographic coverage, the 2010 data series was evaluated to identify major travel trends between communities in the West Michigan study area. Because the study focuses on regional travel, data were grouped into 11 areas that include cities, villages and townships that are considered to be part of the same region. These groupings are as follows:

- **Allendale Township**, which includes only Allendale Township.
- **Holland/Zeeland**, which includes Holland city in Ottawa County, Holland Charter Township, Zeeland city, and Zeeland Charter Township.
- **Grand Rapids**, which includes East Grand Rapids, Grand Rapids city, Grand Rapids Charter Township, Grandville, Kentwood, Walker, and Wyoming.
- **Grand Haven**, which includes Ferrysburg, Grand Haven city, Grand Haven Charter Township, Spring Lake village, and Spring Lake Township.
- **Coopersville**, which includes only Coopersville.
- **Georgetown**, which includes Georgetown Charter Township and Hudsonville.
- **Muskegon**, which includes Muskegon, Muskegon Heights, North Muskegon, Norton Shores, and Roosevelt Park.
- **Eastern Ottawa County**, which includes Blendon Township, Chester Township, Jamestown Charter Township, Polkton Charter Township, Tallmadge Charter Township, and Wright Township.
- **Western Ottawa County**, which includes Olive Township, Park Township, Port Sheldon Township, and Robinson Township.
- **Other Areas in the Study Area**, which include all areas within the project study area that are not included in the above groups.
- **Outside of the Study Area**, which includes all areas outside of Kent, Muskegon and Ottawa Counties.

Allendale Township

Workers living in Allendale Township, a suburban township west of Grand Rapids that contains Grand Valley State University, commute mostly to Grand Rapids (30.5%), within Allendale Township (13.8%) or to other places within the study area not included in the groupings (18.3%). 7.7% of the township's resident workers are employed in the Holland/Zeeland Area, while a small number commute to the Grand Haven (3.3%) or Muskegon (2.6%) areas.

Holland/Zeeland Area

A large percentage (44.9%) of workers both live and work in the Holland/Zeeland area, while a sizable portion (14.8%) commute to the Grand Rapids area. 22.3% of the area's resident workers commute to places outside the study area, while very few commute to the Georgetown Township (3.1%), Grand Haven (2.4%), or Muskegon (1.4%) areas.

Grand Rapids Area

As the region's economic and cultural hub, the Grand Rapids area is the largest employment destination in the study area. The majority of people who work in the Grand Rapids area also live in the area (59.7%). A sizable number commute outside the study area (19%) or to other areas within the study area not included in the groupings (13.7%), although very few commute to the Holland/Zeeland (2.4%), Georgetown (1.8%), Muskegon (0.8%), or Grand Haven (0.4%) areas.

Grand Haven Area

A large percentage (35.3%) of workers both live and work in the Grand Haven area, while a sizable portion (16%) commute to areas outside the study area, or to the Grand Rapids (14.2%) or Muskegon (12%) areas. 8.9% of the area's residents commute to the Holland/Zeeland area, while 7.7% commute

to other areas within the study area not included in the groupings. A small percentage (5.9%) commutes to Allendale Township, Coopersville, Georgetown Township, or Eastern and Western Ottawa County.

Coopersville

The majority of workers in Coopersville commute to the Grand Rapids area (27.9%) or other areas within the study area not included in the groupings (23.9%). A sizable portion commutes to places outside the study area (13.9%) or stay in Coopersville (11.8%). No other single important destination for employment exists, as Coopersville residents tend to commute throughout the study area for work.

Georgetown Township Area

The Grand Rapids area (28.8%) is the largest destination for Georgetown Township area workers, while a sizable portion commutes to other areas within the study area not included in the groupings (23.5%) or stays in the area (16.1%). 9.3% of the area's residents commute to the Holland/Zeeland area while 15.1% commute to places outside the study area. Very few workers commute to Allendale Township, Grand Haven, Coopersville, Muskegon, or Eastern and Western Ottawa County.

Muskegon Area

A large percentage (37.8%) of workers in the Muskegon Area stays in their home communities, while a smaller number commutes to the Grand Rapids (10%) or Grand Haven (8.8%) areas. A sizable number commutes to places outside the study area (22.6%) or other areas within the study area not included in the groupings (15.4%). A very small number commute to Allendale Township, Holland/Zeeland, Coopersville, Georgetown Township, or Eastern and Western Ottawa County.

Eastern Ottawa County

A large percentage (33.8%) of workers in Eastern Ottawa County work in the neighboring Grand Rapids area, while 16.7% commute west to the Holland/Zeeland area. A small number of workers commute to the Georgetown Township area (7.1%) or stay in Eastern Ottawa County (5.6%). 16.6% commute to places outside the study area, while 10% commute to other areas within the study area not included in the groupings. A small number of workers commute to Allendale Township, Grand Haven, Coopersville, Muskegon, or Western Ottawa County.

Western Ottawa County

The majority of Western Ottawa County workers commute to the neighboring Holland/Zeeland area (36.3%) or to places outside the study area (21.3%). A sizable portion stays in Western Ottawa County (9.9%) or commutes to the Grand Rapids (12.3%) or Grand Haven (9.2%) areas. A small number of workers commute to Allendale Township, Coopersville, Georgetown Township, Muskegon, Eastern Ottawa County, or other areas within the study area not included in the groupings.

Other Areas in the Study Area

The majority of the workers living in areas outside of the aforementioned geographic regions work in the Grand Rapids area (42.6%), other areas within the study area not included in the groupings (21.7%), or outside the study area (19.3%). A small number (8.5%) commutes to the Muskegon area, while the rest commute throughout the study area for work.

County-to-County Work Flows

Although 73.8% of the workers who live in Kent County also work in Kent County, a very small percentage (7.1%) commutes to Muskegon or Ottawa Counties, suggesting that there is a limited market for regional transit service for workers leaving Kent County. The remaining workers in Kent County (19.1%) commute to places outside the study area. However, 29.6% of the workers who live in Ottawa County commute east to Kent County, while 49.6% stay in Ottawa County for work. Among Muskegon County workers, 51.5% work in Muskegon County, while 14% commute south to Ottawa County, and 13.5% commute east to Kent County. 21% of Muskegon County workers commute to places outside the study area. A small market may exist for regional transit service among Muskegon and Ottawa and Kent Counties for people who are already employed.

Table 2-2 presents the information discussed above. The county-to-county worker flows shown in Table 2-3 are derived from the same LEHD data used in Table 2-2. Again, these are summarized for the region as a whole. Again, these are repetitive from the 2012 Mp2planning study but are provided to give context to worker movement in the region, as well as to specifically focus in on activity considered most relevant to this study. Table 2-3 provides work flow information updated to 2015. Table 2-4 shows county-to-county work trip patterns.

Table 2-2: Journey-to-Work Flows, West Michigan Study Area, 2010

LIVING IN	WORKING IN: Allendale Township	Holland/Zeeland Area	Grand Rapids Area	Grand Haven Area	Coopersville	Georgetown Township Area	Muskegon Area	Eastern Ottawa County	Western Ottawa County	Other Areas in the Study Area	Outside Study Area	Total
Allendale Township	804	451	1,780	190	45	178	151	104	79	1,064	982	5,828
Allendale Township (%)	13.8%	7.7%	30.5%	3.3%	0.8%	3.1%	2.6%	1.8%	1.4%	18.3%	16.8%	100.0%
Holland/Zeeland Area	240	14,719	4,847	794	57	1,010	443	709	1,340	1,284	7,314	32,757
Holland/Zeeland Area (%)	0.7%	44.9%	14.8%	2.4%	0.2%	3.1%	1.4%	2.2%	4.1%	3.9%	22.3%	100.0%
Grand Rapids Area	1,611	3,691	91,586	682	293	2,686	1,164	1,027	326	21,064	29,204	153,334
Grand Rapids Area (%)	1.1%	2.4%	59.7%	0.4%	0.2%	1.8%	0.8%	0.7%	0.2%	13.7%	19.0%	100.0%
Grand Haven Area	253	1,727	2,743	6,836	107	221	2,320	83	476	1,481	3,100	19,347
Grand Haven Area (%)	1.3%	8.9%	14.2%	35.3%	0.6%	1.1%	12.0%	0.4%	2.5%	7.7%	16.0%	100.0%
Coopersville	69	81	550	93	233	21	88	85	7	471	274	1,972
Coopersville (%)	3.5%	4.1%	27.9%	4.7%	11.8%	1.1%	4.5%	4.3%	0.4%	23.9%	13.9%	100.0%
Georgetown Township Area	502	2,292	7,125	272	73	3,993	255	392	276	5,806	3,743	24,729
Georgetown Township Area (%)	2.0%	9.3%	28.8%	1.1%	0.3%	16.1%	1.0%	1.6%	1.1%	23.5%	15.1%	100.0%
Muskegon Area	84	947	2,687	2,375	97	132	10,214	88	119	4,153	6,107	27,003
Muskegon Area (%)	0.3%	3.5%	10.0%	8.8%	0.4%	0.5%	37.8%	0.3%	0.4%	15.4%	22.6%	100.0%
Eastern Ottawa County	297	2,079	4,196	241	299	880	230	694	203	1,246	2,065	12,430
Eastern Ottawa County (%)	2.4%	16.7%	33.8%	1.9%	2.4%	7.1%	1.9%	5.6%	1.6%	10.0%	16.6%	100.0%
Western Ottawa County	161	5,610	1,904	1,419	18	284	400	212	1,535	600	3,294	15,437
Western Ottawa County (%)	1.0%	36.3%	12.3%	9.2%	0.1%	1.8%	2.6%	1.4%	9.9%	3.9%	21.3%	100.0%
Other Areas in the Study Area	677	3,085	57,374	3,880	462	1,591	11,463	607	331	29,197	25,986	134,653
Other Areas in the Study Area (%)	0.5%	2.3%	42.6%	2.9%	0.3%	1.2%	8.5%	0.5%	0.2%	21.7%	19.3%	100.0%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2010).

Table 2-3: County-to-County Journey-to-Work Flows, West Michigan Study Area, 2010

LIVING IN \ WORKING IN	Kent County	Muskegon County	Ottawa County	Outside Study Area	Total
Kent County	184,895	2,853	14,904	47,841	250,493
Kent County (%)	73.8%	1.1%	5.9%	19.1%	100.0%
Muskegon County	8,616	32,890	8,930	13,388	63,824
Muskegon County (%)	13.5%	51.5%	14.0%	21.0%	100.0%
Ottawa County	33,443	5,760	53,130	20,840	113,173
Ottawa County (%)	29.6%	5.1%	46.9%	18.4%	100.0%
Study Area	226,954	41,503	76,964	82,069	427,490
Study Area (%)	53.1%	9.7%	18.0%	19.2%	100.0%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2010).

2015 work flow estimates are provided in Tables 2-4 and 2-5 and are shown in bold. The 2010 estimates are highlighted in yellow. As can be seen, the work flow estimates have increased about 35% over the five years. These likely reflect increases in population and growth in the economy but should be viewed with caution as there may simply be "more data" in the estimates because of improvements in forecasting technology and data sources.

Table 2-4: Options A1 and A2 - Holland/Zeeland to/from Grand Rapids – Major Work Flows
(2015 data in bold / 2010 data highlighted)

Work Flows	To Grand Rapids Area	To Holland/Zeeland Area (2010 only included Holland in Ottawa County)
From		
Holland/Zeeland Area	**5,753** (4,847)	
Georgetown Area	**12,055** (7,125)	
Total	**17,808** (11,972)	
From		
Grand Rapids Area		**5,689** (3,691)
Georgetown Area		**3,602** (2,292)
Total		**9,291** (5,983)

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2015).

Table 2-4: Option B1 - Norton Shores/Grand Haven to/from Holland/Zeeland

– Major Work Flows

(2015 data in bold / 2010 data highlighted)

Work Flows	To Holland/Zeeland & Grand Haven Areas (2010 only included Holland in Ottawa County)	To Muskegon & Grand Haven Areas
From		
Muskegon Area	**4,777** (3,322)	
Grand Haven Area	**10,119** (8,563)	
Western Ottawa County	**9,175** (7,029)	
Total	**24,071** (18,914)	
From		
Holland/Zeeland Area		**1,784** (1,237)
Western Ottawa County		**1,881** (1,819)
Grand Haven Area		**10,146** (9,156)
Total		**13,811** (12,212)

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2015).

Updated Ridership Estimates

The foundation for the ridership estimates used in the 2012 study was information provided by the major transportation providers in the region. An update of the base ridership for these services is shown in Table 2-5.

Table 2-5: Ridership for Local Services

Updated Transit Ridership Data Relevant to Ottawa County			
Public Transit Agency	**FY 2012**	**FY 2017**	**% increase/(decrease)**
The Rapid	11,985,543	10,972,968	-8.45%
Macatawa Express	459,579	405,382	-11.79%
Harbor Transit	122,103	251,610	106.06%
5310/Specialized Services Agency	**FY 2012**	**FY 2016***	
Georgetown Seniors	12,124	13,176	8.68%
Pioneer Resources	35,247	15,553	-55.87%
Job Access/New Freedom	45,438	16,645	-63.37%

Source: Mp2planning

Ridership has declined in Holland (The MAX) since the 2012 report. The Rapid's ridership has also declined. Ridership decline is also reflected in the overall transit ridership in Michigan. Statewide, ridership has decreased from over 95 million rides in 2013 to just over 88 million rides in 2016. It is difficult to pinpoint a reason for the statewide decline, but it may reflect an improved economy. These data were used to create estimated 2015 ridership for the Chicago Drive service corridor as shown in Tables 2-6 and 2-7.

Table 2-6: Ridership Estimates for West Michigan Commuter Transit Service Options – To Grand Rapids

Service option Route A1 & A2	Workflow numbers (one-way 2015 data)	Mode split based on U.S. Census Data	Anticipated one-way passenger trips per day based on Mode split	Survey results factor	Anticipated one way trips per day adjusted for survey results (daily 2 way trips in yellow)	Annual one way passenger trips based on 249 weekdays	Annual two way trips
From Holland/ Zeeland	5,753	0.9%	52	1.07	56 (112)	13,944	27,888
From Georgetown Area	12,055	0.9%	109	1.06	116 (232)	28,884	57,768

Source: Mp2planning, 2018

Table 2-7: Ridership Estimates for West Michigan Commuter Transit Service Options – To Holland/Zeeland

Service option Route A1 & A2	Workflow numbers (one-way 2015 data)	Mode split based on U.S. Census Data	Anticipated one-way passenger trips per day based on Mode split	Survey results factor	Anticipated one way trips per day adjusted for survey results (daily 2 way trips in yellow)	Annual one way passenger trips based on 249 weekdays	Annual two way trips
From Grand Rapids Area	5,689	0.5%	28	1.06	30 (60)	7,470	14,940
From Georgetown Area	3,602	0.9%	32	1.06	34 (68)	8,466	16,932

Source: Mp2planning, 2018

The ridership estimates are based on people adjusting their travel for bus transportation. Because the 2012 survey did not include a rail preference question, a "number" to represent those who would use

rail, but not bus, is not possible to define. However, discussion with transit and transportation professionals suggests that ridership will grow by as much as ten to 20 percent once service is in place, depending on a number of factors including travel time, amenities, and ancillary development. So, based on the existing data the annual daily one-way trips could range from 520 to 570 per day (using 2015 as a base year).

A question that has been raised during this study is: "Will more people use a commuter train service than a regularly scheduled express bus service for a commute work trip. The following table suggests a ridership attractiveness factor that indicates more people will use commuter train service. The IVTT coefficient factor of 0.85 means, for example, that if the real travel time were 100 minutes, a person could use 85 minutes instead in the mode choice calculation. The time discount for several operating systems is listed.

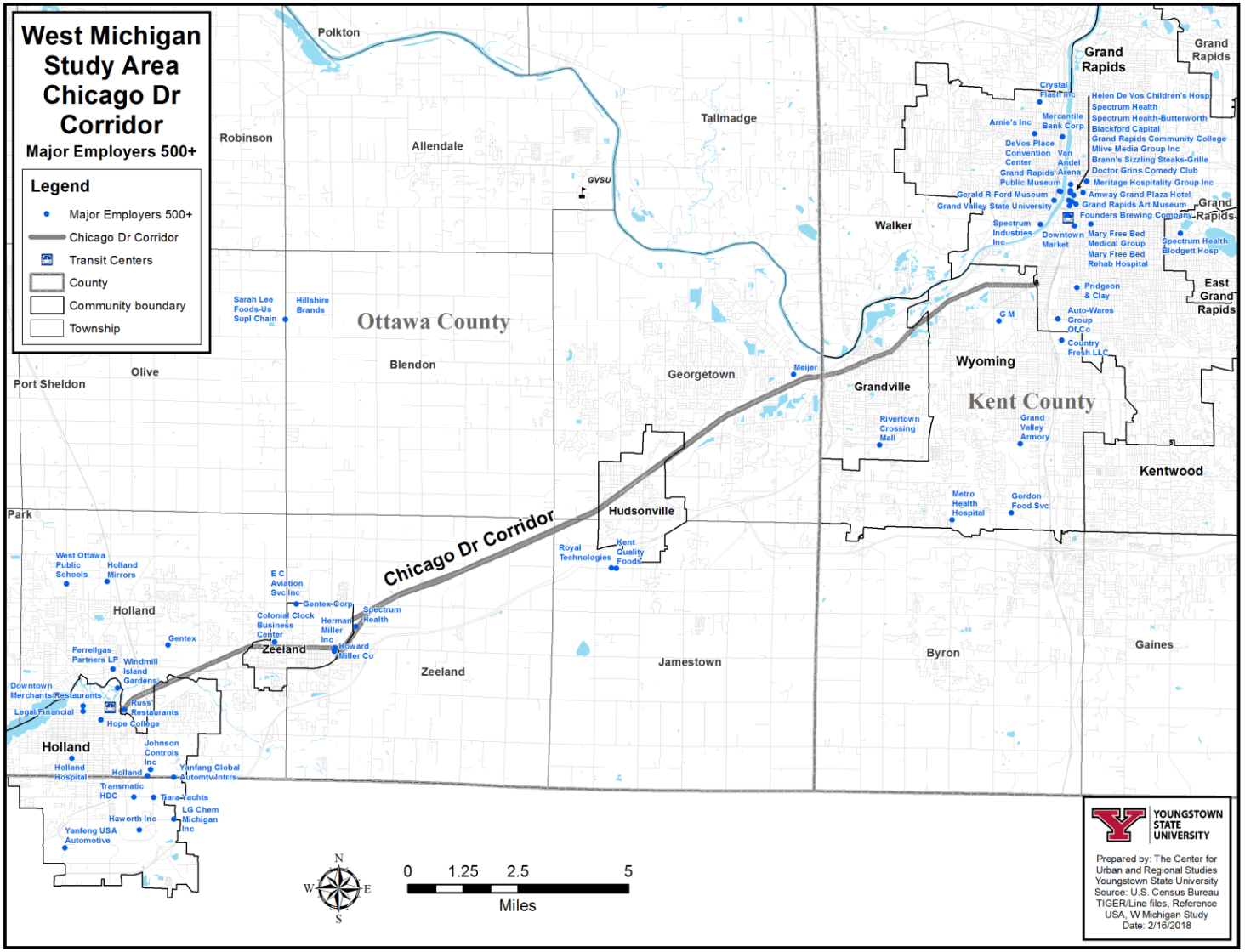
Table 2-8: Ridership Propensity for Rail

	Max benefit			Premium-only benefit								
Unincluded attribute	Premium only	Premium + local	Local	Portland	KC BRT	VRE	NY/CTA	BART	DC Metro	Street car	OmniRide Manassas	Houston Busway
Guideway-like characteristics	**8.0**	**3.0**		**7.0**	**2.0**	**4.0**	**7.0**	**7.5**	**7.5**	**2.0**	**0.0**	**6.5**
- reliability of vehicle arrival	4.0	2.0		3.5	0.0	2.0	4.0	4.0	4.0	0.0	0.0	3.0
- branding/visibility/learnability	2.0	1.0		2.0	1.0	2.0	1.0	2.0	2.0	2.0	0.0	1.5
- schedule-free service	2.0	0.0		1.5	1.0	0.0	2.0	1.5	1.5	0.0	0.0	2.0
Span of good service	**3.0**	0.0		**3.0**	**1.0**	**0.0**	**3.0**	**3.0**	**3.0**	**2.0**	**0.0**	**1.5**
Passenger amenities	**4.0**	**3.0**		**2.5**	**2.0**	**3.0**	**1.5**	**4.0**	**4.0**	**1.0**	**0.0**	**1.0**
- stations/stops	3.0	2.0		1.5	1.0	2.0	1.5	3.0	3.0	0.0	0.0	1.0
- dynamic schedule information	1.0	1.0		1.0	1.0	1.0	0.0	1.0	1.0	1.0	0.0	0.0
TOTAL	**15.0**	**6.0**		**12.5**	**5.0**	**7.0**	**11.5**	**14.5**	**14.5**	**5.0**	**0.0**	**9.0**
TARGET	**15.0**	**6.0**										
IVT coefficient	0.85*Civt		Civt	0.85	0.95	0.75	0.90	0.85	0.85	0.95	0.95	0.95
- ride quality												
- vehicle amenities												
- reliability of travel time												
- availability of seat												
Source:												

Major Employers

A primary market for commuter express transit services is employers. The Youngstown State University Center for Urban and Regional Studies consulted two sources of data to create the West Michigan Study Area (Chicago Drive Corridor) Major Employers map. The first source was a map of the study area used at a meeting of the Planning Team, on which team members noted the location of major employers and destinations in Grand Rapids, Grandville, Hudsonville, Zeeland, and Holland. The second source was establishment-level data downloaded from Reference USA that showed establishments with 500 employees or more, located within the Chicago Dr Corridor. A total of 62 establishments or destinations, 26 from the Planning Team map, and 41 from Reference USA, appear on the map. Five establishments noted on the Planning Team map also appear in the Reference USA database.

Figure 2-2: West Michigan Major Employers



3. Potential Express Transit Services

The primary interest being explored in this study is express passenger train service in the Chicago Drive corridor. The general attractiveness of train service for public transportation and the related community development possibilities seen to accompany rail along with the presence of a potentially viable rail corridor that appears to be in good condition, some but not extensive existing train activity (CSX owns the corridor and Amtrak runs service along it), and the fact that the corridor has previously been identified (in the Coast-to-Coast study) as being along a feasible statewide passenger train alignment all have contributed to this corridor being considered for train activity. Commuter bus service is also feasible. Both modes are discussed next.

Bus

Why not bus? Given the large cost of train service and the availability of bus service that could be provided through the different area transit agencies, there is no clear-cut answer.

In 2011, the City of Hudsonville proposed a millage to the community to extend The Rapid (Grand Rapids bus system) service down through the city allowing connections to Grand Rapids, Grand Valley State, and other generators. This millage proposal was defeated 3-1. City staff conjectures that the reason for the defeat was that the service was aimed at "traditional" transit riders – low income people, seniors, those without automobiles. Regardless, it was defeated. Other than that bus service has many attributes that are hard to argue against: it is flexible, it can quickly be designed and implemented, and it is relatively inexpensive. On the other hand, there is the perception that rail has more impact from a community development standpoint, particularly in the realm of creating development around stations – more commonly known as station area development and can attract more riders because of its stability (you can see the tracks) and the amenities associated with train service.

For the purposes of this study, it is generally accepted that commuter bus could be implemented within the basic parameters outlined in the 2012 study. Those need not be repeated here. The projected ridership / utilization of those bus services will be greater than shown in 2012 based on the updated data in this report, the continuing economic growth in the region, and the that there are companies in the corridor looking for ways to get people to work. So, it will come down to whether the public and private demand for service is strong enough that it becomes reality.

Commuter Train Service

Commuter rail is defined as a passenger rail service operating between a downtown area of a major city and the outlying suburban areas on conventional track infrastructure that is often shared with freight operations. Commuter rail operations can be categorized into "legacy systems" (those systems on commuter service routes historically operated by private railroads) and "new-start systems" (those originally established by public agencies after 1980.[5] Commuter train service is well established in the major metropolitan areas of the United States but there are relatively few suburban areas (and none in Michigan) that are currently operating commuter train service. Commuter rail services provide common

[5] Brock T. J. and Souleyrette R. R., 2013, An Overview of U.S. Commuter Rail. Report KTC-13-18.

carrier passenger transportation along railway tracks with scheduled service on fixed routes on a non-reservation basis, primarily for short-distance travel between a central business district and adjacent suburbs and regional travel in some cases. It does not refer to rapid transit or light rail transit as is found in a number of communities in the United States. Most commuter rail services in North America are operated by government entities or quasi-governmental organizations. Almost all share tracks or rights-of-way used by longer-distance passenger services (e.g. Amtrak, Via Rail), freight trains, or other commuter services. The 600-mile-long (960 km long) electrified Northeast Corridor in the United States is shared by commuter trains and Amtrak's Acela Express, regional, and intercity trains.

Commuter rail operators often sell reduced-price multiple-trip tickets (such as a monthly or weekly pass), charge specific station-to-station fares, and have one or two stations in the central business district. Commuter trains typically connect to bus services at their destination and along their route. While commuter train services in large metropolitan areas have average weekday ridership in the hundreds of thousands (e.g., MTA Long Island Railroad – 354,800) systems in smaller urbanized areas or suburban areas have AWD numbers ranging from 2,000 in Denton, TX to 1,200 in Nashville for the Music City Star line.[6]

Examples of Commuter Rail Vehicles & Services in US Cities:

Nashville, TN, Music City Star

Minneapolis, MN, Northstar Line

Denton, Texas, A Train

Austin, Texas, MetroRail

[6] Public Transportation Ridership Report Fourth Quarter 2016, American Public Transportation Association

The "new kid on the block" in rail is the Brightline between West Palm Beach and Fort Lauderdale. Brightline (www.gobrightline.com) is a private train service that has recently opened in south Florida and has plans for expansion to downtown Miami and Orlando International Airport. Brightline is a product of All Aboard Florida and is part of Florida East Coast Industries, the parent company of successful operations in real estate, transportation and infrastructure. Brightline runs approximately every hour during the week and every 90 minutes on the weekend. There are three stations between West Palm Beach and downtown Fort Lauderdale. Scheduled travel times from one end of the line to the other are about 40 minutes. The service cost billions to build and was built without direct public funding. It operates on tracks separate from the existing Florida East Coast Railway freight tracks. Brightline owns several acres of developable land around its stations. Transit-oriented development is a major factor in the services' business model.

Brightline's Fort Lauderdale Station

Diesel Multiple Units[7] (DMU)

A DMU is a multiple-unit train (generally consisting of a grouping of single units) powered by on-board diesel engines. A DMU requires no separate locomotive, as the engines are incorporated into one of more of the carriages. So, a DMU could consist of one unit or several although in practice two or more units are generally grouped. Diesel powered units may be further classified by their transmission type: diesel-electric, diesel-mechanical, or diesel-hydraulic. In DMU's, the engine may be located above the frame in an engine bay or under the floor. Driving controls can be at both ends, on one end, or in a separate car.

A train composed of DMU cars allows extra passenger capacity to be added as needed. So, a service such as that proposed for the Grand Rapids – Holland line could start as a single car with additional units added as demand increases. DMU's may also be better suited for routes with frequent stops because they have more power-driven axles, as compared to conventional locomotive trainset.

DMU's are more prevalent internationally than in the United States. In the US, only FRA-compliant DMU systems are permitted on freight rail corridors. This is due to the Federal Railway Administration (FRA)

[7] Some information from this section was from Wikipedia.

setting higher coupling strength requirements than European regulators, effectively prohibiting the use of lighter weight European-style inter-city rail DMU's on US main line railways without timesharing with freight operations or special waivers from the FRA. Operations using FRA-compliant vehicles include: the South Florida Regional Transportation Authority (SFRTA), TriMet in Oregon, and Sonoma-Marin Area Rail Transit on its route between San Rafael and Santa Rosa, California. Operations using non FRA-compliant vehicles include Capital Metro in Austin, Texas; the Denton County Transportation Authority in Denton County, Texas; the River LINE operated by NJ Transit from Camden, New Jersey to Trenton; and the North County Transit District (NCTD) in North San Diego County, California. Other systems are proposed, or have been implemented by BART in San Francisco and the Massachusetts Bay Transportation Authority in Boston. Los Angeles, Seattle, Chicago, Anchorage, and Minneapolis-St. Paul are among cities that have various types of studies underway for DMU service.

Positive Train Control

Positive Train Control (PTC) has been at the forefront of consideration of new passenger rail service, particularly in light of recent Amtrak crashes in Oregon, Virginia (involving representatives of congress), and South Carolina that have resulted in fatalities. These recent crashes have highlighted the lack of this safety feature on many of the nation's railroads. In an article in the Wall Street Journal (Monday, February 5), Robert Sumwalt, Chairman of the National Transportation Safety Board, is quoted saying: "…an electronic safety system called positive train control that is being rolled out around the country could have avoided Sunday's collision." The FRA requires that PTC be implemented for new passenger services although waivers are allowed. For example, the WALLY study was predicated on the system having a waiver on PTC from the FRA, thus significantly reducing development costs. Essentially, PTC is an advanced system designed to automatically stop a train before certain accidents occur. In particular, PTC is designed to prevent: train-to-train collisions, derailments caused by excessive train speed, and unwarranted train movements through misaligned track switches. The FRA has listed among its goals: "…To deploy the Nationwide Differential Global Positioning System (NDGPS) as a nationwide, uniform, and continuous positioning system, suitable for train control."[8]

One of the systems operating DMU's in the US (Tri-Rail) is currently resolving PTC issues so that they can deal with FRA requirements. Jack Stephens, executive director of the South Florida Regional Transportation Authority, has stated that Tri-Rail trains will be equipped with a GPS-based PTC system while FEC (Florida East Coast railroad) trains will use enhanced cab signals. According to Stephens, "…We need FEC's assistance on how to operate on their corridor using wayside signaling" prior to full PTC implementation along the FEC corridor." At this level of analysis, it has been estimated by MDOT that putting PTC in place in the Grand Rapids to Holland corridor would be in the range of $10 million in up-front capital costs.

"What if" Schedules

Greg Holcombe, consultant for the City of Hudsonville, developed the following conceptual schedule of express train service between Holland and Grand Rapids (Table 3-1). It generally mirrors the peak hour concept used in the 2012 study, with the inclusion of two midday trips, which were not included in the 2012 study.

[8] Ibid.

Table 3-1: Possible Operating Framework

West Michigan Express						
Potental Schedule of Service **(concept from Greg Holcombe)**						
Five round trips per weekday; some weekend services - TBD.						
These travel time estimates assume a 40 mph operating speed.						
	Holland		**Zeeland**	**Hudsonville**	**Grandville**	**Grand Rapids**
Distances:	0	4.5 miles		8.5miles	5 miles	7 miles 25 miles
Travel Time:	0	7.5 minutes		13.5 min	8.5 min	11.3 min 42 min
Departure Times						**Departure Times**
Trip #1 - WB <	**0642am**		**0634am**	**0620am**	**0611am**	**0600am**
Trip #2 - EB >	**0700am**		**0708am**	**0721am**	**0730am**	**0742am**
Trip #3 - WB <	**0842am**		**0834am**	**0820am**	**0811am**	**0800am**
Trip #4 - EB >	**0900am**		**0908am**	**0921am**	**0930am**	**0942am**
Trip #5 - WB <	**1212pm**		**1204pm**	**1150pm**	**1141pm**	**1130pm**
Trip #6 - EB >	**1230am**		**1238am**	**1251am**	**0100am**	**0112pm**
Trip #7 - WB <	**0442pm**		**0434pm**	**0420pm**	**0411pm**	**0400pm**
Trip #8 - EB >	**0500pm**		**0508pm**	**0521pm**	**0530pm**	**0542pm**
Trip #9 - WB <	**0642pm**		**0634pm**	**0620pm**	**0611pm**	**0600pm**
Trip #10 - EB >	**0700pm**		**0708pm**	**0721pm**	**0730pm**	**0742pm**

Express Bus Operating and Capital Costs

Costs for an express bus service operating in the Chicago Drive corridor were derived from the 2012 Transit Linkages study updated to 2017 using the MDOT annual bus operating costs. Table 3-2 presents the costs estimated for the service.

Table 3-2: Express Bus Operating and Capital Costs

	Capital	Operating	Administrative
Year 1	**$420,000 (3 buses – size/new or used to be determined)($50,000 for stop improvements)**	**$491,775 (based on 6,225 hours of service, approximately 10 round trips)**	**$37,500 (half-time FTE)**
Year 2	**$44,450 (signs/park-and-ride)**	**Same as year 1**	**Same as year 1**

Commuter Rail Costs

Costs for rail service are split between operating costs and capital costs. The Coast-to-Coast Passenger Rail Study's (CCS) cost basis and estimates are used for the Holland to Grand Rapids Rail Corridor.

Table 3-3 shows ranges of costs that may be associated with development of a commuter rail program in the Chicago Drive corridor. These are then explained in the following sections.

Table 3-3: Commuter Rail Operating and Capital Costs

	Capital	Operating	Administrative
Year 1	**$8 million to $28 million depending on level of improvements. Does not include positive train control.**	**$1.5 million to $4 million annually depending on schedule.**	**$75,000 (full-time FTE)**

Operating Cost

For the basis of this West Michigan Express Study, it is assumed that the route will run just from Holland to Grand Rapids. Amtrak currently takes one hour to run from Holland to Grand Rapids. The Coast-to-Coast plan developed a 79-mph option that would make the run in 27 minutes. Including a 10-minute allowance for backing in and out of the Grand Rapids train station, they made the assumption that the run would range from 32 to 47 minutes.

This projected run was not built around any stops. Adding stations along the route would reduce the train speed (slowing down and getting back up to speed) thus raising the transit time. The CCS study also anticipated using the existing stations in Grand Rapids and Holland, but did not factor in any new stations, so the capital costs for new stations was not included in their cost estimates.

Rail operating costs fall within variable costs and fixed costs. Variable costs include train and engine crew costs, train equipment maintenance, fuel and energy costs, insurance cost, and onboard service. Fixed costs include administrative costs, station costs, track and right of way maintenance costs, and sales and marketing. Some of these costs may be minimal, for example onboard service. The level of onboard service may be minimal with an under one-hour transit time.

The following are estimates directly from the CCS:

"Station costs include personnel, ticket machines and station operating expenses.

- Staffed stations will be assumed at major stations. All stations will be assumed open for two shifts. The cost for the staffed stations includes eight positions at each location, costing $80,580 per staff person per year, including the cost of utilities, ticket machines, cleaning and basic facility maintenance.

- The cost for unstaffed stations covers the cost of utilities, ticket machines, cleaning and basic facility maintenance, costing $80,580 per year station. (These costs are also included in the staffed station cost.) The proposed Coast-to-Coast system would share most of its stations with existing Amtrak services. (The proposed service for this study would need an additional station at each stop.)

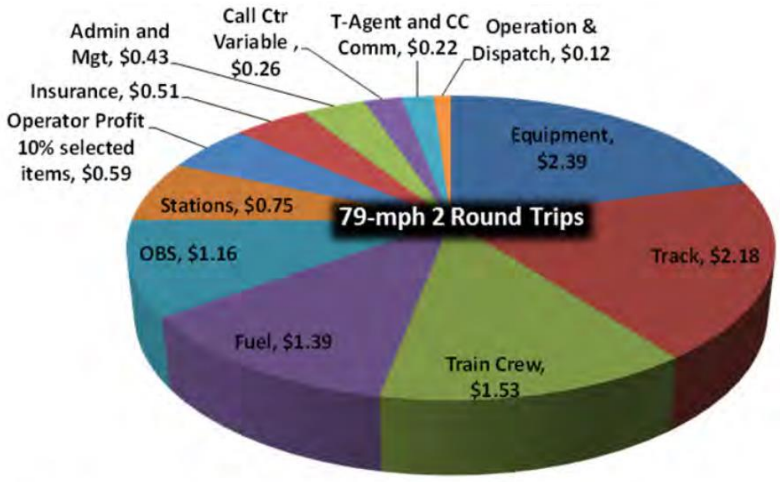
- The Total Cost per track-mile for maintaining dedicated Class 4 track (79 mph) is about $48,468. The shared-use scenario assumes that the owning freight railroad will require this level of support each year for maintaining the additional tracks that it must add to its existing rail corridor, for supporting the needs of passenger rail service.

- The Operating Cost per track-mile for maintaining dedicated Class 4 (79 mph) track is about $18,365. This figure is used for Amtrak or State-owned tracks since these entities will bear the maintenance cost directly.

- Service Administration or management overheads, covering such needs as the corporate procurement, human resources, accounting, finance and information technology functions as well as call center administration. This organizational structure, which was developed with Amtrak's input, had a fixed cost of $8.9 million plus $1.43 per train-mile (in 2002) for added staff requirements as the system grew. Inflated to 2013, this became $11.45 Million plus $1.84 per train mile. However, the Sales and Marketing category also has a substantial fixed cost component for advertising and call center expense, adding another $2.9 Million per year fixed cost, plus variable call center expenses of 70.9¢ per rider, all in 2013 dollars. Finally, credit card (1.8% of revenue) and travel agency commissions (1%) are all variable. In addition, the system operator was allowed a 10 percent markup on certain direct costs as an allowance for operator profit.

  Therefore, the overall financial model for a stand-alone organization therefore has $14.35 million ($11.45 + $2.9 million) annually in fixed cost for administrative, sales and marketing expenses."

The CCS estimated costs for different categories. The chart below shows those associated with 79 mph service. Equipment, fuel, track, and crews are seen to be the largest cost drivers; in each case these five categories comprise about 75% of the total cost although the order of the categories are different. Track costs comprise a significant share of operating expenses; for the 79-mph service running two round trips the track cost is $2.18 million per year or $1.09 million per round trip frequency.



The above Coast-to-Coast Study's cost estimate chart is based on two round trips per day from Detroit to Holland, and assumed that the service would use existing Amtrak stations. As the Holland-Grand Rapids rail segment is 24.8 miles (or 13.3% of the total route miles for the Coast-to-Coast route), 13.3% of the total yearly operational cost would be $1,533,490 for two round trips per day. Five round trips per day would equate to $3,833,725 yearly for an operations schedule similar to what has been discussed through this study.

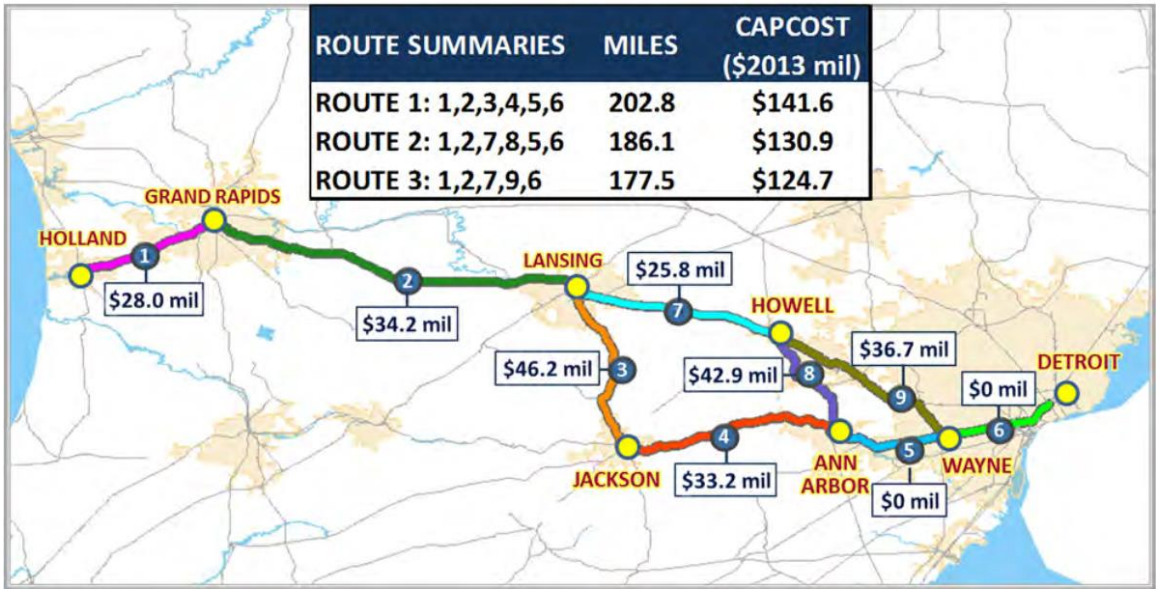
Because of the level of overhead associated with the CCS estimates some of which may not be needed in a smaller scale operation, the operating cost for a commuter service from $2,000,000 to $4,000,000.

Capital Cost

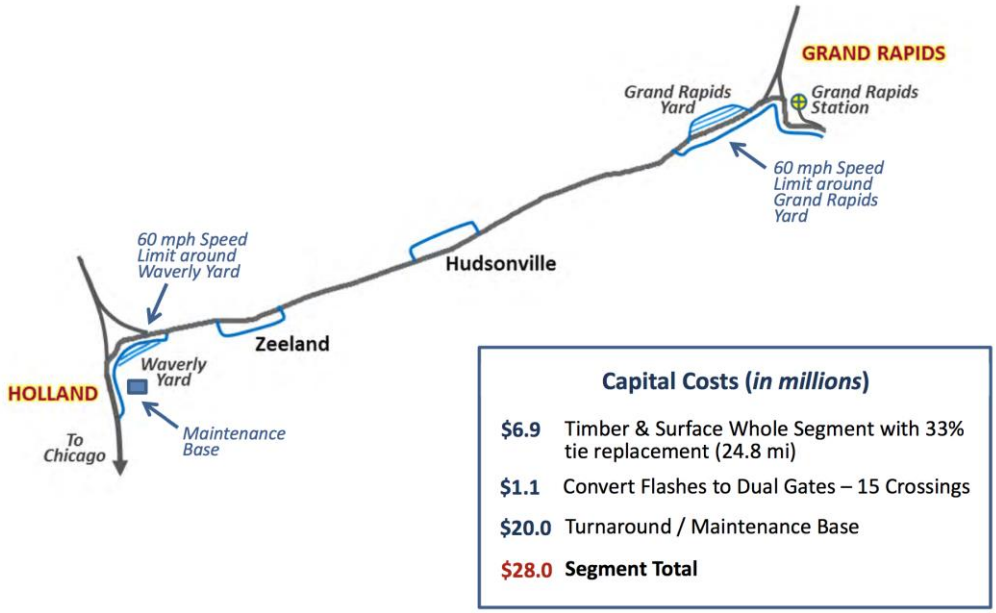
The CCS study estimated the capital cost for implementing a 79-mph service on this segment as $12.3 million in 2002 dollars. It assumed gates would be installed at all remaining ungated crossings, which comprised about 25% of the total, and raised the speed to 79-mph by replacing 33% of the crossties and resurfacing track. It is assumed that the existing welded rail would not need to be replaced. Train speeds would be raised to 60-mph through and around the freight yards at Waverley and Grand Rapids.

This study updates the cost to $28.0 Million in 2013 dollars for a 79-mph based on similar assumptions, but also includes a $20 Million allowance for a train servicing facility at Waverly yard and station improvements at Holland.

That said, it is estimated that the capital cost of installing a commuter rail service in the Chicago Drive corridor on the Grand Rapids to Holland segment could range from $8 million to $28 million depending on the level of capital improvements.



Holland to Grand Rapids (Segment 1): 79 mph Upgrade



The estimates provided do not include locomotive engines or cars. The CCS included the following recommendations on trains:

"The following general assumptions are proposed regarding operating requirements for rolling stock for the Coast-to-Coast rail corridor for all train technology options are as follows:

- Trains will be reversible for easy push-pull operations (able to operate in either direction without turning the equipment at the terminal stations);
- Trains will be accessible from low-level station platforms for passenger access and egress, which is required to ensure compatibility with freight operations;
- Trains will have expandable capacity for seasonal fluctuations and will allow for coupling two or more trains together to double or triple capacity as required;
- Train configuration will include galley space, accommodating roll-on/roll-off cart service for on-board food service. Optionally, the trains may include a bistro area where food service can be provided during the entire trip;
- On-board space is required for stowage of small, but significant, quantities of mail and express packages, and also to provide for an optional checked baggage service for pre-arranged tour groups;
- Each end of the train will be equipped with a standard North American coupler that will allow for easy recovery of a disabled train by conventional locomotives;
- Trains will not require mid-route servicing, with the exception of food top-off. Refueling, potable water top-off, interior cleaning, required train inspections and other requirements will be conducted at night, at the layover facilities located at or near the terminal stations. Trains would be stored overnight on the station tracks, or they would be moved to a separate train layover facility. Ideally, overnight layover facilities should be located close to the passenger stations and in the outbound direction so a train can continue, without reversing direction, after its final station stop; and
- Trains must meet all applicable regulatory requirements.

They also recommended a conventional train with one locomotive be used. Note that costs for positive train control and locomotives/passenger cars were not included in the capital costs.

Funding

Transit funding in Michigan is currently provided to eligible public entities via the Comprehensive Transportation Fund in Public Act 51. Eligible non-urban agencies may receive up to 60% of their eligible operating expenses in reimbursement from State Formula Operating Funds. However, only once since the 60% cap was enacted (1997) has the percentage been reimbursed at that level. The current reimbursement rate for FY 2018 in state operating funds is 39.20 percent. Federal operating funds from Section 5311 are also available to eligible entities. The current rate of reimbursement is 16%. For FY 2018, just over 55% of a transit agency's operational funding will come from state and federal funding. The balance is made up of farebox revenues, contract fares, and local revenue, usually from a dedicated transit millage or other local appropriation. The percentage of State operating funds fluctuates each year as the percentage is derived from the operating expenses of all public transit providers in Michigan.

Due to continuing resolutions, which authorize funding of the Federal Transportation funding legislation, Fixing America's Surface Transportation (FAST) Act, the flow of funds to the State is in flux; though it appears that capital funding for non-urban transit agencies in Michigan will continue to be severely impacted. Local units of government could be responsible for providing funding for the purchase of vehicles, park-and-ride improvements, and stations.

Funding Sources

Federal Funding Sources

Federal capital funding for buses and bus facilities continues to be via the FAST Act. Federal Transit Administration programs pertinent to rural areas are the following:

- Section 5311 Formula Grants for Rural Areas
- Section 5339(a) Bus and Bus Facilities Formula Program
- Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities

Section 5311 Formula Grants for Rural Areas

Under FAST, the 5311 program provides both capital and operating assistance to states to support public transportation in rural areas with populations less than 50,000. MDOT has been using most of the funds for operating assistance for rural transit services.

Section 5339 Bus and Bus Facilities Formula Grants

To augment the additional capital funding available for buses due to increases in Section 5311, FAST allots each state $1.75 million. MDOT allocates this funding for bus replacements for rural transit agencies. MDOT is able to fund 20-30 buses annually statewide.

Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities

This program formerly provided funding to states for the purchases of vehicles by non-for-profit human service agencies to support transportation for seniors and individuals with disabilities. The new program changes in several ways:

- Vehicle support for not-for-profit human service agencies continues
- The FTA Section 5317 New Freedom program is eliminated and is now part of the 5310 program.
- States continue to receive formula allocations, but funding for urbanized areas over 200,000 will now be allocated directly to urbanized area.

However, the 5310 program would not be a source of funding for commuter express services.

Bus and Bus Facilities Infrastructure Investment Program

This is a program that MDOT submits an application for whenever there is a call for projects from FTA. It is a competitive program and MDOT has not been successful at being awarded a grant to replace rural transit vehicles.

State Capital Funding

State capital funding has primarily been used for matching federal funds (20%). If funding for buses and bus facilities is reduced, the State may end up using some of the match to purchase capital, though this would be a change in policy.

Gap Funding

Funding from an appropriation or dedicated millage will be required to balance the operating budget of any commuter express service to be implemented. As mentioned above, local funds are a required element in transit funding in Michigan. "Gap" funding for the short term during a startup period may be required for primarily capital expenses (buses and other equipment). Capital funding for bus purchase takes several years (from time of application to grant award to bus manufacture to actually receiving vehicles. Additionally, if the decision is made to implement the service there will be a need for administrative support for grants, coordination with MDOT, etc. from the beginning. It is estimated that this would require one half-time equivalent position and initial funding would be required to cover this position.

From the standpoint of commuter bus service, MDOT may assist in reassigning older buses from existing transit agencies, but the better course is to purchase used vehicles. If a fleet of 14 buses, for example, were to be purchased, about $150,000 to $400,000 would likely be needed. The low end of this cost range is associated with buses purchased directly from transit agencies while the higher end is associated with used or demonstration vehicles purchased from dealers. One issue that results from this type of startup is that a mix (in style, size, and condition) vehicles are usually placed in service, and it takes time to develop a uniform fleet.

Revenue Sources to Eliminate Funding Shortfalls

The most efficient way to eliminate a funding shortfall is to develop retained earnings (reserve funding). The most successful transit agencies are able to expand on local funds. With a conservative operational budget that plans for slow expansion, a system normally does not run into budget shortfalls. Contacted services with existing public transit agencies could reduce the need for local funding. Farebox revenue is an important part of any local funding. Fares need to be low enough to attract riders, but steady enough to provide a guaranteed revenue stream to the system. By its nature, commuter transit service is unlikely to have contract fares,[9] though this type of fare also provides a base level of fares that can be counted on. Advertising on buses can be a source of income to a transit system, though transit systems in Michigan have had varying levels of success in doing so. For the routes and miles projected for commuter transit service, exploring advertising as a revenue source is recommended, particularly as operating in the Chicago Drive corridor will be highly visible.

Organization

Several public transit authorities exist in West Michigan. Either the MAX in Holland or The Rapid in Grand Rapids could operate a passenger train service in the Chicago Drive corridor. Because of the

[9] Contract fares are typically associated with contracts signed between agencies, government or educational entities, or employees for transit service to be provided for a specified time period.

uniqueness of the service, it may be desirable for a separate entity to operate the service, such as Tri-Rail in South Florida. Transportation authorities can be created under the State of Michigan's Act 196 of 1986 by one or more public entities. They have typically been established by a County Board of Commissioners for the provision of public transit service in a particular county, but there are examples of multi-county 196 authorities as well as multi-jurisdictional authorities headed up by Cities. Act 196 Authorities have their own boards with some members appointed by promulgating public entity, are empowered to raise funds (including through millages), and oversee the staff and operations of transit services outside a normal county staffing structure. Act 196 Transit Authorities can be a means for broader community and stakeholder involvement in the governance of a public transit system. They can provide a measure of distance for a County Board and Administrator from direct responsibility for funding decisions and day-to-day oversight of management and operations, while still providing checks on operations in various ways.

4. Discussions with Key Participants

This study has to date involved discussion and/or communication among participant individuals and organizations (refer to Chapter 1), MDOT, CSX, and representatives of several organizations with major employment locations in the Chicago Drive corridor and agencies with a major interest in transportation activities in the corridor. The following summarizes inputs from these individuals/groups.

MDOT

On January 11, 2018 the Consultant had a conference call with Tim Hoeffner, Director, MDOT Office of Rail, Al Johnson, Rail Operations Manager, and Jeff Martin, Intercity Services and Equipment Analyst. The following questions were addressed:

1. Would MDOT consider purchasing the CSX right-of-way in this Holland-GR corridor (similar to their purchases in the Detroit to Chicago corridor) if CSX is interested in selling it? Tim Hoeffner stated that MDOT was not in an acquisition mode, though even if it were ongoing maintenance would be an issue.

2. What is MDOT's preference for the operating entity for new passenger rail services in this corridor? Would MDOT consider becoming the operating entity for this service? **MDOT would not run a rail service. It is willing to facilitate local success, but would not be the railroad-of-record. An authority could be formed as the operational entity for the service.**

3. Will it be possible to utilize (through lease or sub-lease) vehicles from the re-furbished "MDOT Bi-level Fleet" that has been identified for the potential Ann Arbor-Detroit and Brighton-Ann Arbor passenger services? Would these vehicles be MDOT's preferred vehicle for this service? **MDOT would be open to working out an arrangement for the use of its equipment that currently is in storage.**

4. Will MDOT allow the use of diesel multiple units (DMU's) in this corridor if they are allowed by the Federal Railway Administration? **MDOT has no regulatory responsibility on what equipment is used, so the entity could operate equipment such as DMU's.**

5. Will MDOT require a train control system (ATC or PTC) in this corridor? Or will FRA rules prevail for train control requirements? **MDOT strongly suggests the use of Positive Train Control for any potential passenger service. The host railroad (in this case CSX) would be responsible for installing the system.**

6. Are there sources of MDOT capital and/or operating funds available for this project? For example, might funds be available from the State's **Comprehensive Transportation Fund** which is allowed to make appropriations for intercity passenger services? Are there other State/MDOT funding sources for this potential service? **MDOT does not currently have enough capital funding to address all of its current needs, but Hoeffner did not totally rule out the possibility. He stated a passenger rail service could likely be eligible for CTF funding.**

7. In light of the fact that the State of Michigan does not have any commuter rail services in its various urban centers, could this project qualify for any special demonstration/pilot funding…. (partly) because this commuter approach could serve as a model for other Michigan communities? **MDOT's role is supportive. The issue to begin a service is a local issue, but if it's decided locally to try to initiate service they will help facilitate. Hoeffner stated that passenger rail is regulated by FRA (Federal Railroad Administration) and funded by FTA (Federal Transit Administration).**

Overall, MDOT was supportive of the idea, but cautioned that capital funding was uncertain. Hoeffner emphasized that they would be willing to help facilitate success.

CSX

CSX Railroad is currently the owner of the track along Chicago Drive between Grand Rapids and Holland. CSX is noted as hosting the largest number of passenger rail services in the United States on its tracks and has been in the forefront of private operators in implementation of Positive Train Control. CSX has established a "Letter of Principle" to provide guidance to passenger rail planners.[10] CSX's principles require that:

- Access to host railroad track and property must be negotiated between the properties on a voluntary basis.
- Designing for safety is paramount and separate tracks will be needed to segregate freight and conventional passenger rail from higher-speed rail at sustained speeds in excess of 90-mph.
- Service to rail freight customers must be reliable and protected and cannot be compromised; adequate capacity must be maintained and, in some cases, built to address future freight growth.
- New infrastructure design must fully protect the host railroad's ability to serve its existing customers, both passenger and freight, and locate future new freight customers on its lines. Host railroads must be adequately compensated, especially in regard to the significantly higher maintenance cost associated with enhanced track infrastructure that will be required for high speed rail.
- Host freight railroads need to be fully protected against any and all liability that would not have resulted but for the added presence of high-speed passenger rail service.[11]

The consultant team has consulted with CSX and posed several questions.

1. Would they (CSX) consider selling this corridor to the State as was done in the Chicago-Detroit corridor? **CSX responded: We are willing to have a general conversation on a sale (but not likely a small segment of the larger line).**

2. Train Control. If we are required to install Automatic or Positive Train Control by the FRA, would the CSX be willing to invest/co-invest in that system which would certainly make our passenger

[10] Taken from Coast-to-Coast Study, page 1-6, footnote 1: CSX Principles, email from Marco Turra, CSX to Elizabeth Treutel, Michigan Environmental Council, dated June 4, 2015
[11] Ibid.

services safer, but also improve safety for present AMTRAK and their freight operations…? **We have not received a response from CSX addressing this issue.**

3. Will CSX/AMTRAK be receptive to additional passenger rail services in the range of 5 round trips per day on the Grand Rapids - Hudsonville - Holland line? **They indicated that more AMTRAK would be a challenge.**

Local Employers/Related Agencies

On January 26, 2018, meetings were held with two companies and two local non-profit agencies to gauge their perception and potential support of commuter express transit service in the Chicago Drive corridor. These were:

- Royal Technologies (800 employees); primarily located in Hudsonville;
- Housing Next
- Gentex (6,000 employees); primarily located in Zeeland
- Hope Network

The discussions specifically centered on each group's needs and opportunities as they considered the proposed service. In summary, there was strong interest in the concept. The private sector companies that this (2018) is a different economic world than ten years ago. Both acknowledged the need to get employees to work, providing an opportunity for those making longer commutes and/or in a more professional role to use transit for work trips, the need to begin providing options in the future to reduce congestion, and the role of transit, particularly rail, to be a community development tool. There was acknowledgement of the possible role of rail in creating a "cool" community that would be attractive to employers and potential employees to locate in West Michigan. There was some discussion of creating a "Prosperity" corridor along Chicago Drive, which would be designed to be supported by land use and transportation initiatives to encourage commercial and residential development along the corridor to create more dense land uses, and encourage the development of transit-supportive communities that would create more livable, walkable, attractive downtown areas and provide more freedom from the single-occupancy automobile for current and future generations.

Both of the non-profit agencies involved in the discussion (HOPE Network – transportation and Housing NEXT – affordable housing) stressed the need for regional connectivity and transportation. They both expressed excitement and interest in the fact that this concept was being explored and saw many opportunities for their agencies as the result of an implemented system.

In summary, there was definitely interest and support for additional study of the proposed express service. Neither of the private sector companies thought the proposal was a "slam dunk" and that the ability of actually convincing employees to not drive their car would be limited. This is not inconsistent with the ridership projections, which include a transit use factor derived from a survey done for the 2012 transit linkages study.

5. Recommendations

The following "road map" presents a set of steps for Hudsonville and its partners to follow as they explore the concept of express transit in Michigan further. These should be coordinated and put into place with the guidance and support of MDOT, CSX as applicable, and in recognition of Federal Transit Administration and Federal Railroad Administration requirements, as applicable.

YEAR 1

1. **Organization:** Establish the current West Michigan Express stakeholder group as an "official" Working Group dedicated to exploring express transit service in the Chicago Drive corridor. It is recommended that this group be formalized under the operating framework of either the Grand Valley Metro Council or the Macatawa Area Coordinating Council.
2. **Objective:** Define the overall objective as being to develop commuter rail service in the Chicago Drive corridor but that it is recognized a stepwise process (i.e., bus first) is needed to get there.
3. **Grants to Explore:** Apply for appropriate grants to continue to explore commuter express transit in the corridor, including a survey to determine interest in commuter transit, particularly rail. It is possible that such a survey be both targeted at the general public and employer/employee-based because workforce issues have motivated special attention and funding for other regional issues.
4. **Partnerships:** Help facilitate a partnership between identified agencies that provide transportation services in the region, such as Hope Network's Wheels to Work program, and employers in the corridor to provide/enhance employee transportation services.
5. **Prosperity Corridor:** Work with the MPO's to designate Chicago Drive between Grand Rapids and Holland as a "Prosperity Corridor," and create an overlay concept/district that can be adopted by jurisdictions along the corridor and include a set of principles to guide future development in a way that supports transportation, skilled training, and workforce housing.
6. **Public Leaders:** Broaden the stakeholder circle to include more public leaders in this region so that as more information is acquired and concrete transit proposals are generated, these leaders will be in a position to consider, and hopefully, provide local political and funding support for the best regional transit options.

YEARS 2-5

1. **Express Bus:** Depending on the survey results work with local bus agencies for express bus service in the Chicago Drive corridor with appropriate private sector shuttles established as a demonstration service.
2. **Results:** Monitor the express bus service to determine when appropriate ridership thresholds are met to move towards commuter rail.
3. **Capital Campaign:** Based on survey results and progress on express bus efforts, initiate a capital campaign to raise private funds to be used as local matching funds in a future commuter service.
4. **Rail Funding:** When ridership reaches a predetermined threshold, request state and federal funding for a demonstration commuter rail service in the corridor.

Conclusions

Public transit in any form is costly but the lack of public transit could be more costly now and in the future. Through this study, as an outside observer, it is clear that the West Michigan region with its twin anchors of Grand Rapids and Holland is a unique place. In the consultant's experience, public transit with an eye on eventual utilization of the Chicago Drive corridor for commuter rail, should be pursued in a cautious logical way. The potential short term benefits (helping drive the economic vitality of the corridor by enhancing opportunities for employees to get to work) and long term benefits (community development and enhancement as the region grows) make such a pursuit worthwhile.