MARKETING AND EDUCATION BUDGET

FOR IMPLEMENTATION OF NEW TRANSIT TECHNOLOGY

MDOT Michigan Department of Transportation

CRAFT

University of Detroit Mercy

Michael Baker International

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16. Abstract

Michigan's public transit agencies face increasing challenges in adopting new technologies due to limited funding, staffing constraints, and varying technical capacity. **The purpose** of this project was to identify practical strategies to support the planning, marketing, and implementation of new transit technologies across Michigan.

The research methods included a statewide survey of Michigan's transit agencies, interactive workshops with the Michigan Public Transit Association and MDOT's Transit Technology Forum, and analyses of leading technology vendors and case studies. These methods informed both a comprehensive report and an accessible *Transit Technology Implementation Guidebook* designed for agency use.

The results show that successful technology adoption depends on both right-sized tools and strong human capacity. Agencies that invest in staff training, change management, and clear communication achieve higher adoption rates and sustained system performance.

The conclusions highlight that MDOT can best support statewide modernization through centralized training, shared communications resources, and peer learning networks.

Practical use of the results: The findings and Guidebook offer MDOT and local transit providers an actionable framework and ready-to-use tools for planning, funding, and implementing technology solutions that improve efficiency, service reliability, and the rider experience statewide.

17. Key Words

Public transit; Transit technology; Technology implementation; Transportation planning; Marketing strategies; Education and training; Stakeholder engagement; Rural transit; Transit management systems; Passenger information systems; Workforce development; Michigan Department of Transportation (MDOT); Guidebooks.

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CHAPTER 1 **ABSTRACT AND INTRODUCTION**

Public transit technology is rapidly evolving, offering new ways for agencies to enhance operations and improve the rider experience. While many innovations, such as mobile trip planning, digital ticketing, and real-time service alerts, directly impact riders, an equally critical part of the picture is the internal technology that supports agency staff, streamlines operations, and boosts overall efficiency. From dispatch systems and scheduling software to data reporting tools and automated maintenance tracking, internal-facing technologies form the backbone of sustainable public transit service—particularly in rural communities where staffing and resources are often limited.

The Michigan Department of Transportation (MDOT) and public transit agencies across the state continue to invest in both internal and external technologies, recognizing their transformative potential. However, a persistent challenge remains: limited budgets—not just for implementation, but also for marketing, staff training, and long-term support. Many agencies already face staffing shortages and tight funding, making it difficult to dedicate resources to promoting and integrating new systems. Without adequate awareness, education, and capacity-building, even the most promising technologies risk going underutilized or being abandoned altogether.

New public transit technology can transform how agencies provide transportation, improve operational efficiencies, and enhance the rider experience. However, in order to achieve widespread adoption, public transit agencies should consider addressing key barriers that hinder engagement with these digital tools. Effective marketing and education strategies are critical to helping both public transit agencies and the public understand and maximize the benefits of these investments. This cannot happen without adequate funding, which remains one of the most significant barriers—particularly for marketing and education efforts.

Recognizing the need for a comprehensive approach, MDOT has partnered with CRAFT, Michael Baker International, and the University of Detroit Mercy to develop this report, which documents the study process, along with a guidebook to help public transit agencies budget, fund, implement, and market public transit technology. This initiative offers a strategic roadmap for the successful implementation of public transit technology across Michigan, encompassing the state's public transit agencies that collectively support nearly 50 million trips annually across all modes of transportation: fixed-route bus, demand-response service, bus rapid transit, vanpool, commuter bus, automated guideway transit, ferryboat, and streetcar. Specifically, it aims to:

INVESTIGATE and recommend key public transit agency considerations for marketing and budgeting of new public transit technology.

IDENTIFY effective public transit technology adoption processes, including emerging trends, and key challenges faced by public transit agencies.

OUTLINE effective procurement strategies of new public transit-related technology.

HIGHLIGHT the involvement of key stakeholders in technology selections.

GATHER best practices detailing methods and strategies for marketing new transit technology to the public.

By providing agencies with a framework for marketing and budgeting of new public transit technology, this report aims to bridge the gap between technological investment and user adoption, ultimately fostering a more connected and efficient public transit system for all Michiganders.

Successfully adopting new technology calls for a thoughtful, strategic approach that aligns with each agency's unique goals, resources, and rider needs. To support that process, a key outcome of this initiative is an interactive guidebook shaped by the insights, challenges, and creative solutions surfaced through workshops, interviews, and working sessions with public transit agencies of varying sizes and service models.

The purpose of the guidebook is to provide a clear, adaptable framework that helps agencies move from idea to execution—from identifying technology needs and exploring funding options to implementation, staff training, marketing, and long-term sustainability. Developed in close collaboration with MDOT and public transit agencies across the state, it includes practical tools such as templates, checklists, and resource recommendations designed to support real-world planning and decision-making.

The guidebook presents a phased approach designed to meet agencies where they are and offer guidance at every stage of the technology journey. By following this framework, agencies can make informed, strategic decisions that maximize the impact of their technology investments, ultimately strengthening public transit operations and improving mobility for communities across Michigan.

MAIN OBJECTIVES OF THIS ACTION-ORIENTED PLANNING PROCESS

PHASE 1: Assess Your Agency Needs

PHASE 2: Plan, Fund, and Procure

PHASE 3: Employee and Staff Engagement, Awareness, Training, and Internal Communications

PHASE 4: External Technology Marketing and Training

PHASE 5: Manage, Maintain, and Evaluate Technology, Resources, and Funding

FOR MORE INFORMATION ABOUT THE PURPOSE OF THE GUIDEBOOK AND ITS CREATION, **SEE CHAPTER 5.**

1.1 HOW TO USE THIS REPORT

This report documents the study process for MDOT, providing an overview of transit technology adoption that includes foundational concepts, emerging trends, and key challenges faced by public transit agencies. It offers case studies, workshop outcomes, and research insights to provide MDOT with a comprehensive understanding of the complexities involved in integrating new technologies into public transit operations.

While this report—and the accompanying guidebook—are specifically tailored for small and rural public transit agencies and nonprofit providers, the solutions presented are scalable and adaptable to agencies of all sizes. Recognizing that no two agencies face the same challenges or share identical priorities, the materials offer a flexible framework rather than a one-size-fits-all approach. Agencies can utilize the provided strategies to create a customized plan for technology adoption and implementation.

Together, these two documents are designed to help public transit agencies navigate the complexities of identifying, purchasing, and implementing technologies that align with their operational goals. The focus is on making practical, sustainable investments—not adopting technology for its own sake. Key considerations such as internal and external communications, onboarding, staff training, and long-term adaptation are addressed to help agencies stay focused on their objectives and their riders' needs.

The report and guidebook also serve as resources for budgeting and funding, highlighting the importance of partnerships in supporting public transit technology initiatives. Agencies are encouraged to consider the full lifecycle of a technology investment—from onboarding and communication to maintenance and eventual replacement. Additionally, given the rapid pace of technological advancement, both the report and guidebook are intended to evolve over time. **Assessments are recommended every two years to ensure the information remains current and relevant.**

1.2 WHAT THIS REPORT IS NOT

This report focuses exclusively on the adoption and marketing of public transit technology rather than serving as a comprehensive marketing plan for public transit agencies. While the research provides insights into promoting customer-facing technologies, it does not offer guidance on broad marketing strategies unrelated to public transit technology. Similarly, it is not a user manual for any specific technology, nor does it give detailed instructions on which technologies to purchase. Instead, the emphasis is on equipping agencies with strategies to effectively plan, implement, and communicate the value of public transit technologies.

Both the report and guidebook offer agencies guidance on the types of technology available and key factors to consider. However, these documents are not intended to be prescriptive or exhaustive. Agencies are encouraged to utilize these resources as planning tools to inform their decision-making and marketing efforts, recognizing that additional steps, such as creating marketing materials, user-specific guides, and training, may be necessary.

1.3 **HOW DO WE DEFINE SUCCESS?**

Defining success will require a shift in perspective: success is not measured by achieving perfection immediately but by building a foundation for sustainable, scalable progress. For smaller public transit agencies with limited resources, even modest, incremental steps can lead to meaningful outcomes over time. **A successful program is an iterative process**—one that evolves in response to changing needs and opportunities, growing in sophistication and impact as lessons are learned, funding is identified, and resources are effectively leveraged.

The driving force behind this effort is a clear gap in resources, knowledge, and tailored approaches to the marketing and budgeting of new public transit technology. Success, in this context, means not only improving how public transit technology is used today, but also equipping agencies with the tools and insights needed to enhance operations and support meaningful trip-making. It's about bridging the divide between what's currently available and what agencies actually need to thrive—ensuring marketing strategies and technology solutions are grounded in the real-world challenges public transit providers face. This requires moving beyond the hype of adopting technology for its own sake and instead focusing on practical solutions to specific problems—whether related to rider experience, operational efficiency, or system integration. In other words, **success is not defined by the type of technology itself, but by how effectively it is used by stakeholders to support and enhance the everyday journeys of their riders.**

Successful implementation is often embedded in a public transit agency's broader business plan, emphasizing long-term sustainability and supported by marketing. Agencies need a clear understanding of their goals, whether it's addressing operational challenges or enhancing rider satisfaction. Additionally, they may wish to evaluate workforce capacity to ensure they can effectively use and maintain new technology. This includes planning for the eventual replacement of tools and ensuring continuous evaluation of the technology's shelf life. Part of this planning may include identifying and securing the financial support necessary to make these improvements viable and sustainable, whether through grants, public-private partnerships (P3s), or federal and state funding mechanisms. Success means that agencies not only adopt the right technology but also sustain its value over time through a thoughtful, forward-looking strategy.

Finally, a public transit technology program is most successful when it is adaptable and "rightsized" for each agency's infrastructure, budget, and capacity. There is no one-size-fits-all solution. Plans should be scalable and integrated into the agency's broader business framework, aligning with their technological needs and development timelines. By ensuring agencies have the knowledge, tools, and financial means to select and procure technologies that fit their size and goals—and by prioritizing sustainability over trend-following—public transit marketing programs can drive meaningful, lasting impact.

MEASURING SUCCESS: KEY QUESTIONS FOR AGENCIES TO CONSIDER

A successful program not only meets immediate operational needs but also aligns with broader agency goals, rider expectations, and long-term sustainability. To ensure a well-rounded approach, agencies should consider factors such as efficiency, accessibility, and future scalability. The following list of questions serves as a structured framework to help agencies define clear objectives, assess progress, and make informed decisions throughout the planning and implementation process.

In addition to these guiding questions, it's critical to establish **clear metrics** to evaluate the impact of marketing and implementing technology—especially in rural transit systems. Tracking these indicators over time can help public transit agencies refine their strategies, justify investments, and deliver improved service.

DEFINING SUCCESS FOR TECHNOLOGY USE AND IMPLEMENTATION

Have you clearly identified your goal?
What problem are you solving (e.g., increase ridership, reduce scheduling time/downtime, improve service quality, improve safety, accident mitigation/reduction)?

Do the technology's capabilities align with your goal?
Does it meet the needs of your agency and fit within your infrastructure, capacity, and budget?

Have you set measurable adoption and performance targets?
Consider tracking user adoption rates, such as the number of riders who download and actively use mobile apps or other digital tools. Additional targets might include reducing scheduling time, minimizing wait times, or enabling real-time vehicle tracking.

Do you have the resources to support the technology?
Does your staff have the skills and capacity to implement, operate, and train others on the new systems?

Have you planned for user (external and internal) adoption and ongoing marketing?
Develop and promote a clear onboarding plan that includes how-to guides, community events, and communications campaigns to encourage technology engagement. Track frequency and depth of user interaction with digital platforms to evaluate success.

DEFINING SUCCESS FOR YOUR RIDERS AND COMMUNITY

Does the investment address rider needs and enrich (improve) their trip-making experience?
For example, opportunities might include providing real-time updates, enhancing service reliability, or offering modern amenities such as onboard Wi-Fi or signage.

Have you consulted with current and potential riders to understand specific priorities?
Use developed personas and community feedback to tailor services. Conduct surveys and focus groups to measure customer satisfaction with new technologies and their impact on riders' daily lives.

Have you ensured transparency in communication?
Clearly communicate the benefits of the technology and how it supports long-term service improvements.

Are there measurable outcomes for public benefits?
Track increased ridership, especially among tech-savvy or underserved populations. Evaluate outcomes such as reduced travel time, improved accessibility, and reported satisfaction on rider feedback.

1.4 CHALLENGES OF ADOPTING PUBLIC TRANSIT TECHNOLOGY

Public transit agencies often struggle to adopt new technologies due to a lack of resources. Most agencies, including smaller ones, operate with limited funding. Staff frequently juggle multiple roles, leaving limited bandwidth to research emerging technologies or manage the complexities of adoption. In some cases, agencies are unaware of the full range of available options, making it challenging to determine which technologies best support their operations.

These resource constraints create a ripple effect that complicates modernization efforts. While improvements to internal systems, such as dispatching, scheduling, or operator retention, can enhance efficiency and long-term service quality, they are often deprioritized because they are less visible to riders. Agencies are responsible for carefully balancing limited budgets, ensuring that any investment demonstrates clear and immediate benefits. This can make it difficult to justify strategic, behind-the-scenes upgrades to both stakeholders and the public. Without a clear way to communicate the value of these improvements, agencies risk skepticism or resistance, particularly when funding is tight. At a minimum, any new technology should ultimately enhance the rider experience.

For smaller agencies, the challenge is even more pronounced. Limited staffing means fewer personnel dedicated to technology planning, grant applications, or vendor evaluations. Funding sources may be restricted, leaving agencies with few opportunities to invest in long-term solutions. In contrast, larger agencies often contend with governance hurdles, including board approvals, political considerations, and prolonged decision-making processes, which can slow progress. Additionally, external pressures, such as elected officials advocating for new technology without considering operational feasibility, can further strain agency resources, forcing them to implement solutions they may not be fully prepared to support.

These barriers illustrate the complexities of adopting public transit technology in a resource-constrained environment. Successfully overcoming them requires not just recognizing these limitations but also finding strategic ways to work within them—leveraging partnerships, seeking external funding, and prioritizing solutions that align with both immediate needs and long-term sustainability. For rural Michigan public transit agencies, addressing these challenges directly is essential to ensuring that technology investments translate into meaningful and lasting improvements.

5 MYTHS ABOUT PUBLIC TRANSIT TECHNOLOGY IN RURAL TRANSPORTATION NETWORKS[1]

1

"TransitTech-powered on-demand transit is never financially viable in a sprawling and low-demand area. It can't be deployed in rural areas without increased costs."

Reality: In some cases, switching from fixed-route or pre-booked dial-a-ride to on-demand can actually help decrease costs, while meeting the community's needs with flexibly adjusted parameters.

2

"TransitTech is one-size-fits-all: agencies will be pressured into implementing on-demand services even where pre-booking may be a better option."

Reality: Technology facilitates flexible service design. Simulation exercises and live service data can help agencies refine their demand-responsive networks, indicating where pre-booked and on-demand services will work best.

3

"Mapping and connectivity are too spotty in rural areas to allow tech-enabled services to work."

Reality: Even in remote areas without any cellular service, technology-enabled public transit can work in off-line mode with pre-downloaded rider locations, directions, and routing.

4

"Tech-based on-demand services offer no options for riders without smartphones."

Reality: On-demand systems offer a variety of booking options, including by calling dispatch centers, smartphone apps, web portals, or even standalone ride-booking kiosks, to ensure all types of riders are able to access the service.

5

"Rural microtransit leaves out people with mobility issues."

Reality: Microtransit serves all. With wheelchair-accessible vehicles, microtransit—sometimes commingled with paratransit can bring an even better riding experience for those with accessibility needs.

1.5 **OPPORTUNITIES AND BENEFITS OF PUBLIC TRANSIT TECHNOLOGY**

Investing in marketing, budgeting, and implementing public transit technology can significantly enhance public transit systems, but success depends on the strategic execution of these initiatives. Effective marketing often balances *social* marketing—encouraging behavior change for the public good—with *service* marketing, which promotes public transit as a paid service. While public transit agencies aim to shift public perception and increase ridership, their primary focus is on delivering reliable and convenient service that meets customer expectations.

Budgeting for public transit technology requires both a strategic financial plan and a long-term vision for cost savings. While the upfront costs of new systems, such as real-time tracking, mobile ticketing, or automated scheduling, can be substantial, the efficiencies gained often result in significant long-term savings. Identifying these cost and time savings opportunities within the agency is crucial for justifying investments. For example, a new scheduling system may require a high initial investment but can reduce administrative workloads and overtime expenses, ultimately cutting labor costs. However, this investment may also increase ridership. Agencies that clearly demonstrate the financial benefits of technology adoption, including reduced operating costs and improved service efficiency, will find it easier to secure funding and stakeholder support.

Partnerships play a critical role in the successful implementation of public transit technology. Collaboration with other agencies, government entities like MDOT, and private sector partners can lead to shared procurement opportunities, resource pooling, and innovative funding strategies. By working together, agencies can lower costs, access greater expertise, and streamline technology rollouts. P3s, in particular, can drive innovation by leveraging private investment and expertise while ensuring public benefit. Additionally, engaging with elected officials and policymakers can help secure funding and regulatory support for public transit technology initiatives.

Finally, change management is essential as part of any public transit technology marketing effort *(see Chapter 7, Transit Technology Marketing)*. If public transit employees are not engaged with new systems, it becomes much harder to encourage adoption among riders. Effective training, clear communication, and early involvement of frontline staff can facilitate a smooth transition and create internal champions for new technology. Without buy-in from operators and other key stakeholders, even the most advanced public transit technology can fail to deliver its intended benefits. Agencies that prioritize internal adoption efforts will have a much smoother rollout and a greater chance of long-term success.

1.6 GLOSSARY OF TERMS

The following glossary clarifies common terms you will find throughout this document:

ACCESSIBILITY
The design and implementation of environments, services, and technologies to ensure equitable access for people with disabilities, unbanked individuals, or those experiencing other limitations.

AMERICANS WITH DISABILITIES ACT (ADA)
U.S. legislation prohibiting discrimination against individuals with disabilities and mandating accessible public spaces, transportation, and services.

ASSISTIVE TECHNOLOGY (AT)
Tools, devices, or software that enhance the capabilities of individuals with disabilities to perform tasks.

AUTOMATED PASSENGER COUNTER (APC)
An electronic device installed on public transit vehicles such as buses and trains that accurately captures the number of passengers boarding and alighting.

AUTOMATIC VEHICLE LOCATION (AVL)
A system that uses GPS and other technologies to track the real-time location of vehicles.

BATTERY ELECTRIC BUSES (BEBs)
Buses powered solely by electricity stored in onboard batteries.

CAPITAL EXPENSES
Long-term investments in physical assets like vehicles, facilities, or infrastructure.

CAPITAL FUNDS
Financial resources allocated for capital expenses, often from government grants or specific budgets.

CHOICE RIDERS
Individuals who have access to multiple transportation options but choose public transit.

CLOUD-BASED
Technology or services hosted on remote servers and accessed via the internet.

COMPUTER-AIDED DISPATCH (CAD)
Systems that streamline scheduling, tracking, and management of public transit vehicles in real time.

DEMAND RESPONSE SERVICE
A flexible public transit service that allows riders to schedule trips based on individual needs.

DEVIATED FIXED ROUTE SERVICE
A bus service that follows a regular route but can deviate to pick up or drop off passengers upon request.

1.6 GLOSSARY OF TERMS

DIGITAL FARE COLLECTION
Technology that allows passengers to pay for public transit electronically via apps, cards, or online platforms.

ELECTRIC VEHICLES (EVs)
Vehicles powered by electricity stored in batteries or fuel cells, producing zero tailpipe emissions.

FARE REVENUE
Income generated from passenger payments for public transit services.

FIRST-MILE-LAST-MILE (FMLM)
Transportation solutions that connect passengers from their starting point to public transit, or from public transit to their destination.

FIXED-ROUTE BUS SERVICE
Public transit services that operate on established routes and schedules.

FUND BRAIDING
Combining multiple funding sources to finance public transit projects or operations.

GENERAL TRANSIT FEED SPECIFICATION (GTFS)
A standardized format for sharing public transit schedules, routes, and real-time data.

GPS (GLOBAL POSITIONING SYSTEM)
A satellite-based navigation system that provides location, velocity, and time information anywhere on Earth.

INTERNET OF THINGS (IOT)
A network of connected devices that communicate and share data to improve efficiency and functionality.

JOINT PROCUREMENT
Collaborative purchasing agreements between organizations to secure better terms or pricing.

KEY PERFORMANCE INDICATORS (KPIs)
Metrics used to evaluate the effectiveness and efficiency of public transit operations.

LIMITED ENGLISH PROFICIENCY (LEP)
Individuals who have difficulty reading, writing, or speaking English and may require language assistance.

MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT)
State agency responsible for overseeing, building, maintaining, and operating Michigan's transportation system.

MICROMOBILITY
Small, lightweight transportation options like bikes, e-scooters, or e-bikes for short-distance travel.

1.6 **GLOSSARY OF TERMS**

MICROTRANSIT
On-demand, shared transportation services that offer flexible routes and schedules.

MOBILE TICKETING
The ability to purchase and use public transit tickets via a smartphone app or device.

MOBILITY HUB
A central location offering multiple transportation options, such as buses, bikes, and ride-sharing services.

MOBILITY WALLET
A digital platform that integrates payment for multiple transportation modes in one account.

MOBILITY-AS-A-SERVICE (MaaS)
An integrated platform that allows users to plan, book, and pay for multiple transportation options via a single interface.

OFFICE OF PASSENGER TRANSPORTATION (OPT)
The department responsible for administering MDOT's passenger transportation programs, including local transit, intercity bus, and for-hire passenger regulation.

PARATRANSIT SERVICE
A transportation service for individuals with disabilities or mobility challenges who cannot use fixed-route public transit.

PASSENGER (SEE RIDER)
An individual who uses a transit system for transportation.

PERSONS WITH DISABILITIES (PWD)
Individuals who have physical, mental, or sensory impairments that impact daily activities.

PUBLIC-PRIVATE PARTNERSHIPS (P3)
Collaborative agreements between government agencies and private companies to deliver public services or infrastructure.

PUBLIC TRANSIT AGENCY
An organization responsible for operating and/or managing public transit services.

PUBLIC TRANSIT TECHNOLOGY
The innovative use of technology to enhance the efficiency, accessibility, and overall experience of public transit systems.

RIDER (SEE PASSENGER)
An individual who uses public or private transportation services.

1.6 **GLOSSARY OF TERMS**

RIDERSHIP
The total number of passengers using a public transit system over a given period.

RURAL
Areas characterized by low population density and limited access to public transit.

SERVICE AREA
The geographic region where a public transit agency provides services.

SUBURBAN
Areas outside urban centers, often with moderate population density and varying levels of public transit access.

TACTILE SIGNAGE
Signs with raised characters or braille to assist visually impaired individuals.

URBAN
Areas characterized by high population density and extensive transportation infrastructure.

VEHICLE/BUS OPERATOR
An individual responsible for driving public transit vehicles and ensuring passenger safety.

WAYFINDING SIGNS
Signage designed to guide and direct people within public transit systems or public spaces.

CHAPTER 2 **BACKGROUND AND PRELIMINARY RESEARCH**

To lay the foundation for this report, we began by auditing the state of the industry, examining both the public transit technology currently deployed by Michigan's public transit agencies and the broader landscape of emerging innovations shaping the future of public transit. This research included a comprehensive needs assessment to identify gaps and opportunities in existing public transit technology, as well as an exploration of best practices for increasing public awareness and adoption. By analyzing these factors, we gained valuable insights into the challenges and opportunities facing public transit agencies.

2.1 **IMPACT OF THE COVID-19 PANDEMIC ON PUBLIC TRANSIT**

The COVID-19 pandemic severely disrupted public transit in the United States, plunging ridership to just 20% of pre-pandemic levels in April 2020. While ridership has since rebounded to 79% of pre-pandemic levels (see Figure 1), public transit agencies now face a looming fiscal cliff. Federal pandemic relief funding helped agencies avoid drastic service cuts during the height of the crisis, but as this aid phases out, agencies are grappling with the dual challenge of reduced fare revenues and recovering ridership levels. This financial strain has compounded a long-standing issue of unstable and inconsistent funding, leaving many public transit agencies in precarious financial positions.

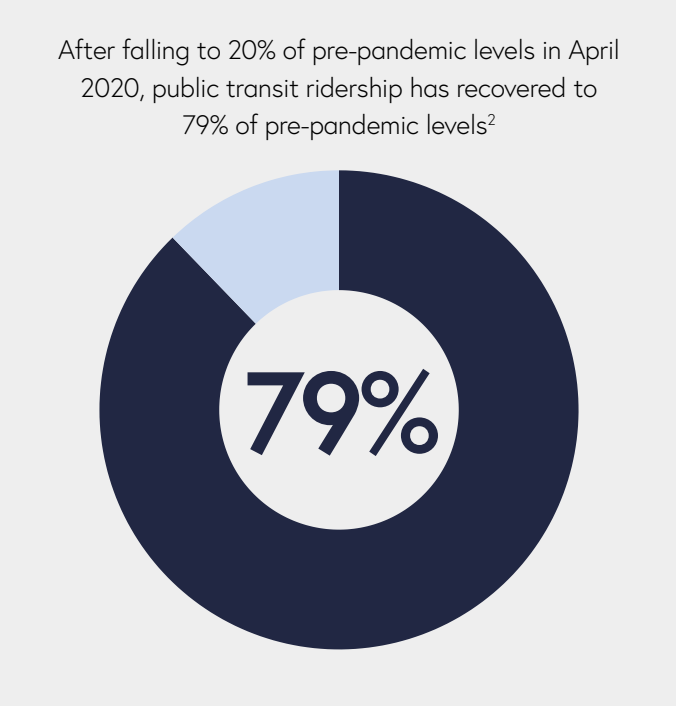


Figure 1: Pre- vs. post-pandemic public transit ridership.

Figure 2: Across the U.S., public transit is facing a challenging cycle.

The pandemic also reshaped revenue sources for public transit agencies, amplifying their financial vulnerabilities. As fare revenues plummeted, agencies became increasingly reliant on federal aid to maintain operations.[4] This dynamic has perpetuated a challenging and unsustainable cycle (see Figure 2): reduced ridership lowers fare revenues, forcing service cuts, which in turn discourages ridership even further. This cycle is unfolding even as public transit agencies across the state face challenges filling bus operator vacancies left behind by employees who quit or retire, leaving many agencies struggling to stabilize their finances while attempting to rebuild ridership.

Beyond financial challenges, the pandemic catalyzed a shift in how public transit agencies operate and deliver services. To adapt to rapidly changing circumstances, many agencies turned to public transit technology to support operations and enhance services. Technologies that enable round-the-clock support, contactless payments, and remote operations became essential. The pandemic accelerated the adoption of policies and innovations that leveraged public transit technology to address new challenges, such as improving safety, responding to evolving customer needs, and finding efficiencies amid budget constraints. This shift highlights the increasing importance of public transit technology as a tool for resilience and adaptation in the post-pandemic landscape.

2.2 NEEDS ASSESSMENT: PUBLIC TRANSIT TRENDS AND DATA

Integrating public transit is essential to ensuring the long-term viability of rural transit in Michigan, especially as agencies strive to recover from the operational and financial challenges exacerbated by the COV-19 pandemic. Many rural public transit providers still rely on manual, paper-based processes, which can be time-consuming, costly, and prone to inefficiencies. Modernizing these systems with both operational and public-facing technologies (see Figure 3) can enhance service reliability, improve cost efficiency, and expand mobility options for residents who depend on public transit. By leveraging technology, agencies can build more sustainable and responsive public transit networks that meet their communities' evolving needs.

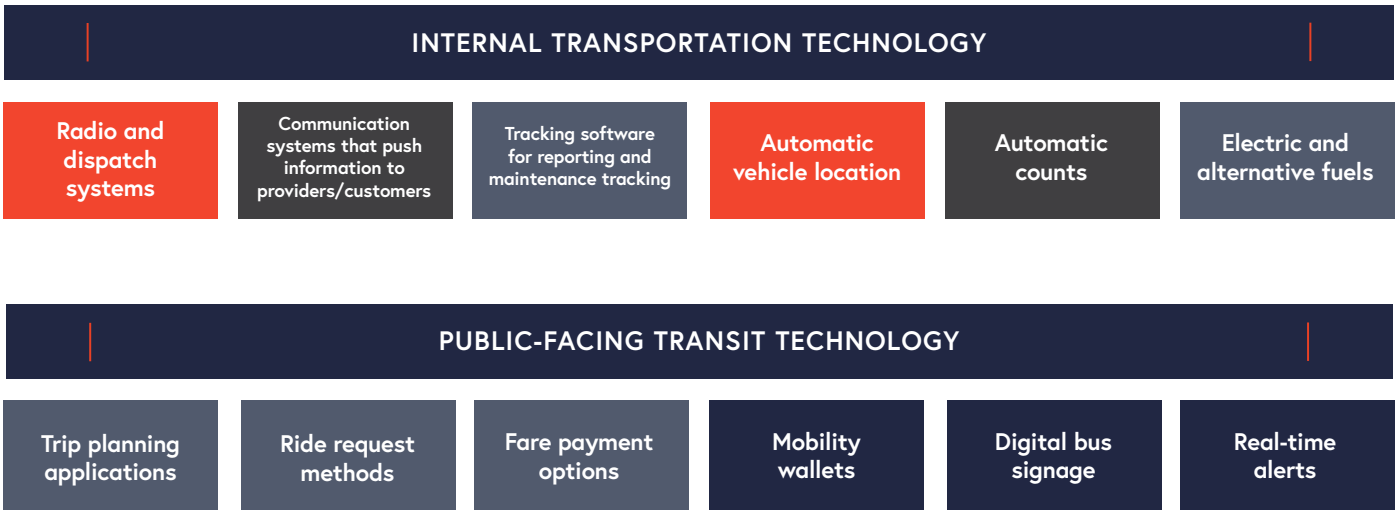


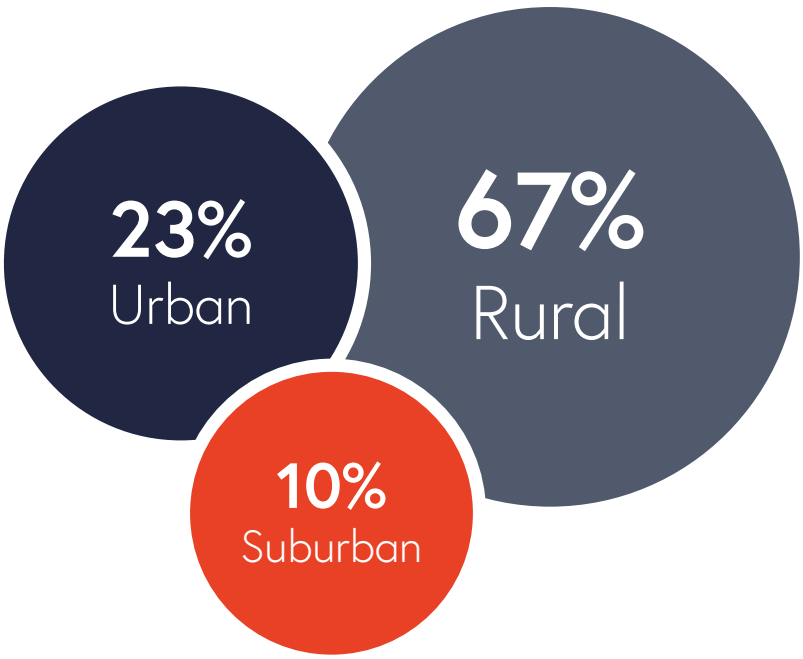
Figure 3: Examples of internal and public-facing transit technology.

2024 Survey

To better understand the needs of public transit agencies and the riders they serve, the project team conducted a statewide survey in 2024. Administered online via SurveyMonkey, the survey was distributed to transportation executives from public transit agencies across Michigan. It aimed to gather insights into the challenges agencies face when adopting new technologies, the characteristics of their service populations, and the types of support that could improve implementation efforts.

The findings, presented throughout this report, will help inform future marketing, education, and funding strategies to ensure they align with agency priorities and enhance the rider experience.

AGENCIES SURVEYED



TECHNOLOGY NEEDS OF MICHIGAN PUBLIC TRANSIT AGENCIES[5]

According to respondents of a 2024 survey of Michigan public transit agencies, nearly 50% are using dispatching systems, 40% are using infrastructure or vehicle-based safety applications, and 35% have adopted realtime information tools. Asset management systems and tracking are used by more than 20% of agencies, while roughly 18% are using Internet of Things (IoT) tools. Nearly 25% report using other technologies such as microtransit apps or on-board cameras and 18% report using none of the listed technologies.

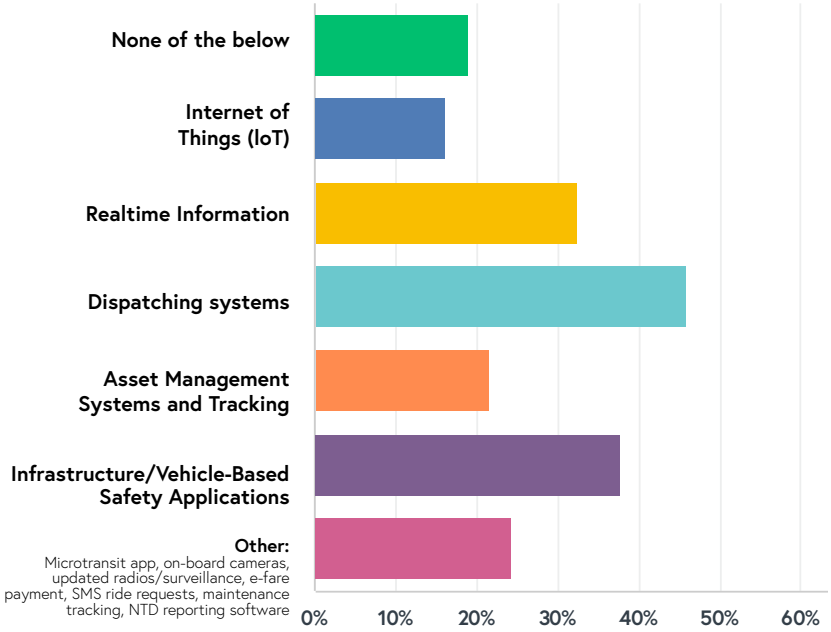


Figure 4: Chart showing Michigan public transit agencies' leading needs (sample size: 37).

TECHNOLOGY NEEDS OF MICHIGAN PUBLIC TRANSIT AGENCY RIDERS[6]

According to respondents of a 2024 survey of Michigan public transit agencies, the most commonly cited priority area for future technology investment is digital fare collection and mobile wallet systems, followed by realtime data and passenger information upgrades and on-vehicle rider amenities such as Wi-Fi and assistive technology. Less common needs identified include assistive technology for riders with disabilities, first-mile/last-mile connections, Mobility-as-a-Service integration, and bus stop and station improvements.

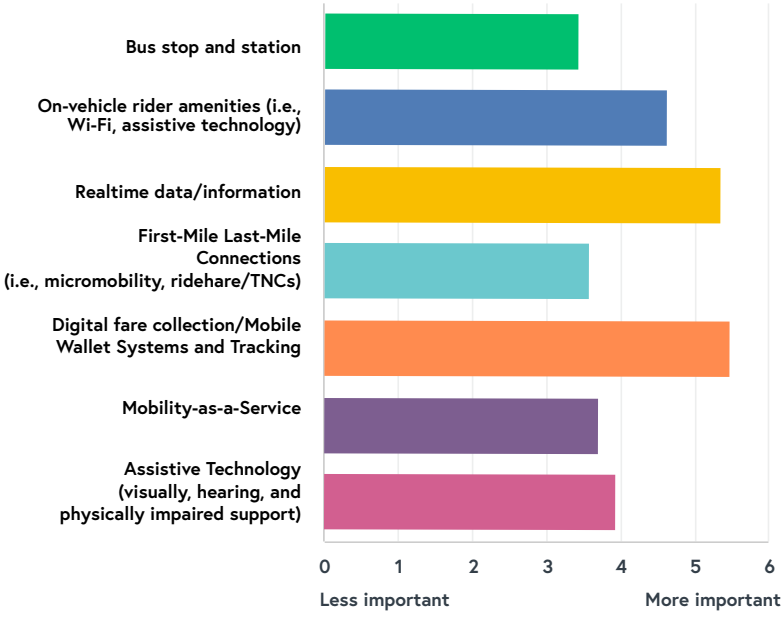


Figure 5: Chart showing Michigan public transit riders' leading needs (sample size: 37).

Operational technologies such as AVL, real-time dispatch systems, and automated passenger counting offer significant benefits in optimizing service delivery. These tools enable public transit providers to improve scheduling, reduce unnecessary mileage, and enhance fleet management, leading to long-term cost savings. Additionally, onboard security systems, including cameras and GPS tracking, contribute to safer conditions for both passengers and drivers. While the upfront investment in these technologies can be substantial, the operational efficiencies they create justify the cost by reducing administrative burdens and improving service reliability.

BY THE NUMBERS: MICHIGAN'S RURAL PUBLIC TRANSIT AGENCIES (2023)[7]

Michigan's rural transit agencies spend approximately $102,412,518 per year
Ridership ranges from 8,482-426,270 per agency
Total passengers: 4,361,558
Elderly passengers: 514,438
Persons with disabilities: 894,118
Elderly with disabilities: 315,496
Total elderly and disabled: 1,677,872

Equally important are public-facing technologies that improve the rider experience and increase accessibility. Digital fare payment options, real-time trip planning applications, and ride-request platforms offer greater convenience and flexibility for passengers, particularly for seniors and individuals with disabilities who rely on assistive technology (AT). These technologies also facilitate smoother transitions between different public transit services, enabling a more integrated and efficient network. Expanding access to user-friendly public transit solutions can help rural agencies increase ridership and better serve their communities.

"Having an upgraded dispatching system would help us to be more efficient. It would also assist our passengers to see when their bus would be arriving."[8]
— Insight from 2024 survey of Michigan public transit agencies

Adopting public transit technology is a strategic investment in the future of rural mobility. By modernizing internal operations and enhancing public-facing services, agencies can create more efficient, cost-effective, and accessible transportation networks. This shift not only improves the sustainability of rural public transit systems but also strengthens economic and social connectivity for residents who depend on reliable transportation options (see Figures 4 and 5).

2.3 TECHNOLOGIES USED BY MICHIGAN PUBLIC TRANSIT AGENCIES

In the fall of 2021, prior to the commencement of this research effort, OPT conducted a Transit Technology Assessment Survey to better understand how rural public transit agencies across Michigan are utilizing technology and identify their most pressing technology needs. The survey included responses from 61 organizations, including all rural area public transit agencies and four additional providers offering transportation in rural areas. Respondents answered 28 questions about their current technology use and future interests, providing valuable insights into the state of consumer-facing public transit technology in Michigan. These findings were captured in the agency's 2022 Statewide Technology Plan for Rural Public Transit Agencies, which also proposed 37 recommended initiatives for expanding the use of public transit technologies.[9]

This section summarizes the key findings from the survey, focusing on how Michigan public transit agencies utilize technology to enhance trip planning, fare payment, and the overall rider experience. These insights highlight the progress made in adopting consumer-facing tools and the opportunities for further innovation and expansion.

THE 2021 SURVEY CATEGORIZED AGENCIES INTO FOUR LEVELS

Level 1 (Novice): Minimal use of CAD or AVL, with interest in adoption (16 respondents).

Level 2 (Basic): Use of either CAD or AVL, but not additional technologies (22 respondents).

Level 3 (Intermediate): Use of both CAD and AVL, exploring advanced solutions (14 respondents).

Level 4 (Expert): Implementation of innovative technologies like app-based booking, open for new opportunities for further advancement (5 respondents).

63%
Agencies Using AVL

63%
Agencies Using CAD[10]

TRIP PLANNING

State transportation agencies across Michigan are leveraging scheduling technologies, such as CAD and AVL systems, to enhance trip planning and provide real-time information for riders. CAD systems are widely adopted; 63% of agencies were using platforms such as PCTrans, Ecolane, and Routematch to streamline dispatching and vehicle scheduling, according to the 2021 survey. These systems have the potential to enhance operational efficiency while also boosting rider confidence by improving the reliability of on-time service. Yet, the systems remain underutilized by smaller agencies, many of which still rely on manual methods, like note cards for dispatching.

AVL systems, which use GPS to track vehicle locations, are another critical tool in trip planning. These systems enable agencies to track fleet activity and provide riders with real-time updates on vehicle locations. While nearly two-thirds of agencies have adopted AVL, fewer than half have integrated it across their entire fleets, according to the survey. Some smaller agencies are uncertain about the benefits of AVL or face challenges in implementing it, particularly in rural areas where traditional GPS tracking systems are less effective. Despite these hurdles, AVL remains a promising technology for improving trip planning and overall service reliability.

FARE PAYMENT

Fare payment technologies are becoming increasingly important for public transit agencies aiming to enhance convenience and increase operational efficiencies. While most agencies still rely on cash or prepaid tickets, a few, such as the Bay Area Transportation Authority (BATA), Cadillac/Wexford Transit Authority, and Roscommon County Transportation Authority (RCTA), have adopted modern electronic fare collection systems, like Passage: Transit Ticketing, as of the 2021 survey. Passage: Transit Ticketing enables riders to purchase fares through a mobile app that operates seamlessly across multiple systems, thereby reducing barriers for riders and simplifying the payment process. Some agencies also utilize advanced systems, such as Genfare fareboxes, which enable electronic fare collection.

Respondents identified fare collection as the area with the greatest potential for improvement through technology, with 67% expressing interest in electronic fare cards, mobile payment options, and contactless systems. Features like fare capping, which ensures riders never pay more than the cost of an unlimited ride pass, regardless of the number of trips taken, were highlighted as important equity tools. Despite the interest, resource constraints and lack of familiarity with these technologies have slowed widespread adoption, leaving room for significant growth in this area.

RIDER EXPERIENCE

To enhance the rider experience, Michigan agencies are increasingly providing real-time trip information and exploring new communication technologies. Some agencies, like the Isabella County Transportation Commission and BATA, share their route and scheduling data by publishing their GTFS feeds, enabling riders to access real-time updates, service alerts, and delays via trip-planning tools, such as Google Maps. This integration provides greater transparency and convenience for riders, improving their overall public transit experience. Agencies also expressed interest in mobility apps that allow riders to book trips directly, as well as in SMS communication systems to keep riders informed. Improving self-service capabilities is a key focus for many agencies, with 10 agencies noting in the 2021 survey that allowing riders to schedule trips through mobile apps would significantly enhance operations and rider satisfaction.

Other areas of focus in the 2021 survey, such as asset management and safety technologies, present as internally beneficial for public transit agencies. Yet, they also directly benefit consumers by improving service reliability and security. This includes asset management tools used by public transit agencies, such as FleetSoft, which help agencies like Clare County Transit and Isabella County Transportation Commission efficiently maintain vehicles and manage parts inventory, reducing downtime and ensuring smoother, uninterrupted service for riders. Meanwhile, safety technologies, including video surveillance systems like Safe Fleet and AngelTrax, enhance security both on vehicles and at public transit facilities, providing passengers with a safer travel experience.

SPOTLIGHT: ACCESSIBLE TRANSPORTATION TECHNOLOGIES RESEARCH INITIATIVE

The USDOT's Accessible Transportation Technologies Research Initiative (ATTRI) is a collaborative effort focused on improving mobility for all travelers, particularly those with disabilities, through innovative technologies and service models. By addressing each link in the travel chain—from trip planning to final destination access—ATTRI ensures a seamless and fully accessible transportation experience. This comprehensive approach emphasizes that any break in accessibility disrupts the entire journey, underscoring the importance of advancing solutions that benefit individuals with severe disabilities and enhance mobility for all.

THE COMPLETE TRIP

The complete cycle of a typical public transit trip booked with technology.

After his doctor appointment, Andy decides to take a spontaneous trip to meet a friend at a coffee shop in an unfamiliar part of town. Using ATTRI's **pre-trip conceriege**, wayfinding and navigation, **robotics and automation**, and safe intersection crossing applications, Andy can travel with confidence throughout his trip.

1 PLAN AND BOOK A TRIP

Andy uses a **pre-trip concierge application** to plan and book his trip from the doctor's office to the coffee shop.

2 TRAVEL TO TRANSIT STATION

An **automated shuttle** (rideshare service) is dispatched to take Andy to the transit stration based on his booked trip. Once there, an **assistive robot** helps Andy to his bus platform.

3 RIDE THE BUS

While on the bus, Andy receives direction on when to pull the Stop Request cord from his wayfinding and navigation application. After he departs the bus, the application provides Andy with turn-by-turn walking directions to the coffee shop.

4 CROSS THE STREET

As Andy approaches an intersection, his safe intersection crossing application communicates with the traffic signal to ensure sufficient time for him to safely cross the street and notifies him when it is safe to begin crossing. The application also communicates with nearby cars to notify them of Andy's presence in the intersection.

5 ARRIVE AT DESTINATION

Andy safely arrives at his destination, while the pre-trip concierege application plans his return trip home.

Figure 6: How technology can be incorporated into a complete trip.

Public transit agencies are increasingly leveraging innovative technologies to modernize operations, enhance efficiency, and improve the rider experience. These trends highlight how public transit technology is transforming public transit, offering agencies new tools to meet the evolving needs of riders and communities.

> ***"We have recently introduced new dispatching and routing software, accompanied by a rider app, which has significantly improved our service."***[11]
> *— Insight from 2024 survey of Michigan public transit agencies*

Fare collection automation has become a significant focus, with many agencies adopting contactless payment systems that streamline boarding and reduce operational costs. Similarly, the rise of MaaS platforms integrates various transportation modes into a single app, which can enable a successful complete trip—a seamless journey from origin to destination using multiple modes of transportation, supported by unified planning, ticketing, and payment (see Figure 6). These advancements not only enhance convenience for riders but also offer agencies valuable data to optimize routes and services.

In addition to operational improvements, emerging technologies are reshaping how agencies address broader transportation challenges. Micromobility solutions, such as e-scooters and bikes, have gained popularity as FMLM options that extend the reach of public transit systems. Mobility hubs, which integrate multiple modes of transportation in a single location, are also becoming a key feature in public transit planning. Meanwhile, decarbonization efforts are driving investments in electric and alternative fuel vehicles, aligning with sustainability goals and reducing environmental impact.

LEADING TECHNOLOGIES THAT HAVE THE POTENTIAL TO TRANSFORM PUBLIC TRANSIT NATIONWIDE[12]

1. DRIVERLESS VEHICLES

Autonomous technology is expanding beyond cars and trucks to include buses, trams, subway cars, and drone taxis. AI can enhance the routing of autonomous public transit, improving safety and efficiency by allowing for emergency rerouting of services.

2. ZERO-EMISSION BUSES

To cut carbon emissions and boost system efficiency, public transit authorities are prioritizing zero-emission and low-emission buses, including electric, hydrogen, and compressed natural gas (CNG) options. These buses can be remotely monitored through IoT, enabling proactive maintenance and repairs.

3. RAPID TRANSIT

Urban public transit systems are increasingly integrating rapid transit options, such as trains, hyperloop systems, and buses with dedicated lanes and traffic priority, facilitated by smart traffic management solutions.

4. SMART TRAFFIC MANAGEMENT

The rise of smart cities enhances traffic management through centralized control of traffic lights, cameras, and public transit routes, optimizing traffic flow and emergency responses.

5. MAAS MODELS

MaaS systems offer comprehensive apps for mobile ticketing and multimodal trip planning, from public transport to bikes, supported by IoT for seamless access and payment across different transport modes.

2.5 **PUBLIC TRANSIT TECHNOLOGY CONSIDERATIONS**

What does each technology solve? How does it operate? What is the ease of use?

How much does the technology cost to precure, implement, operate, and maintain?

What is the success rate and learning lessons of technology deployments and pilots?

What are the benefits and challenges of procuring, implementing, using, and updating the technology?

How is the technology procured, monitored, and updated?

How will this technology be communicated/advertised to transit agencies? How will this technology be deployed?

Innovation should be purposeful—public transit agencies are encouraged to adopt technology that directly enhances operations, improves rider experience, and supports long-term efficiency. Before investing in new solutions, agencies may want to assess key factors such as cost, ease of use, procurement challenges, and long-term maintenance. By considering these elements, agencies can make informed decisions that maximize the value of their investments, ensuring that technology serves as a tool for progress rather than an unnecessary complication.

CHAPTER 3 **CASE STUDIES**

In Michigan, most public transit agencies provide demand response services that require complex coordination, including trip scheduling, vehicle dispatch, fare processing, and grant reporting. Timeliness is especially critical for medical and school-related trips, adding layers of complexity that go beyond what is typical in urban fixed-route systems. Agencies may also plan for return trips home after appointments, further complicating operations.

Despite these challenges, technologies commonly used in urban public transit—such as mobile apps, real-time tracking, automated fare collection, and digital schedules—hold significant promise for rural providers. These tools can boost efficiency through optimized scheduling, improve the rider experience with on-demand options and mobile payments, and enhance accessibility by bridging geographic gaps. However, adoption in rural areas is often hindered by limited digital literacy and poor internet connectivity.

After assessing the broader public transit technology landscape, the project team focused on how agencies implement and integrate these tools into daily operations. Successfully deploying new technology goes beyond selecting the right solutions—it requires sufficient funding, effective change management, staff training, and public engagement to support long-term adoption and utilization. Without these critical elements, even the most advanced technologies risk being underutilized or abandoned.

This chapter explores real-world examples to illustrate how public transit agencies navigate the complexities of implementation. The case studies provide both operational and rider-focused perspectives, serving as a practical resource for agencies seeking to optimize their technology investments and improve the overall public transit experience.

While we reviewed national examples for context, the case studies presented in this report are based solely in Michigan to ensure local relevance and replicability. By examining the experiences of agencies and riders across the state, we identify best practices, recurring challenges, and actionable insights that can guide future technology adoption efforts statewide.

3.1 **FINDING THE BALANCE: ALLEGAN COUNTY TRANSPORTATION BLENDS TECHNOLOGY AND HUMANITY**

Public transit isn't just about getting people from point A to point B—it's about building connections and strengthening communities. As public transit agencies adopt new technologies to improve efficiency, it's essential to ensure the human touch isn't lost, because true accessibility goes beyond automation. Allegan County Transportation (ACT) understands this challenge firsthand. When updating its Title VI plan under the guidance of MDOT, they confronted a critical issue: how to ensure non-English-speaking riders could communicate with dispatchers without relying on impersonal or ineffective translation technology. Their solution—implementing a real-time, human-powered translation service through Voiance (a CyraCom International company)—demonstrates how innovation and empathy can work together to create a system that is both modern and people-centered.

While the introduction of this technology was a major step forward, Allegan County and its leadership recognized that technology alone wouldn't solve every problem. They took a people-first approach, ensuring that when riders called, they were greeted by a live dispatcher rather than an automated system. This small but crucial detail prevents callers from hanging up in frustration. Additionally, the agency used Census data to identify communities needing targeted outreach, printing multilingual signage and hiring an outreach coordinator with support from Mobility Management Funds. The coordinator has been working closely with local senior facilities, hospitals, and community organizations to spread awareness about the new translation service and other public transit resources.

The rollout of this technology has highlighted a broader shift in how Allegan County views public transit—not as a numbers game, but as a service built around real people. Historically, caseworkers had to facilitate translation services, meaning there was no real-time way for non-English speakers to interact with public transit agencies. Now, with the live interpretation tool in place, communication is immediate, removing a major obstacle for riders. At the same time, Allegan County is reshaping dispatcher culture, encouraging staff to prioritize customer service over efficiency. Instead of simply moving people from point A to B as quickly as possible, they aim to create meaningful connections—something particularly important for older adults, for whom a daily call to a dispatcher or conversation with a bus driver might be their only human interaction.

This balance of technology and human connection extends beyond phone translation services. With rising demand, the county has expanded its fleet from 12 to over 20 buses, supported by a rider app powered by Via, a public transit technology provider. Yet, despite these advancements, the agency remains committed to maintaining a personal touch. When a longtime passenger passes away, they send sympathy cards to their families—a testament to the deep relationships built within the public transit system. Dispatchers, who initially feared technology would replace them, have come to see that it enhances their work rather than threatens it. If anything, they need more staff to maintain these personal connections.

ACT's experience underscores a fundamental truth in public transit: technology should serve as a tool, not a replacement for human interaction. The agency continues to invest in outreach, community partnerships, and people-led marketing to ensure that every rider, regardless of language or background, feels seen and supported. As one team member put it, "Technology needs to help us, but it cannot replace human relationships." By keeping this principle at the core of their work, they demonstrate that innovation and empathy can coexist.

ABOUT ACT

ACT has been serving Allegan County since 2000, enhancing and promoting economic development and serving the transportation needs of Allegan County by providing safe, reliable, barrier-free travel. The agency is a reservation bus service that provides transportation, connecting people to transportation for employment, medical care, and quality of life.

TECHNOLOGY SHOWCASED

A real-time, human-powered phone translation service by Voiance (a CyraCom International company), which enables three-way calls between dispatchers, non-English-speaking riders, and live interpreters to ensure seamless communication.

KEY TAKEAWAYS

ACT's approach demonstrates that technology and human connection can coexist. When used thoughtfully, innovation can enhance, rather than replace, the personal touch that makes public transit truly accessible. By implementing real-time translation services while maintaining a people-first approach, they've created a system that is both efficient and deeply compassionate, resulting in a higher demand for their service.

3.2 COMMUNICATING CHANGE: CLINTON TRANSIT HIGHLIGHTS THE IMPORTANCE OF MARKETING IN MOBILITY WALLET ROLLOUT

Known locally as the Blue Bus, Clinton Transit is revolutionizing transportation in mid-Michigan by becoming the first agency in the region to implement cashless, contactless, and queue-less boarding. As part of a statewide initiative to improve mobility, Clinton Transit is piloting the Michigan Mobility Wallet, a cutting-edge mobile application designed to streamline transportation access. The Blue Bus system offers safe, reliable, and on-demand rides to county residents. Now, with the Mobility Wallet, riders can plan, book, and pay for trips effortlessly using a single digital interface.

The Michigan Mobility Wallet was launched through a collaboration among MDOT, the Office of Future Mobility and Electrification (OFME), and other state agencies focused on economic opportunity and poverty alleviation. The free app integrates various mobility options, including fixed-route and demand-response buses, rail, taxis, scooters, bikeshare, and rideshare services.

As the first agency to implement the Michigan Mobility Wallet, Clinton Transit is paving the way for a more connected, accessible, and modern public transit experience in Michigan. The app is designed with accessibility and ease of use in mind. Riders can save frequent trips and destinations, receive real-time service alerts, and access in-app customer support. Clinton Transit has also introduced hands-free ticket validation scanners, enabling passengers to board without needing to take out their phones. For riders without smartphones, alternative options such as physical cards and keychains ensure inclusivity.

Despite the potential of this technology, widespread adoption remains a challenge. Clinton Transit recognizes the importance of community engagement when introducing new digital solutions, particularly for those without access to smartphones or digital payment methods. The agency is actively working to raise awareness through media outreach and public engagement initiatives.

ABOUT CLINTON TRANSIT

Established in 2001, Clinton Transit has been providing curb-to-curb service to meet the needs of all Clinton County residents. The on-demand public transit system responds to ride requests and provides safe, reliable transportation to all county residents. This creates a more connected, accessible, and vibrant Clinton County.

TECHNOLOGY SHOWCASED

Michigan Mobility Wallet, a mobile application that enables riders to load funds and/or connect bank accounts to a single platform, creating a streamlined mechanism for fare payment and collection, thereby increasing access to vital mobility services in Michigan.

KEY TAKEAWAYS

The Michigan Mobility Wallet is a compelling mobility solution that has the potential to boost ridership and engagement with Clinton Transit. However, technology alone cannot achieve progress. To encourage widespread adoption, public transit agencies like Clinton Transit may prioritize community engagement and awareness efforts, ensuring that all residents benefit.

3.3 PIVOTING TO SUCCESS: ROSCOMMON COUNTY TRANSPORTATION AUTHORITY AND WESTERN-WASHTENAW AREA VALUE EXPRESS NAVIGATE A TECHNOLOGY TRANSITION

In rural Michigan, two public transit providers—Roscommon County Transportation Authority (RCTA) and Western-Washtenaw Area Value Express (WAVE)—faced the shared challenge of replacing outdated systems while maintaining reliable service for their communities. Both organizations relied on legacy software, such as PCTrans, for scheduling and dispatching, which, although serviceable, couldn't keep up with modern demands. For RCTA, a failing server prompted the search for a new system. For WAVE, a leadership change paved the way for technological innovation. Though their approaches varied, both agencies ultimately navigated major transformations by prioritizing usability, sustainability, and community engagement.

RCTA's initial transition to a new software platform fell short—despite its promises of advanced AI and reporting. After three years of underperformance and staff frustration, RCTA paused, reevaluated, and shifted its focus to include voices from across the organization. A cross-functional team of managers, dispatchers, and senior drivers reviewed potential solutions, eventually selecting TripMaster from CTS Software for its blend of robust features and user-friendly design. WAVE, meanwhile, tackled a more foundational challenge: building a technology infrastructure from the ground up. Under new leadership, WAVE introduced Samsara's cloud-based fleet management system to improve safety, GPS tracking, and real-time driver coaching. Together, these upgrades created a safer, more transparent experience for riders and staff alike.

Both providers understood that a successful rollout required more than just purchasing software. RCTA invested $15,000 in on-site TripMaster training and executed a phased implementation that included data validation and testing before launch. WAVE adopted a similar mindset when switching to Pingo by The Routing Company (TRC)—a dispatching platform with a rider-facing app that streamlined scheduling, payments, and visibility across service areas. Despite a dramatic cost increase from $3,500 to $95,000 annually, WAVE secured grant funding and leveraged vendor partnerships to offset onboarding fees. The result: a twofold increase in rides per hour, improved reporting, and new funding interest from local municipalities and foundations.

In both cases, leadership recognized that frontline adoption was critical. RCTA embedded software training into new driver onboarding, and WAVE hired an outreach coordinator who regularly visited senior centers, local businesses, and farmers markets to promote the new app. These grassroots efforts helped build trust and encouraged residents to adopt new digital tools, such as self-service ride booking and live bus tracking. Even among populations traditionally less tech-savvy, agencies found that a thoughtful rollout could bridge generational gaps while maintaining the personal service valued by riders.

Together, RCTA and WAVE illustrate how rural public transit providers can modernize operations without compromising service quality. By investing in adaptable platforms, engaging staff and stakeholders, and creatively funding their upgrades, both agencies have not only improved efficiency but also deepened their connection to the communities they serve. Their journeys highlight the potential of technology when paired with inclusive planning and mission-driven leadership, offering a roadmap for rural mobility far beyond Michigan.

ABOUT RCTA

RCTA provides more than 65,000 rides annually, serving Roscommon County's 23,000+ residents. Located in Michigan's Lower Peninsula, the county is renowned for its natural beauty, featuring destinations like Higgins Lake, Houghton Lake, and Lake St. Helen.

ABOUT WAVE

WAVE is a nonprofit public transit provider offering rides for all in greater western Washtenaw County, Michigan, envisioning communities where all people can access all places.

TECHNOLOGY SHOWCASED

TripMaster (CTS Software), Samsara, and Pingo—modern public transit technologies designed to enhance dispatching, fleet management, real-time tracking, safety, and rider self-service.

KEY TAKEAWAYS

RCTA and WAVE successfully modernized their rural public transit operations by investing in user-friendly, scalable technology and prioritizing staff and community engagement. RCTA overcame a failed initial rollout by involving frontline users in selecting TripMaster, while WAVE built its tech infrastructure from scratch with Samsara and Pingo, boosting safety, efficiency, and rider satisfaction. Both providers leveraged grants and partnerships to fund upgrades, demonstrating that thoughtful planning and inclusive leadership can drive meaningful innovation in rural public transit.

3.4 ADVANCING RURAL MOBILITY: MDOT PILOTS INNOVATIVE SMART GRANT-FUNDED GTFS TRIP PLANNING TOOLS ACROSS 15 AGENCIE

In an effort to bridge transportation gaps across rural Michigan, MDOT launched a pilot project under the federal Strengthening Mobility and Revolutionizing Transportation (SMART) grant program to expand access to public transit trip planning and real-time information. The project's first phase focused on four pilot agencies—Benzie Transportation Authority, Cadillac/Wexford Transit Authority, Charlevoix County Transit, and RCTA. These agencies were selected for their technological readiness and represent a diverse cross-section of rural communities, including areas of persistent poverty, tribal lands, and disadvantaged census tracts. The project introduced GTFS and GTFS-Flex data feeds to these agencies, enabling integration with public-facing trip planners and enhancing visibility of demand-responsive public transit services. Eleven more agencies were added to the pilot before expiration of the SMART grant.

One of the key challenges addressed by the project was the varied level of technical expertise among agencies. Many rural public transit providers lacked in-house tech staff and had never worked with GTFS data. The project team conducted site visits and hosted discovery sessions to assess operations, build capacity, and provide hands-on education. These sessions helped tailor technical solutions to each agency's unique service model and informed a broader understanding of how to represent flexible public transit services using the newly formalized GTFS-Flex specification. Despite occasional hurdles with open-source tools like OpenTripPlanner lagging behind evolving standards, the team adapted creatively to ensure accurate and realistic trip discovery.

Beyond the technical deployment, the project also prioritized ongoing agency support and rider engagement. The project team recommended customized marketing kits for each pilot agency to promote the new trip planning tools through newsletters, social media, and community outreach. This included collaborations with local institutions like retirement centers, schools, and hospitals to build grassroots awareness. These community-led efforts were critical to fostering rider trust and ensuring the technology was not only implemented, but embraced by those it aimed to serve.

The pilot's success laid the groundwork for Stage 2 funding application, which would scale the initiative statewide, aiming to integrate all rural public transit agencies into MDOT's upcoming MaaS platform. By creating a centralized, accessible source of static and real-time public transit data, MDOT envisions a more connected and equitable transportation network for rural Michiganders—one where residents can plan trips confidently, regardless of ZIP code.

ABOUT BENZIE TRANSPORTATION AUTHORITY

Known as "Benzie Bus," Benzie Transportation Authority provides a secure and convenient public transit network in Benzie County, Michigan, offering services such as airport transportation, regional options, non-emergency medical transportation, health rides, and package delivery.

ABOUT CADILLAC/WEXFORD TRANSIT AUTHORITY

Operating as WexExpress, Cadillac/Wexford Transit Authority delivers door-to-door public transit across Wexford County's 575 square miles, including demand response, flex routes to neighboring counties, non-emergency medical transportation, and contract services for community mental health.

ABOUT CHARLEVOIX COUNTY TRANSIT

Charlevoix County Transit provides safe, affordable, and friendly transportation throughout Charlevoix County, specializing in demand-response services and offering medical trips to local and out-of-county hospitals and care facilities.

ABOUT RCTA

RCTA aims to be the premier public transit provider committed to safety, courtesy, quality, responsiveness, efficiency, and innovation in Roscommon County.

TECHNOLOGY SHOWCASED

GTFS-Flex technology, enabling real-time trip planning and service visibility for rural public transit agencies in Michigan.

KEY TAKEAWAYS

This pilot program demonstrates how SMART grant funding enabled rural Michigan public transit agencies that lack GTFS data to modernize their services by implementing GTFS-Flex data for trip planning and real-time updates. With support from HNTB, agencies with limited technical capacity received hands-on training, tailored tools, and marketing resources to increase rider awareness and adoption. The project not only improved access to public transit information in underserved areas but also laid a scalable foundation for statewide integration into MDOT's future MaaS platform.

3.5 DRIVING THE FUTURE: FLINT MASS TRANSPORTATION AUTHORITY'S CLEAN ENERGY TRANSFORMATION THROUGH TECHNOLOGY AND INNOVATION

The Mass Transportation Authority (MTA) of Flint, Michigan, has embarked on a bold journey to reinvent its fleet, driven by a commitment to sustainability, innovation, and long-term cost savings. The shift began in 2010 during a period marked by high fuel prices and economic strain, prompting MTA to seek alternatives to diesel fuel. Their first step was converting the entire minibus fleet to propane, significantly lowering operating costs, at times fueling for as little as 20 cents per gallon. The savings were immediate and substantial, with over $5 million saved in just four years. This early success laid the foundation for more ambitious changes, including the integration of CNG, EVs, and most notably, hydrogen fuel cell technology.

MTA's transition to hydrogen has been a decade-long process marked by strategic experimentation and resilience. After building its first hydrogen fueling station, Flint introduced its initial hydrogen-powered bus in 2011. However, faced with limited availability and high costs, MTA temporarily shifted to CNG, supported by Consumers Energy and a substantial federal grant. Over time, Flint has transitioned to a tri-fuel system—hydrogen, CNG, and propane—while gradually phasing out its diesel-electric hybrids. Today, just 16 diesel buses remain, with plans to replace them with hydrogen-powered models. A recent award of an $11 million federal and state-backed grant—including $5.8 million from the U.S. Department of Energy—will fund the expansion of Flint's hydrogen fueling infrastructure and support the purchase of up to 60 additional hydrogen buses.

Funding has played a critical role in enabling this transformation. Traditionally structured as 80% federal and 20% local funding, MTA has aggressively pursued grants and formed innovative P3s. This includes collaborations with institutions such as Kettering University and energy companies to co-develop innovative solutions. The agency is even exploring partnerships with future tenants of a forthcoming 1,200-acre manufacturing Megasite. These diversified funding strategies have allowed MTA not only to expand its fleet, but also to invest in state-of-the-art training programs, positioning Flint as a potential alternative fuel training hub for Michigan.

The journey hasn't been without its challenges. Internally, the shift required retraining staff, reorganizing facilities, and investing in new safety protocols and technician certification programs. Convincing stakeholders of hydrogen's viability was an early hurdle, particularly when safety concerns were a significant concern. Community education and persistent marketing efforts were crucial. MTA leadership dedicated significant time to informing federal agencies, legislators, and the public about the benefits of hydrogen and other alternative fuels. Over time, skepticism gave way to support, culminating in statewide recognition and growing interest from other public transit systems.

Today, MTA stands as a national example of how a mid-sized urban public transit agency can lead in clean energy innovation. Through trial, education, and strategic partnerships, MTA has redefined what is possible for sustainable public transportation. As they prepare to phase out the final diesel vehicles and scale up hydrogen deployment, the team reflects on how far they've come. "We can continue to do the same thing over and over, but how exciting it is to make these changes," one leader remarked—a sentiment that captures the spirit driving Flint's green transformation.

ABOUT MTA

MTA provides safe, efficient, and affordable public transit throughout Flint and Genesee County, Michigan. Serving over 5.5 million passengers annually, MTA operates 14 fixed routes, 83 peak-period routes, and regional service to five nearby counties. MTA's Your Ride program offers over 450,000 curb-to-curb rides each year for seniors, people with disabilities, and those outside fixed route areas.

TECHNOLOGY SHOWCASED

Alternative fuel technologies, including propane, CNG, EVs, and hydrogen fuel cells.

KEY TAKEAWAYS

Flint MTA's transformation highlights how a mid-sized public transit agency can lead in clean energy through innovation, strategic partnerships, and persistent advocacy. By transitioning from diesel to a tri-fuel system of propane, CNG, and hydrogen, MTA significantly cut costs and emissions while positioning itself as a state leader in alternative fuel adoption. Key success factors included early investment in infrastructure, staff retraining, community education, and aggressive pursuit of federal and state funding. The agency's journey highlights the importance of a long-term vision and adaptability in achieving sustainable public transportation goals.

4.1 VIRTUAL WORKSHOP: PERSONA DEVELOPMENT

In July 2024, the project team conducted a virtual workshop aimed at developing personas for both riders and public transit agencies. This session marked an early step in understanding how Michigan's public transit agencies can better market public transit technology and educate their stakeholders on available tools and approaches. The workshop emphasized the importance of personas as research-based profiles that reveal the unique characteristics, goals, and challenges of key audiences. By focusing on personas, the team aimed to identify the problems public transit agencies and riders are trying to solve and determine the appropriate technological solutions to address these needs.

To guide the discussion, we began by defining the concept of personas. A rider persona is a profile of a target user, built from research, to understand who is using the public transit service, what value it provides in their lives, and the challenges they may face. Agencies may have multiple rider personas shaped by their regions and service offerings. Similarly, a public transit agency persona represents the various types of public transit agencies operating in Michigan, reflecting differences in geography, public transit modes, urban versus rural needs, success criteria, and operational challenges. These personas allow for a tailored approach, recognizing that a one-size-fits-all solution does not apply.

Through this foundational discussion, the team explored how personas can help public transit agencies pinpoint specific problems they aim to solve, whether related to riders, operational efficiencies, or internal systems. For instance, if a primary rider persona includes older adults, agencies may determine that cutting-edge apps may not be the most suitable solution and instead explore other user-friendly technologies. Additionally, the workshop highlighted the importance of assessing workforce capacity to determine what tools agencies can realistically adopt, operate, and sustain.

The workshop also delved into defining success for the project. This included creating plans for the adoption and replacement of technology, considering long-term budgeting, and ensuring alignment with broader business plans. We emphasized a sustainable approach, ensuring that agencies select and market technology that fits their infrastructure, budget, and capacity rather than simply chasing industry trends. The session concluded with an interactive activity that developed both rider and public transit agency personas, laying the groundwork for the recommendations detailed in the subsequent chapters of the report.

This collaborative effort set the stage for scalable, adaptable marketing strategies tailored to the diverse needs of Michigan's public transit landscape. The results of this persona identification process can be found in Chapter 6.

4.2 VIRTUAL WORKSHOP: TECHNOLOGY AND TRANSIT AGENCY ENGAGEMENT

In the second virtual workshop, held in 2024, the project team gathered public transit agencies from across Michigan to explore the current state of technology in the sector and discuss strategies to support the rollout of new public transit technology. This workshop focused on both the internal and external aspects of public transit technology, alongside critical discussions on change management, marketing, budgeting, and collaboration.

The technology presented covered a broad spectrum of capabilities and uses, both internally, for public transit agencies themselves, and externally, for public transit riders. For internal-facing technology, the conversation touched on systems like Collision Avoidance Awareness (CAWs), BEBs, asset tracking and management systems, and advanced dispatching platforms. For external or public-facing technology, the team highlighted innovations such as virtual station signage with real-time updates and tactile signage, onboard Wi-Fi, phone applications that enable trip planning and mobility wallets, micromobility solutions like e-scooters and e-bikes for first- and last-mile connectivity, and digital fare collection systems. The team presented the capabilities, benefits, and challenges of these technologies, guiding discussions that underscored the different needs of Michigan's public transit agencies and the importance of tailoring technology solutions to meet unique regional and agency requirements.

70% of organizational change initiatives either fail or fail to sustain long-term impact.[13]

Change management was a key focus of the workshop. Agencies shared candid insights into challenges, including resistance to change and staff capacity limitations. The project team also presented opportunities to address these barriers, including the importance of identifying early adopters and "change champions," implementing robust training programs, and creating incentives for driving change within agencies. We positioned these practices as key components of any successful public transit technology marketing plan.

Marketing emerged as another critical area of focus, with agencies identifying the need for both internal (targeting staff, drivers, and inter-agency teams) and external (targeting riders and the public) efforts. The workshop included a discussion of existing strategies used by agencies to engage riders and the potential for enhancement. Budgeting and funding considerations were also central to the discussion, with agencies sharing how they leverage federal grant opportunities, fund braiding for local match requirements, and foundation funding to support their technology initiatives.

The workshop concluded with a conversation about fostering collaboration among agencies. A key suggestion was the establishment of a statewide rural transit technology committee as part of a broader statewide technology plan for rural public transit agencies. This initiative may help identify technologies to pilot and identify agencies as candidates for those pilots. These tools aim to improve trip planning, enhance accessibility to public transit services, and elevate the overall travel experience for riders. This collaborative approach emphasized the potential for shared resources and strategies to drive progress in Michigan's public transit technology landscape.

4.3 MICHIGAN PUBLIC TRANSIT ASSOCIATION WORKSHOPS

Following the initial virtual workshops with MDOT, we facilitated a series of workshops at the Michigan Public Transit Association (MPTA) annual conference. This organization represents more than 60 public transit providers across Michigan and plays a crucial role in advocating for and strengthening the state's public transit network, encompassing both public transit agencies and specialized service providers. Engaging directly with MPTA and its members allowed us to gain deeper insights into the operational realities and strategic priorities of Michigan's public transit agencies.

The workshops were structured into three key focus areas: Agency and Public Platforms and Tools, Partnerships and Community Engagement, and Budgeting and Funding. These topics were selected to ensure a comprehensive exploration of both internal agency needs and external rider-facing technology. Participants discussed their experiences with public transit technology, the effectiveness of existing partnerships, and the financial constraints that impact their ability to adopt and sustain new solutions. By addressing these themes, we sought to uncover the most pressing opportunities and challenges faced by public transit providers across Michigan.

Key workshop goals included identifying both the internal technology needs of public transit agencies and the external technology needs of riders, as well as assessing barriers to technology procurement, implementation, and training. Alongisde these discussions, we examined the technologies that agencies are already using or familiar with, gathering lessons learned from their experiences. Agencies also shared insights on partnerships, marketing strategies, and the challenges of promoting new technologies to riders. These conversations provided a realistic snapshot of Michigan public transit agencies, ensuring that the input gathered directly informed the development of public transit agency and rider personas, accurately reflecting their operational realities and diverse challenges.

4.4 OPT TRANSIT TECHNOLOGY FORUM

In February 2025, the project team co-hosted the OPT Transit Technology Forum. As part of this research project, the forum focused on budgeting for marketing and education when implementing new public transit technology. Discussions explored best practices for marketing and public education strategies, as well as the benefits of enhanced outreach efforts for public transit agencies.

In advance of the forum, the project team conducted a survey of Michigan public transit agencies to gain an understanding of their rider demographics, riders' needs, current technology usage, agency technology needs, and technology interests. The results of this survey helped to focus additional research on just a handful of public transit technology types. Several technology vendors were identified for each public transit technology type to research further to examine their products and capabilities and identify if they should be contacted for further information.

THE TABLE PRESENTED HERE INCLUDES A SNAPSHOT OF THE TECHNOLOGY VENDORS THAT WE CONTACTED FOR AN INTERVIEW.

VENDOR	PRODUCTS/CAPABILITIES
Passio Technologies	Offers a variety of passenger-facing products, including Automatic Voice Announcements (AVA), LED signs, onboard Wi-Fi, and a rider app. Also provides internally focused tools for route management, vehicle tracking, camera monitoring, yard management, and performance monitoring.
The Routing Company (TRC)	Provides demand response vehicle routing and management software. Products include a backend dashboard for dispatching and performance tracking, a rider-facing app, and a driver-facing app for trip navigation.
AbleLink	Offers tools to support individuals with cognitive disabilities. Products include a mobile and desktop app, a multimedia toolkit, and training and support services to promote independent living.
LookingBus	Provides an app that allows waiting riders to notify nearby public transit drivers when they need to be picked up— functioning like a stop request. Originally designed for individuals with visual, mobility, or hearing impairments, it also benefits anyone who wants to avoid being overlooked or needs extra time to reach the vehicle.
Optibus	Offers website design support and a suite of software with features for passenger alerts, route planning, scheduling, rostering, operations, and performance monitoring.
Samsara	Delivers asset management solutions. Products include AI- powered dash cams for video monitoring and onboard units for real-time GPS vehicle tracking.

Table 1: Summary of technology reviewed as part of this research project.

The project team invited two technology vendors—Passio Technologies and TRC—to deliver presentations and hands-on demonstrations at the workshop. Representatives from MDOT and public transit agencies across Michigan contributed valuable insights that helped shape tools designed to guide public transit agencies in their technology adoption efforts. The outcomes of this forum will support initiatives that improve economic opportunities, public awareness, health outcomes, and overall quality of life for public transit users and communities statewide.

DAY 1

The first day of the OPT Transit Technology Forum focused on the challenges and opportunities surrounding the implementation of new public transit technologies, organized according to the five phases outlined in the guidebook. These phases, and the outcomes of this discussion, are summarized in Chapter 5 of this report. Discussions highlighted the need for sustainable funding strategies, streamlined procurement processes, and stronger collaboration among Michigan public transit agencies. Participants explored best practices for reducing costs, increasing efficiency, and improving knowledge sharing to ensure successful technology adoption.

DAY 2

On the second day of the OPT Transit Technology Forum, representatives from two public transit technology providers—**TRC** and **Passio Technologies**—presented their solutions. TRC specializes in AI-powered, on-demand public transit services that enhance efficiency, reduce wait times, and improve accessibility for both fixed-route and demand-responsive systems. Passio Technologies offers modular public transit and parking solutions, including real-time passenger information, automated dispatch, and vehicle tracking systems. Their Passio Navigator™ platform helps public transit operators streamline operations and optimize resources. Both companies showcased innovative tools designed to modernize public transit and improve the rider experience.

THE ROUTING COMPANY

The Routing Company (TRC) offers innovative on-demand public transit solutions designed to enhance the flexibility and efficiency of public transit systems. The Pingo platform, which includes the Drive Pingo™ and Ride Pingo™ apps, provides a unified platform for riders across various public transit agencies, enabling seamless access to multiple public transit modes through a single application. This "one app for all" strategy simplifies user experience and promotes broader adoption. Additionally, TRC employs geofencing technology to automatically switch between agency setups, ensuring that riders receive tailored services based on their specific locations.

TRC's solutions are built on proprietary algorithms capable of optimizing vehicle utilization at a city-wide scale, allowing public transit agencies to maximize efficiency and coverage. Their platform is designed to integrate seamlessly with existing public transit infrastructures, offering features such as real-time analytics, call-center booking, and flexible service modes, including paratransit and rural deployments. By leveraging these advanced technologies, TRC empowers cities to create smarter, more accessible transportation networks that adapt to the evolving needs of their communities.

TRC PRICING (AS OF FEBRUARY 2025)

Varies project=by-project, baseline ranges provided below

ITEM	PRICING STRUCTURE	AMOUNT
Software Implementation & Training	One-time	$7,500–$20,000
Ongoing Software Licensing, Option #1	Per-vehicle, annual	$2,500–$6,000
Ongoing Software Licensing, Option #2	Ridership-based per trip	$0.50–$0.90/trip, marginally scaling down with ridership milestones
Ongoing Customer Support	Fixed annual	$8,000–$24,000

Table 2: Summary of pricing from TRC

PASSIO TECHNOLOGIES

Passio Technologies provides modular and customizable public transit solutions that enable agencies to improve operational efficiency and enhance the passenger experience. Their suite of services includes real-time passenger information through the Passio GO™ app, automated passenger counting, and CAD/AVL systems, providing comprehensive insights into public transit operations. The modular nature of their offerings allows agencies to select and integrate specific functionalities tailored to their unique needs, without the obligation to adopt an entire system.

To support seamless implementation, Passio provides unlimited training for "superusers" and utilizes platforms like Monday.com for structured onboarding processes. Their solutions are designed to accommodate varying levels of technology access among riders; for instance, they offer text messaging for arrival times to assist passengers who do not have smartphones or internet access. Equipment operates using SIM cards, with a preference for Verizon, ensuring reliable data sharing across all devices. Additionally, Passio's systems facilitate on-demand trip modifications through dispatcher coordination, ensuring that drivers receive updated routing information without manual adjustments.

PASSIO PER VEHICLE PRICING (AS OF FEBRUARY 2025)

Installation costs vary by solution and number of vehicles

SOLUTION	INSTALLATION COST
Passio GO GPS Tracking with Passenger App (20 Vehicles)	• Upfront, one-time cost: $1,159.98 • Recurring, annual cost: $709 • Total Year 1 Cost: $1,868.98
Automated Voice Announcements (20 Vehicles)	• Up-front, one-time cost: $2,611.06 • Recurring, annual cost: $472 • Total year 1 cost: $3,083.06
SmartSense. Interior, Passenger Facing LED Signs (20 Vehicles)	• Up-front, one-time cost: $2,153.14 • Recurring, annual cost: $199 • Total year 1 cost: $2,352.14
Onboard Wi-Fi. 5 GB Data Plan, Pooled (20 Vehicles)	• Up-front, one-time cost: $1,380.51 • Recurring, annual cost: $943.60 • Total year 1 cost: $2,324.11
Infotainment Signs. 37" Onboard Screen (20 Vehi-cles)	• Up-front, one-time cost: $6,999.50 • Recurring, annual cost: $499 • Total year 1 cost: $7,498.50
Electronic Passenger Counting (Touch Screen, 20 Vehicles)	• Up-front, one-time cost: $1,736.41 • Recurring, annual cost: $419 • Total year 1 cost: $2,155.41

Table 3a: Summary of per-vehicle pricing from Passio Technologies

Passio Discounts* (Setup Fees):
Multiple solutions: 15%
0–10 vehicles: No discount
11–20 vehicles: 15%
21–30 vehicles: 20%
31–40 vehicles: 30%
41–50 vehicles: 40%
51+ vehicles: 45%

Please note, in addition to the above discounts, Passio provides vehicle volume discounts for license fees, hardware fees and recurring fees based on the vehicle milestones above. If a location has multiple solutions and multiple vehicles,the higher discount will be applied.

TRIPMASTER PER VEHICLE PRICING (AS OF AUGUST 2025)

PASSIO TECHNOLOGIES FEATURE	PRICE
TripMaster per vehicle (includes Trip Scheduler, TripMaster, Driver App)	• Up-front, one-time cost: $2,700 • Recurring, annual cost: $624 • Total year 1 cost: $3,324
Trip Reminders per vehicle	• Up-front, one-time cost: $480 • Recurring, annual cost: $396 ($33 monthly per 1,000 reminders) • Total year 1 cost: $876
Trip Portal per vehicle	• Up-front, one-time cost: $540 • Recurring, annual cost: $300 • Total year 1 cost: $840
Trip Pass per vehicle	• Up-front, one-time cost: $1,380.51 • Recurring, annual cost: $943.60 • Total year 1 cost: $2,324.11
Implementation Fees per visit	• Remote Setup: $750 • Onsite Training: $6,500
TripMaster Discounts (Setup Fees)	• 0–10 vehicles: No discount • 11–20 vehicles: 15% • 21–30 vehicles: 20% • 31–40 vehicles: 30% • 41–50 vehicles: 40% • 51+ vehicles: 45%

Table 3b: Summary of TripMaster pricing from Passio Technologies

Please note, TripMaster provides vehicle volume discounts for license fees, recurring fees based on the vehicle milestones above. If a location has multiple solutions and multiple vehicles, the higher discount will be applied.

CHAPTER 5 **TRANSIT TECHNOLOGY IMPLEMENTATION GUIDEBOOK: PURPOSE, DEVELOPMENT, AND KEY INSIGHTS**

To complement the insights gathered throughout the development of this report, we identified a clear need for a concise, user-friendly guidebook to assist public transit agencies in the practical aspects of planning and implementing technology marketing strategies. This guidebook serves as a hands-on resource for agencies at various stages of their public transit technology journey, offering accessible guidance to a broad audience. Designed to be visual, engaging, and actionable, it aims to demystify the often-complex process of marketing new technologies to riders and stakeholders alike. The guidebook forms the foundation for the chapters that follow, which expand on its core themes by introducing rider and agency personas, exploring the importance of change management, and offering strategic funding recommendations.

Central to the guidebook is a five-phase framework for adopting and marketing public transit technology. Each phase is described below, accompanied by insights gathered during a workshop with public transit professionals held in early 2025 (see Chapter 4.4). These real-world observations ground the guidebook's recommendations in the lived experience of public transit agencies, ensuring its relevance and utility in the field.

PHASE 1: ASSESS YOUR AGENCY'S NEEDS

Before investing in new technology, public transit agencies might consider identifying their unique needs and challenges. Innovation should serve a purpose—aligning with both agency operations and rider expectations. This foundational step sets the framework for informed decision-making and stakeholder buy-in.

- **Before determining or procuring technology, public transit agencies must understand their riders and their staff. This will help to identify what is needed and what goal should be achieved by the implementation of the selected technology.**
- **Agencies can stay informed about public transit technology options by attending vendor presentations at conferences and workshops.**
- **Funding remains the primary barrier to implementation, with many agencies, particularly in rural areas in the state of Michigan, lacking a clear technology plan.**
- **Capacity constraints make technology adoption challenging; some rural agencies operate with minimal staff, many of whom wear multiple hats, such as directors who also drive buses.**
- **Marketing technology as a solution to staffing and operational challenges can improve agency buy-in.**
- **Peer success stories, particularly from drivers and riders, can help agencies see the tangible benefits of technology adoption.**
- **Agencies need a guidebook to help them make the case for funding and statewide procurement solutions.**

RESOURCES

MDOT: Advancing Rural Mobility Program
N-CATT: Technology Readiness Assessment
N-CATT: Launching a Customer-Facing App Worksheet
Example of a Tech Roadmap: Bay Area Transportation Authority Technology Roadmap
N-CATT: A Framework for Making Successful Technology Decisions
Spare: What is a Mobility Service Rider Persona and Why is it Important?

PHASE 2: PLAN, FUND, AND PROCURE

Phase 2 focuses on selecting and procuring technology solutions that align with the needs and goals identified in Phase 1. This stage includes evaluating vendor options, considering costs and resources, securing buy-in, and ensuring compliance with procurement policies.

- **There is no centralized system to track the technologies being used by agencies across the state.**
- **Information-sharing methods, such as webinars, regional training sessions, and roundtable discussions at MDOT meetings, could help agencies make informed decisions.**
- **Procurement remains complex, with many agencies struggling to navigate the RFI/RFP process.**
- **There is a need for a procurement contract checklist that outlines key items to consider when entering into a vendor agreement, such as payment terms, report outputs, training support, and suggestions for KPIs, among others.**
- **Statewide procurement strategies, such as statewide contracts or a vendor showcase, could reduce costs and streamline technology adoption.**
- **Some agencies have taken advantage of joint procurement, which has pros and cons. It creates leverage but can "force" smaller agencies to purchase technology that might have been more than what they needed.**
- **Reputation matters—vendors that fail to deliver on contracts are quickly identified through agency networks.**
- **Funding challenges make it difficult to engage all agencies, highlighting the need for broad stakeholder involvement from the start.**

RESOURCES

Department of Technology, Management & Budget: MiDEAL Extended Purchasing Program
National RTAP: Directory of Grant Writers
National RTAP: ProcurementPRO
National RTAP: Transit Manager's Toolkit - Procurement 101
N-CATT: RFIs as Tools in Transit Technology Procurements
N-CATT: Strategic Technology Technical Assistance Teams

PHASE 3: EMPLOYEE AND STAFF ENGAGEMENT, AWARENESS, TRAINING, AND INTERNAL COMMUNICATIONS

Adopting new technology (both for internal and external stakeholders) in government agencies presents unique challenges, particularly in transportation, where digital innovation must align with established processes and regulatory requirements. Successfully implementing digital solutions requires leadership alignment, structured knowledge management, and workforce upskilling to ensure smooth adoption and long-term sustainability.

- **Many drivers have limited proficiency in technology or prefer traditional paper-based systems.**
- **Training programs can be tailored to different skill levels, using peer-to-peer mentorship and vendor-led training sessions.**
- **Clear communication about implementation goals, timelines, and success criteria is essential for staff buy-in.**
- **Change management is key; technology can be positioned as an evolving tool that requires ongoing adaptation.**
- **Emphasizing the "What's in it for me?" factor would be essential to gaining staff buy-in.**
- **Agencies can capture lessons learned to refine their strategies for future technology implementations.**

RESOURCES

Indeed: How To Write an Action Plan (With Template and Example)
Change Adaptive: Change Management and Knowledge Sharing Best Practices
APTAU Learning: APTA Workforce Mini-Guides
National RTAP: Training
National RTAP: Sharing Training with Agencies Coordinating Transportation Best Practices
Transit Workforce Center: Train-the-Trainer

PHASE 4: EXTERNAL TECHNOLOGY MARKETING AND TRAINING

Marketing is essential for gaining public buy-in, especially when public transit agencies rely on millage votes every few years. A strong marketing and engagement plan ensures that riders and the broader community understand the benefits of public transit, as well as the value of new technology investments.

- **Universities and student partnerships can support rider education and collect feedback on new technology.**
- **Interactive onboard tablets, sponsored by local businesses, could serve as both educational and marketing tools.**
- **Incentives like "Free Ride" can encourage smartphone-based scheduling and increase technology adoption.**
- **Effective marketing requires understanding riders' needs rather than simply increasing ridership.**
- **Contracting with local organizations (e.g., YMCA, community mental health services) could improve service accessibility.**
- **AI and social media influencers offer new opportunities to promote public transit services and educate riders.**
- **Passenger onboarding is critical; creating instructional landing pages and FAQs for mobile apps can significantly ease adoption.**
- **People and technology can work together to provide a meaningful trip-making experience.**
- **Marketing is not a one-time event; rather, it is a continuous process.**

RESOURCES

National RTAP: Intro to Marketing Tools
National RTAP: Marketing Plan Workbook
N-CATT: Collecting & Analyzing Customer Feedback Data
CRAFT: Marketing Without a Marketing Degree
CRAFT: Marketing Made Smarter with AI
CRAFT: Ethics in AI for Marketing is with You
CRAFT: Social Media 101 Guide

PHASE 5: MANAGE, MAINTAIN, AND EVALUATE TECHNOLOGY, RESOURCES, AND FUNDING

Technology, marketing, and funding require ongoing management to ensure long-term success. Agencies may consider establishing review milestones at three, six, and 12 months after implementation, followed by annual evaluations. These assessments help determine if the technology is meeting its original objectives, identify necessary adjustments, and capture insights to guide future initiatives.

- **Agencies need guidance on KPIs to effectively evaluate various technologies.**
- **Different types of technology (e.g., safety vs. dispatch software) require different KPIs for measurement.**
- **AI and text/chat features could improve dispatcher efficiency and enhance customer service.**
- **The public transit technology landscape is evolving rapidly, with frequent mergers and acquisitions; agencies are wise to stay informed about vendor stability.**
- **Balancing passenger needs with operational efficiency remains a key challenge, requiring ongoing evaluation and adjustment.**

RESOURCES

Transit Cooperative Research Program: TCRP Report 88: A Guidebook for Developing a Transit Performance-Measurement System

N-CATT: Data Practices

Outsource Accelerator: 10 Key Strategies for Successful Vendor Relationship Management

Forbes: 17 Metrics for Evaluating the Success of Tech Projects and Initiatives

CHAPTER 6 **AGENCY AND RIDER PERSONAS**

This chapter presents the rider and public transit agency personas developed as part of a workshop conducted early in this research project, which is outlined in Chapter 4 of this report. They are designed to be a practical tool to help public transit agencies make informed decisions about technology investments, implementation, and ongoing service improvements. By defining key characteristics, challenges, and public transit needs, these personas provide agencies with a structured way to identify who they serve and how to enhance their operations. Whether selecting new technology, refining service models, or improving rider engagement, personas serve as a foundation for making strategic, rider-focused decisions.

The personas in this report reflect the diversity of Michigan's public transit landscape, representing different geographies, rider demographics, service models, and operational scales. They help agencies recognize their own organizational identity while also understanding the needs of their communities. This framework is particularly valuable in marketing and implementation efforts, ensuring that public transit solutions are not only effective but also aligned with the needs of the people they serve. While this research aims to be broadly applicable, a key focus is on supporting rural public transit agencies through scalable strategies that can be adapted to fit various resource levels, budgets, and staff capacities.

By casting a wide net, this report offers a flexible approach that can be utilized by agencies of all sizes, ranging from small demand-response providers to large urban systems. The personas serve as a bridge between strategic planning and real-world application, helping agencies navigate the complexities of service delivery while ensuring that public transit remains accessible, efficient, and responsive to evolving community needs.

6.1 **RIDER PERSONAS**

A rider persona is a research-based profile representing a specific segment of a public transit agency's ridership. It is developed to better understand the needs, behaviors, and challenges of target riders. A public transit agency may have multiple rider personas, each reflecting different demographics, travel patterns, and priorities based on regional or system-specific factors.

TYPICAL PURPOSE OF TRIP-MAKING AMONG MICHIGAN PUBLIC TRANSIT RIDERS[14]

According to respondents of a 2024 survey of Michigan public transit agencies, medical appointments are the most common reason riders use public transit, followed closely by commuting to work. Errands make up the next largest share of trips, while fewer agencies reported that riders primarily use transit for social or recreational purposes or for traveling to school.

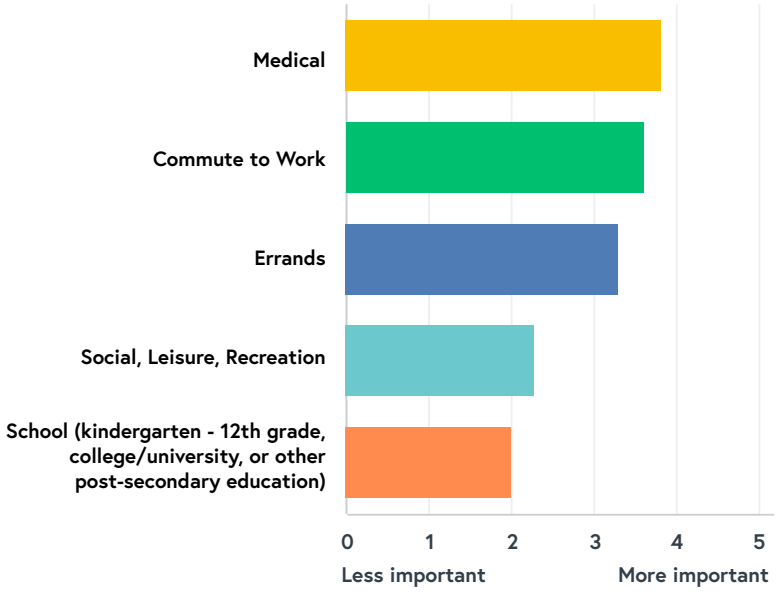


Figure 7: Chart showing Michigan public transit riders' leading trip-making purposes, according to agencies (sample size: 47)

Rider personas are essential for public transit agencies because they ensure services are designed to meet the real needs of riders. By developing detailed profiles of different rider segments, agencies can identify key challenges and refine their offerings to create a more efficient and accessible public transit system. Understanding rider personas also helps in selecting the right technology solutions—whether it's mobile ticketing, real-time tracking, or accessibility features—that best serve specific user groups. Additionally, these insights guide more effective marketing strategies, ensuring that riders are aware of and can fully utilize the technology and services available to them.

AVERAGE AGE OF MICHIGAN PUBLIC TRANSIT RIDERS[15]

According to respondents of a 2024 survey of Michigan public transit agencies, the largest share of riders are between 55 and 64 years old, followed by riders aged 65 and older. Riders between 45 and 54 make up the next largest group, with smaller proportions in the 35–44 and 25–34 age ranges. Very few agencies reported that most of their riders are under 25, indicating that Michigan's transit systems primarily serve middle-aged and older adults.

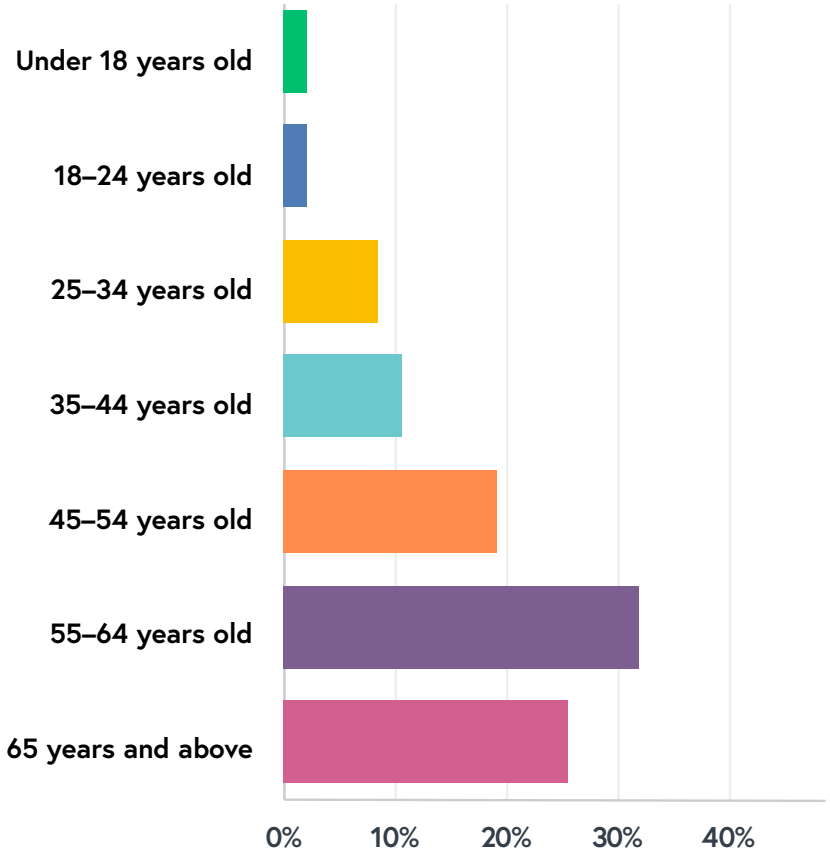


Figure 8: Chart showing the average ages of typical Michigan public transit riders (sample size: 47).

Following are the rider personas developed as part of our research. These profiles were informed by internal research and survey data, which revealed that Michigan public transit riders tend to skew older, with more than half of all riders over the age of 55 (see Figure 8). Additionally, the research indicated that most riders use public transit for practical purposes, such as commuting to work, running errands, or attending medical appointments, rather than for leisure or recreation (see Figure 7).

While these profiles provide a framework for understanding key rider segments, they do not represent all public transit users. Instead, they serve as a guideline to help agencies refine their approach. Therefore, the personas can be further customized in collaboration with operators and internal teams, either by adapting existing profiles or creating new ones as part of implementation planning.

RIDER PERSONA

The Savvy Student

A technology-savvy student balancing a part-time job and evening college classes relies on public transit as their primary mode of transportation. Without a driver's license, they depend on frequent and well-timed service to get to work and school on schedule. Challenges like missed connections and irregular schedules make real-time tracking, app-based ride requests, and reliable public transit essential for their success.

Background

- Suburban area
- No driver's license
- Tech-savvy
- Part-time college student
- Works at the local Walmart

OVERVIEW

Travel Habits

- Going to/from work daily
- Evening college classes

Challenges

- Infrequent service
- Missed connections
- Irregular work hours

Definition of Success

- On-demand service
- Arrives/departs on schedule

Technology Considerations

- On-demand ride requests
- Real-time bus tracking
- Phone app payments

RIDER PERSONA

The Independent Senior

A retired resident in a rural area relies on public transit for essential trips, including medical appointments and errands. Living on a fixed income and without access to fixed-route services, they require affordable, door-to-door public transit options that accommodate their mobility needs. With limited access to technology, they prefer printed schedules and phone-based reservation systems to navigate their public transit options independently and confidently.

Background

- Rural area
- Fixed income
- Does not own a smartphone
- Retired

OVERVIEW

Travel Habits

- Weekly medical appointments

Challenges

- Needs mobility assistance
- No access to fixed-route services

Definition of Success

- Fare-free system
- Accessible vehicles that provide door-to-door service

Technology Considerations

- Prefers printed schedules and maps
- Calls to reserve rides

RIDER PERSONA

The Hybrid Commuter

A professional with a hybrid work schedule chooses public transit over driving to avoid congestion and reduce commuting stress. While they own a vehicle, they prefer using public transit for part of the week, making seamless connections and real-time service updates crucial for a smooth commute. Access to onboard Wi-Fi, flexible ticketing options, and multimodal connections enhances their ability to stay productive while traveling and ensures a reliable alternative to driving.

Background

- Lives in urban area outside of city
- Owns a vehicle, but is a choice transit user
- due to commuter traffic congestion
- Salary job, with hybrid work schedule
- Owns a smartphone

OVERVIEW

Travel Habits

- Uses transit to transport children to city school and commute to work
- Travels to office only half of the week

Challenges

- Missed connections
- Need to utilize multiple routes for a single trip
- Commuter route into city needs to align with connecting route

Definition of Success

- Informed on bus cancellations or when running late
- Bus frequency and ease of connections

Technology Considerations

- Comprehensive phone application
- Connections to other transportation modes
- On-board, free Wi-Fi to enable working during commute

RIDER PERSONA

The Urban Multitasker

A busy city-based parent depends on public transit for daily errands, social outings, and transporting children. Without a personal vehicle, they navigate a mix of buses, micromobility options, and walking to get where they need to go. Their biggest concerns include the reliability of public transit, accessibility for strollers and bikes, and clear communication of delays or cancellations. Features like onboard safety measures, multilingual signage, and well-maintained infrastructure make public transit more convenient and efficient for their family's needs.

Background

- Lives in the city
- Does not own a vehicle
- Stay-at-home mother
- Hearing impaired

OVERVIEW

Travel Habits

- Uses public transit daily
- Uses public transit for errands, social, transporting kids
- Enjoys using bicycles

Challenges

- Stroller and/or bicycle storage on bus and onboarding/offboarding
- Late or cancelled transit service

Definition of Success

- Bus stops are not a far walk to/from destination
- Adequate bus stop/station infrastructure
- Transit cleanliness
- Multiple methods of communication

Technology Considerations

- Onboarding/offboarding safety applications
- Visual cues at bus stop/station and onboard
- Phone applications to support hearing impaired
- Ease of micromobility use, use (e.g., e-bikes)

RIDER PERSONA

The Determined Traveler

A senior, first-generation immigrant with LEP relies on public transit for errands, medical visits, and daily mobility. Without a driver's license, they face challenges in understanding signage, online public transit information, and verbal announcements. Navigating the system is further complicated by mobility constraints. Their experience is improved through multilingual signage, clear visual cues at stops and stations, and public transit apps with built-in translation features, allowing them to travel with confidence and independence.

Background

- 60 years old
- Does not own a vehicle/have a driver's license
- Speaks/understands very little English
- First-generation immigrant
- Uses a mobility device

OVERVIEW

Travel Habits

- Uses public transit often, including for errands, social outings, and transporting children
- Uses paratransit to access medical appointments

Challenges

- Difficulty traversing to/from the bus stop/pickup location, as well as onboarding and offboarding
- Trouble understanding signs, online content, and verbal announcements, which creates barriers to effective paratransit

Definition of Success

- Signs, online content, and onboard provision of content in multiple languages
- Ease of accessing bus stops/stations and transit vehicles (e.g., sidewalks, lighting)
- Ease of applying to use paratransit

Technology Considerations

- Transit apps and/or drivers equipped with text-to-speak translating tools
- Visual cues at bus stops/stations and onboard—to ease language barrier

RIDER PERSONA

The Young Navigator

A young school-aged rider takes public transit to and from school, often traveling alone or with siblings. With no school-provided transportation, they depend on buses to get to class on time and may need to travel later due to after-school activities. Delays, missed transfers, and safety concerns are significant challenges. Features like real-time tracking for students and parents, secure station amenities, and easy, cashless payment options help make their public transit experience safer and more accessible.

Background

- 13 years old
- Uses public transit to travel to elementary/secondary school
- Often travels alone or with siblings

OVERVIEW

Travel Habits

- Uses public transit to travel to and from school
- Often travels later due to after-school activities

Challenges

- Delayed or cancelled buses and late arrivals
- Difficulty understanding tranfers and new routes

Definition of Success

- Real-time tracking for both student rider and student's parents
- Ease of payment/adding funds

Technology Considerations

- Cashless, onboard payment
- Onboard Wi-Fi for devices without data/calling abilities
- Station amenities--security cameras, lighting, real-time information
- Online videos to help riders learn how to use the system

6.2 PUBLIC TRANSIT AGENCY PERSONAS

A **public transit agency persona** is a research-driven profile that represents the diverse public transit providers across Michigan. These personas highlight key factors, including geographic location, service models, urban or rural settings, operational hurdles, and success metrics. Michigan's public transit landscape encompasses a range of services, from large urban networks with extensive fixed-route services to small rural agencies specializing in demand-response transportation. Each agency operates within its own set of challenges, from funding limitations to technology adoption, making it crucial to develop tailored strategies that address their specific needs.

Public transit agency personas play a vital role in shaping effective policies and solutions by ensuring that recommendations are tailored to specific needs rather than being generic. By defining distinct characteristics and obstacles, these personas can help agencies identify the right technologies, both for internal operations, such as scheduling and fleet management, and for external rider-facing services, including mobile ticketing and real-time tracking. Additionally, they provide valuable peer insights, offering shared experiences and solutions from agencies facing similar challenges. This structured approach enables public transit agencies to make informed decisions, leveraging technology and best practices to enhance efficiency, accessibility, and overall service quality.

The following public transit agency personas pertain to this research project:

RURAL (DEMAND-RESPONSE)

Rural demand-response public transit agencies operate in areas with lower population densities, often serving communities with limited transportation options. These agencies typically have a small workforce and operate with constrained funding, which can lead to staffing shortages and service limitations. Unlike fixed-route systems, they rely on minivans, cutaway vans, and in some cases, ferries to provide flexible, on-demand transportation, typically requiring advanced reservations to be made through a dispatcher or app. Due to resource limitations, their operating hours may be restricted, with some agencies unable to offer early morning, late evening, or weekend services. This can pose challenges for riders who depend on public transit for essential trips outside standard business hours.

The riders who rely on these services often include seniors, individuals with disabilities, and those without personal vehicles, many of whom use public transit for medical appointments and essential errands. However, many rural riders may have limited familiarity with technology or lack access to smartphones and cellular data, making traditional phone-based ride scheduling a critical component of service accessibility. Additionally, rural areas frequently experience intermittent or unavailable communication services, further complicating real-time scheduling and trip coordination. As a result, successful rural demand-response public transit depends on clear communication methods, reliable scheduling systems, and accessible options that accommodate riders with varying levels of technological proficiency.

RURAL (DEVIATED FIXED-ROUTE)

Rural deviated fixed-route public transit agencies operate a hybrid service model that combines elements of fixed-route public transit with the flexibility of paratransit. Typically serving low-density communities with limited transportation options, these agencies often function with a small workforce, constrained funding, and potential staffing shortages. They primarily use minivans and cutaway vans to provide scheduled service along designated routes while also accommodating off-route deviations—usually up to a quarter of a mile—to pick up or drop off riders who have made reservations in advance. This model enables agencies to serve both regular commuters and riders with mobility challenges, striking a balance between structured service and demand-based accessibility. However, due to resource limitations, agencies must carefully coordinate scheduling and communication to ensure efficient operations and reliable service for all users.

SUBURBAN

Suburban public transit agencies serve communities that bridge the gap between urban and rural areas, offering a mix of fixed-route bus service, vanpools, demand-response options, and commuter buses. These agencies often cover expansive service areas, requiring them to balance the public transit needs of both densely populated suburban hubs and more rural outskirts. Their services are designed to connect residents to major employment centers, public transit hubs, and urban cores while also accommodating local travel. Unlike specialized public transit services, these agencies do not provide point-to-point transportation, and riders are not required to schedule trips in advance, allowing for more spontaneous and flexible use. Given their diverse geographic coverage, suburban public transit agencies coordinate commuter-friendly schedules, multimodal connections, and adaptable routing to effectively serve a broad range of riders.

URBAN

Urban public transit agencies operate in more densely populated areas, providing a range of services, including fixed-route buses, vanpools, and demand-response commuter options. As direct recipients of greater funding, these agencies typically own and maintain their fleets and may operate multiple facilities to support expansive service networks. Urban riders tend to be more familiar with technology, frequently using mobile apps for trip planning, ride-hailing, and fare payment. With higher ridership demand, these agencies prioritize efficiency, frequency, and multimodal connectivity to provide reliable and accessible public transit options that meet diverse commuter needs.

CHAPTER 7 **TRANSIT TECHNOLOGY MARKETING**

The successful implementation of public transit technology across Michigan hinges not just on the tools themselves but on how well agencies engage both staff and riders. Technology doesn't drive progress on its own, and without a clear, deliberate strategy to support adoption, even the most innovative solutions can fall short. Producing a report or issuing a set of recommendations isn't enough. True transformation requires structured training, consistent communication, and a commitment to addressing institutional and cultural barriers that may hinder change.

External marketing plays a vital role in this process. Public-facing campaigns help build awareness, encourage public trust, and drive rider adoption of new tools and services. Whether it's introducing mobile ticketing, real-time tracking, or on-demand transit options, agencies must clearly communicate the benefits and functionality of new technologies. Effective outreach leverages a mix of digital media, community events, and trusted local partnerships to reach diverse audiences. By meeting riders where they are and listening to their feedback, agencies can turn passive users into active participants in the transit system's evolution.

Yet before any external marketing can succeed, internal alignment is key. This is where change management becomes essential. For new technologies to take root, they must first be embraced within the organization. Change management offers a structured framework for coordinating and implementing new systems while minimizing disruptions. This includes early engagement with employees, training that builds confidence and competence, and fostering a workplace culture that sees innovation as a shared goal. When transit staff are empowered and aligned, they become the strongest ambassadors for change, translating internal readiness into external impact.

This chapter explores the role of internal and external marketing of public transit technology. It highlights key challenges agencies may face and outlines strategies for effectively communicating the benefits of new systems, incentivizing adoption, and ensuring a smooth transition through workforce training and public engagement.

7.1 THE IMPORTANCE OF CHANGE MANAGEMENT

Figure 9: Change management in the context of technology procurement.

Adopting new technologies presents challenges for any organization, particularly for public transit agencies, where limited resources, regulatory constraints, and long-standing operational practices can slow the pace of change. These agencies operate in a space where the push for modernization meets the pull of established systems, interested in improving service with digital tools but constrained by the practical realities of day-to-day operations. Navigating this terrain requires a deliberate, people-focused approach to change management—one that fosters internal alignment, prepares teams for transition, and clearly demonstrates how new tools will benefit both staff and riders (see Figure 9).

Research indicates that 70% of organizational change initiatives either fail or do not result in sustained change.

The importance of effective change management cannot be overstated. Research indicates that 70% of organizational change initiatives fail or do not result in sustained improvements, often due to a lack of clear communication, inadequate training, and a failure to address resistance. To counter this, agencies are encouraged to invest in change management strategies to ensure that staff are prepared for change.

THE FOLLOWING KEY CONSIDERATIONS REFLECT COMMON CHANGE MANAGEMENT CHALLENGES PUBLIC TRANSIT AGENCIES MAY FACE AND SUGGESTIONS ON HOW TO OVERCOME THEM:

Role Alignment and Communication
Many frontline and administrative staff may view public transit technology as outside their core responsibilities, particularly in roles that are already stretched thin. It's crucial to align new tools with existing duties and clearly demonstrate how they simplify daily tasks. Ongoing, targeted communication can help overcome resistance to change and skepticism by connecting innovation with real, tangible benefits, not as a top-down directive, but as a shared opportunity.

Staffing, Capacity, and Workload
Small and rural public transit agencies often operate with lean teams, where individuals juggle multiple roles. This can limit the time, focus, and energy available for adopting new systems. The reality of overloaded staff raises important questions around how to motivate employees and integrate new processes without overwhelming them. Support from MDOT—in the form of centralized resources or implementation guidance, for example—can help reduce strain and build momentum.

Workforce Transitions and Timing
High turnover and upcoming retirements across the sector add urgency and complexity to technology rollouts. Agencies should carefully consider the timing of their adoption efforts to avoid losing institutional knowledge during critical transitions. Structured knowledge management strategies, peer mentorship, and documented processes can help ensure continuity while creating opportunities to upskill the next generation of public transit professionals.

Organizational Culture and Employee Well-being
In a post-pandemic workplace, achieving a work-life balance and promoting employee well-being are top priorities. Employees may be reluctant to take on new responsibilities without seeing a clear return on investment for their time and effort. Fostering a culture that supports innovation and personal sustainability is essential. This includes thoughtful change management, access to training, and visible leadership support for employee growth and adaptation.

Cost, Bandwidth, and Broader Challenges
Technology is only one part of the equation. Agencies also face constraints around budget, staffing bandwidth, compliance requirements (such as passing drug tests), and broader operational challenges. As a result, any strategy for technology adoption should be realistic, responsive, and positioned within the larger context of what public transit agencies are truly up against.

By understanding and addressing these challenges, public transit agencies across Michigan can better position themselves for successful, long-term digital transformation, with MDOT serving as a valuable partner throughout the process.

7.2 STRATEGIES FOR SUCCESSFUL CHANGE MANAGEMENT

To successfully introduce new public transit technologies, it is important to consider organizational development and the people who will use, support, and promote them. Before an agency identifies the technologies it is rolling out—whether internal systems, operator tools, or public-facing enhancements—it might consider planning how to build awareness, train staff, and engage both internal and external audiences. How do operators, frontline staff, and employees interact with the new technology? How will the public learn about and trust these changes? These are not afterthoughts—they are essential questions that can be addressed through a strong change management strategy.

At the agency level, embracing new technology is only part of the journey. The broader goal is to cultivate a culture of adaptability—one that welcomes innovation, understands its purpose, and feels supported through each stage of change. In this sense, change management is about establishing processes to evaluate, coordinate, and implement change in a way that minimizes disruption, reduces errors, and helps people feel confident and informed. For complex public transit agencies, change management is about bringing everyone along for the ride—and ensuring that staff are not just informed, but empowered.

In other words, this is all about people. Success hinges on how well an agency communicates, trains, and motivates its workforce. It requires thoughtful planning to overcome institutional barriers and foster participation at all levels. *Public transit agencies can lay the groundwork for smooth transitions by focusing on the following strategies:*

EMPOWER EARLY ADOPTERS AND "CHANGE CHAMPIONS"

Identifying and supporting individuals who are naturally enthusiastic about innovation is essential. These early adopters can serve as "change champions" who lead by example, mentor peers, and help normalize new technologies. Agencies can amplify their impact by providing dedicated tools, training, and recognition. Their success stories—focusing on how technology improves effectiveness and simplifies tasks—can be shared to inspire others.

TAILOR TOOLS TO SPECIFIC ROLES AND RESPONSIBILITIES:

Public transit technology is most effective when it aligns with the day-to-day realities of employees. Customizing tools to match job functions ensures smoother integration into workflows, reduces friction, and increases engagement. Solutions can be tested with diverse employee groups, including frontline staff, to ensure practicality and usability across different roles and environments.

DELIVER ONGOING, ROLE-SPECIFIC TRAINING

Training can be seen as a continuous journey, not a one-time event. Programs should go beyond technical instruction to highlight the benefits of new tools and encourage broader skill development. Agencies may consider establishing structured processes to identify and support internal talent development and mobility. Offering certifications and learning pathways can position training as an opportunity for professional growth rather than a compliance task.

INCENTIVIZE LEADERSHIP AND PARTICIPATION

Incentives can significantly increase engagement. Public transit agencies may consider revising their compensation structures to offer promotions or role reclassifications for employees who achieve certifications or lead implementation efforts. Recognizing those who take on key roles in the marketing and rollout of new technologies reinforces that these efforts are valuable, career-building contributions.

BUILD A CULTURE OF LEARNING AND INNOVATION

Foster an environment where participating in technology rollouts—or even leading aspects of the program—is viewed as an opportunity for personal and organizational growth. Celebrate contributors publicly, establish peer learning cohorts, and encourage cross-functional collaboration. A supportive, forward-looking culture is critical to sustaining momentum and enthusiasm over time.

ESTABLISH A ROBUST, MULTI-LEVEL CHANGE MANAGEMENT PLAN

Successful change management spans program-level, agency-wide, and cross-agency coordination. A comprehensive plan may include action planning, leadership alignment, communications strategies, knowledge-sharing mechanisms, and marketing initiatives. MDOT can play a key role in supporting agencies with toolkits, templates, and shared learning resources.

When change management and organizational development are planned and executed with care and focus, public transit agencies are better positioned to implement new technologies with minimal disruption and maximum impact, both internally and for the communities they serve.

7.3 THE ROLE OF INTERNAL MARKETING AND COMMUNICATIONS IN CHANGE MANAGEMENT

For Michigan public transit agencies, effective change management starts with strong, strategic marketing and communication. As new public transit technologies are introduced, clear and consistent communication helps employees understand what's coming, why it matters, and how they'll be supported throughout the transition. It's about generating buy-in, building momentum, and creating internal advocates for change.

To drive adoption and foster long-term engagement, we recommend that Michigan public transit agencies implement a coordinated mix of communication and training touchpoints (see Figure 10). This can include kick-off meetings to launch new initiatives, regular training sessions tailored to staff roles, and monthly office hours to provide space for ongoing questions and feedback. A central hub for communications—whether digital or in-person—can help ensure that all employees receive timely updates, clear guidance, and access to resources.

Supplementing this with **on-demand and in-person training tools**, such as virtual and in-person workshops, short instructional videos, how-to guides, and interactive modules, can help agency staff gain the foundation through live group facilitator-led training sessions, while also providing the flexibility to continue learning at their own pace and revisit materials as needed. Pairing these resources with a coordinated **branding program** for new technologies will also reinforce consistency across agencies, increase visibility, and build confidence in the tools being introduced.

To support a unified approach across the state, agencies may benefit from a shared **marketing and communications toolkit**. Potentially led by MDOT, this could include customizable messaging templates, branding elements, design templates, FAQs, and sample outreach plans—flexible enough to reflect each agency's unique culture, while staying aligned with broader statewide goals. Regular quarterly updates and feedback loops can further strengthen communication efforts by celebrating milestones, surfacing concerns early, and reinforcing key messages.

By integrating marketing and communication into every phase of change management, Michigan public transit agencies can ensure smoother rollouts, stronger engagement, and more successful adoption of new technologies, turning change into an opportunity for growth, innovation, and improved service.

SAMPLE COMMUNICATIONS

Kick-off Announcement
Publish an agency-wide announcement sharing news about the rollout of new public transit technology. The messaging might include high-level details about the technology rollout, its benefits for staff and riders, instructions on how employees can get started, a link to the main resources page, and contact information for support.

Agency-wide Communication
Leverage internal communications channels to effectively promote your public transit technology rollout. Communications can include sharing success stories and use cases from the field, providing updates on deployment and development progress, highlighting the agency's commitment to innovation in public transit, sharing calls to action (e.g., register for quarterly knowledge-sharing sessions), and linking to key program resources.

Agency-wide Knowledge-sharing
Meet quarterly as an agency to discuss all aspects of the public transit technology rollout. We recommend opening these meetings to current users as well as staff who are interested in learning more or considering adoption, creating space for knowledge sharing, feedback, and broader engagement.

Figure 10: Typical process of communicating the rollout of new technology.

LEADERSHIP ALIGNMENT AND ACTION PLAN FRAMEWORK

Agencies can establish a straightforward framework that outlines how leaders will support and communicate change throughout the program. Consider building the framework around three key areas:

Attendance
Identify which stakeholders will attend which meetings related to change.

Alignment
Assess the degree of stakeholder alignment to the objectives of the transformation and identify steps to correct any misalignment.

Advocacy
Clarify the role that stakeholders will play in driving and accelerating change around new technology.

7.4 STRATEGIES FOR EXTERNAL MARKETING OF NEW TRANSIT TECHNOLOGY

After a successful change management strategy is in place, external marketing becomes a critical next step for raising awareness, building rider trust, and driving adoption. To be effective, marketing efforts must be adaptable and scalable, designed to fit the unique size, capacity, and context of each agency. From community-based outreach to comprehensive digital campaigns, the most impactful approaches are those that elevate the rider experience, reflect internal readiness, and foster opportunities for collaboration across stakeholders.

Marketing is not a one-time task but an ongoing process that must evolve alongside shifting public needs, agency capabilities, and the broader technological landscape. For new transit technologies to succeed, they must be introduced with thoughtful, inclusive, and community-driven marketing. By leveraging existing assets, forming creative partnerships, and using adaptable tools, agencies across Michigan can ensure that technology investments truly serve their communities, fostering more connected, informed, and equitable transportation systems statewide.

This section presents practical strategies for marketing new transit technologies, with a focus on digital communication, community engagement, shared resources, and sustained outreach.

1. SCALABLE, FLEXIBLE PLANNING

Marketing efforts should be designed to accommodate a range of budget levels and staff capacities. Agencies may implement low-cost, high-impact tactics, such as social media engagement or printing flyers, or invest in more resource-intensive strategies, including coordinated advertising campaigns, branded bus wraps, or community events. The ability to scale up or down enables agencies to remain responsive to both community needs and internal constraints.

2. DIGITAL MEDIA AND SOCIAL PLATFORMS

Digital communication platforms—particularly social media—offer an efficient and cost-effective means of engaging riders and the broader public. Agencies may wish to focus on one or two platforms most aligned with rider demographics (e.g., Facebook and Instagram), rather than attempting to maintain a presence across every channel.

Key social media tactics include:

- **Promoting real-time rider stories, testimonials, or user-generated content through platform-specific campaigns and hashtags.**
- **Encouraging employee advocacy to amplify posts within their personal and professional networks.**
- **Collaborating with community influencers and local leaders to promote technology adoption.**
- **Partnering with schools, hospitals, senior centers, and local service providers to co-share messages on their digital platforms.**

These efforts can be further supported by targeted outreach to communities that may require more one-on-one support, including seniors or underserved populations.

3. COMMUNITY-BASED PARTNERSHIPS

Agencies can extend their reach and credibility by establishing partnerships with community organizations. Co-branded campaigns with local entities—such as libraries, mental health services, grocery stores, hospitals, doctors' offices, schools, or religious centers—can promote technology rollouts and increase visibility within trusted community networks. These partnerships may also help address equity goals by ensuring outreach efforts are accessible and representative of local populations.

4. PRINT MEDIA AND PUBLIC SIGNAGE

In communities with limited digital access, print materials continue to be a vital tool for communication. Higher-cost options such as bus foils, billboards, and station signage can enhance visibility and reinforce consistent branding. Agencies may also consider using printed flyers, posters in high-traffic locations, or mailed newsletters as complementary methods for reaching their target audiences.

5. SHARED RESOURCES AND INTERAGENCY COLLABORATION

Agencies with limited internal capacity can benefit from collaborative models of marketing execution. For example, high school or university student interns can support the design and delivery of digital marketing materials, often at low or no cost through academic credit or volunteer programs. Similarly, neighboring transit agencies can co-develop shared toolkits—such as customizable flyers, social media templates, or sample press releases—that reflect a flexible approach to messaging while reducing duplication of effort.

Establishing centralized design templates at the regional or state level (e.g., via MDOT) could also further streamline implementation and promote visual consistency across agencies.

6. TECHNOLOGY-ENABLED CONTENT CREATION

The proliferation of user-friendly marketing tools allows agencies to create professional-quality content with minimal effort or design expertise. Platforms such as Canva (graphic design), Mailchimp (email marketing), and Animoto (video creation) can support fast and replicable marketing across digital touchpoints. These tools also enable timely updates, iterative improvements, and responsive communication aligned with technology rollouts.

7. DIRECT RIDER ENGAGEMENT AND FIELD-BASED OUTREACH

In-person engagement remains a powerful tactic for fostering trust and increasing awareness. Agencies may consider hosting field days where staff ride alongside passengers, answer questions, and distribute marketing materials that promote the usage of apps or other new technologies. QR codes on printed flyers can offer direct access to downloads, tutorials, or service updates. Similarly, volunteer programs that pair tech-savvy students with seniors at community centers can offer one-on-one assistance while building intergenerational trust and comfort with digital tools.

8. NEWSLETTERS AND TARGETED MAILINGS

Traditional outreach methods such as print newsletters, mailers, and bulletin-board postings at transit centers continue to play a key role in reaching non-digital users. Digital newsletters and email campaigns—particularly when sent in partnership with trusted community organizations—can also reinforce key messages and provide updates in a format that is easy to share and reference.

9. ADVERTISING AND REVENUE-GENERATING STRATEGIES

Agencies may also consider marketing not only as an outreach effort but as an opportunity for revenue generation. Creative use of advertising—both digital and physical—can provide funding that offsets the cost of future marketing campaigns.

Examples include:

- **Installing digital signage or screens on buses or at stations can serve dual purposes: as rider information platforms and as advertising platforms for local businesses.**
- **Publishing branded newsletters or flyers that include sponsorship space for healthcare providers, community colleges, or local employers.**
- **Offering ad space on agency websites, apps, or printed schedules can help offset the production costs while supporting local economic development.**

By creating modest advertising programs and partnering with mission-aligned sponsors, agencies can establish sustainable funding streams that directly support marketing efforts, enhance rider communication, and expand public engagement, all without relying solely on operating budgets.

10. COMMUNITY EVENTS AND ON-THE-GROUND PRESENCE

Public transit agencies can deepen trust and visibility by participating in community events, which offer natural opportunities to connect with riders where they already gather. Unlike passive outreach channels, community events allow for active engagement, one-on-one conversations, and real-time demonstrations of new technologies, such as mobile apps, payment systems, or scheduling tools.

Agencies might consider the following opportunities:

- **Sponsor booths at local fairs, festivals, and farmers markets, where they can offer informational materials, give tech demonstrations, and even distribute branded giveaways that promote app downloads or transit awareness.**
- **Participate in events hosted at community centers, senior residences, schools, and places of worship, especially those that already draw transit-reliant populations.**
- **Provide on-site support, such as transit ambassadors or digital access stations, where staff can guide residents through a new scheduling platform or assist them in setting up their accounts.**
- **Collaborate with partner organizations to co-host transportation-themed events, such as "Mobility Days" or "Transit Tech Tuesdays," that combine education, hands-on support, and entertainment in an approachable setting.**

These events not only raise awareness but also allow agencies to conduct hands-on training, gather direct feedback from riders, understand adoption barriers, and tailor their marketing and training strategies accordingly. When coordinated effectively, community-based outreach reinforces public perception of transit as a responsive, human-centered service and can foster greater participation in future initiatives, including funding referendums or pilot programs.

7.5 **OPPORTUNITIES FOR PLACE-BASED MARKETING**

Detroit's People Mover is more than just a mode of transportation—it's a curated public art experience. Thanks to a visionary commission formed in 1984, each of the 13 stations showcases striking public art, transforming the 2.9-mile loop into a vibrant cultural journey. [16]

Placemaking is rooted in the simple but powerful idea that public spaces should be designed for people first. Evolving over decades, it has become a collaborative approach that combines urban design, cultural expression, and community input to create vibrant, inclusive, and functional spaces. When applied to public transit, placemaking can transform routes, stations, and even informal gathering points—such as park-and-ride lots or roadside pull-offs—into welcoming community hubs. Especially in rural areas where traditional infrastructure may be limited, these efforts offer creative opportunities to make public transit more visible, accessible, and appealing.

Beyond improving the user experience, placemaking acts as a powerful marketing tool for public transit networks. By investing in well-lit pathways, digital signage, inviting gathering spaces, and connections to local amenities, agencies can shift public perceptions and build a stronger emotional connection to transit options. Placemaking helps position transit stops and routes as central nodes of community life, driving higher adoption rates and long-term support. Successful efforts often rely on strong public-private partnerships that align resources and priorities, ensuring projects are both impactful and financially sustainable.

BOOSTING RIDERSHIP THROUGH PUBLIC ART[17]

The Creative Bus Shelter Initiative in Portland, Oregon, tackled the inconvenience of waiting for buses by transforming bus shelters into vibrant works of public art. In partnership with local artists, Creative Portland, the Greater Portland Metro, and the Greater Portland Council of Governments utilized art installations to promote multimodal transportation, increase ridership, and celebrate diversity and inclusion. Supported by the National Endowment for the Arts, the project has installed 14 artistic shelters throughout the city, with a second phase launched in 2021. This initiative gained national recognition when one of its designs, by Ebenezer Akakpo, won Streetsblog's Best Bus Stop in the USA competition, fostering community pride and celebration.

DIRECTING RIDERS TO RESOURCES USING WAYFINDING[18]

In partnership with Forecast Public Art, Detroit-based designer Ndubisi Okoye created a wayfinding system to guide residents along the half-mile route from a nearby bus stop to Lasky Recreation Center. Partnering with city departments and gathering community feedback, Okoye designed 17 bold, multilingual signs with vibrant colors, clear symbols, and ground-painted arrows to ensure accessibility and inclusivity. This successful project not only connected residents with vital resources but also inspired Detroit to develop a new process for designing wayfinding systems near public transit corridors.

7.6 THE ROLE OF KNOWLEDGE MANAGEMENT, WORKFORCE TRAINING, AND UPSKILLING

Change management is a continuous process—one that evolves in tandem with an agency's workforce, tools, and goals. As public transit agencies roll out and sustain the use of new technologies, three elements become especially critical to success: **knowledge management, workforce training, and upskilling**. These components help preserve institutional knowledge, prepare staff for new responsibilities, and build a workforce that's agile and ready to embrace innovation far beyond the initial introduction of new technology.

For Michigan public transit agencies, effective knowledge management ensures that expertise is retained and shared, especially as experienced employees transition out of the workforce. A strong training foundation—supported by dedicated internal resources—ensures that employees have access to up-to-date learning materials, technical guidance, and peer exchange opportunities. Upskilling initiatives, in turn, help agencies future-proof their workforce by equipping staff with the capabilities needed to work confidently with evolving public transit technologies.

Together, these efforts form the backbone of a successful change management strategy—one that empowers employees and supports long-term adoption.

KNOWLEDGE MANAGEMENT

Across Michigan's public transit agencies, many operations still rely heavily on a tenured workforce—experienced employees who carry vital institutional knowledge "in their heads." While this deep expertise is invaluable, it also presents a challenge during times of change. When long-serving staff retire or leave, their knowledge often goes with them, creating gaps that can disrupt continuity and slow the adoption of new public transit technologies.

The rollout of new public transit technology presents a timely opportunity to transition from informal knowledge sharing to a more structured and sustainable knowledge management strategy. By intentionally capturing and transferring expertise, public transit agencies can ensure that critical insights are preserved and shared, reducing the impact of workforce transitions and enabling smoother, more effective implementation of new tools and processes. Seasoned staff can be actively involved in shaping this effort, documenting best practices and guiding the development of new workflows.

Agencies can consider the following components of knowledge management when fulfilling the promise of this digital delivery program:

Shadowing, Mentorship and Collaboration, and Ownership

Building a knowledge-sharing culture starts with creating opportunities for employees to learn from one another (see Figure 11). Structured shadowing programs, peer mentorship, and collaborative problem-solving help ensure that knowledge is passed along. Engaging staff early and giving them ownership over aspects of the rollout fosters long-term investment and a smoother transition.

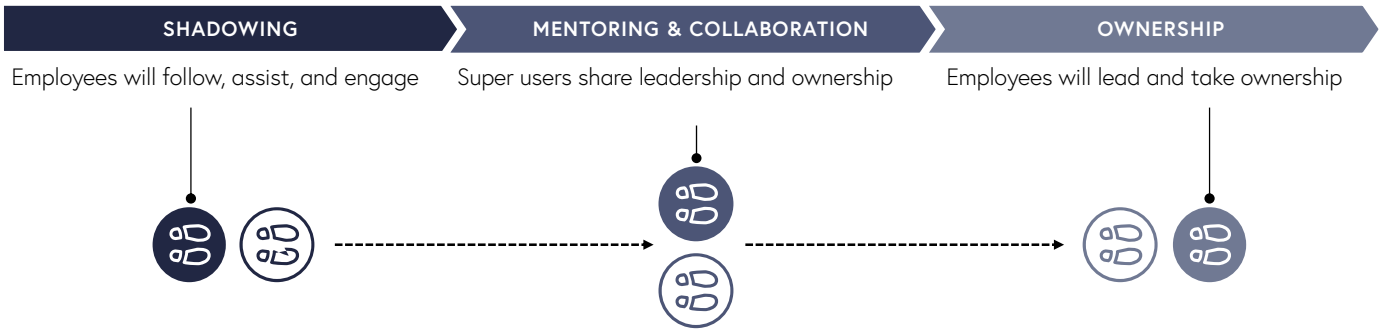


Figure 11: Typical process of cultivating a knowledge-sharing environment.

Identification of superusers and champions

Agencies may consider identifying and training superusers who can serve as internal experts and advocates for new technologies. These champions can come from across the workforce, including seasoned employees who shift from hands-on roles to mentoring or oversight positions. As respected peers, they are well-positioned to build trust and drive adoption among their colleagues.

Documentation and support

Knowledge retention may be embedded into every stage of the rollout. Superusers and other designated staff can be tasked with documenting key processes, creating how-to guides, maintaining design specifications, and identifying and addressing knowledge gaps. Tools like knowledge agreements, documentation templates, and regular review cycles can help standardize and strengthen this work.

Developing and centralizing training material

A shared library of resources—such as videos, manuals, quick-start guides, and process maps—can be created and maintained as part of the agency's knowledge management strategy. These materials not only support onboarding but also act as living documents that evolve as technology and practices change.

WORKFORCE TRAINING AND UPSKILLING

As Michigan public transit agencies introduce new technologies, workforce training and upskilling play a crucial role in ensuring a smooth and successful transition. Capturing insights from experienced staff is key to developing effective training programs rooted in real-world knowledge. These seasoned employees bring a deep understanding of public transit operations that can inform practical and relevant training content. At the same time, it's essential to design training that resonates with newer staff, blending institutional wisdom with modern learning methods to build a skilled, confident workforce ready to adopt and sustain change.

To support this effort, Michigan public transit agencies might consider the following core elements when developing a workforce training and upskilling plan:

Skillset assessments

Start by identifying existing skills and pinpointing gaps that may impact the adoption of new public transit technologies. These assessments help shape training content, prioritize learning needs, and guide leadership in allocating resources effectively.

Training plans and materials

A flexible, evolving training strategy is essential. As projects progress, agencies can refine their approach based on what works best for them. This may include onboarding modules for new users, group workshops, targeted sessions for specific roles, and refresher courses to keep skills up to date. Materials may be practical, accessible, and tailored to real tasks employees encounter on the job.

Train-the-trainer programs

Designate superusers—employees who are early adopters of the technology—to serve as peer trainers. These individuals can help scale training efforts by providing one-on-one guidance, answering questions in real time, and building trust across teams.

Technology use in training

Use digital tools to make learning more accessible and dynamic. Virtual training sessions, remote assistance, and an on-demand video library can support staff in the field and in the office. Consider capturing "tips from the field" to document practical insights that might otherwise be lost, creating a resource that's as informative as it is authentic.

CURRENT FUNDING SOURCES FOR PUBLIC TRANSIT AGENCY MARKETING AND TECHNOLOGY[19]

According to respondents of a 2024 survey of Michigan public transit agencies, federal funding is the most common source of support for marketing and technology investments, used by roughly 85% of agencies. Just over half of agencies rely on state funding, while about half also draw from local revenue sources such as fares, advertising, or retail sales. In addition, around 60% of agencies reported using other supplemental funding sources, indicating that most agencies rely on a mix of funding streams rather than a single primary source.

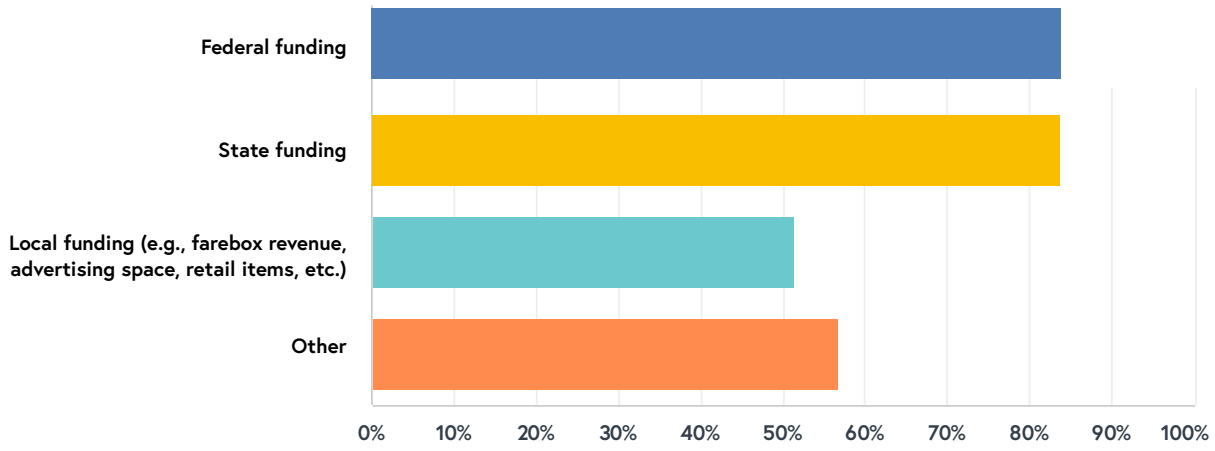


Figure 12: Chart showing Michigan public transit agencies' current leading funding sources (sample size: 36).

Developing and sustaining effective public transit systems requires a strategic, diversified funding approach that supports long-term financial resilience. Public transit agencies operate within a complex landscape of federal, state, and local funding sources, supplemented by private investment and community contributions. These resources are essential not only for infrastructure upgrades and service expansion but also for supporting new technologies and the marketing efforts needed to drive their adoption. Without funding for outreach and engagement, even the most promising innovations risk going unused or underutilized (see Figure 12).

Philanthropic foundations are playing an increasingly vital role in advancing equitable, sustainable, and innovative mobility solutions. By providing targeted grants, they can help agencies pilot new technology programs and promote their adoption through community-informed marketing and outreach. In addition to foundation support, agencies can explore financial mechanisms such as public-private partnerships, green bonds, or risk-sharing models to unlock investment, manage financial exposure, and accelerate implementation. Strategically layering these funding streams enables agencies to build more responsive and future-ready transit systems.

"Procurement is a long and arduous to navigate—especially for new persons in the transportation field."[20]

— Insight from 2024 survey of Michigan public transit agencies

In Michigan, transit funding is drawn from a mix of federal, state, and local sources. Locally, this includes fare revenue, general funds, and property tax millages. Property tax millages—used by 54 of Michigan's transit agencies—are a key tool for securing long-term, voter-approved funding.[21] These millages are calculated based on a property's assessed value and must undergo a public process. Local governments propose the rate, duration, and purpose of the millage, which must be approved by a governing body and then voted on by the public. If passed, the millage will provide a predictable revenue stream to support the specific transit investments outlined in the proposal.

The following section outlines funding strategies that public transit agencies can use to support both the implementation and promotion of new technology programs, ensuring not only that these tools are introduced but that they are embraced by the communities they serve.

8.1 FUNDING OPTIONS FOR PUBLIC TRANSIT TECHNOLOGY

PROSPECTIVE FUNDING SOURCES FOR PUBLIC TRANSIT TECHNOLOGY MARKETING[22]

According to respondents of a 2024 survey of Michigan public transit agencies, the most commonly cited potential future funding source for marketing and technology is general grant funding, identified by nearly 75% of agencies. Partnerships with outside entities—such as public-private collaborations, universities, hospitals, or manufacturers—were the next most cited source, selected by about 60% of agencies. Local government support and scalable marketing planning followed, while fewer agencies expect to rely on creative budgeting or grassroots fundraising, and only a small share selected "other" sources.

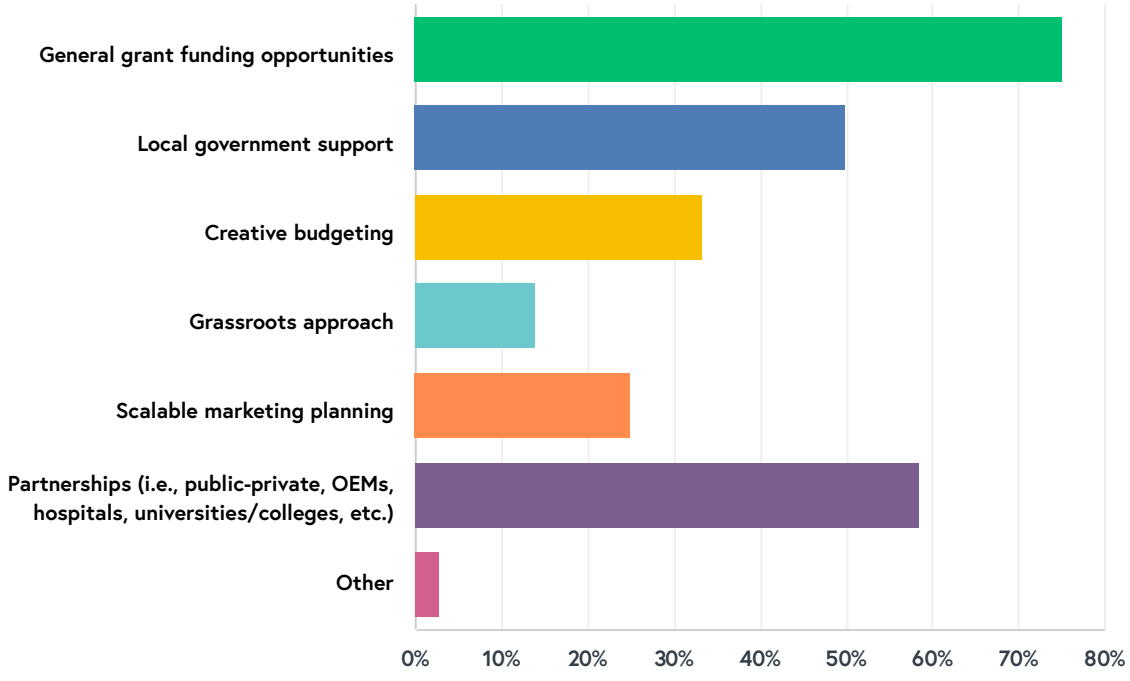


Figure 13: Chart showing Michigan public transit agencies' prospective leading funding sources (sample size: 36).

Funding new public transit technology requires a varied approach, combining public, private, and community-driven financial strategies to ensure sustainability and growth. From government grants and Green Bonds to P3s and crowdfunding initiatives, public transit agencies have multiple pathways to secure the necessary resources. This is true for Michigan public transit agencies, which derive considerable funding from grants, partnerships, and local government (see Figure 13). Each funding model offers unique advantages, including predictable revenue, reduced financial risk, and increased community engagement. These funding tools are summarized below.

When pursuing funding for new technology, agencies should be sure to account for the cost of marketing and public education. Communicating the value and purpose of the technology is critical to successful adoption and long-term impact.

FEDERAL GRANT FUNDING

Federal grant funding for public transit in the U.S. supports a wide range of initiatives aimed at improving safety, accessibility, innovation, and sustainability in transportation systems. These competitive grants are available to public agencies, tribal governments, and private sector partners, with eligible projects spanning from station accessibility upgrades to the deployment of advanced technologies. Whether focused on equity, environmental impact, or emerging mobility solutions, these programs offer flexible funding levels based on project scope and need.

EXAMPLES:

- **All Stations Accessibility Program (ASAP):** Public transit agencies are using ASAP funds to upgrade older rail stations with elevators, ramps, and accessibility technologies such as audio announcements and tactile signage, ensuring legacy systems are fully ADA-compliant while improving the rider experience through clearer, more inclusive information.[23]

- **Accelerating Innovative Mobility (AIM) Program:** Agencies are piloting autonomous shuttle services with AIM support, leveraging funding for activities such as planning, developing service models, acquiring equipment, and evaluating outcomes—testing how cutting-edge technologies can improve first- and last-mile connectivity while reducing operational costs. For example, the City of Wilson in rural central North Carolina received $250,000 to replace its fixed-route transit with on-demand, accessible microtransit, offering phone booking and lower fares to better serve local mobility needs.[24]

- **SMART Grants Program:** Through SMART grants, public sector agencies are conducting demonstration projects that integrate advanced smart community technologies—such as traffic management systems and transit signal priority—to improve transportation efficiency, enhance safety, and reduce greenhouse gas emissions across urban corridors. Five projects received funding in Michigan, with one of the projects being a transit project establishing open data standards among three counties, enabling publicly accessible real-time transit information.[25]

ORGANIZATION-PAID FARES AND BULK PUBLIC TRANSIT PROGRAMS

Organization-paid fare and bulk transit programs offer transit agencies a powerful marketing and revenue tool—providing predictable funding streams while embedding public transit into daily routines at workplaces, campuses, and hospitals. By partnering with employers, universities, and healthcare providers, agencies can expand their rider base, boost visibility, and promote lasting transit habits among key commuter groups. These programs also help agencies position themselves as integral to sustainable, congestion-reducing urban mobility solutions.

EXAMPLES:

- **Seattle's ORCA Business Passport Program (Seattle, WA):** Companies provide subsidized ORCA public transit passes to employees, reducing congestion, promoting public transit use, and supporting sustainability goals.[26]

- **Chicago Transit Authority's (CTA) U-Pass Program (Chicago, IL):** Universities bulk-purchase unlimited ride U-Passes for students, ensuring steady funding for CTA while offering students affordable campus and city-wide mobility.[27]

- **Boston's Medical Transit Partnership (Boston, MA):** Hospitals subsidize public transit fares for patients and staff, ensuring low-income and senior patients can access medical care without financial strain.[28]

GREEN BONDS AND CLIMATE FINANCING

Green Bonds and climate financing provide a crucial funding mechanism for sustainable public transportation projects, offering long-term, low-interest capital to support energy-efficient infrastructure, EV fleets, and public transportation technology enhancements. By attracting socially responsible investors, these bonds enable public transit agencies to meet climate action goals and carbon reduction mandates, while promoting low-emission transportation solutions. Additionally, Green Bonds encourage private investment from environmentally conscious institutions, driving the transition toward cleaner, more sustainable urban mobility.

EXAMPLES:

- **San Francisco Bay Area Rapid Transit (San Francisco, CA)**: In 2017, BART issued $500 million in Green Bonds to support projects that reduce greenhouse gas emissions, electrify train fleets, and improve energy efficiency within the public transit network.[29]
- **Capital Transit (Juneau, AK):** In 2024, FTA issued $11.8 million to fund the purchase of electric buses, installation of charging equipment, and initiation of a workforce development program to improve service, reliability, and air quality.[30]
- **Massachusetts Bay Transportation Authority (Boston, MA):** In 2017, MBTA issued $337 million in Green Bonds to fund public transit infrastructure upgrades, including energy-efficient station lighting, solar panels, and sustainability-focused retrofitting.[31]

CROWDFUNDING AND COMMUNITY INVESTMENT

Crowdfunding and community investment are inherently marketing-driven funding strategies, enabling transit agencies to build public support while raising capital for improvements. By inviting residents, businesses, and local governments to directly invest in mobility solutions, these models promote shared ownership, attract corporate sponsors, and generate positive visibility. They not only fund pilot programs and service expansions—they also strengthen brand loyalty, community trust, and alignment between transit offerings and local needs.

EXAMPLES:

- **Detroit Transportation Corporation (Detroit, MI):** In December 2023, the Detroit Transportation Corporation launched a fare-free pilot program on the People Mover, supported by a corporate sponsorship donation. This initiative increased ridership and demonstrated the viability of business-funded public transit operations.[32]

- **Eastern Sierra Transit Authority (Mammoth Lakes, CA):** The Eastern Sierra Transit Authority (ESTA) provides a free bus service in Mammoth Lakes, funded by local tax revenues and private sponsorships from Mammoth Mountain Ski Area. This model reduces congestion and supports seasonal public transit demand.[33]

- **Commute.org (San Mateo County, CA):** Commute.org launched the STAR platform in 2016, a web-based commuter rewards system that logged 700,000+ trips by 2019. A mix of private sector contributions and local community investments funds this program to promote sustainable commuting habits.[34]

PUBLIC-PRIVATE PARTNERSHIPS (P3s)

P3s offer a strategic approach for public transit agencies to leverage private sector investment and expertise in developing, operating, and maintaining public transit systems. By bringing in private capital, these collaborations help reduce financial and operational risks while accelerating project timelines and improving service efficiency. Additionally, P3s encourage technological innovation, as private partners introduce advanced solutions and best practices to enhance public transit infrastructure and mobility services.

EXAMPLES:

- **Pinellas Suncoast Transit Authority (St. Petersburg, FL):** Pinellas Suncoast Transit Authority is using public funds and Uber funds to subsidize first-mile-last-mile to transit stops using an app.[35]

- **Los Angeles Metro and VIA Link (Los Angeles, CA and San Antonio, TX):** Los Angeles Metro partnered with private technology firms to optimize traffic signal priority for buses, improving public transit reliability. VIA Link in San Antonio integrates ride-hailing and bus services through a private sector partnership, enhancing flexibility and accessibility for riders.[36]

- **Denver Transit Partners (Denver, CO):** Denver partnered with private entities through the Eagle P3 project to deliver new rail service along three corridors, incorporating smart infrastructure, real-time data systems, and integrated fare collection to improve efficiency and rider experience.[37]

OTHER CREATIVE FUNDING OPPORTUNITIES

Public transit agencies across the U.S. are turning to innovative, non-traditional funding methods to bridge budget gaps and enhance service delivery. These strategies often tap into local partnerships, shared resources, and advertising opportunities, unlocking new revenue streams without relying solely on fare increases or government subsidies. By thinking creatively, agencies can stretch their dollars further while strengthening community ties and increasing visibility.

EXAMPLES:

- **METRO Bus Wraps (Houston, TX):** To generate additional income for transit system operations and upgrades to transit technology, Houston's METRO sells advertising space on its buses, bus shelters, and public transit centers. These campaigns not only boost revenue but also give local businesses a high-visibility platform to reach riders and passersby.[38]

- **Statewide Joint Procurement in Massachusetts:** The Massachusetts Department of Transportation coordinates joint purchases of vehicles, fuel, and equipment across regional public transit authorities. This group buying power reduces per-unit costs and ensures smaller agencies can access the same quality resources as larger ones. [39]

- **Grocery Store Partnerships (Dayton, OH):** Greater Dayton RTA partnered with local grocery chains to co-sponsor shuttle services to food deserts. In exchange for branding and recognition, retailers help fund routes that connect underserved communities to essential services, making public transit a lifeline and a local economic driver.[40]

8.2 FOUNDATION FUNDING FOR PUBLIC TRANSIT TECHNOLOGY

Securing funding for public transit programs is essential for fostering sustainable, accessible, and efficient transportation solutions in communities. Numerous foundations support initiatives that enhance public transit, community infrastructure, and mobility equity through targeted grant programs. While each foundation has its own priorities, funding criteria, and application processes, organizations seeking financial support should consider aligning their projects with the respective foundation's mission. Some foundations accept unsolicited proposals, while others invite applications through specific Requests for Proposals (RFPs) or Letters of Inquiry (LOIs).

The following summaries provide an overview of key foundations that offer grant funding for public transit-related projects, including their focus areas, application steps, and annual grantmaking budgets. This list has been vetted for a specific focus on Michigan.

THE FORD FOUNDATION

The Ford Foundation focuses on equitable access to transportation and sustainable urban development. It does not accept unsolicited grant proposals and instead identifies projects through pre-selected partners and occasional RFPs. If an open RFP aligns with a project, applicants may submit an LOI outlining their organization's background, project impact, budget, and expected outcomes. If selected, they will be invited to submit a full proposal, which will undergo a thorough review process. The foundation has an annual grantmaking budget of approximately $500 million.

THE CHARLES STEWART MOTT FOUNDATION

The Charles Stewart Mott Foundation provides grants for community infrastructure and public transit systems. To apply, organizations must first ensure their project aligns with the foundation's funding priorities. Interested applicants are required to submit an LOI through the foundation's grant portal. If the LOI is approved, the organization will receive an invitation to submit a full proposal, which must include a project overview, a financial plan, a timeline, a sustainability strategy, and letters of support. The review process takes several months, and successful applicants receive a formal grant agreement. In 2022, the foundation awarded 385 grants totaling $190.6 million.

THE RALPH C. WILSON, JR. FOUNDATION

The Ralph C. Wilson, Jr. Foundation supports community development, public spaces, and transportation initiatives. Organizations interested in funding must first confirm that their project aligns with the foundation's priorities. They must create an account on the online grant portal and submit an LOI detailing the project's purpose, impact, budget, and key partners. If the LOI is accepted, the applicant will be invited to submit a full proposal, which will undergo a review process that includes site visits. From 2015 to 2019, the foundation awarded 573 grants totaling $614.6 million, averaging approximately $122.9 million per year.

THE COMMUNITY FOUNDATION FOR SOUTHEAST MICHIGAN (CFSEM)

CFSEM funds projects that improve public transit and community connectivity. Organizations seeking funding may first review open grant opportunities on the foundation's website. Applicants must create an account in the CFSEM Grants Management System and, if required, submit an LOI outlining the organization's background, project impact, budget summary, and expected outcomes. If invited, they can then submit a full proposal, which must include a detailed project scope, budget justification, and evaluation strategy. The review and grant decision process takes several months. The foundation has awarded $1.4 billion in grants over its 40-year history, averaging approximately $35 million per year.

THE JOYCE FOUNDATION

The Joyce Foundation focuses on environmental sustainability and funding for public transit. Organizations interested in applying must first review the foundation's grant priorities. If their project aligns with these priorities, they can submit an LOI via the foundation's online portal. If selected, they will be invited to submit a full proposal, which must include an impact analysis, a detailed project plan, and a financial overview. The review process involves interviews with applicants. The foundation has an annual grantmaking budget of approximately $50 million.

THE KRESGE FOUNDATION

The Kresge Foundation supports community development, public transit, and infrastructure projects. To apply for funding, organizations must first review the foundation's grant priorities and create an online grant account. Applicants must submit an LOI outlining their project. If invited, they must then submit a full proposal, which includes in-depth project documentation, a financial plan, and letters of endorsement. The foundation's board reviews proposals before making a final funding decision. The foundation distributes approximately $160 million in grants annually.

THE MCGREGOR FUND

The McGregor Fund provides grants for basic needs, recovery and restoration, and skill-building programs for teens and adults experiencing poverty, primarily in Detroit and the surrounding counties of Macomb, Oakland, and Wayne. Interested applicants must begin by submitting an initial inquiry to determine alignment with the fund's priorities. If the inquiry aligns, the applicant may be invited to engage in discussions to further develop the grant concept. This leads to a collaborative process where a detailed grant proposal is created, including objectives, strategies, and anticipated outcomes. The proposal undergoes a formal review process before a funding decision is made.

UNITED WAY FOR SOUTHEASTERN MICHIGAN

United Way for Southeastern Michigan provides funding opportunities for projects that promote equitable access and community development. While specific public transit-related grants may not always be available, transportation projects may qualify under broader community access initiatives. Applicants may review available grants on the organization's Proposal Opportunities page and register an account on SurveyMonkey Apply (SMA). Before applying, organizations must submit an Organizational and Financial Information form. Once eligibility is confirmed, applicants can submit a grant application that includes project details, a budget plan, and supporting documents. The review process includes the possibility of additional information requests, and applicants are notified of the decision within a designated timeframe.

AARP COMMUNITY CHALLENGE: TRANSIT TECHNOLOGY GRANT

The AARP Community Challenge provides grants for projects that improve public places, transportation, digital access, and mobility solutions, particularly benefiting older adults. Eligible applicants include nonprofit organizations, government entities, and other qualifying institutions. The program offers three types of grants: Flagship Grants (up to $25,000) for infrastructure and mobility improvements, Capacity-Building Microgrants ($2,500) for training and technical assistance, and Demonstration Grants ($10,000-$25,000) for innovative public transit models. Applicants must submit a proposal outlining project goals, expected impact, budget justification, and a timeline, with all projects required to be completed by December 15, 2025. Awardees received notification by May 2025, with final reports due by December 31, 2025.

8.3 BUDGETING FOR THE MARKETING OF PUBLIC TRANSIT TECHNOLOGY

Marketing transit technology in rural and mid-sized Michigan communities requires flexible, tiered strategies that reflect local realities, including limited funding, varying staffing capacities, and distinct community needs. Rather than relying on a single approach, agencies can use creative partnerships, scalable outreach tactics, and existing digital tools to raise awareness and encourage adoption in ways that are both cost effective and community focused.

Investing in transit technology marketing is not a one-size-fits-all effort. Budgets will vary significantly by agency, and so will the available tactics. This section outlines a set of estimated budget tiers, offering examples of what agencies can realistically accomplish at different funding levels. These estimates focus specifically on outreach and engagement, such as community activation, printed materials, and event support, and do not include costs associated with staff time, paid advertising, or the technology itself.

Grounded in real-world strategies from across rural and mid-sized communities as of August 2025, the guidance is intended to offer adaptable options, not fixed prescriptions. Agencies can use this framework to tailor their campaigns to local contexts, aligning marketing efforts with available resources and operational goals. While it excludes personnel and procurement costs, the focus remains on marketing that helps bridge the gap between technology investment and public adoption.

To stretch budgets further, agencies are encouraged to explore shared resources, such as co-branded materials, university partnerships, or MDOT-developed outreach tools. Sponsorships and advertising opportunities can also generate revenue that supports ongoing engagement and helps sustain marketing momentum over time.

BUDGET TIERS AND RECOMMENDED ACTIVITIES

A practical benchmark is to allocate approximately 2–8.5% of total revenue to marketing, with at least 25% of that amount dedicated to technology-focused outreach. For example, a rural transit agency with annual revenue of $2.67 million would target a marketing budget of roughly $55,000 (at the low end of the range), of which at least $13,750 should support technology initiatives. The following table outlines four tiers of marketing and outreach investment, indicating the strategic emphasis and illustrative activities associated with each funding level.

INVESTMENT RANGE	STRATEGIC FOCUS	EXAMPLE ACTIVITIES
$1k–$5k	Grassroots outreach & digital visibility	Single-platform digital campaign; flyers/posters; simple rider guide; volunteer-led info sessions; partner material distribution.
$5K–$20K	Enhanced outreach & multichannel activation	Multi-platform digital content; newsletters; community tech events; student/freelance support; signage with QR codes. Integrated campaigns & branded experiences
$20K–$50K	Integrated campaigns & branded experiences	Coordinated campaigns with videos; live activations; microsite; sponsored print materials; co-branded community outreach.
$50K–$100K	High-impact campaigns & systemwide visibility	Large-scale print/digital ads; countywide launches; major events; kiosks/signage; docu-style video series.

Table 4: Four tiers of marketing.

This tiered approach offers flexible, scalable tactics for outreach, rider engagement, and community activation based on agency size and budget. Designed for rural and mid-sized communities, it illustrates what's achievable at various funding levels (excluding staff time, advertising, or technology costs) and promotes creative strategies—like resource sharing and sponsorships—to help maximize impact.

$1,000 – $5,000: GRASSROOTS OUTREACH AND DIGITAL VISIBILITY

- Launch focused, single-platform digital campaigns (e.g., Facebook), with minimal paid amplification.
- Develop and distribute printed flyers, posters, and basic visual signage across public facilities.
- Create campaign hashtags and encourage user-generated content through organic community involvement.
- Host community-facing information sessions (e.g., "Tech Help Day") with student volunteers or community partners.
- Produce a one-page printed or digital rider guide for app use or other technology onboarding.
- Collaborate with schools, religious/spiritual centers, or nonprofits to distribute campaign materials at no cost.

$5,000 – $20,000: ENHANCED OUTREACH AND MULTICHANNEL ACTIVATION

- Expand digital campaigns to additional platforms (e.g., Instagram), incorporating testimonials or animated explainers.
- Develop quarterly digital or print newsletters mailed to households or distributed in community hubs.
- Host outreach events, such as "Transit Tech Town Halls," featuring demos and refreshments.
- Contract local high-school or university students, or freelance professionals with a limited hourly spend each month, to assist with content creation or campaign support.
- Leverage design and scheduling tools that help streamline the creation process, such as Canva Pro, Adobe Express, Buffer, or Mailchimp, to streamline content development and publishing.
- Create signage for shelters or buses, QR codes linking to apps or feedback surveys, and printed instructional handouts.

$20,000 – $50,000: INTEGRATED COMMUNITY CAMPAIGNS AND BRANDED EXPERIENCES

- Deploy coordinated multi-platform campaigns featuring branded videos, app walk-throughs, and earned media outreach.
- Host live activations, such as a "Tech on Wheels" campaign bus tour or booth sponsorships at fairs or job expos.
- Build a mobile-friendly landing page or microsite to support app onboarding and community education.
- Create custom print products (e.g., newsletters, brochures) with ad space for community business sponsorship.
- Design and distribute co-branded materials with healthcare providers, schools, or local merchants.
- Develop standardized, customizable templates for use by multiple agencies in a shared region.

$50,000 – $100,000: HIGH-IMPACT CAMPAIGN EXECUTION AND SYSTEMWIDE VISIBILITY

- Fund large-scale campaigns with print, digital, and in-person components, including TV/radio content, wrapped vehicles, and interactive displays.
- Execute countywide campaigns for technology launches, coordinated across agencies.
- Sponsor large-scale events such as a regional "Mobility Month," incorporating gamification and rider incentives.
- Deploy touchscreen kiosks or real-time display signage in key ridership locations.
- Develop a series of docu-style videos or storytelling campaigns to promote the human impact of technology adoption.
- Contract part-time or freelance students or marketing professionals to manage production timelines and delivery milestones. This will significantly reduce cost since you are not hiring full-time resources, which may not be needed.

A note on revenue generation and resource optimization: Transit agencies can offset marketing costs and stretch limited budgets by generating revenue and optimizing resources through partnerships. Opportunities include selling ad space in printed materials or on digital signage, recruiting students for credit-eligible internships in communications or marketing, and leveraging toolkits from MDOT or local institutions to reduce design costs. Agencies can also collaborate with one another to co-develop content and share the costs of outreach campaigns.

CHAPTER 9 **RECOMMENDATIONS**

To support the effective, consistent, and forward-looking implementation of public transit technology across Michigan, it is recommended that MDOT take an active, centralized role in facilitating and guiding public transit technology investments. MDOT can provide critical support by streamlining procurement processes, offering sustained training opportunities, developing scalable marketing and communication templates, material and toolkits, and ensuring that strategic direction stays current in a rapidly evolving technology landscape. These recommendations are proposed not for public transit agencies themselves but for MDOT's OPT, with the goal of enabling greater efficiency, interoperability, and long-term success statewide.

PROCUREMENT CHECKLIST

Create a checklist of key items to review before signing a vendor agreement. Think payment terms, reporting deliverables, training support, suggested key performance indicators (KPIs), and more. This ensures you cover all the essentials and set your team up for a smooth rollout.

- ☑ **Define Your Objectives First:** Begin with a clear understanding of what the technology must achieve. Tie each procurement to specific operational or rider experience goals identified during internal assessments.
- ☑ **Involve Key Stakeholders Early:** Include operations staff, drivers, IT, procurement officers, and riders (if possible) in the evaluation process. Their input can ensure that solutions are both realistic and supported.
- ☑ **Build a Simple Needs Matrix:** List must-haves, nice-to-haves, and non-negotiables for each technology. This will help during vendor comparisons and prevent feature overload.
- ☑ **Understand Total Cost of Ownership:** Look beyond initial purchase price. Include training, maintenance, licensing, integration, and upgrade costs over the life of the product.
- ☑ **Draft a Procurement Timeline:** Account for internal approvals, grant timelines, public notices (if applicable), and training rollout. A realistic schedule reduces delays and missed funding windows.
- ☑ **Develop or Use a Procurement Template:** If a centralized RFP/RFI template is available from MDOT or peer agencies, use it. Standardization saves time and ensures alignment with state procurement policy.
- ☑ **Verify Vendor Credentials and References:** Ask for at least three transit-specific references. Call them. Pay close attention to after-sale service, product reliability, and user training quality.
- ☑ **Insist on a Demonstration or Pilot:** Before committing, request a live demo tailored to your agency's environment—or consider piloting the product. Even simple sandbox tests can help validate usability.
- ☑ **Clarify Support, Service Levels, and Training:** Include Service Level Agreements (SLAs) and staff training in contracts. Ensure that vendors offer tech support in formats that suit your agency's capabilities.
- ☑ **Plan for Evaluation and Scalability:** Select technology that can scale with future needs. Build in KPIs from the start, and schedule reviews at regular intervals (three, six, and 12 months).

ESTABLISH STATEWIDE TECHNOLOGY PROCUREMENT

OPT might consider leading the establishment of a statewide procurement system for public transit technology. Currently, there is no centralized way to track which technologies agencies across the state are using, making it difficult to identify gaps, share best practices, or coordinate investments. Centralizing procurement would alleviate the administrative and financial burden placed on individual public transit agencies, many of which lack the capacity to independently vet, purchase, and integrate complex systems. A coordinated procurement approach would also promote greater uniformity across the state, making it easier to achieve interoperability between systems, streamline maintenance and support, and ensure a higher standard of quality control. By managing vendor relationships and contracts at the state level, MDOT can help ensure equitable access to advanced technologies for all agencies, regardless of size or funding level.

LAUNCH A STATEWIDE TRANSIT TECHNOLOGY RESOURCE CENTER

To better support local and regional transit agencies—especially those in rural or under-resourced areas—MDOT could lead the creation of a centralized Transit Technology Resource Center modeled after Oregon DOT's successful effort. Oregon's Technical Resource Center has become a valuable hub for agencies statewide, offering direct assistance, curated tools, and expert guidance to streamline the adoption and implementation of public transit technologies. A Michigan-based resource center could serve as a one-stop shop for best practices, procurement templates, vendor evaluations, implementation playbooks, and ongoing technical assistance. It would empower agencies to make informed, future-ready decisions and help ensure that no agency—regardless of size or location—is left behind as the industry evolves. The center could also provide critical support for grant writing, project scoping, and performance measurement, addressing long-standing capacity gaps in smaller and mid-sized agencies.

CREATE CENTRALIZED AND FLEXIBLE MARKETING AND COMMUNICATIONS TOOLKITS

To support more efficient and cohesive outreach, OPT may wish to create centralized marketing and communications toolkits that can be easily adapted by individual public transit agencies. These toolkits could include pre-established content, design templates, messaging frameworks, and other supporting materials that serve as a consistent starting point for local campaigns. By providing ready-made resources, agencies can reduce the time and effort required to build materials from scratch, while still maintaining the flexibility to tailor messaging to their unique communities. This shared resource approach promotes brand alignment across the state, increases efficiency, and ensures that even smaller agencies with limited capacity can access high-quality marketing and communications tools.

CONDUCT ONGOING TRAINING

OPT may wish to invest in a robust, ongoing training program to ensure that agencies are equipped to use, manage, and adapt to new technologies. The training program would evolve based on the changing needs of transit agencies. While guidebooks and documentation are helpful, they are only as useful as the training that accompanies them. Staff turnover, evolving systems, and operational changes necessitate more sustained and interactive training efforts. This could include regular virtual or in-person workshops, peer learning opportunities, and a centralized knowledge base with up-to-date resources, either in larger groups or as part of a one-on-one training session. Ongoing training ensures that public transit agencies can effectively implement and maximize the value of technology investments while staying adaptable to future changes.

UPDATE THIS REPORT ON A BIANNUAL BASIS

Given the rapid pace of technological change, it is recommended that this report be reviewed and updated every two years. A biannual update would allow OPT to reassess the state of public transit technology, evaluate the effectiveness of past recommendations, and incorporate emerging trends and solutions. This regular cadence will help ensure that the statewide strategy remains aligned with both innovation in the marketplace and the evolving needs of Michigan's public transit providers and riders.

CHAPTER 10 **ACKNOWLEDGEMENTS**

The success of this project was driven by the collaboration of academic, industry, marketing, and technology leaders, each bringing unique expertise and perspectives to support MDOT and Michigan's transportation agencies. Bringing together different backgrounds, experiences, and ideas, this team provided critical insights that shaped a comprehensive and practical approach to public transit technology implementation. By combining research-driven analysis, industry best practices, and cutting-edge technological knowledge, the project team developed a strategic roadmap that ensures the effective deployment of public transit innovations across Michigan, ultimately enhancing mobility, efficiency, and accessibility statewide.

We appreciate the executive leadership at MDOT for their vision and support in driving advancements in how public transit technology is deployed and marketed throughout the state.

MDOT
Michigan Department of Transportation

MDOT's OPT administers programs supporting local public transit, intercity bus service, and for-hire passenger regulation. OPT works to ensure a safe, balanced statewide network that supports Michigan's social, safety, and economic needs. The state owns more than 4,700 highway, railroad, and pedestrian bridges; 665 miles of railroad track; approximately 2,700 miles of nonmotorized trails; and four airports. Additionally, MDOT administers state and federal transportation programs for aviation, intercity passenger services, rail freight, and local public transit services.

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STATE PUBLIC TRANSIT AGENCIES

We are grateful for the participation of Michigan's public transit agencies , whose insights were instrumental in shaping this report. Several agencies contributed through interviews and workshops, providing valuable perspectives that informed the findings and recommendations, ensuring they reflect the real-world needs of public transit providers across the state.

PROJECT CONSULTANTS

CRAFT

CRAFT
CRAFT helps companies drive transformational value through digital innovation. Founded by Mona Ketterl, one of the country's leading technologists and workforce transformation experts, it focuses on the importance of change management and building advocacy to achieve buy-in for fresh ideas. CRAFT works with organizations that are entering a new phase in their digital transformation journey, helping them achieve practical transformation one step at a time.

Mona Ketterl is a technologist and the founder of CRAFT. With more than 20 years of experience in marketing, organizational development, and technology/digital transformation, she has led initiatives across State DOTs, federal agencies, consumer goods, automotive, manufacturing, construction, life sciences, service-based industries, and high-tech sectors.

Dillon Goodson is a technical writer, researcher, and strategic advisor at CRAFT, specializing in transit, community development, and the role of public transit in building strong, connected communities. With a background in communications and systems change, he brings over 15 years of experience developing strategies for thriving urban places.

Erin Bonham is a creative director specializing in visual communications, bringing clarity to complex ideas through compelling design. With a strong background in corporate branding, marketing, and art direction, she understands that effective marketing starts with the ability to simplify and visualize solutions. Erin's creativity ensures impactful storytelling within the framework of project budgets.

Laura Heidrich is a communications professional with 20 years of experience in change communications, process development and training, and technical writing and editing, supporting CRAFT clients in reaching their goals. On this project, Laura served as a communications and program marketing expert, supporting research and overall QA/QC.

Michael Baker
INTERNATIONAL

MICHAEL BAKER INTERNATIONAL

Michael Baker International is a leading provider of engineering and consulting services, including design, planning, architectural, environmental, construction, and program management. Based in Pittsburgh, Pennsylvania, and with more than 85 offices nationwide, it serves as a trusted adviser to the communities it serves, making them safer, more accessible, more sustainable, and more prosperous.

Kristin Gladwin, Ph.D., is a detail-oriented transportation planner and researcher with nearly a decade of experience in transportation analysis and improvement. Before joining Michael Baker International, she worked at the Florida Department of Transportation on planning and grant management projects. Dr. Gladwin has authored peer-reviewed articles, written technical and policy reports, led stakeholder outreach, and has extensive experience in public transit grant management.

Elizabeth Bechtel is the rail and transit technology lead for Michael Baker International. As a multimodal transportation planner, she has supported various public transit agencies and transportation departments with projects such as asset management, transit collision avoidance system guidance, strategic business plans, feasibility studies, and transit service redesign. She has previous experience working in a Pennsylvania Zoning and Codes office and as a planning commission secretary.

John Wilkerson is the director of digital delivery at Michael Baker International, specializing in digital data exchange and automation in transportation engineering. Previously, he led MDOT's Digital Delivery Work Group, managing 3D model QA/QC and engineering support. He is passionate about advancing digital design-to-construction data transfer processes. John is an active member of AASHTO's JTCEES, TRB's AED80 Digital Delivery Subcommittee, and building SMART International, contributing to the evolution of digital delivery standards.

UNIVERSITY OF DETROIT MERCY

The University of Detroit Mercy (UDM) leverages its deep expertise in civil engineering, transportation planning, and public transit systems to drive innovation in public infrastructure. With a strong history of partnering with DOT agencies, UDM has played a pivotal role in regional transit initiatives, including the development of the Q-Line in Detroit and studies on effective regional mobility. As a leader in transportation research, curriculum development, and workforce training, UDM continues to shape the future of public transit through cutting-edge academic and applied research.

Utpal Dutta, Ph.D., is a professor of civil, architectural, environmental, and transportation engineering at the University of Detroit Mercy. With over 25 years of public transit-related research, his work focuses on ridership, public transit-oriented development, sustainability, and system modeling. He has studied the socio-economic impact of Detroit's BRT system and visited public transit systems in Cleveland, Atlanta, Denver, and Detroit. Dr. Dutta is a member of the Transportation Research Board, ITE, ASCE, and ASEE.

Xiaohui Zhong, Ph.D., is a professor and researcher specializing in applied statistics and probability in the fields of engineering and science. As a principal and co-principal investigator on multiple National Science Foundation and Department of Transportation grants, her research informs data-driven decision-making, including public opinion analysis on public transit, which contributed to the success of the 2022 Oakland County transit ballot.

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- **Venkata Durga**
- **Tia Jokic**
- **Naveena Srikakolapu**

If you require assistance accessing this information or require it in an alternative format, contact the Michigan Department of Transportation's (MDOT) Americans with Disabilities Act (ADA) coordinator at Michigan.gov/MDOT-ADA.

FOOTNOTES

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