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WEST MICHIGAN EXPRESS: FEASIBILITY REVIEW

The Rapid Transit Master Plan (TMP)
Interurban Transit Partnership (ITP)

August 8, 2023



THE RAPID

Quality Information

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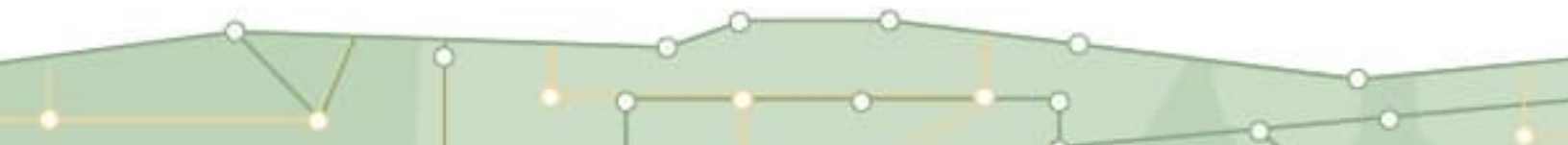


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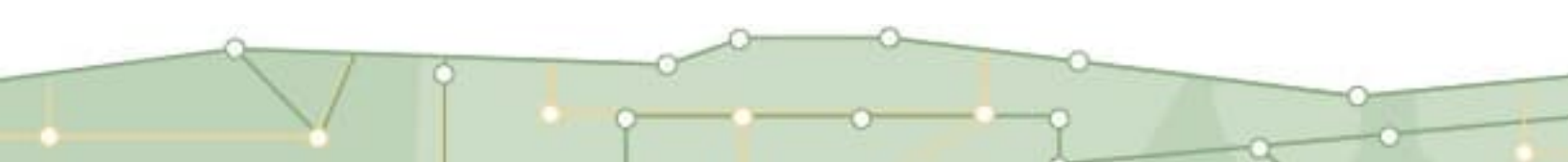
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INTRODUCTION

The West Michigan Express (WMX) initiative is a collaborative effort to link communities along the Chicago Drive (M-121) corridor - including Holland, Zeeland, Hudsonville, Grandville, and Grand Rapids with commuter-based public transportation for the purpose of enhancing economic growth and quality of life in the region. Currently, this corridor's most convenient travel mode is driving or other automobile-based travel modes. There is an existing Amtrak train that runs from the City of Holland to Grand Rapids, however the service is infrequent with one roundtrip per day and does not run during typical commuting times. The West Michigan Express initiative will explore commuter-based public transportation mobility options for the Chicago Drive corridor, beginning with express bus service and potentially leading to commuter rail.

WMX Task Force

The WMX initiative has thus far been led by the WMX Task Force, which was formed in 2017. Last convened in 2018-2019, the Task Force included representatives from the following organizations:

- Citizens Research Council
- City of Grandville
- City of Holland
- City of Hudsonville
- City of Zeeland
- Gentex
- Grand Rapids Chamber
- Grand Valley Metro Council (GVMC)
- Herman Miller
- Hope College Frost Research Center
- Hope Network Wheels to Work
- Housing Next
- Lakeshore Advantage
- Macatawa Area Coordinating Council
- Macatawa Area Transit
- Michigan Association of Railroad Passengers (MARP)
- Michigan Department of Transportation (MDOT)
- Michigan Economic Development Corporation (MEDC)
- Mobile Grand Rapids
- State Senate
- Talent 2025
- The Rapid
- The Right Place
- Urban Innovations (Consultant)

WMX Goals

Goals of providing WMX bus service, as identified by the WMX Task Force, are:

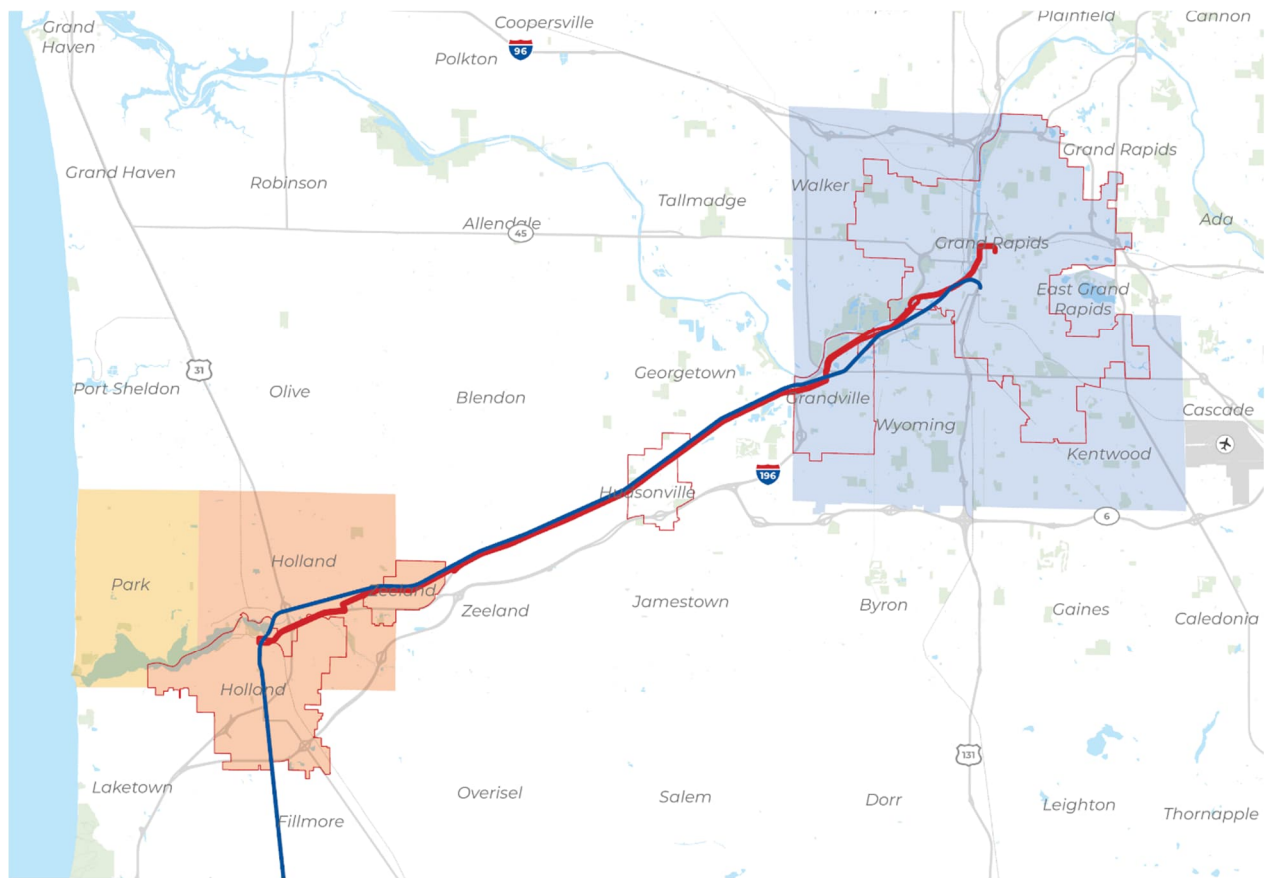
- Expanding access to regional employment opportunities
- Identifying sustainable operational funding sources for transit service outside of current member communities
- Catalyzing transit-supportive developments across the WMX alignment
- Fostering a stronger transit-supportive culture across West Michigan by demonstrating successful service
- Engaging in mutually beneficial cooperative partnerships with regional employers
- Establishing a successful prototype for regional express service that can be used as a model elsewhere in the region

Existing Conditions

Holland and Grand Rapids are currently connected by the Pere Marquette Amtrak route (see Figure 1). The route operates seven days a week with one daily westbound train departing from Grand Rapids at 6:00 a.m. and arriving in Holland at 6:47 a.m. and one daily eastbound train departing from Holland at 10:33 p.m. and arriving in Grand Rapids at 11:34 p.m.

Current public transportation systems within the potential WMX cities include The Rapid in Grand Rapids and Grandville, and Macatawa Area Express (MAX) in Holland and Zeeland (see Figure 1). The two systems do not currently connect to one another.

Figure 1: Current Public Transportation Systems



Amtrak, The Rapid, and MAX Coverage

- Potential WMX Cities
- Chicago Drive Corridor
- Pere Marquette Amtrak Route
- ITP member communities
- MAX Service Area
Fixed Route and Advance Reservation
- Advance Reservation Only



PREVIOUS PLANNING

Multiple studies have been conducted over the past several years to gauge interest in and assess the feasibility of transit service between Holland and Grand Rapids. Previously identified stops and alignment are shown in Figure 2. Findings from previous studies are summarized in the following sections.

Figure 2: Previously Identified WMX Stops and Alignment

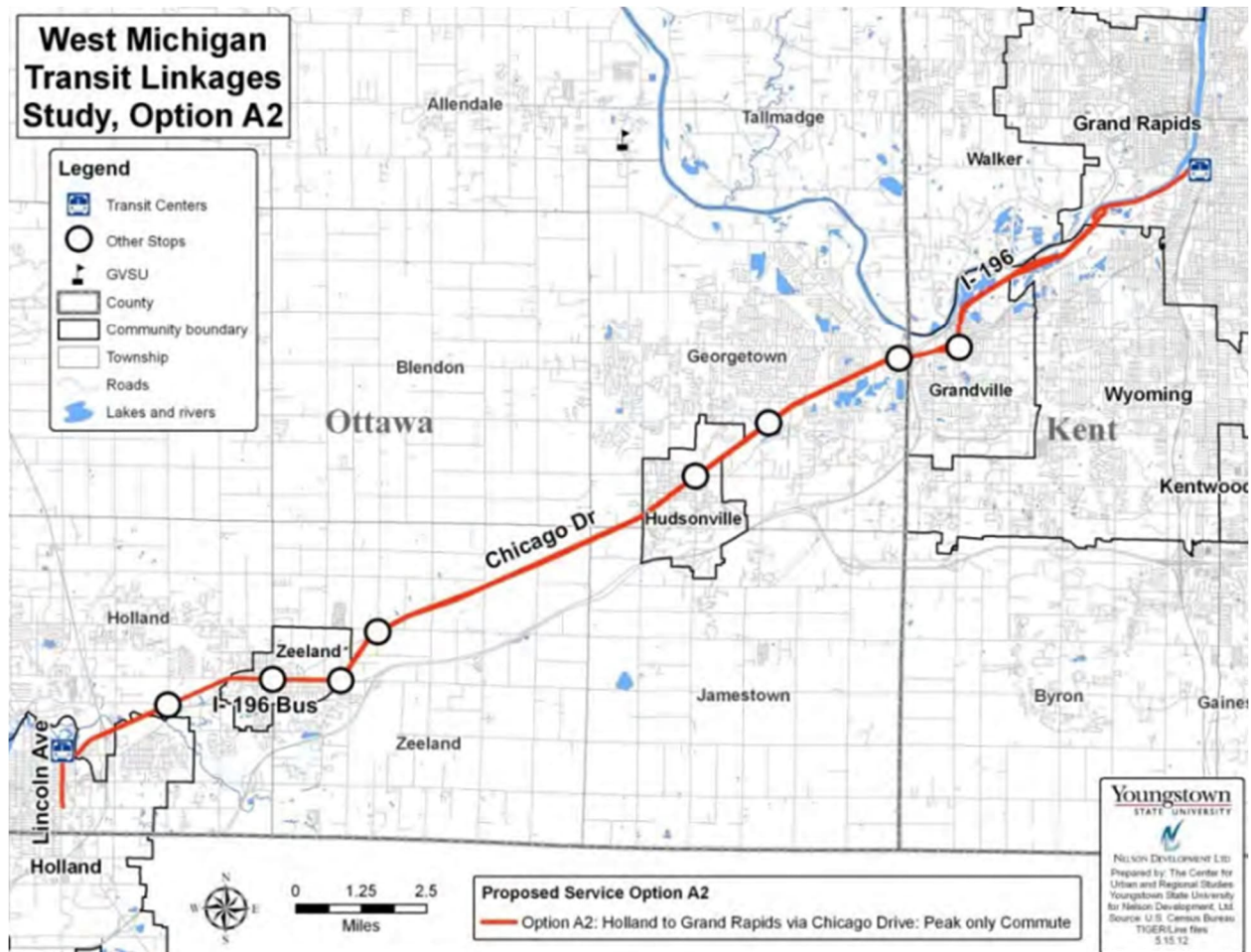


Source: The Rapid

2012 West Michigan Transit Linkages Study

This study was completed in September 2012 by MP2 Planning, LLC at the commission of Ottawa County. Peak-only commuter bus service between Holland and Grand Rapids was explored for the stops and alignment shown in Figure 3. Service assumptions included five trips each way on weekdays with two trips in the AM peak period and three trips in the PM peak period, 30-minute frequency, and a commuter bus travel time of about 50 minutes from end to end.¹

Figure 3: Previously Proposed Stops and Alignment



Source: Mp2planning

The West Michigan Transit Linkages Study estimated ridership for service options A1 and A2 by applying a mode split (the percent of trips in a particular area made using public transit) to the workflow numbers, as shown in Table 1. The survey results factor comes from a survey conducted for the study which asked respondents their likelihood to use commuter transit service². About 58 one-way trips per day were estimated for the trip from Holland/Zeeland to Grand Rapids, and about 32 one-way trips per day were estimated for the reverse trip.

¹ West Michigan Transit Linkages Study, Commuter Transit Service Options Report, Section 2.2, pages 8-11 https://www.miottawa.org/departments/planning/pdf/landuseprojects/transit_service_options_report.pdf

² West Michigan Transit Linkages Study, Commuter Transit Service Options Report, Appendix A https://www.miottawa.org/departments/planning/pdf/landuseprojects/transit_service_options_report.pdf

Table 1: 2012 Ridership Estimates

	Holland / Zeeland Area to Grand Rapids Area	Grand Rapids Area to Holland / Zeeland Area
Workflow numbers (one-way 2015 data)	11,972	5,983
Mode split based on U.S. Census data	0.5%	0.5%
Anticipated one-way passenger trips per day based on mode split	54	30
Survey results factor	1.07	1.06
Anticipated one-way trips per day adjusted for survey results	58	32
Annual one-way passenger trips based on 249 weekdays	14,354	7,896
Annual two-way trips	28,707	15,792

Source: Mp2planning, 2012

Notes: 249 weekdays based on 256 weekdays less regular holidays. Mode splits for Western Ottawa County cities for commuter express service estimated to be half local transit mode split. Mode split for commuter express trips from Grand Rapids are estimated to be one-fourth the Grand Rapids Metro mode split.

Based on demand, projected low ridership, and lack of local funding commitment, the study found that commuter express service as defined by the Federal Transit Administration (FTA) was recommended to not be implemented, but to be revisited if fuel prices reach levels that cause people to actively seek alternative transportation, economic development factors such as the creation of a large centralized employment destination occur, unforeseen demographic changes occur, or the ability of local units to provide funding for public transportation improvements changes.

2016 Coordinated Mobility Plan for Prosperity Region 4

This plan was completed in 2016 by the Grand Valley Metropolitan Council (GVMC) and covers transit connectivity and health and human services in Allegan, Barry, Ionia, Lake, Kent, Mason, Mecosta, Montcalm, Muskegon, Newago, Oceana, Osceola, and Ottawa Counties. The plan identified an unmet demand for commuter employment trips into Grand Rapids from surrounding communities and an inability for existing transit operators to provide service beyond their service areas, making commuter service difficult. In response, the plan prioritized the provision of transit beyond the service area for commuter service to larger employment centers and major cities in and adjacent to the region with the strategy of expanded coordinated service. Local transit agencies including The Rapid are expected to provide services and work with related programs to meet needs. With additional funding and support, The Rapid is also encouraged to coordinate and link with other transit services in the region, such as MAX. Finally, the plan identified the USDOT's Ladders of Opportunity grants as a potential funder of commuter services.

2018 West Michigan Express Study

This study was completed in February 2018 by MP2 Planning, LLC at the commission of the City of Hudsonville to determine whether express bus or rail transit service in the Chicago Drive corridor was feasible and suggested that both options should continue to be considered with commuter express bus being an incremental step toward rail. Out of this study, conversations were initiated in early 2020 with community foundations and other private philanthropic/family foundations to seek capital/support.

Longitudinal Employer-Household Dynamics (LEHD) data from 2010 and 2015 was used to identify workflow numbers for the Holland/Zeeland area (including the City of Holland, Holland Township, City of Zeeland, and Zeeland Township), the Grand Rapids area (including the City of East Grand Rapids, City of Grand Rapids, Grand Rapids Township, City of Grandville, City of Kentwood, City of Walker, and City of Wyoming), and the Georgetown area (including Georgetown Township and City of Hudsonville). Ridership estimates from the 2012 West Michigan Transit Linkages Study were updated, as shown in Table 2. These ridership estimates are almost identical to the previous estimates (56 one-way trips per day from Holland/Zeeland to Grand Rapids and 30 for the reverse trip), but include additional ridership to/from Georgetown, adding another 116 one-way trips per day to Grand Rapids for a total of 172, and adding 34 to Holland/Zeeland for a total of 64.

Table 2: 2018 Ridership Estimates

	Holland/Zeeland Area to Grand Rapids Area	Georgetown Area to Grand Rapids Area	Grand Rapids Area to Holland / Zeeland Area	Georgetown Area to Holland / Zeeland Area
Workflow numbers (one-way 2015 data)	5,753	12,055	5,689	3,602
Mode split based on U.S. Census data	0.9%	0.9%	0.5%	0.9%
Anticipated one-way passenger trips per day based on mode split	52	109	28	32
Survey results factor	1.07	1.06	1.06	1.06
Anticipated one-way trips per day adjusted for survey results (daily two-way trips in parentheses)	56 (112)	116 (232)	30 (60)	34 (68)
Annual one-way passenger trips based on 249 weekdays	13,944	28,884	7,470	8,466
Annual two-way trips	27,888	57,768	14,940	16,932

Source: Mp2planning, 2018

2019 Employee Survey Report

This survey was completed in March 2019 by the Hope College Frost Research Center at the commission of the West Michigan Express Task Force. Employees at various employers in proximity of the Chicago Drive corridor were asked about their work commute, travel habits, employer perks related to transit, and interest in alternative transportation services.

More than one-third of respondents worked at Spectrum Health and more than 16 percent lived in the Hudsonville/Jamestown area. The majority of respondents work a typical first shift from 8:00 a.m. or 9:00 a.m. to 5:00 p.m. or 6:00 p.m. Mondays through Fridays and drive alone to work, citing time savings as the main reason. Respondents working at Suburban Inns and at the hospitals in Downtown Grand Rapids and respondents living in Grandville and Jenison expressed the greatest interest in commuter service.

The average amount respondents were willing to pay for a round trip ride on an express commuter service was \$4.27. To the question, “What would encourage you to ride an express commuter service from home to work?”, the most popular responses included convenience (frequency and alignment with work schedules), saving money, and rider experience (Wi-Fi, ability to work on-board, bus interior).

Key Findings and Priorities

Key findings and priorities from the review of previous planning efforts and studies include:

- Demand and projected ridership for commuter service between the proposed cities needs to be verified under current conditions and with adjusted expectations of the type of service that could be provided (bus as opposed to train, park-and-ride as opposed to front-door pickup and drop-off).
- A weekday-only commuter service geared towards first-shift employees living in Jenison or Grandville and working in Downtown Grand Rapids or Holland has shown some potential for a transit market.
- Round trip fare should be set at around \$4.00.
- Convenience, monetary savings, and rider experience benefits should be incorporated into plans for service and communicated to potential riders.
- Local funding commitment needs to be secured.
- Park-and-ride locations need to be identified and Memorandums of Understanding (MOU) need to be developed with park-and-ride landowners.
- Reverse commute ridership has potential with multiple key employers and a University that could support this type of travel pattern if it is coupled with partnerships, programs, and robust marketing.

FEASIBILITY REVIEW

Building upon previous planning efforts, more detailed technical analysis was performed to understand the feasibility of express bus route service under updated existing conditions. The existing condition metrics include distance and time from downtown Grand Rapids, transit market profile along the corridor, travel patterns, and ridership estimates. These updated existing conditions metrics add context to previous recommendations and are especially important to consider given shifting travel patterns due to an increase in the number of people who work from home after the Covid-19 Pandemic.

Benchmark: KCATA Route 550

Throughout the feasibility review, Kansas City Area Transportation Authority (KCATA) Route 550: Lee’s Summit Express (see Table 3) is referenced as an operational express bus route of similar service type and travel distance (see Table 4) against which future potential express bus service in Western Michigan can be benchmarked.

Route 550 is an express bus route connecting the Metro Park-and-Ride at Blue Parkway and Chipman Road in Lee’s Summit, Missouri and the bus stop at Unity Village to Downtown Kansas City via Blue Parkway (State Route 350), I-435, and I-70. This is a similar configuration to potential West Michigan Express bus service because it has stops in multiple outlying communities and operates on highways like Chicago Drive and I-196 into the downtown core.

Table 3: KCATA Route 550 Statistics

Service levels	Monday-Friday 2 trips and 1 reverse commute trip for each peak period Metro Park-and-Ride to Downtown: 5:30 a.m., 7:00 a.m., and 4:40 p.m. Downtown to Metro Park-and-Ride: 6:20 a.m., 3:30 p.m., and 5:30 p.m.
Average daily ridership (2022)	31
Annual ridership (2022)	7,912
Funding	Lee’s Summit and Unity Village contribute minimal funding, mostly funded by KCATA’s general operating sources

Source: Kansas City Area Transportation Authority, Route 550: Lee’s Summit Express, <https://ridekc.org/assets/uploads/route-schedules/550swk.pdf>

Distance and Time from Downtown

For a baseline understanding of current commutes, the distance and drive time between the potential WMX cities and Downtown Grand Rapids were calculated, as shown in Table 4. The same was done for the outlying communities served by KCATA Route 550 for comparison.

Table 4: Distance and Time from Downtown

City	Drive Distance from Downtown (miles)	AM Peak Drive Time to Downtown (minutes)	PM Peak Drive Time from Downtown (minutes)
Holland	28.3	35 - 55	35 - 60
Zeeland	23.0	28 - 40	30 - 45
Hudsonville	14.8	18 - 24	18 - 28
Grandville	7.9	10 - 14	10 - 18
Benchmark			
Lee's Summit, MO	21.5	24 - 35	26 - 45
Unity Village, MO	18.6	22 - 35	22 - 40

Source: Google Maps (Chicago Dr / I-196 route to Butterworth Hospital, AM Peak arrive at 9 a.m., PM Peak depart at 5 p.m.)

Source: Google Maps (Blue Pkwy / I-435 / I-70 route to IRS Processing Center, AM Peak arrive at 9 a.m., PM Peak depart at 5 p.m.)

The above commute characteristics were then compared to best practice standards to gauge their suitability for express bus service. According to the Texas A&M Transportation Institute³, in order for people to choose to ride an express bus when they are traveling to a bus stop by walking, trips must originate 10 to 15 miles from downtown (or the passenger's destination). Express bus services accessed by automobile (driving) trip origin points should be 10 to 20 miles from downtown in order for a person to choose to ride an express bus. As such, in order for a city to be considered for an express bus service stop, it must be located a minimum of 10 miles from downtown Grand Rapids. All potential WMX cities fall within these ranges with the exception of Grandville, which does not meet the minimum distance from downtown of 10 miles.

³ Texas A&M Transportation Institute, Mobility Investment Priorities, System Modification Strategies, Alternative Modes, Express Bus Service, page 2, <https://mobility.tamu.edu/mip/strategies-pdfs/system-modification/technical-summary/Express-Bus-Service-4-Pg.pdf>

Transit Market Profile

To understand the transit market within each of the potential WMX cities, dwelling unit, population, and employment densities were calculated for each city, as shown in Table 5. The communities served by KCATA Route 550 are also shown for reference.

Table 5: City Densities

City	Area (acres)	2020 Dwelling Units	Units per acre	2020 Population	2019 Jobs	People + Jobs per acre	2040 Projected Population Change
City of Holland	11,160	13,512	1.21	34,378	29,323	5.71	4%
City of Zeeland	1,925	2,472	1.28	5,719	18,003	12.32	5%
City of Hudsonville	2,584	2,880	1.11	7,629	5,100	4.93	15%
City of Grandville	4,913	6,835	1.39	16,083	17,166	6.77	6%
City of Grand Rapids	29,203	85,288	2.92	198,917	132,127	11.34	5%
	49,786 Total	110,987 Total	1.58 Average	262,726 Total	201,719 Total	8.21 Average	7% Average
Benchmark							
City of Lee's Summit, MO	42,182	40,373	0.96	101,108	42,503	3.40	
Unity Village, MO	973	45	0.05	66	34	0.10	
Kansas City, MO	204,160	241,949	1.19	508,090	327,218	4.09	
	247,315 Total	282,367 Total	0.73 Average	609,264 Total	369,755 Total	2.53 Average	

Sources: Area from GIS or Google, Dwelling Units and Population from 2020 Decennial Census, Jobs from 2019 LEHD, Projected Population Change from 2020-2040 WMRPC Trend-Based Projections

The above density characteristics were then compared to best practice standards to gauge their suitability for express bus service. According to the Texas A&M Transportation Institute⁴, express bus accessed by walking requires a minimum of 15 dwelling units per acre over two square miles of collection area for five trips during the two-hour peak period, and express bus accessed by automobile requires a minimum of three dwelling units per acre over 20 square miles of collection area for 5 to 10 bus trips during the two-hour peak periods.

None of the potential WMX cities meet the minimum dwelling unit density for walking or automobile; however, if three dwelling units per acre can support 5 to 10 bus trips accessed by automobile, it is possible that half the dwelling units per acre (as there are in the potential WMX cities) could support half as many (two to five) bus trips accessed by automobile. In addition, the communities served by KCATA Route 550 also do not meet the minimum dwelling unit density recommended, but service is still provided.

⁴ Texas A&M Transportation Institute, Mobility Investment Priorities, System Modification Strategies, Alternative Modes, Express Bus Service, page 2, <https://mobility.tamu.edu/mip/strategies-pdfs/system-modification/technical-summary/Express-Bus-Service-4-Pg.pdf>

Travel Patterns

Travel patterns to Downtown Grand Rapids from the other potential WMX cities were analyzed using both pre-pandemic Census-based commute data (2019 LEHD data) and a more recent activity-based travel model (Fall 2021 Replica⁵ data), as shown in Table 6. The analysis was built on the following assumptions:

- Trip origins include Traffic Analysis Zones (TAZs) within 5 miles of the associated previously proposed WMX stop. A 5-mile buffer was used to account for park-and-ride as a potential mode of access for future express bus service. The 5-mile buffers around the Holland and Zeeland stops were merged for analysis, and areas overlapped by two different 5-mile buffers were bisected and allocated accordingly to each trip origin (see the desire line figures on the following pages).
- The Downtown Grand Rapids trip destination includes Census Tracts 20 and 21, which encompass the quarter-mile buffers around the previously proposed WMX stops in Downtown Grand Rapids. A quarter-mile buffer was used because future express bus riders would most likely walk to their final destination. There is also the potential for express bus riders to connect to The Rapid's fixed route network once they arrive downtown and connect to the Holland MAX system when traveling westbound. While this will be a small number of riders due to the travel time penalty of accessing an express bus first via kiss-and-ride or park-and-ride, then connecting to a fixed route system downtown, it is important to note it. In downtown Grand Rapids, a half-mile buffer is considered in addition to the quarter-mile buffer in the *Ridership Estimates* section (page 17) to account for riders potentially transferring downtown.

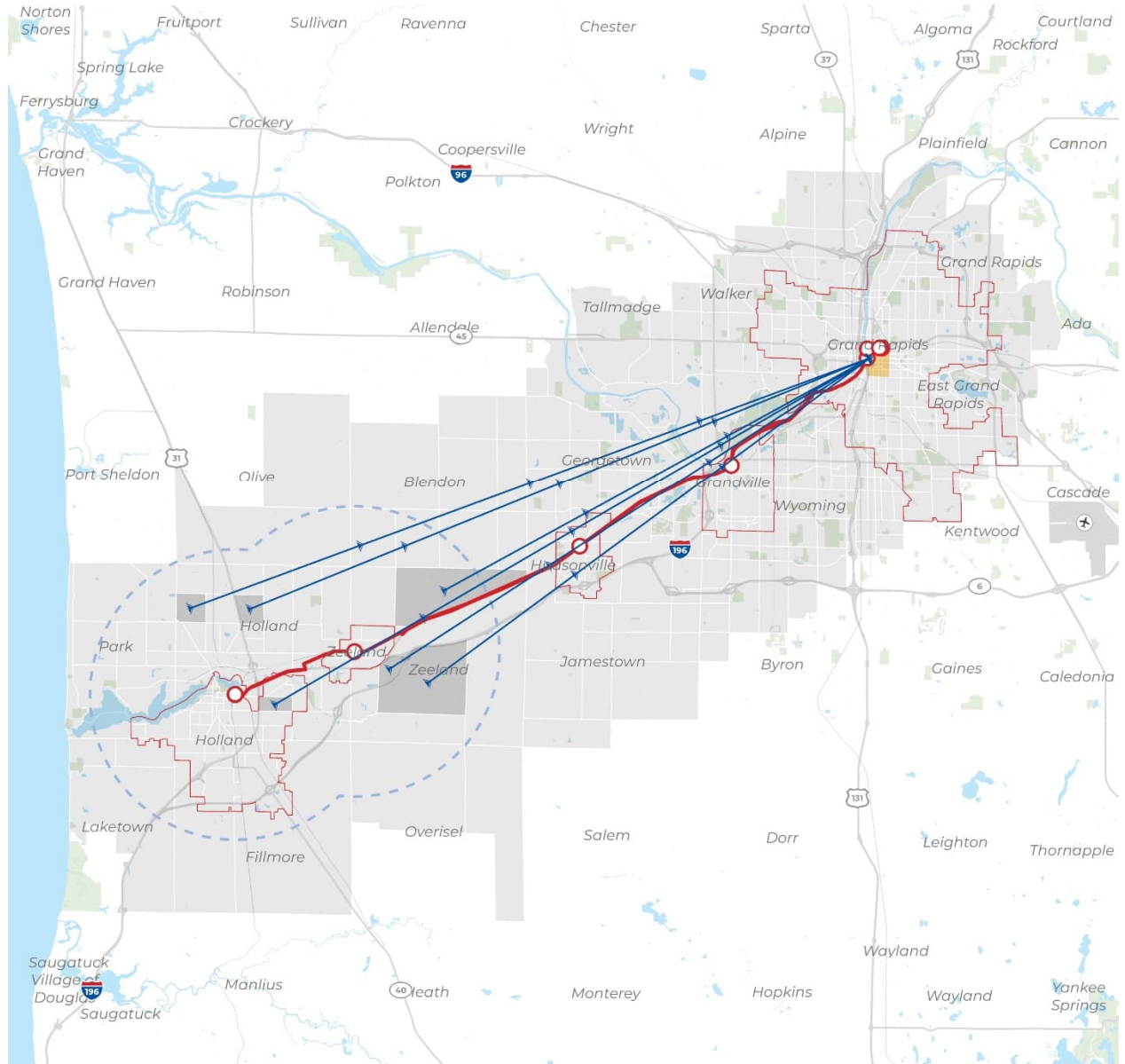
Table 6: Trips to Downtown

To Downtown Grand Rapids	From Holland / Zeeland Area	From Hudsonville Area	From Grandville Area	TOTAL
Workflow numbers (2019 LEHD)	972	1,793	3,832	6,597
Total trips (Fall 2021 Replica)	1,150	1,550	5,890	8,590
Benchmark: KCATA Route 550				
To Downtown Kansas City, MO			From Lee's Summit/Unity Village Area	TOTAL
Workflow numbers (2019 LEHD)			4,876	4,876
Total trips (Fall 2021 Replica)			4,270	4,270

⁵ Replica's activity model methodology is provided here: <http://help.replicahq.com/en/articles/5632479-replica-methodology-summary>

The most prevalent trips, or “desire lines” are shown in the figures below. Most trips from the Holland/Zeeland capture area are from TAZs outside the city boundaries, in the surrounding townships. Most trips from the Hudsonville capture area are from TAZs north of the Chicago Drive corridor, in Georgetown Township. Finally, most trips from the Grandville capture area are from TAZs in the southeast corner of the City of Hudsonville and at the north end of Jamestown Township.

Figure 4: Desire Lines from Holland/Zeeland Area

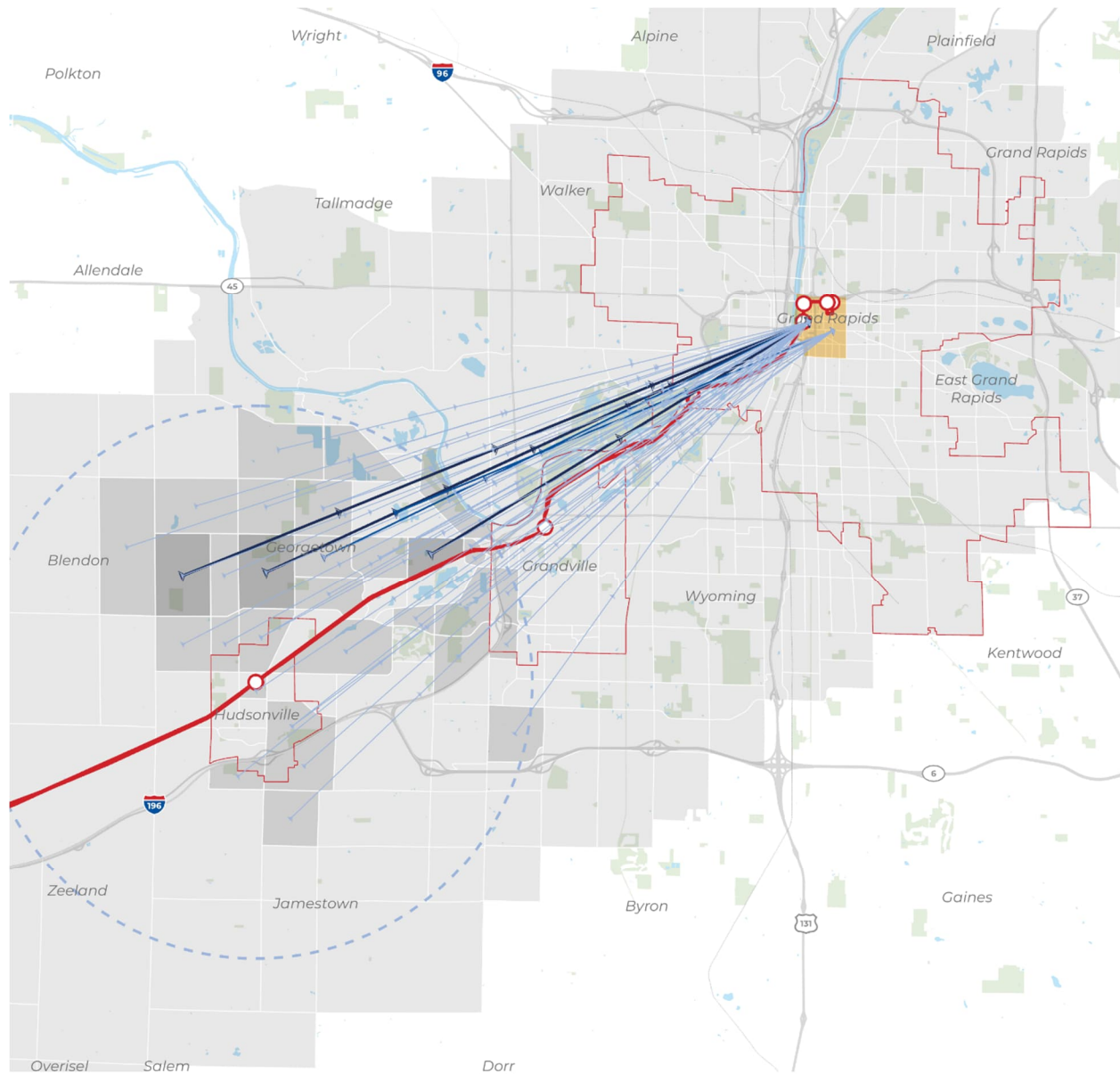


Holland/Zeeland Area to Downtown Grand Rapids

- Previously Proposed WMX Stops
- Previously Proposed WMX Alignment
- Origin TAZs
- Traffic Analysis Zones (TAZs)
- Downtown Grand Rapids (Census Tracts 20 & 21)
- ➔ Desire Lines: 20-30 Daily Trips
- 5mi Buffer



Figure 5: Desire Lines from Hudsonville Area

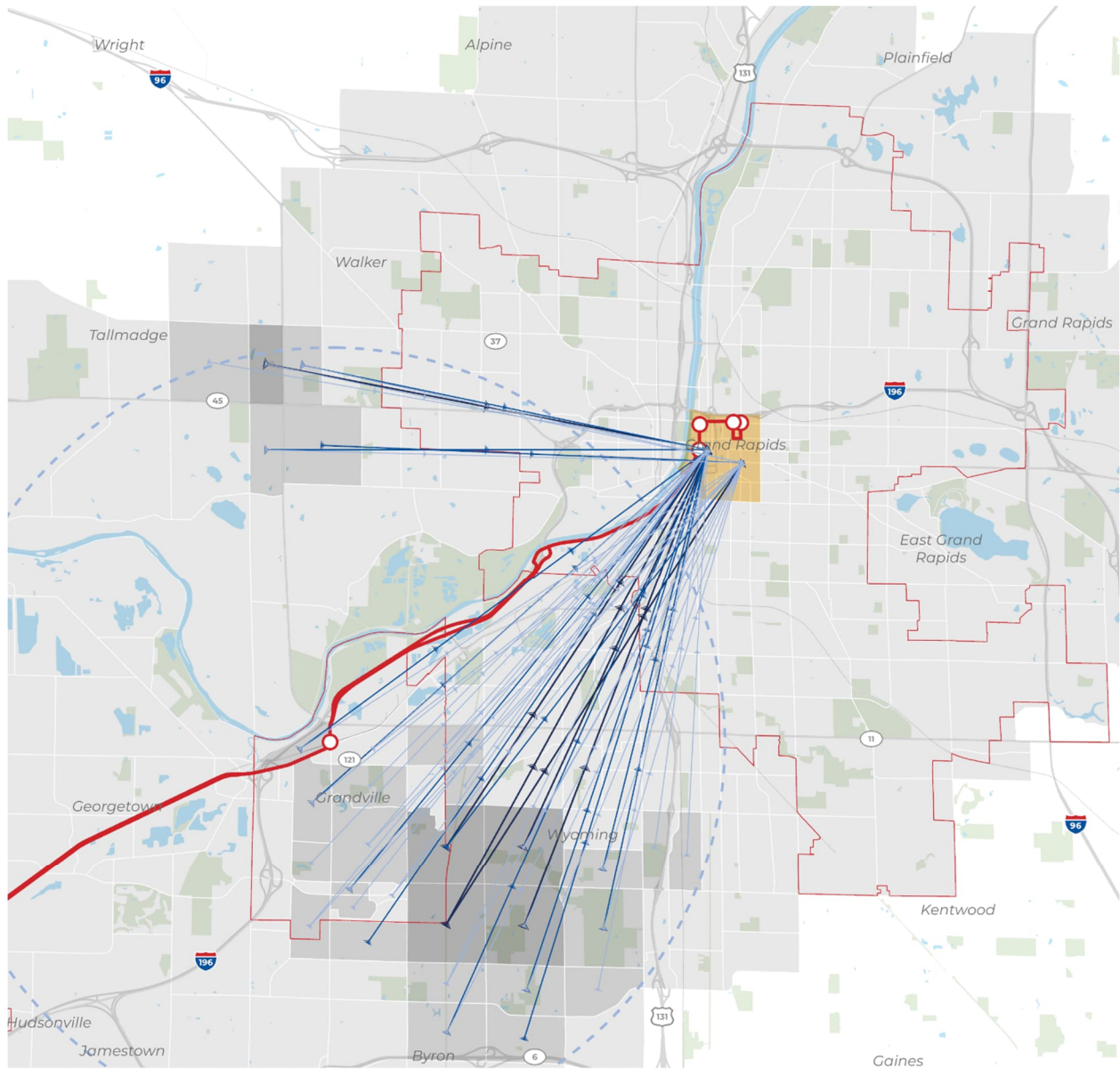


Hudsonville Area to Downtown Grand Rapids

- Previously Proposed WMX Stops
 - Previously Proposed WMX Alignment
 - Potential WMX Cities
 - Top Origin TAZs (>75 Daily Trips)
 - Origin TAZs
 - Traffic Analysis Zones (TAZs)
 - Downtown Grand Rapids (Census Tracts 20 & 21)
-
- Desire Lines
 - 20 - 50 Daily Trips
 - 51 - 75 Daily Trips
 - 76 - 152 Daily Trips
 - 5mi Buffer



Figure 6: Desire Lines from Grandville Area



Grandville Area to Downtown Grand Rapids

- Previously Proposed WMX Stops
- Previously Proposed WMX Alignment
- Potential WMX Cities
- Top Origin TAZs (>75 Daily Trips)
- Origin TAZs
- Traffic Analysis Zones (TAZs)
- Downtown Grand Rapids (Census Tracts 20 & 21)
- Desire Lines (at least 5 miles long)**
- 1 - 50 Daily Trips
- 51 - 75 Daily Trips
- 76 - 154 Daily Trips
- 5mi Buffer



The desire lines extending from the west along Lake Michigan Drive (M-45) are most likely trips from Grand Valley State University.

Ridership Estimates

Estimated passenger trips for future express bus service to Downtown Grand Rapids were calculated using the same methodology as the previous ridership estimates: by applying an assumed mode split to the observed travel patterns. The assumed mode split for future express bus service in all the origin communities is based on regional commute patterns, a mode split analysis from the regional Grand Valley Metro Council (GVMC) Travel Demand Model (TDM), and a comparative analysis. Table 7 shows the observed mode splits.

Table 7: Mode Split Comparison

Mode Split	City of Holland	City of Zeeland	City of Hudsonville	Georgetown Township	City of Grandville
2021 ACS 5-year transit commute share	0.90%	1.50%	0.00%	0.00%	0.60%
2020 GVMC TDM transit commute share			0.00%	0.00%	5.04%
2020 GVMC TDM regional transit commute share	-----		1.45%	-----	
Benchmark					
Mode Split	City of Lee's Summit, MO	Unity Village, MO	Lee's Summit/Unity Village		
2021 ACS 5-year public transportation commute share	0.20%	0.00%			
2022 average daily ridership per 2019 LEHD workers			0.94%		
2022 average daily ridership per Fall 2021 Replica trips			1.05%		

Updated daily and annual ridership estimates for future express bus service are shown in Table 8 using a range of assumed mode splits, with one percent as a conservative estimate and 2.5 percent as an aspirational estimate. This resulted in an estimated 66 daily ridership (16,427 annual), assuming a one percent mode split, and 165 daily ridership (41,066 annual), assuming a 2.5 percent mode split. This range helps to capture latent potential users and the potentially accumulative impact of additional efforts to attract riders through marketing, education, and employer incentives.

In addition, ridership may be further bolstered by running the bus in service on reverse commute trips and targeting major employers and the University in the corridor through partnerships, programs, scheduling around shift/school times, and robust marketing. The Replica trip pattern analysis identified 92 daily reverse commute trips made between the ½-mile buffer around Downtown GR (to account for the potential for riders to connect through The Rapid's existing fixed route network) and the ¼-mile buffers around the Holland, Zeeland, and Hudsonville stops. The daily reverse commute estimate represents a potential pool of trips (see

Table 5) from which these efforts can attract more riders and potentially realize results beyond the aspirational 2.5 percent mode split estimates.

The ridership estimates shown in Table 8 are calculated using a ¼-mile buffer around downtown Grand Rapids.

Table 8: Updated Ridership Estimates

	Holland / Zeeland Area to Downtown Grand Rapids	Hudsonville Area to Downtown Grand Rapids	Grandville Area to Downtown Grand Rapids	TOTAL
LEHD-Based Estimate				
Workflow numbers (2019 LEHD)	972	1,793	3,832	6,597
Mode split (based on Table 7)	1-2.5%	1-2.5%	1-2.5%	1-2.5%
Estimated daily ridership	10-24	18-45	38-45	66-165
Estimated annual ridership	2,420-6,051	4,465-11,161	9,542-23,854	16,427-41,066

	Holland / Zeeland Area to Downtown Grand Rapids	Hudsonville Area to Downtown Grand Rapids	Grandville Area to Downtown Grand Rapids	TOTAL
Replica-Based Estimate				
Total trips (Fall 2021 Replica)	1,150	1,550	5,890	8,590
Mode split (based on Table 7)	1-2.5%	1-2.5%	1-2.5%	1-2.5%
Estimated daily ridership	12-29	16-39	59-147	86-147
Estimated annual ridership	2,864-7,159	3,860-9,649	14,666-36,665	21,389-53,473

Benchmark

	ROUTE 550
Average daily ridership (2022)	31
Annual ridership (2022)	7,912

Notes: 249 weekdays based on 256 weekdays less regular holidays. Route 550 ridership data provided by KCATA.

To represent the potential for riders that may connect to The Rapid's existing fixed route network (as discussed in the *Travel Patterns* section on page 12), ridership estimates in Table 9 compare total ridership estimates from this analysis using both a ¼-mile as well as a ½-mile buffer downtown.

The updated ridership estimates (66-86 for the ¼-mile buffer and ~155 for the ½ mile buffer downtown) are less than the 2018 estimates, even at the conservative mode split estimate of one percent. However, even if a mode split half as large (0.5%) were assumed instead of the 1-2.5% shown in Table 9: Ridership Estimate Comparison, the estimated annual bus service ridership is approximately 8,213 – 10,695 and greater than the most recent annual ridership on the KCATA peer Route 550 (7,912).

Table 9: Ridership Estimate Comparison

Year		Total to Grand Rapids	
Daily one-way trips			
2012		58	
2018		172	
		<i>¼-mile buffer downtown</i>	<i>½-mile buffer downtown</i>
2023	<i>at 1% mode split</i>	66 – 86	155
	<i>at 2.5% mode split</i>	147 – 165	386
Annual one-way trips			
2012		14,354	
2018		42,828	
		<i>¼-mile buffer downtown</i>	<i>½-mile buffer downtown</i>
2023	<i>at 1% mode split</i>	16,427 – 21,389	38,471
	<i>at 2.5% mode split</i>	41,066 – 53,473	96,176

Recommended Service Model

Based on the results of the feasibility review, a pilot express bus service connecting Holland, Zeeland, and Hudsonville to Downtown Grand Rapids is recommended as the first step of implementation. Depending on the schedule, reverse commute trips (westbound in the morning and eastbound in the afternoon) could be provided in between standard commute trips (eastbound in the morning and westbound in the afternoon), similar to KCATA Route 550.

The potential WMX cities are places where people are accustomed to driving as there is no current express service and, in some cases, no transit service at all. Therefore, while previous planning conceptualized future “feeder” services as a mode of access to future express service, and while microtransit could provide a more efficient version of such feeder service, this is not recommended because it expects riders to make a transfer between transit services when familiarity with transit is already quite low. Additionally, feeder or microtransit service would add significant cost to the implementation of express service, and should the pilot need to be discontinued, it is much less challenging to end an agreement with a parking lot owner than to remove bus routes or microtransit service. As a result, it is anticipated

that most riders would access the service via park-and-ride, even considering Holland and Zeeland both have existing transit service that could connect to WMX stops. Similarly, it is expected that most riders would walk to their final destination upon arrival in Downtown Grand Rapids; however, there is also the potential for riders to connect to The Rapid’s existing fixed route network.

Table 10 shows the reasoning for including or not including previously proposed WMX stops in the recommended pilot service. Most notably, because Grandville is closer to Downtown Grand Rapids than express bus routes typically serve, and because it is already served by multiple fixed routes in The Rapid system, it is not recommended as a stop location for the initial pilot.

Continued examination and outreach after implementation could be conducted to determine if future conditions warrant different future stops.

Next Steps

The upcoming implementation plan will identify park-and-ride locations for future express service, refine the proposed alignment to serve those park-and-rides, develop a schedule, calculate vehicles and operating hours needed to provide service, develop cost estimates, and identify funding options.

Table 10: Feasibility by Stop

	Holland	Zeeland	Hudsonville	Grandville
Distance from Downtown	Appropriate distance (more than 10-20 miles from downtown)	Appropriate distance (more than 10-20 miles from downtown)	Appropriate distance (10-20 miles from downtown)	Inadequate distance (less than 10 miles from downtown)
Density	Regionally average density	Regionally high density	Regionally average density	Regionally average density
Travel Patterns	Regionally low volume of trips to downtown	Regionally low volume of trips to downtown	Regionally average volume of trips to downtown	Regionally high volume of trips to downtown
Additional Considerations	N/A	N/A	Strong TOD visioning	Already has multiple fixed routes to downtown
Overall Feasibility	Medium	High	High	Low
Include in WMX Pilot	✓	✓	✓	✗