

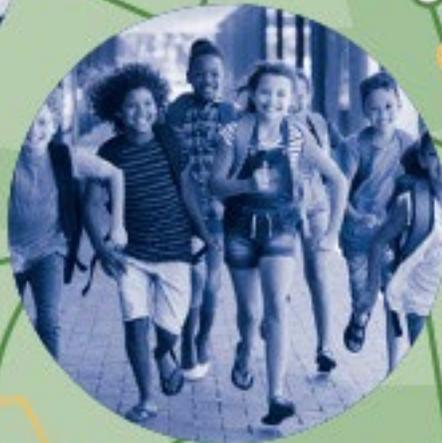
THRIVING

A framework for the future of connectivity.

WEST MICHIGAN EXPRESS: IMPLEMENTATION PLAN

The Rapid Transit Master Plan

April 15, 2024



THE RAPID

Quality Information

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Revision History

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00	10/27/2023	Implementation Plan – first draft
01	12/1/2023	Second draft – revised as per comments
02	12/22/2023	Third draft – revised as per comments
03	1/02/2024	Fourth draft – revised as per comments
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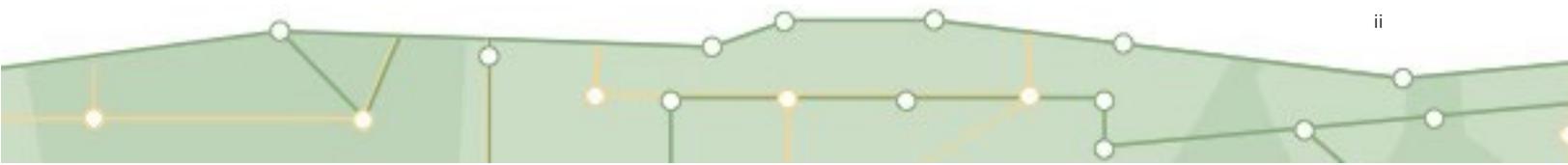
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INTRODUCTION

This implementation plan builds on the feasibility of an express bus service discussed in the previous **West Michigan Express Feasibility Review**. 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.

Express bus service functions primarily for work commuter service and, as noted in the name, prioritizes express travel time. Service design for an express bus service focuses on longer-distance trips, typically on a weekday during peak times. Another key feature of an express bus service is limited stations. Proposed express bus service must consider the relationship between the number stations and potential loss of ridership compared to time lost with additional stations.

Because express busses typically compete with single-occupancy vehicles or private automobiles for ridership, developing a “premium” service that is convenient, comfortable, and customer-oriented is a high priority. This implementation plan will build on the previous Feasibility Review by identifying park-and-ride locations for future express service, refining the proposed alignment to serve those park-and-rides, developing a schedule, calculating vehicles and operating hours needed to provide service, developing cost estimates, and identifying funding options.

Table 1 summarizes the proposed framework for designing and implementing a pilot program for the West Michigan Express route. The outputs of the implementation plan will evaluate potential express stations, discuss service operating models and calculate the necessary investments to make the pilot a success.

Table 1: Implementation Plan Process

Implementation Step	Description	Status
1. Implementation Development		
Service Analysis	Determine whether express bus service is needed or would be a good fit for the area.	<i>Complete – Feasibility Review</i>
Initial Concepts	Determine whether express bus service is needed or would be a good fit for the area.	<i>Complete – Feasibility Review</i>
Concept Refinement and Cost Estimates	Refine the design and schedules; develop costs for service based on hours of service needed to run route.	<i>Complete – Implementation Plan</i>
Title VI and ADA Review	Required for most new services. Note that express routes do not require complementary paratransit, as per FTA regulations.	<i>Pending</i>
Initial Proposal Review by both Internal and External Stakeholders*	Vetting of proposed route, stations, park and ride locations and design, and schedule through internal and external stakeholder meetings, public meetings, and community outreach.	<i>Pending</i>
Proposal Revisions	Revise proposals based on feedback.	<i>Pending</i>
2. Board Process		
Board Committee Review	Present initial proposals and community feedback received to Board work session or Board planning committee.	<i>Future step</i>
Public Hearing	Hold separate public hearing for last-round of comments.	<i>Future step</i>
Final Recommendations	Present final proposal and recommendations for service to The Rapid's Board of Directors	<i>Future step</i>
Board Decision	Rapid Board of Directors approves or disapproves service.	<i>Future step</i>
3. Execution Preparation		
Secure Funding	Apply and secure funding for pilot capital and operating expenses	<i>Future step</i>
Schedule Development	If service is approved, schedules are tested and finalized.	<i>Future step</i>
Operator Work Assignments	Route is presented for operator bidding.	<i>Future step</i>
Marketing and Communication Materials	Development and distribution of marketing and communications materials advertising and promoting the services offered. Engage with external stakeholders on community outreach and partnerships.	<i>Future step</i>
Capital Upgrades	Development and installation of accessible stations, including ADA pads, signage, and fare collection equipment and infrastructure. Development and agreement Memorandum of Agreement (MOA) with landowners for park and ride use. Purchase or lease of vehicles, as needed. Evaluation of feasibility to implement transit signal prioritization (TSP).	<i>Future step</i>
Information Technology Updates	Updates and upgrades to agency website, automatic vehicle location, and operator schedule sheets.	<i>Future step</i>

*Examples of external stakeholders include the West Michigan Express Task Force and Holland MAX

Stations and Alignment

Express services often compete with the travel time of a comparable auto trip. In order to minimize travel time and present a more competitive alternative, the number of stations on an express service are minimized and alignment between the origins and the central destination are streamlined.

Industry standards identify the markets that best support express bus services include:

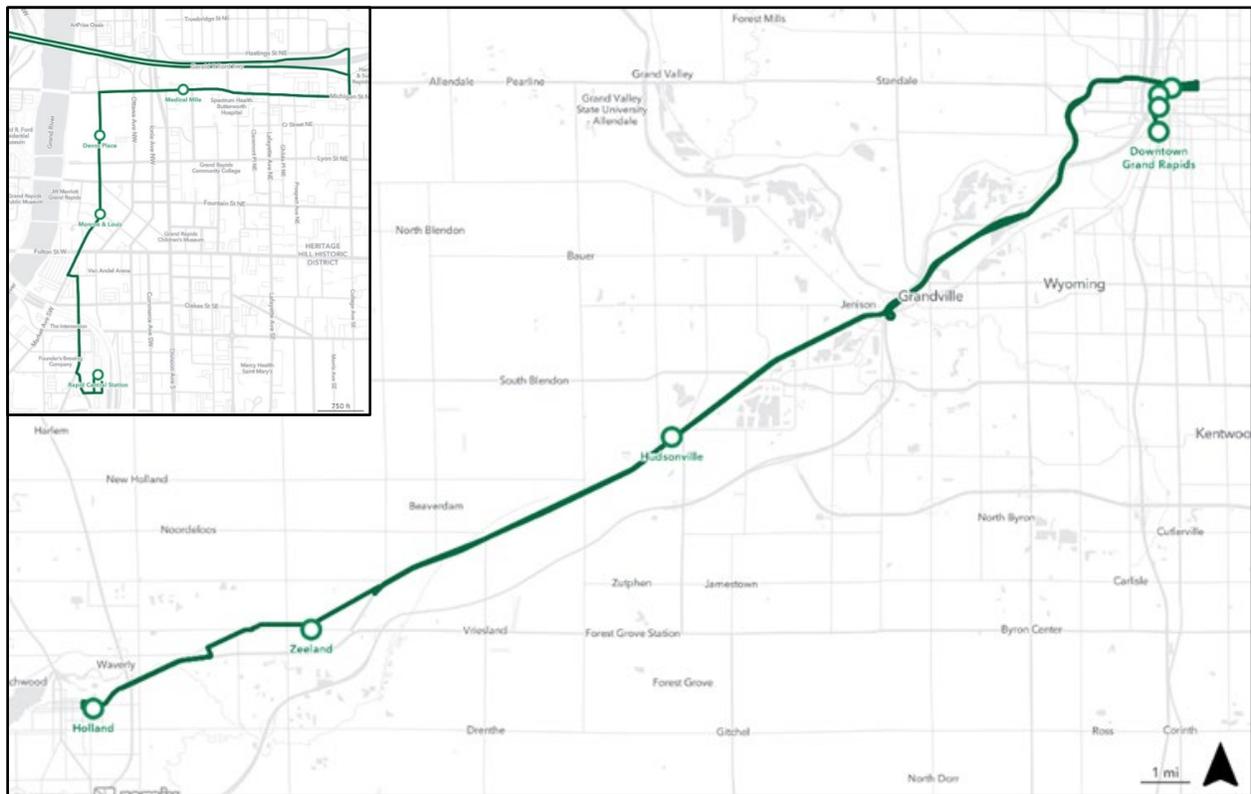
- Regionally high population and employment densities
- Large number of trip generators (origin or destination) based off the desire line or travel pattern analysis
- Destinations ranging from 10 to 30 miles from downtown

Discussions with stakeholders and findings of previous studies, including the **West Michigan Express Feasibility Review**, identifies potential markets for the West Michigan Express pilot alignment that meet the above industry standards. The proposed alignment balances minimizing travel time with downtown circulation to desired destinations and transfer opportunities, as shown in **Figure 1**.

Based on the surrounding land use and transit markets, most riders in Holland, Zeeland, and Hudsonville are anticipated to access the service via park-and-rides, even considering Holland's and Zeeland's existing transit service. Using a similar evaluation approach, most riders are anticipated to walk or take other mobility services to their destination upon arrival in Downtown Grand Rapids, including micromobility or transit. This first-mile / last-mile context, along with input from stakeholders, previous studies, and industry best practices, help to inform recommended stations along the proposed alignment.

Potential stations for the pilot were evaluated based on the number of potential trips, location along the corridor, and the likelihood for potential short-term park and ride agreements, building on findings explored during previous planning efforts. Potential stations are identified for each market in **Table 1**.

Figure 1: Proposed West Michigan Express Alignment and Potential Markets



- Potential Markets/Stations
- Proposed West Michigan Express Alignment

Table 2: Potential Stations and Characteristics

Market	Potential Stations	Type	Current Trips*	Justification
City of Holland	1. 166, 172, 184 E 7 th St and 175 E 8 th St	Park and Ride	1,330 daily trips from 5-mile buffer to Downtown GR** (includes overlap with Zeeland buffer)	Second highest population and employment markets. Furthest location from DT Grand Rapids, ideal for express type service.
	2. 100, 116, 122 E 8 th St			
	3. 200, 221, 228 E 9 th St			
	4. Hope DeVos Fieldhouse (North Lots located at approximately 250 9 th St)			
	5. Hope DeVos Fieldhouse (Southeast Lots located at approximately 301 E 11 th St))			
	6. Padnos Train/Bus Depot (171 Lincoln Ave)			
	7. 536 Columbia Ave and 196 E 10 th St			
	8. 286 Lincoln Ave			
	9. 182 E 12 th St			
	10. 210 E 12 th St			
	11. Windmill Island Gardens (1 Lincoln Ave)			
City of Zeeland	12. Zeeland Lumber and Supply Co. (146 E Washington Ave)	Park and Ride	830 daily trips from 5-mile buffer to Downtown GR (includes overlap with Holland buffer)	Third highest employment. Second furthest location from DT Grand Rapids, ideal for express type service
	13. Zeeland Public Parking Lot (10 N Church St)			
	14. Zeeland City Hall/Howard Miller Public Library/Community Center (lot at approximately 150 E Cherry St)			
	15. Zeeland Recreation Center (320 E Main Ave)			
	16. 114, 59, 11 W Washington Ave			
17. 44 N Elm St (Vacant lot)				
City of Hudsonville	18. Hudsonville City Hall (3275 Central Blvd)	Park and Ride	3,720 daily trips from 5-mile buffer to Downtown GR	Strong TOD support and visioning. Third furthest location from DT Grand Rapids, appropriate for express type service.
	19. B2 Outlet Stores (5221 Cherry Ave)			
	20. First CRC of Hudsonville (5486 32 nd Ave)			
	21. Hudsonville Early Childhood Center (5535 School Ave)			
	22. Terra Square (located at approximately 3380 Chicago Dr)			
	23. Hudsonville Freshman Campus/WCET (North Lots located at approximately 3500 Allen St)			
Medical Mile Station	N/A, existing station	Downtown BRT Station	192 daily trips from Holland/Zeeland 5-mile buffer to ¼-mile buffer around station	Regional key destination with BRT transfer opportunity
Monroe/Devos Station	N/A, existing station	Downtown BRT Station	143 daily trips from Holland / Zeeland 5-mile buffer to ¼-mile buffer around station	Major stop in DT with BRT transfer opportunity.
Monroe/Louis Station	N/A, existing station	Downtown BRT Station	287 daily trips from Holland / Zeeland 5-mile buffer to ¼-mile buffer around station	Major stop in DT with BRT transfer opportunity.
Rapid Central Station	N/A, existing station	Downtown BRT Station	91 daily trips from Holland/Zeeland 5-mile buffer to ¼-mile buffer around station	Major transfer center DT with connections to many Rapid bus routes, including BRT

*Trip estimates for all transportation modes from Spring 2023 Replica data

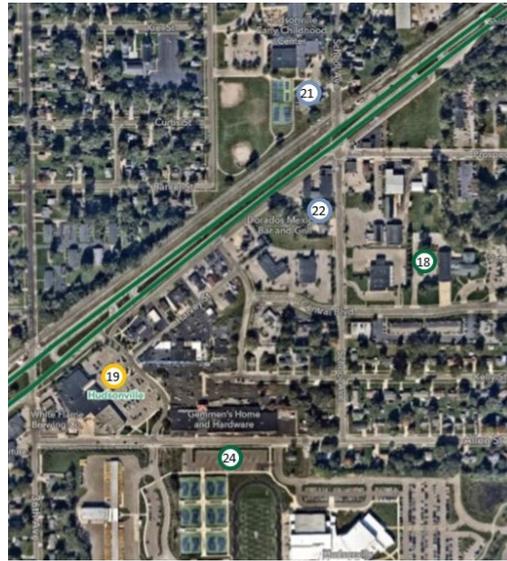
**Downtown Grand Rapids is defined as Census Tracts 20 & 21

Figure 2: Potential Station Locations

Holland



Hudsonville



Zeeland



- Potential Stations
- Potential Stations Identified by Stakeholders*
- Proposed Pilot Park and Ride Stations

**Potential station locations identified during previous planning efforts are mentioned in consideration for the significant coordination efforts already initiated with local stakeholders, such as proposals to construct new parking or transit facilities for the purpose of this express service.*

Coordination efforts regarding these sites should be considered in any long-term implementation of the express service but may not be ready in time for a pilot, depending on the pilot's implementation timeline.

Potential stations were refined based on a review of site conditions through aerial and street-view imagery. Proposed new stations are described in **Table 2**.

Additional vetting of proposed route, stations, park and ride lots, alignment, and schedule through internal and external stakeholder meetings, public meetings, and community outreach will be included in future implementation steps. Park-and-ride locations also need to be further refined and Memorandums of Understanding (MOU) will need to be developed with park-and-ride landowners. Continued examination and outreach after implementation could be conducted to determine if future conditions warrant different future stations.

Table 2: Proposed Park and Ride Stations

Market	Proposed Pilot Park and Ride Site	Parcel Ownership*	Site Condition Notes**
Holland	DeVos Fieldhouse north parking lots at Hope College	Hope College	<ul style="list-style-type: none"> Well-lit, paved lot of 146 parking spaces with adjacent sidewalk access. Within walking distance of adjacent major activity center (Hope College) and regional transportation hub (Holland Amtrak Station). Site's primary land use is associated with recreational uses and will most likely be active during non-commuter hours. High potential for partnership with landowner.
Zeeland	Zeeland Recreation Center (420 E Main St)	Zeeland Public Schools	<ul style="list-style-type: none"> Well-lit, paved lot of 110 parking spaces with adjacent sidewalk access and bike facilities. Site's primary land use is associated with recreational uses and will most likely be active during non-commuter hours. Moderate potential for partnership with landowner.
Hudsonville	B2 Outlet Stores (5221 Cherry Ave)	Hudsonville Downtown Dev Authority Ventures with A Mission, LLC Cherry Plaza, LLC	<ul style="list-style-type: none"> Well-lit, paved lot of 186 parking spaces with adjacent sidewalk access. Site vehicle access includes protected left and right turns. Site's primary land uses are associated with retail and community services and will most likely be active during non-commuter hours. Parking facility is designed to accommodate large vehicles (i.e., commercial trucks). Moderate potential for partnership with landowner.

*Parcel ownership sourced from county parcel data. Accessed online May 25, 2023.

**Condition notes were made from visual observations of aerial and street-view imagery.

OPERATING CHARACTERISTICS

Service Models

The proposed West Michigan Express pilot is a limited-stop express bus service that will operate one vehicle during peak-commuter periods between the cities of Holland and Grand Rapids, with stations in Hudsonville and Zeeland. The pilot may also be ramped up to include more than one bus in operation, however that may be added as part of future phases detailed in the *Conclusion & Next Steps* section of this report.

Standard vehicles for this type of regional express bus service are coach-style buses, which can seat between 47 to 57 passengers, varying by vehicle model. The pilot may also be served by traditional fixed-route buses, depending on the service model and ridership expectations.

There are three service operation models for The Rapid to consider for an express bus service and are detailed in **Table 3**. Operating & Maintenance (O&M) and Capital cost breakdowns for all three options are discussed further in the *Cost Estimates* section of this report. Initial launch and future phases will be detailed in the *Conclusion & Next Steps* section of this report.

Table 3: Service Model Options

Option	Description	Pros	Cons
1	The Rapid contracts out the service to a third-party operator who can provide the vehicle, operations, and marketing services in a “turnkey” model.	<ul style="list-style-type: none"> Cheaper* than option 2 Higher passenger capacity than option 3 Operations and vehicle maintenance are outsourced (simpler for operations) 	<ul style="list-style-type: none"> More expensive* in the long run than options 2 or 3 Operations and vehicle maintenance are outsourced (several unknowns and uncertainties associated with contracting services to a third party, such as customer service and reliability, among others)

*O&M and Capital cost breakdowns for all three options are discussed further in the *Cost Estimates* section of this report.

Option	Description	Pros	Cons
2	<p>The Rapid owns, operates, and markets their own coach vehicles.</p> <p><i>Note: This model may include a cheaper option to purchase a used vehicle, which is included in the cost analysis Table 5 as a range.</i></p>	<ul style="list-style-type: none"> • Cheaper* in the long run than option 1, but not as cheap as option 3 • Operations and vehicle maintenance are managed by Rapid staff • Higher passenger capacity than option 3 	<ul style="list-style-type: none"> • Most expensive* in upfront capital costs (vehicle) and operations costs (staff training + maintenance equipment) • Operations and vehicle maintenance are managed by Rapid staff (more difficult on operations staff) • Higher investment risk for The Rapid
3	<p>The Rapid owns, operates, and markets their own fleet vehicles.</p>	<ul style="list-style-type: none"> • Cheapest* in terms of initial start-up and long-term operations • Operations and vehicle maintenance are managed by Rapid staff • No significant changes to current operation processes/equipment (compared to options 1 and 2) 	<ul style="list-style-type: none"> • Lower passenger capacity than options 1 or 2 • May not be viewed as a premium service without additional vehicle enhancements (e.g., charging ports, tabletops, etc.), which would add additional upfront costs

**O&M and Capital cost breakdowns for all three options are discussed further in the Cost Estimates section of this report.*

Guaranteed Ride Home Program

A 'Guaranteed Ride Home' program is another service component for The Rapid to consider offering in conjunction with the proposed West Michigan Express pilot. Guaranteed Ride Home programs provide registered customers with a taxi or other ride home in the event of an unexpected emergency. These programs typically include an annual membership fee, a set number of reimbursed emergency taxi rides per year, and a set list of pre-approved unplanned personal emergencies that qualify for reimbursement-eligible rides. A Guaranteed Ride Home program model will likely incur capital and O&M costs (in addition to increased administrative resources); however, these costs will not be factored into the estimates discussed in the *Cost Estimates* section of this report.

Example: CapMetro Guaranteed Ride Home Program¹

Provides registered MetroExpress, MetroFlyer, MetroRail, and MetroRideShare customers up to 4 free taxi rides home per calendar year for an annual fee of \$5. Pre-approved personal emergencies include:

- *Personal or family illness*
- *Unscheduled overtime or extended work hours*
- *Ridesharing vehicle breaks down or the driver is unable to make the scheduled trip home*

¹ CapMetro Guaranteed Ride Home Program Guidelines https://www.capmetro.org/docs/default-source/riders-guide-docs/our-services-docs/guaranteed-ride-home-program-guidelines-2019.pdf?sfvrsn=e0366db9_2

Schedule and Service Span

To make an express bus service appealing to the commuter market and present a competitive alternative to personal automobile travel, the proposed pilot’s schedule and service span should be centered around commuters from other cities working in the central downtown area but be flexible enough to capture potential reverse-commute patterns and respond to a shifting market following the Covid-19 pandemic.

To help inform the Implementation Planning process, two approximate schedule options were developed based on stakeholder feedback and recommendations from previous studies: Schedules A and B. Both Schedule A and B are grouped around traditional a.m. and p.m. peak commute times and include an additional midday trip to allow for unexpected or mid-day return trips that need to be made earlier than the traditional afternoon peak. Schedule A is a traditional “express” schedule, which prioritizes transporting commuters traveling from outside Grand Rapids to the downtown core during the morning commuting hours, and the reverse in the afternoon. An example of Schedule A’s timing is shown in **Figure 3**. Schedule B is a regular schedule that does not favor one commuting direction over the other and stops at every location in each direction for all trips. An example of Schedule B’s timing is shown in **Figure 4**.

The exact timing of the finalized pilot schedule will need additional refinement with stakeholders prior to implementation as well as adjustments based on observed ridership once the service is in operation. Future phases will be detailed in the *Conclusion & Next Steps* section of this report.

Figure 3: Schedule A – Express Schedule

Downtown Grand Rapids	Monroe/Louis Station	Devos Place Station	Medical Mile	Hudsonville	Zeeland	Arrival Holland P&R	Depart Holland P&R	Zeeland	Hudsonville	Medical Mile	Devos Place Station	Monroe/Louis Station	Downtown Grand Rapids
5:55	5:59	6:02	6:04	-	-	6:40	6:45	6:55	7:09	7:30	7:32	7:35	7:40
7:55	7:59	8:02	8:04	-	-	8:40	8:45	8:55	9:09	9:30	9:32	9:35	9:40
12:00	12:04	12:07	12:09	12:28	12:41	12:50	12:55	1:06	1:19	1:40	1:42	1:45	1:50
3:30	3:34	3:37	3:39	3:58	4:11	4:25	4:30	-	-	5:08	5:10	5:13	5:20
5:30	5:34	5:37	5:39	5:58	6:11	6:25	6:30	-	-	7:08	7:10	7:13	7:20

Layover/recovery time: 10 or 15 minutes in Downtown Grand Rapids
 Holland to Downtown travel time: ~45 or ~52 minutes
 Cycle time: 2 hours

For the four trips in Schedule A that skip the Hudsonville and Zeeland stations, there is an option for the express bus to travel along the Interstate 196 corridor. However, travel time from Holland to Downtown following the I-196 corridor instead of Chicago Drive (while skipping stations in Hudsonville and Zeeland) may not have a significant impact on travel time. The I-196 corridor travel time is estimated to be 35 minutes from Holland to the Medical Mile station, which is about the same as the Chicago Drive corridor.

Figure 4: Schedule B - Coverage Schedule

Downtown Grand Rapids	Monroe/Louis Station	Davos Place Station	Medical Mile	Hudsonville	Zeeland	Arrive Holland P&R	Depart Holland P&R	Zeeland	Hudsonville	Medical Mile	Davos Place Station	Monroe/Louis Station	Downtown Grand Rapids
5:55	5:59	6:02	6:04	6:23	6:36	6:45	6:50	7:01	7:14	7:35	7:37	7:40	7:45
7:55	7:59	8:02	8:04	8:34	8:36	8:45	8:50	9:01	9:14	9:35	9:37	9:40	9:45
12:00	12:04	12:07	12:09	12:28	12:41	12:50	12:55	1:06	1:19	1:40	1:42	1:45	1:50
3:30	3:34	3:37	3:39	3:58	4:11	4:20	4:25	4:36	4:49	5:10	5:12	5:15	5:20
5:30	5:34	5:37	5:39	5:58	6:11	6:20	6:25	6:36	6:49	7:10	7:12	7:15	7:20

Layover/recovery time: 10 minutes in Downtown Grand Rapids
 Downtown to Holland travel time: ~52 minutes
 Cycle time: 2 hours

Travel time following Schedule B is approximately 52 minutes. For context, a comparable auto trip for the same origin-destination takes approximately 40 minutes following the Chicago Drive corridor and approximately 35 minutes following the Interstate 196 corridor. Additional time savings may be achieved the Chicago Drive corridor by implementing traffic signal prioritization (TSP) systems.

COST ESTIMATES

Costs were calculated for six scenarios, including each of the three service model options and each of the two schedule options. A full list of assumptions and cost estimates are included in the appendix. Several service operations metrics were built into the cost estimates, including the following:

- Number of vehicles: One vehicle and one standby
- Days of operation (weekly): Monday through Friday (5 days)
- Days of operation (annual): 255 operating days (excluding weekends and holidays)

Capital costs include purchase of new vehicles (when applicable), construction of additional amenities at new stations, and marketing and promotional materials (i.e., bus wrap identifying the vehicle with the

Station Amenities:

- Concrete Pad
- Bus Stop Shelter (below)
- Bus Stop Signs, Information Panels (right), Route Flags



BUS STOP ID:
ID DE LA PARADA DE BUS:
3495

8 PRAIRIE
NORTHBOUND TO CENTRAL STATION

WEEKDAYS 7:00 AM - 7:00 PM
SATURDAYS 7:00 AM - 7:00 PM
SUNDAYS 7:00 AM - 7:00 PM

KEY
■ 1st Stop
■ 2nd Stop
■ 3rd Stop
■ 4th Stop
■ 5th Stop
■ 6th Stop
■ 7th Stop
■ 8th Stop

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Image sources: Google Streetview (2023) & The Rapid (2023)

service) during the first year of operations (Y1), as well as fare/real-time technology integrations. Capital costs do not include any potential costs associated with Memorandums of Understanding (MOU) or Right of Way (ROW) agreements with park and ride landowners, nor does it include potential associated infrastructure improvements (i.e., wayfinding, paving, signage, etc.).

O&M costs include vehicle contract/maintenance, stop maintenance for the three new stations, and fuel. O&M estimates do not include planning or administrative costs as both will be absorbed by existing staff. O&M estimates also do not include additional costs associated with future Guaranteed Ride Home Programs. O&M and Capital cost estimates are summarized in **Table 4** below.

It should be noted, annual operational costs may be less depending on how much is offset by farebox revenue once the service is in operation. A conservative annual farebox revenue is estimated at \$65,000 (11% farebox recovery using O&M costs from scenario 2), following recommendations from the **West Michigan Express Feasibility Review** (individual fare of \$4.00 per round trip and most conservative annual ridership estimate of 16,425). Farebox revenue is not factored into the total service cost estimates in **Table 4** as the exact fare, discounted fare programs for regional fares/transfers, and the rate at which ridership increases, among other considerations, have still yet to be determined. Discussions with regional transit providers and other community stakeholders are still needed to finalize fare price and structure.

Table 4: Scenario Cost Estimates

Scenario	Service Model	Schedule	Costs				
			Capital	O&M	Year 1	3-Year Pilot (Total)	30-Year Annualized
1	Option 1	Schedule A	\$293,100	\$599,200	\$892,300	\$2.1M	\$621,000
2		Schedule B					
3	Option 2	Schedule A	\$1.2M - \$2.3M	\$279,500	\$1.4M - \$2.6M	\$2.0M - \$3.1M	\$468,000*
4		Schedule B					
5	Option 3	Schedule A	\$209,600	\$279,500	\$489,100	\$1.0M	\$331,200
6		Schedule B					

Notes: **Year 1** costs equals the total Capital Costs plus one year of O&M costs.
3-Year Pilot Total cost equals three times the O&M costs plus capital costs.
30-Year Annualized cost equals the sum of each capital costs' per year cost (purchase value divided across the item's lifespan), which is then multiplied by 30-years.
 *30-year cost estimate is only for the purchase of new buses. 30-year cost estimate is not available for a used vehicle due to the variability in the lifespan of the good.

FUNDING

Previous coordination efforts identified challenges with securing funding commitment from local sources for the proposed service. Further coordination is needed to shore up partnerships and secure local funding commitments from previous efforts.

The following identifies local, state, and federal funding sources which may help fill previously identified gaps. Potential state and federal discretionary capital and operating funding sources may also be explored further to help support the pilot.

Local Funding

Potential local funding sources include:

Public-Private Partnerships (P3) with Major Employers or Universities

The 2018 West Michigan Express Study initiated conversations in early 2020 with community foundations and other private philanthropic/family foundations to seek capital/support. The *WMX Feasibility Review* identified reverse commute ridership has potential with multiple key employers and a university² that could support this type of travel pattern if it is coupled with funding partnerships, programs, and robust marketing.

Local Municipalities

Local municipalities economic development corporations may be interested in investigating the economic benefit to supporting a regional express bus pilot. Past studies have identified a willingness among municipalities to contribute to long-term implementation of bus stop facilities.

Local Transit Agencies

Partnerships between local transit agencies may help share the costs and revenues of a regional express services.

State and Federal Funding

Potential State and Federal funding sources include, but are not limited to, the following.

Carbon Reduction Program

The Carbon Reduction Program (CRP)³ is a new program established by the Infrastructure Investment and Jobs Act (IIJA) in 2021 that provides capital funding to develop projects and strategies to reduce carbon dioxide emissions from on-road vehicles. FHWA apportions funding as a lump sum for each State, which is then divided among apportioned programs through Metropolitan Planning Organizations (MPOs).

² Note: Hope College is located within a half mile of the proposed Holland station and employs approximately 800 faculty and staff, in addition to 3,200 enrolled students.

³ FHWA Carbon Reduction Program (CRP). https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program funds capital expenditures of transportation projects that contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS). The CMAQ Program provides funding to state departments of transportation (DOTs), local governments, and transit agencies for projects and programs that help meet the requirements of the Clean Air Act by reducing mobile source emissions and regional congestion on transportation networks⁴.

CONCLUSION & NEXT STEPS

The West Michigan Express pilot is recommended to operate as a pilot for a minimum of one year and up to three years. Three years is preferred, as per industry standards, as it allows the service to exist long enough for the travel market to adapt and respond to the new program. The first two years can be used to gather data and generate familiarity with the service among the public. The third year can be used to evaluate service performance and plan for potentially long-term implementation of services following the pilot. The implementation phasing described in **Table 5** below builds on the framework established **Table 1**.

⁴ FHWA Congestion Mitigation and Air Quality (CMAQ) Improvement Program.
https://www.fhwa.dot.gov/environment/air_quality/cmaq/.

Table 5: Implementation Phasing

Year	Phase	Description
FY2024	Implementation Development	Continue the implementation framework established in Table 1 .
	Board Process	
	Execution Preparation	
	Secure Funding	
FY2025	Marketing & Partnerships	Partnerships, programs, and robust marketing with key employers and universities, such as Hope College ⁵ , to promote reverse commute ridership. Convenience, monetary savings, and rider experience benefits should be incorporated into plans for service and communicated to potential riders.
	Pilot Operation Year 1 (Y1)	
		Operation of pilot Y1 as discussed in this report.
FY2026	Y1 Performance Review	Refinement and minor adjustments to service schedule according to Y1 performance.
	Pilot Operation Year 2 (Y2)	Continue Y2 operation of the pilot.
FY2027	Y2 Performance Review	Refinement and minor adjustments to service schedule according to Y2 performance.
	Pilot Operation Year 3 (Y3)	Continue Y3 operation of the pilot.
	Pilot Review	Review of key performance measures for all operational years
	Plan Next Steps	Restart implementation framework established in Table 1 for a long-term service plan after the conclusion of the pilot, including a re-evaluation of bus stop amenities and operating models based on an updated understanding of public interest and funding.
FY2028	Potential Expanded Service Operation	Implementation of expanded operations depending on the performance of the pilot and success of efforts during the “Plan Next Steps” phase.

Preferred Scenario & Implementation Phasing

Given the recommendation to continuously refine and adjust the service schedule throughout the implementation plan, **Schedule B** is the preferred option for the first year of the pilot. By stopping at every station in each direction for both a.m. and p.m. peak commute periods, Schedule B allows for greater observation of ridership activity in a shifting era of commuting patterns following the Covid-19 pandemic. This schedule will also help capture potentially high reverse-commute ridership, as evaluated in the *WMX - Feasibility Review* report. Even though there is an approximately \$20,000 to \$30,000 annually higher operating cost for Schedule B, this cost is nominal compared to the value for long-term implementation from a wider breadth of ridership and performance data. This data will contribute to a more

⁵ Note: Hope College is located within a half mile of the proposed Holland station and employs 800 faculty and staff, as well as 3,200 enrolled students.

informed refinement of the service in Year 2, resulting in a more useful pilot for long-term implementation.

Selecting a preferred service model option depends primarily on two factors: the **amount of funding available** and how much **community support for long-term implementation** longer than the initial three-year pilot. The preferred option per consideration factor is detailed in **Table 6**.

Table 6: Preferred Scenario and Additional Considerations

	Higher confidence in long-term implementation	Lower confidence in long-term implementation
<p>Greater amount of additional funding is secured</p>	<p>Option 2 – Rapid Owned and Operated Coach Bus (Scenario 4)</p> <p>Pilot Cost: \$2.0M - \$3.1M</p> <p>Pros: Allows for operation of a high-quality service vehicle at a smaller annual cost (when compared to Option 1).</p> <p>Cons: Highly inflexible if the transit agency wants to add additional buses during the pilot. Additional cost associated with time for O&M staff training and purchase of additional vehicle maintenance tools/parts. Higher risk for The Rapid in case of lower support for long-term implementation.</p>	<p>Option 1 – Contracted Service (Scenario 2)</p> <p>Pilot Cost: \$2.1M</p> <p>Pros: Highly flexible. Allows for operation of a high-quality service with lower costs for the duration of the pilot (compared to Option 2). By contracting out the service for the duration of the pilot, the public can experience the highest quality version of the service without any long-term commitments on behalf of the transit agency. Implementation of the pilot may also help build community support for long-term implementation.</p> <p>Cons: Option 1 is not recommended as strongly for long-term implementation due to long term cost as well as other factors of unpredictability associated with contracting out to a third-party operator.</p>
<p>Lesser amount of funding is secured</p> <p><i>Note: if a larger amount of funding is secured, either of the options in this row could be operated at a higher frequency (more buses within the operating timeframe) to provide a higher quality of service.</i></p>	<p>Option 1 – Contracted Service (Scenario 2)</p> <p>Pilot Cost: \$2.1M</p> <p>Pros: Highly flexible. Allows for operation of a high-quality service vehicle with lower costs for the duration of the pilot (compared to Option 2). By contracting out the service for the duration of the pilot, the public can experience the highest quality version of the service and help build support for more funding after the pilot is concluded.</p> <p>Cons: Option 1 is not recommended as strongly for long-term implementation due to long term cost as well as other factors of unpredictability associated with contracting out to a third-party operator.</p>	<p>Option 3 – Rapid Owned and Operated Standard Bus (Scenario 6)</p> <p>Pilot Cost: \$1.0M</p> <p>Pros: Allows for operation of service at a lower cost for the duration of the pilot (compared to all other service model options).</p> <p>Cons: Primary drawback of operating the service with a standard bus is the potential for diminished public reception of the service as a “premium” for express commuters (i.e., user experience). This perception could be partially offset by minor upgrades to the vehicle (e.g., charging ports), and additional vehicle marketing.</p>

APPENDIX A: LIST OF COST ASSUMPTIONS

Table 7: Capital Cost Assumptions (Up Front)

Item	Description	Cost Assumption*	Lifespan	Source
Bus Shelters	Three 9' Branded 'Off-the Shelf' Shelters (Tolar, Brasco) for each new station	\$18,000 for each station	10 years	The Rapid, 2022
Concrete Pad	Installation of concrete pads at the three new stations (pad size: 6'x8' by 4" deep)	\$6,500 for each station	10 years	The Rapid, 2022
Station Signage	Bus Stop Signs, Information Panels, and Route Flags (only for a pilot) for all seven stations	\$800 for each station	5 years	The Rapid, 2022
Marketing and Promotional Material	Upfront branding, marketing, advertising, and promotional materials	\$75,000	n/a	The Rapid, 2023
Fare Collection	Purchase and installation of fare integrated collection boxes on each vehicle	Fare boxes: \$1,500 each Wave Card Readers: \$5,500	30 years 12 years	The Rapid, 2023
Coach Bus	Purchase of new or used over-the-road coach bus with wheelchair lifts	Approximately \$1,000,000 (new) or \$500,000 (used) per bus	12 years	AECOM, April 2023 Purchase Agreement
Standard Bus	Generic 40-foot CNG bus	\$600,000	12 years	AECOM, April 2023 Purchase Agreement

* All cost assumptions need to be updated or validated upon approval of final Implementation Plan

Table 8: Operating Cost Assumptions (Annual)

Item	Description	Cost Assumption*	Source
Coach Bus Operating Contract	Annual contract fee for an Over-The Road Coach with Wheelchair Lifts	Base rate of \$5.85 per mile in addition to a 9% fuel surcharge (total of \$6.38 per mile)	Indian Trails, 2022
Bus Stop Maintenance	Shelter and bus stop repair and maintenance for three new stations, including cleaning and snow removal	\$800 annually per station	The Rapid, 2022
Rapid Fleet Operations and Maintenance	Cost per revenue hour for operations and maintenance of Rapid fleet vehicles	Approximately \$99.00 per revenue hour	The Rapid, 2023

**All cost assumptions need to be updated or validated upon approval of final Implementation Plan*