METRO COMPREHENSIVE OPERATIONAL ANALYSIS

Board Meeting Presentation – February 2022





AGENDA

- Introductions
- Project Background
- Market Analysis
- Service Analysis
- Stakeholder Engagement
- Next Steps

PROJECT BACKGROUND



PROJECT BACKGROUND

- Metro operates fixed-route and demand response service in Kalamazoo County.
 - 21 fixed routes in the urbanized area
 - Metro Connect demand response service throughout the county
- Metro service is supported by voter-approved millages
 - .90 mills paid by property owners in urbanized area
 - .3145 mills paid by property owners in the county
- In 2019 (pre-pandemic), Metro carried 2.7 million passengers.
 - 1.9 million passenger trips in 2020
- Metro's last Comprehensive Operational Analysis was in 2010
 - It is best practice to review service at least every decade because communities and travel patterns change (especially in the last two years).





PROJECT GOALS

- Analyze the existing system to identify strengths, weaknesses, and opportunities for expansion/improvement.
- Develop service improvement recommendations.
 - Increase ridership
 - Improve over-all system efficiency
 - Consider new approaches to service and new mobility technologies





PROJECT APPROACH





MARKET ANALYSIS



TRANSIT POTENTIAL

- Transit service is generally most efficient in areas with high concentrations of people and jobs.
- The Transit Potential Index is a composite of the population and employment density of an area and is an indicator of the viability of fixed-route service in that area.



TRANSIT POTENTIAL



TRANSIT POTENTIAL

- Fixed-route transit service works best at densities above 5 people and/or jobs per acre and in areas with supportive pedestrian infrastructure.
- For lower-density areas, or areas with challenging pedestrian environments, other service models may be more effective.



MICROTRANSIT

- Technology-driven demand-response service.
- More coverage than fixed-route service; more responsive than traditional dial-aride services.
- Effective approach for low density and/or auto-oriented environments.
- Familiar interface for those who have used Uber/Lyft app (phone reservations also possible).
- Dedicated fleet.
- Predictable fares.
- Data-rich platform (useful for future planning).

NEW TRANSIT CONNECTION

Ride Flex from Gratiot and 15 mile to Lake St. Clair Metropark.





Schedule rides in advance straight from your phone.



TRANSIT NEED

- Certain population subgroups are more likely to use transit than other modes as their primary means of transportation.
 - Zero-Vehicle Households
 - Persons with Disabilities
 - Low-income Households
 - Youth and Young Adults
 - Older Adults
- Similarly, certain land-uses tend to generate transit trips at a higher rate than others (e.g., multifamily housing vs. single-family housing).



SERVICE ANALYSIS



PEER COMPARISON

- To put Metro's fixed-route service performance into perspective, agency was compared to a set of peers on a number of key metrics.
- Peers matched those used in 2015 Ten Year Vision Service Plan

Agency	Service Area Population	Population Density	Fixed Route Vehicles in Peak Service	Annual Fixed- Route Ridership
Lansing, MI	292,735	2,152	87	10,555,526
Grand Rapids, MI	417,978	2,697	124	9,242,401
Ann Arbor, MI	258,829	1,991	85	6,383,790
Lexington, KY	295,803	1,042	52	4,364,637
Flint, MI	407,385	637	99	4,201,682
Kalamazoo, MI	259,830	448	29	2,599,958
Erie, PA	189,872	2,466	63	2,449,829
Burlington, VT	284,655	136	56	2,443,703
Binghamton, NY	200,600	282	38	1,785,701
Fort Wayne, IN	268,485	2,419	29	1,600,996
Green Bay, WI	176,664	1,963	22	1,292,700
Cedar Rapids, IA	158,890	2,037	21	1,246,374
La Crosse, WI	71,201	1,978	16	905,412
Average	252,533	1,558	55	3,774,824

PEER COMPARISON

Metric	Performance Measure	Peer Average	Metro	Relative Performance
Cost Effectiveness	Operating Expense per Passenger Trip	\$5.23	\$4.32	Outperforms Peer Average
Service Efficiency	Operating Expense per Revenue Hour	\$101.62	\$85.64	Outperforms Peer Average
Service Effectiveness	Passenger Trips per Revenue Hour	20.3	19.8	Similar Performance to Peer Average
Market Penetration	Passenger Trips Per Capita	14.3	10.0	Underperforms Peer Average
	Revenue Hours per Capita	0.7 (41 minutes)	0.5 (30 minutes)	Underperforms Peer Average
Passenger Revenue Effectiveness	Fare Revenue per Operating Expense (Farebox Recovery Ratio)	17%	24%	Outperforms Peer Average
	Fare Revenue per Passenger Trip	\$0.86	\$1.03	Outperforms Peer Average

ROUTE-LEVEL ANALYSIS

- The design of a transit service can be assessed based on quantitative and qualitative measures.
- These measures are documented in a set of diagnostic route profiles.



ROUTE-LEVEL ANALYSIS

- Quantitative Measures
 - Ridership
 - By stop
 - By trip
 - Maximum Load
 - Productivity
 - Passengers per Hour
 - Passengers per Trip
 - Cost per Passenger
 - On-time Performance
 - Early
 - □ Late
 - □ On-Time

Qualitative Measures

- Is service simple?
 - Do schedules have clockface frequencies?
 - Are routes direct rather than circuitous?
 - Are routes symmetrical in the inbound and outbound direction?
 - Do routes serve well defined markets?
 - Is service well-coordinated at transfer hubs?

ROUTE: 1

Description: Downtown Kalamazoo to Crossroads Mall with limited service to Portage Adult Education

min

min

min

Late

Rank

2/19

4/19

2/19

1/19

25%

Westnedge

Key Points of Interest: Midtown Fresh, Vine Neighborhood, Southland Mall, Portage Adult Education, Meijer on Westnedge, and Crossroads Mall





ROUTE: 5

Key Points of Interest: East Main Street, Hardings Market, and Eastwood Plaza





Route Analysis

Strengths

- Only route serving the high-transitneed Eastside neighborhood and E. Main St. corridor
- Simple alignment with direct service to downtown Kalamazoo
- Easy-to-remember clockface frequency
- Relatively high frequency and extensive span of service
- Relatively strong on-time performance

Weaknesses

- Route lacks strong regional anchor other than downtown Kalamazoo, that would justify its high frequency and attract ridership from beyond the corridor it serves
- Fewer than 10 passengers on most trips

Opportunities

- Extend route to Meijer/Walmart on Gull Rd. to give the route stronger anchors/ridership generators
- Interline Route 5 and Route 9 to allow for one-seat rides between E. Main St. and Gull Rd. corridors
- Consider streamlining Route 9 to operate as a BRT or limited stop service along the destination-rich Gull Rd. corridor, and shifting some local service to an extended Route 5
- Reduce off-peak service frequency to improve productivity

ROUTE: 6 Parchment

Description: Downtown Kalamazoo to Walmart on G Ave via Parchment

Key Points of Interest: City of Parchment, Barclay Hills, Parchment High School, Kalamazoo Township Offices, Riverview Launch, Gull Prairie Apartments, Coopers Landing Apartments, Walmart on Gull and G Ave

Rank

10/19

8/17

8/17

60

60

60

Peak

min

min

min

On-Time

60 min

Off-Peak

Off-Peak

60 min

Off-Peak

5,566

84,876

557,685

96,276

Late

Rank

13/19

13/19

14/19

12/19

37%

60 min





Route Analysis

Strengths

- Only route serving the City of Parchment
- Strong anchors at the Kalamazoo Transportation Center and Walmart on G Ave.
- Easy-to-remember clockface frequency
- Seven-day-a-week service

Weaknesses

- Relatively low ridership on most trips, especially on weekends and after 6 pm on weekdays
- Poor on-time performance with 37% late arrivals
- Somewhat circuitous alignment to serve Barkley Hills Education Center
- Challenging land-use and pedestrian environment, including large multifamily housing communities set back from main arterial street and lacking sidewalks

Opportunities

- Consider replacing fixed-route service ٠ in Parchment and surrounding areas with microtransit service that would be able to better serve lower-density and auto-oriented land-uses and provide direct service to additional key destinations like Ascension Borgess Hospital
- Reduce weekday service hours due to low ridership and to improve productivity
- Consider combining Route 5 and Route 6 into a bi-directional loop that feeds into a BRT or enhanced bus service along Gull Road rather than serving downtown Kalamazoo

Metro Connect

Metro Connect offers curb-to-curb transportation on a shared ride basis throughout Kalamazoo County and to the Battle Creek Veteran's Administration Hospital in Calhoun County. Service is available for all residents of Kalamazoo County. Discounts are available for seniors 62 years of age or older and individuals certified with a disability by a physician or caseworker.

r@-	Operating	Hours		Annual Statistics	2019
	Weekday	6:00 a.m 12:15 a.m.		Revenue Hours	91,989
	Saturday	Saturday 6:00 a.m 10:15 p.m. Sunday 8:00 a.m 6:00 p.m.		Revenue Miles	1,369,323
	Sunday			\$ Operating Costs	\$5,019,771
				Ridership	166,188
\$	Fare Structure			Monthly Statistics	Oct 2019
*	General		\$12.00	Trips	17,201
	General Subscription * Senior/Disability ADA (Metro Connect Access) Medical/Employment/ Education Subscription **		\$14.00	On-Time Performance	97%
			\$4.00	Average Wait Time	3 min
			\$3.00	Shared Trips	53%
			\$6.00	Recurring/ Subscription Trips*	60%
	Child	65	\$10.00	No-Shows/ Cancellations	25%

Ride Scheduling

All rides are scheduled by calling (269) 350-2970 or emailing mcc@applebuscompany.com. Reservations for service can be made daily 8:00 a.m. to 5:00 p.m. Reservations can be made up to seven days in advance and no later than 5:00 p.m. the day before the ride. Customers may make reservations for same-day service if vehicle space is available.

*Riders who use subscription service can schedule up to four recurring trips that occur at least two times per week to/from the same locations at the same times.

¹⁴For certified passengers only.





Service Analysis

Strengths

- Strong ridership in areas spread across the CCTA service area and no trip denials, indicating sufficient service area and capacity
 to accommodate trip requests
- Very high on-time performance and short wait times
- Hours of service mirror those of the fixed-route system

Weaknesses

- Difficult to understand Metro Connect as a first-time customer due to complicated fare structure and registration process
- Strongest travel flows from a handful of residences and high percentage of recurring trips, indicating that service is operating as
 a point-to-point service for a limited number of passengers taking a large volume of trips (60%)
- Large share of no-shows/cancellations (25%)

Opportunities

- Simplify fare structure by consolidating the General Subscription and Medical/Employment/Education Subscription fares and consolidating the Senior/Disability and ADA (Metro Connect Access) fares
- Shift to a digital registration process and conduct in-person or video-conference functional assessments to determine customers' eligibility for ADA (Metro Connect Access) and the disability discount. This would allow staff to better understand customers' true need for paratransit service, provide one-on-one training on how to use the system, and shift customers to the fixed route network where possible.
- Improve wait times and availability of vehicles for same-day service by using microtransit to serve trips in areas with a high
 concentration of Metro Connect trips, such as the WMU and Crossroads Mall areas
- Leverage technology to enable trip reservation via text, mobile app, and/or website in addition to phone and email to provide
 customers with real-time information about their trip

STAKEHOLDER ENGAGEMENT



3 ROUNDS OF ENGAGEMENT

- Each round has a specific purpose / focus
 - Round 1: Listening / Data Collection
 - Round 2: Concept Testing
 - Round 3: Final Vetting
- First round of engagement began in December 2021
 - 3 Stakeholder Meetings
 - □ Social service providers (6)
 - □ Local planners (5)
 - □ Local employers (6)
 - On-line Survey
 - Live for two months
 - 206 surveys submitted

STAKEHOLDER QUESTIONS

• What is Metro doing well?

How could Metro serve the community better?

What is the top change that Metro could make to encourage transit use?

STAKEHOLDER COMMENTS

What is the top change that Metro could make to encourage transit use?
 — Shortening the lead time needed to schedule Metro Connect rides

— Continued bus stop improvements throughout the entire Metro system

- Using more green branding to attract non-transit-dependent riders
- Providing earlier hours for riders in Comstock and Galesburg to access big industrial bases
- Meeting people's increasing expectations for service they don't have to wait for
- Implementing microtransit to provide more price-controlled Uber-like service and lastmile connections

Website is easy to understand Maps and schedules are easy to understand Staff is professional and courteous Buses are comfortable and well-kept Fares are reasonable Service hours meet my travel needs Routes get me where I need to go Service is dependable 0



Reasons for transit use:



- I do not own a car
- Bus is the most convenient option
- I cannot drive for legal or health reasons
- Taking the bus is cheaper than gas and car maintenance
- I am doing my part for the environment
- I prefer to spend time on activities other than driving
- My car is temporarily out of service
- Other

Reasons for not using transit:



- I prefer to drive
- There is no service near my home
- There is no direct route between my home and work or other destinations
- Taking the bus takes too much time
- Bus does not come frequently enough
- I don't understand how to use the transit system
- Other

Trade-Off Questions:



Non-Riders





NEXT STEPS





- Meet with riders and front-line staff Today
- Complete diagnostic route profiles February
- Develop two preliminary service improvement scenarios March/April
- Second round of engagement (present scenarios) April/May
- Finalize recommendations; third round of engagement Summer

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STAKEHOLDER QUESTIONS

• What is Metro doing well?

- Engagement efforts
- Bus stop improvement work
- On-time performance
- Frequency of service

STAKEHOLDER QUESTIONS

How could Metro serve the community better?

- Reduce the amount of time in advance that Metro Connect riders must schedule their ride
- Increase frequency to a level that makes transit reliable and attracts those who are currently dissuaded from riding the bus
- Continue upgrades to make bus stops more comfortable to wait at and safe to access
- Make transfers more convenient
- Provide targeted transit for specific employers
- Help the community understand how riding transit can reduce its greenhouse gas emissions
- Work with partners to incentivize transit use