



Ohio
Department of Health



Public Transit and Health

Best Practices Report

September 2019



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Key Terms

Public transit is an essential community resource that allows people to safely and reliably access their everyday destinations and needs, such as jobs, schools, healthcare, and healthy food.¹ To effectively discuss public transit use and policy, it is helpful to have a basic understanding of the following key terms.

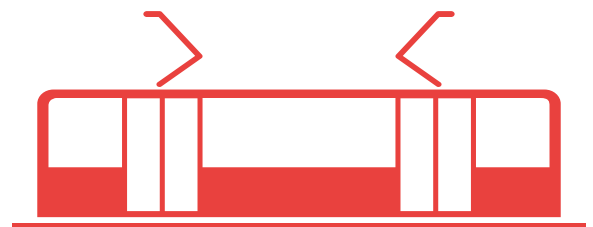
- » **Accessibility** – The ability of public transportation users to access all transit modes and information.
- » **Environmental Justice** – The “equal treatment and meaningful involvement of all people, irrespective of race, color, national origin, or income in the development, implementation, and enforcement of environmental laws, regulations, policies, and development projects.”²
- » **First Mile/Last Mile Connection** – The gap between the beginning or end of a public transportation trip and an individual’s origin or destination. While walking is often an acceptable connection, it is not always feasible due to longer distances or missing infrastructure. First mile/last mile connections may be covered with a variety of strategies, including walking, biking, local transit, ride hailing, and/or microtransit.
- » **Frequency** – The number of vehicles per unit of time that pass a given stop.
- » **Headway** – The time between the arrival of each transit vehicle at a given stop.
- » **High-quality transit service** – A fixed route transit service with a maximum 15-minute headway during peak travel times.
- » **Mobility** – The movement of people or goods (in public transit, usually measured as passenger-miles).
- » **Regional Transit Authority** – A transportation provider that is structured as a political subdivision of the state.
- » **Transportation Demand Management (TDM)** – TDM focuses on how people can best use existing transportation infrastructure more efficiently.³ TDM involves programs and strategies that encourage people to change their behavior by exploring their options and trying new modes of getting around other than driving alone.



Types of Public Transit

The term “public transit” can refer to a wide variety of types of services and systems. This section briefly describes the different types of public transit and related terms.

- » **Fixed or Published Route:** Public transit that follows a pre-determined route and posted schedule. A main driver of fixed route service planning is efficiency, or the ability to transport the most people at the lowest cost. This often means focusing on rush hour travel to/from a community’s primary employment center.
 - » **Fixed Guideway Systems** use a separate right-of-way or rail. They can include heavy rail/metro systems, light rail, commuter rail, streetcar, and bus rapid transit systems.
 - » **Rail Systems** require more planning time and funding to implement and often result in land use changes that strengthen the local economy through denser development.
 - » **Bus Rapid Transit (BRT)** systems combine the lower cost of bus service with a fixed-guideway-type dedicated travel lane along streets.
 - » **Published bus routes** can adapt more easily to ridership or development changes. Bus service can also adapt to needs in rural communities. Because of the relatively low set-up cost, communities establish bus systems before considering more costly fixed guideway systems.
- » **Deviated Fixed Route –** A transportation service that has routes and schedules but can modify the route to a limited extent based on passenger requests for origins and destinations.
- » **Demand Response Transit (DRT) –** A transportation service lacking a fixed schedule and route. Demand response transit uses advance scheduling and live requests from the passenger to provide transit flexibility. Public entities, nonprofits, and private companies can all provide DRT.⁴
- » **Paratransit –** Specialized transit services for people with disabilities. Paratransit can either be demand-responsive or may run along a fixed route. Public transit systems are required through federal mandate to provide comparable paratransit service for individuals who are unable to use fixed route systems. In systems where only DRT is offered, separate paratransit services are usually not required.⁵
- » **Microtransit –** Flexible, private multi-passenger transportation services that use information technology to dynamically generate routes. Microtransit may provide door-to-door service or pick up from designated points, and use a range of vehicles from SUVs to small buses. Microtransit is most commonly used for first mile/last mile connections or to serve specific destinations or employers.
- » **Mobility on Demand Service (MOD)**
 - Multimodal, integrated, automated, accessible, and connected transportation system in which personalized mobility is a key feature. MOD allows for the use of on-demand information, real-time data, and predictive analysis to provide travelers with transportation choices that best serve their needs and circumstances. MOD leverages



technologies that allow for a traveler-centric approach to provide better mobility options for everyone. In recent years, and in part because of competition from bikeshare and ride-hailing services, more transit agencies now offer route deviation and demand response service distinct from paratransit service, funded through the federal Mobility on Demand program. These models are valuable in suburban and rural areas that lack robust public transit service.⁶

» **Human Services Transportation –**

Transportation services to meet the needs of people who do not drive or cannot use fixed route transit service, especially older adults and individuals with low incomes or disabilities. This may include a combination of dial-a-ride or DRT, transit passes, taxi vouchers, and/or mileage reimbursement. Public transit agencies may also work with human service transportation programs to coordinate medical and social service transportation, using a single call center to schedule trips.

» **Mobility Management –** A community-based and collaborative approach to designing and delivering transportation based on user need. With mobility management, transit agencies often take a broad role of connecting suppliers and customers of transportation by coordinating between public transit and multiple human services transportation providers.

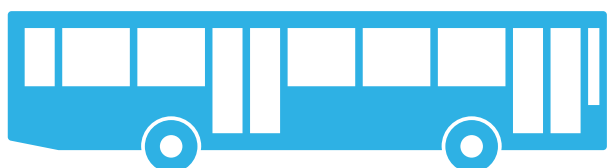
» **Urban Public Transit –** For the purposes of FTA funding requirements, Section 5307, urban transit systems serve urbanized areas with populations over 50,000.

» **Rural Public Transit –** For the purposes of FTA funding requirements, Section 5311, rural transit systems serve nonurbanized areas.

» **Rural Regional Transportation –**

Transportation from a rural area that crosses county or jurisdictional boundaries to serve a destination that has services (e.g., medical, educational, employment, retail, government) not available in the rural area.

» **Intercity Transportation –** Transportation between non-urbanized areas and urbanized areas that result in connections of greater regional, statewide, and national significance.





Introduction

In addition to ensuring mobility for community members, the availability of public transit plays a role in shaping health outcomes. This section explores the connection between public transit and health, and examines the state of public transit in Ohio and the nation.

The Intersection of Public Transit and Health

Supporting public transit is an important strategy for improving public health. A Centers for Disease Control and Prevention analysis shows fewer traffic crashes, lower air pollution, increased physical fitness, and other health benefits when people have access to public transit.⁷

Public transit benefits communities by:

- » Reducing the use of private motor vehicles, which can decrease congestion and improve air quality
- » Serving as an impetus for a community to improve its infrastructure for those walking or biking to stops and stations. Transit networks that are connected to sidewalks, bike lanes, and other multimodal accommodations can reduce crash risks and improve active transportation conditions for all users.

Transportation and Health Tool

The US Department of Transportation's [Transportation and Health Tool](https://www.transportation.gov/transportation-health-tool) is a resource for public health practitioners wishing to improve public health through transportation planning and policy. The tool provides access to data analyzing the health impacts of transportation systems.

Data available from the tool includes public health and transportation indicators for all US states and metropolitan areas. These indicators demonstrate how the transportation environment affects safety, active transportation, air quality, and connectivity to destinations. Before beginning a project to improve transportation, communities can use the tool to quickly see how their state or metropolitan area compares with others in addressing key transportation and health issues.

<https://www.transportation.gov/transportation-health-tool>

» Satisfying lifestyle choices for people who prefer not to drive and choose where they live accordingly, which helps attract and retain residents. Public transportation and active transportation go hand in hand, providing people with multiple options for getting around without a personal vehicle.

Public transit benefits individuals by:

- » Providing mobility for people who do not drive due to age, ability, economics, or choice, allowing them to access essential medical services, workplaces, healthy food options, and social activities.
- » Creating opportunities for increased physical activity when people walk or bike to and from a stop or station. For example, Americans who use transit spend an average of 19 minutes walking to and from transit daily, which helps them meet the minimum 30 minutes of daily physical activity.⁸ This, in turn, can result in overall improved physical and mental health.
- » Encouraging social interactions on board and/or at stops, which especially benefits older adults.
- » Lowering transportation costs, allowing individuals to save money that may then be spent on health and other needs.

National Trends in Public Transit

Who's on Board is a national study on the state of public transit in the United States, and is published every three years by TransitCenter. Some of the findings of that report are summarized in this section. The study examines trends in transit ridership, user preferences, and transit operations. While national trends may or may not be reflected by local systems, they are indicative of the changing face of transit and offer insight on how to provide better service at a local level.^{9 10}

People of all ages and abilities use transit: children, teens, adults, and seniors; people with cars, without cars, those who want to

save money, and employees using employer subsidies. Nationally, the majority of people who ride transit use it for a variety of trip types; and most people walk to get to and from transit. The biggest factor driving transit ridership is the quality of service; people use transit more often when good service is provided, whether or not they own a car. Research shows that transit riders want to see high frequencies, fast travel times, reliable service, comfortable shelters, and real-time information.¹¹

Across the country, communities are currently pushing to develop more efficient systems that serve more riders with limited funding. Most transit systems struggle with lack of funding for capital investments, operations and maintenance, and balancing system costs with subsidies to maintain affordable fares. Continual increases in private car ownership and competition from ride hailing services or transportation networking companies (TNCs) also pose challenges to attracting and retaining riders. Overall rates of transit ridership have gone down and transit trips have been replaced by car trips as car ownership has increased since the Great Recession.¹²

Public Transit Needs in Ohio

A 2016 report from the Ohio Department of Transportation examined transit needs and trends in Ohio.¹³ According to this research, most current riders are transit-reliant, meaning they depend on transit for their mobility needs. Riders expressed desires for longer service hours, system expansion, improved on-time service, bus stop amenities, and easier on-demand scheduling.

There are currently 61 transit providers in Ohio. Of these, 12 provide fixed route services, 31 provide demand response services, and another 18 provide a combination of both. Twenty-six are classified as urban transit systems, and 35 as rural. Of Ohio's 88 counties, 27 have no public transit service at all. Because of Ohio's development pattern, "nearly every county has at least one town with enough density to support deviated fixed route service. The

Types of Public Transit in Ohio

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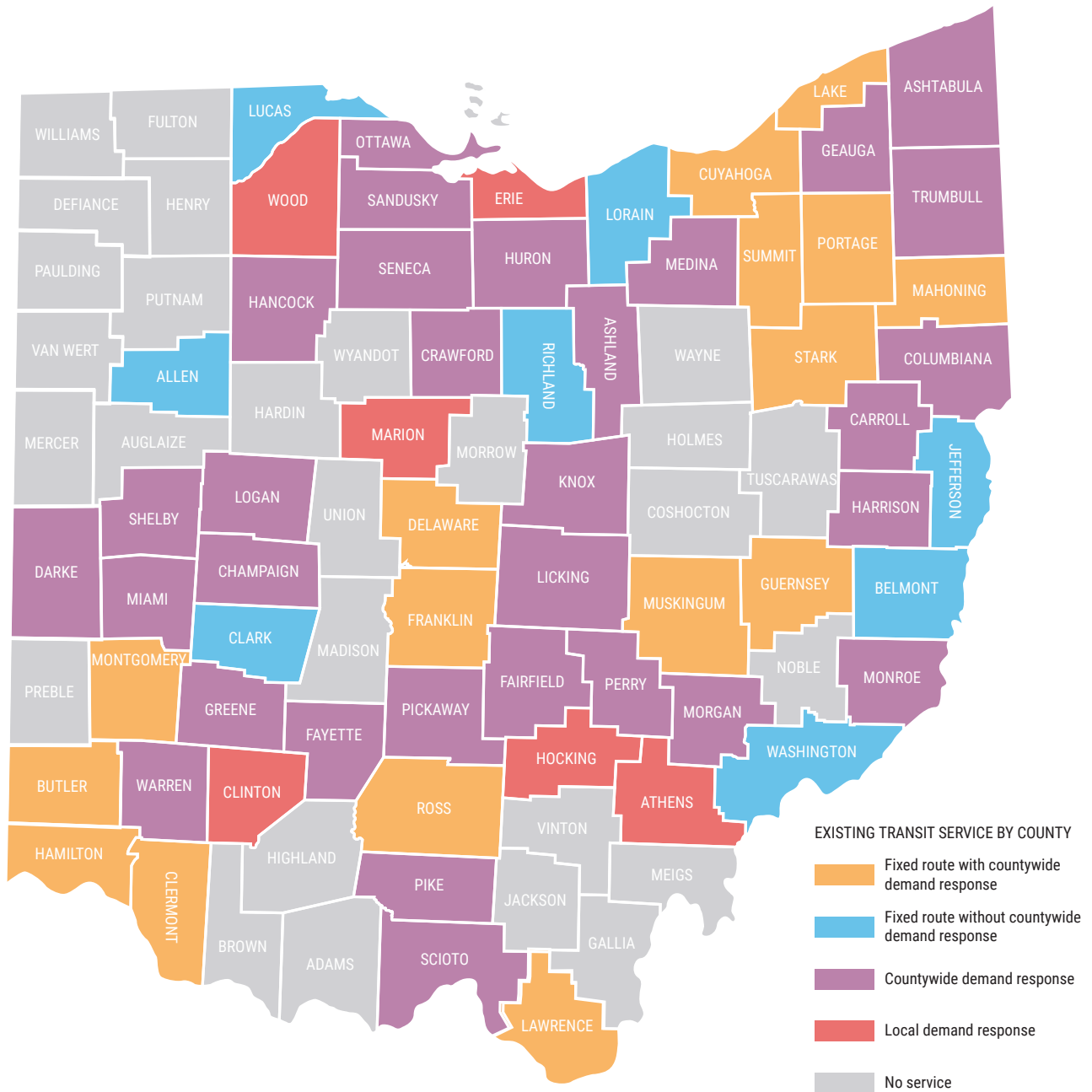
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transit providers

urban systems

rural systems

counties without transit



Types of transit service in Ohio, by county (Source: Adapted from ODOT 2015.)

remainder of the state has lower densities such that demand response service is likely the most appropriate, though difficulties in providing this base level of service may still exist”.¹⁴

Despite the transit systems available in Ohio today, some communities are still being left behind. Overall, roughly 80 percent of Ohio residents have access to some sort of public transportation service. Nevertheless, living in a county or city that has public transportation service available does not necessarily indicate a high level of service, quality, or frequency. Approximately 30 percent of Ohio’s population has access to demand response service only, meaning people must reserve a trip in advance. Many of these services are available on weekdays during normal business hours only (i.e. 8:00 AM to 5:00 PM). About one-half of Ohio’s population lives in communities with fixed route service, but a much smaller portion lives within walking distance to these services – usually considered to be ¼ mile. Twenty percent of Ohio’s residents live in communities with no public transit at all.¹⁵

The ODOT study suggests that bringing service to the 20 percent who have none, expanding service in communities that need more, and operating and maintaining service in both cases requires billions of dollars. In addition to capital needs, the study identifies seven major initiatives needed to improve transit in Ohio:

- » **Performance Metrics and Guidelines:** Establish a performance measurement system to track strengths and weaknesses, demonstrate value, and expand support for transit investment.
- » **Human Service Transportation:** Improve coordination between public transportation and human services transportation to reduce costs and improve access.
- » **Regional Services and Organizations:** Develop regional transit services to improve access across political boundaries.
- » **Dedicated Transit Funding:** Identify a dedicated source of funding for public transportation in Ohio.

- » **Public Information Systems:** Improve the availability of transit information to improve ridership and customer satisfaction.
- » **Transit Technology Needs:** Invest in core transit technologies at most Ohio transit agencies.
- » **Fares and Partnerships:** Fare programs, partnerships, and other innovative strategies can reinforce transit agency revenue.¹⁶

The Future of Public Transit in Ohio

Ohio is expected to undergo major demographic shifts in the coming years. In some areas, this will mean population growth. In other parts of the state, populations are expected to decline and grow older. As Ohio’s communities age, change in size, and/or densify, the demand for public transit and communities’ ability to provide adequate service will also shift. Any community that wishes to maintain equitable access to public transit, improve community health, attract new residents and/or reduce its emissions will need to make careful plans to adequately respond to these changing conditions.

Demographics

Ohio’s population is aging, especially in rural areas. Older adults become more reliant on transit as they become unable to drive, likely increasing the demand for transit and



Human services transportation in Allen County, OH.

especially for demand response trips. The number of foreign-born residents is also on the rise; many immigrants come from countries with higher rates of transit use and expect similar accommodations here, so demand for high-quality transit service will likely increase. Young adults and Millennials have also demonstrated preferences for public transit or other alternative modes over driving, and often prefer to live in communities with public transportation options. Lastly, poverty rates have also increased in the state, increasing the number of people who cannot access private vehicles and need public transit to reach jobs and services.¹⁷

Land use and development patterns

Recent trends indicate that both older and younger adults are shifting their preferences towards living in more compact, dense, and mixed-use neighborhoods. This type of neighborhood can provide the high numbers of riders and trip destinations that are needed to support high-frequency transit networks and allow people to easily access the transit system by walking or biking. Nevertheless, sprawling growth is continuing in many communities, with city and rural residents alike moving into low-density suburbs. As cities grow outward there will be a need to extend service beyond urban cores, even though low-density growth patterns do not provide ideal conditions to support it. Suburban sprawl will challenge transit agencies' efforts to provide high-quality transit service, especially for non-work trips. In addition, many Ohioans commute across county borders to access jobs, shopping, education, and health care. Jurisdictions will need to take a collaborative approach to regional transit services to accommodate this trend.¹⁸



High Street in Columbus, OH is a high-density corridor that supports frequent transit service.



Guiding Principles for Public Transit

While public transit service can take a variety of forms depending on local contexts and needs, all transit providers should follow a basic set of guiding principles in order to ensure that all members of the community have adequate access to mobility options.

Ensuring Equity and Access in Public Transit

Personal mobility and transportation are fundamental human needs. Nevertheless, in both Ohio and around the nation, access to adequate means of transportation has not always been provided equitably, especially for communities of color and low-income communities where there is less access to personal vehicles. These populations have also been historically exposed to disparate impactsⁱ and human health effects due to transportation planning, such as the siting of freeways through or near these communities. All transportation planning decisions should be made through the framework of environmental justice (EJ), or the “equal treatment and meaningful involvement of all people, irrespective of

i Disparate impacts are the result of a “facially neutral policy or practice that disproportionately affects members of a group identified by race, color, or national origin, where the recipient’s policy or practice lacks a substantial legitimate justification and where there exists one or more alternatives that would serve the same legitimate objectives but with less disproportionate effect on the basis of race, color, or national origin” (FTA 2012).

Environmental Justice Principles

- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by communities of color and low-income populations.
- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on communities of color and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

- United States Department of Transportation ²⁴

race, color, national origin, or income in the development, implementation, and enforcement of environmental laws, regulations, policies, and development projects.”¹⁹ The federal government has regulations in place that require transit providers to consider EJ in their decisions.

» **Executive Order 82198** states that the federal government must identify and address “disproportionately high and adverse human health or environmental effects of programs, policies, and activities on low-income and minority populations”.²⁰ This rule applies to any organization or group receiving federal funding, and the United States Department of Transportation has issued its own agency EJ strategy.²¹

» **Title VI of the Civil Rights Act of 1964** protects people from discrimination or exclusion on the basis of race, color or national origin in all programs or activities receiving federal funding. All public transit authorities are subject to Title VI. Any substantive changes to transit service or facilities must be analyzed to ensure the change does not result in a disparate impact on the basis of race, color, or national origin.²²

In addition, transit systems must comply with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, which prohibit discrimination against persons with disabilities in providing access to public facilities and services. Transit systems must provide accessible vehicles and services, and equivalent paratransit services to those who cannot access fixed route services.²³

Public health practitioners and transit providers should always consider whether decisions on transit will result in equitable outcomes. Key steps to follow include:

- » Incorporate environmental justice and non-discrimination policies into planning and decision-making processes and project-specific environmental reviews.
- » Conduct effective and inclusive community outreach to gather input from all community members when considering changes to transit service.
- » Consult with legal staff when making outreach and transit decisions, if possible.



An accessible paratransit vehicle. (Source: New York MTA (2012) - via Flickr)

Making Public Transit an Attractive Option

Transit providers and the communities they serve should follow four main principles for making public transit an attractive option for all.

Enable people to get to stops or stations safely, directly, and reliably.

People are more likely to use public transit if a stop is within an easy distance from both ends of a trip, when walking or bicycling to a stop is safe, and when the stop layout prioritizes customer comfort and convenience.

Provide service that meets travelers' needs.

National experience shows that density and demographics help determine the type of transit service that will work best in a region. Transit agencies must be responsive to a community's transit need based on the type of community and its transit riders. Designing the service (hours and days of operation, frequency of service, and vehicle type and capacity), then marketing it, are both integral factors in

the system's success. Different needs might include schedules that accommodate third shift workers or childcare trips, or providing promotional materials in multiple languages.

Make fares affordable for all users.

Understanding how investments in public transit benefit both individuals and the larger community is an important part of setting fares. Maintaining affordable fares motivates people to use transit, increasing its economic and social value.

Implement policies and programs that support door-to-door trips

Ride-hailing services, such as Uber and Lyft, compete with public transit when it comes to convenience, but transit prevails as the most affordable option. Public agencies can offer door-to-door options to compete with private ride-hailing services. Door-to-door public transit service may also be the most effective option in rural communities with lower population densities and fewer destinations, but where the need for transportation remains high.



A comfortable and accessible transit stop.



On-demand transit in a small town.



Case Studies

The following case studies provide a variety of examples of how communities across Ohio and the United States are implementing transit systems to serve the diverse needs of their residents.

Ohio Best Practices				
Location	Program Name	Population Served	Transit Type	Page
Perry County	Perry County Mobility Manager	Rural	Demand Response	13
Cleveland	Cleveland RTA Health Line	Urban	Bus Rapid Transit	14
Noble, Muskingum and Guernsey Counties	Southeast Area Transit (SEAT)	Small Town Rural Regional	Fixed Route, Demand Response	16
Groveport	Groveport Rickenbacker Employee Access Transit (GREAT)	Suburban	First mile/last mile	17

National Best Practices				
Location	Agency Name	Population Served	Transit Type	Page
Rochester, NY	Reimagine RTS Community Mobility Zones	Urban Suburban	Fixed Route, Demand Response	18
Los Angeles, CA and Seattle, WA	Mobility on Demand Sandbox Program	Urban Regional	Mobility on Demand	19
King County, WA	King County Metro Transit In Motion Program	Urban Suburban Rural	Transportation Demand Management	20

Managing Mobility: Perry County

Project Description

The Ohio Mobility Management Program aims to increase access to mobility for Ohioans by “increasing understanding and awareness of transportation needs, coordination of transportation options to meet needs, and building sustainable and healthy communities by integrating transportation into planning and programs”. As of September 2019, there were 20 mobility managers in Ohio serving 57 counties.²⁵

Perry County does not have the high-density development needed to support frequent fixed route transit service, but it does have rural transit options that are common in much of the state. Perry County Transit (PCT) is the area’s demand response transit service. In Perry County, less than one percent of residents use transit to commute to work. However, the county has a high number of households with no access to personal vehicles, and residents use PCT to reach grocery stores, healthcare, and other essential needs in addition to jobs.

To better serve these residents, Perry County hired a mobility manager (MM) in 2018, housed under the Jobs and Family Services Department. The MM plays a crucial role connecting county residents to the best transit service for their needs regardless of age, income, or ability. They link individuals and organizations to transit services and agencies that can assist particular passengers and trips, and also facilitate long-term arrangements between transit providers and other organizations. The MM works with PCT as well as all County agencies, large medical providers, hospitals, and employers to help coordinate trips. Trips may be to locations within the County or to other regional destinations; for example, there are no specialty physicians or dialysis clinics in Perry County, so transportation is provided to those destinations in surrounding counties. The entire transit fleet in Perry County is ADA accessible.

Key Points and Innovations

Perry County wrote a locally developed, coordinated transportation plan in order to qualify for mobility management funding from ODOT; such plans identify community transportation resources and needs.²⁶ The County is undertaking a rider survey to further understand gaps and needs. It holds quarterly meetings on the coordinated plan, which initially drew little interest, but have grown in attendance and now involve local decisionmakers as well as transit riders.

Previously, transit service in the County was only available Monday to Friday from 6:00 AM to 6:00 PM and Saturday from 6:00 AM to 12:00 PM. Feedback from residents indicated a need for greater coverage hours. Working with ODOT, the County extended service hours on Wednesdays until 9:00 PM in order to provide greater access to evening medical appointments and mid-week church services.

Transit ridership and use of the MM’s service has been growing throughout Perry County. The MM works directly with Medicare and Medicaid service providers to publicize transit service to Medicare and Medicaid recipients, which has proven a key strategy in boosting ridership. While the MM is currently able to meet all service requests received, an increase in service hours or expansion in coverage would require additional funding.²⁷



A Perry County Transit vehicle.

Takeaways

- » Mobility management can help connect riders to transportation options, even in rural counties without fixed route transit service.
- » Mobility management is a key tool for helping residents access essential healthcare services which may or may not be available locally.
- » Public health practitioners are crucial partners in this service. The Perry County MM works closely with the County Health Department to coordinate service across the county. The MM is also part of the advisory team for the Perry County Active Transportation Plan, which the Perry County Health Department is leading.
- » A coordinated transportation plan is required to obtain ODOT funding for this position. Communities who wish to apply for funding for a mobility manager should start with a survey to understand need, and visit [ODOT's website](#) for more information on developing a coordinated plan.²⁸
- » Mobility managers may serve a single county or multiple counties; in the latter case, coordination with surrounding counties is important.

Dedicating Space for Transit: Cleveland Health Line

Project Description

Bus rapid transit (BRT) systems offer many of the benefits of a fixed guideway system, but for a much lower startup cost than rail. The City of Cleveland and the Greater Cleveland Regional Transit Authority (RTA) opened Ohio's first BRT line, the Cleveland Health Line, in 2008. The route connects Downtown Cleveland and the University Circle neighborhood, the home of a major hospital, cultural, educational, and employment district.²⁹ It runs for 7.1 miles along Euclid Avenue, primarily in dedicated bus lanes, and serves 36 stops 24 hours a day.

The station platforms are level with the floor of the bus to more comfortably accommodate people with mobility challenges. The buses are 64-foot high capacity articulated vehicles, and feature signal preemption to give transit vehicles priority access through intersections and ensure on-time performance. Riders pay for their ticket at kiosks before entering, which also allows for reduced headways between vehicles: headways are 10 minutes during peak travel periods, and generally 10-15 minutes during off-peak periods. The BRT line cost an initial \$200 million to implement, using a combination of funding from the Federal Transit Administration, other federal funds, ODOT, Greater Cleveland RTA, City of Cleveland, and Northeast Ohio Areawide Coordinating Agency (NOACA). (By comparison, Cuyahoga County spends around \$370 million annually on highway construction and maintenance projects).³⁰ Travel times along the route were reduced from 46 minutes to 36 minutes following installation, with travel time reductions mostly occurring within the 4.5 mile segments where the BRT has exclusive lanes and signal preemption. Significant active transportation improvements accompanied the Health Line's debut, including new bike lanes on both sides of the street, new and improved sidewalks, curb extensions, ADA ramps, and landscaped medians. The corridor saw a 60 percent increase in ridership in its first three years compared to other transit services on the corridor.³¹

Key Points and Innovations

The Health Line has some unique features in its planning, funding, and operations. It was planned as a community revitalization strategy rather than a standalone transit project, with significant community input and support from Community Development Corporations and major businesses and institutions along the corridor. Since the project was implemented, there has been about \$9.5 billion in direct private investment into the corridor (which is \$190 dollars in benefits for every local dollar spent on the project).³²

The City added 1,500 new street trees to the corridor, along with benches, public art, and decorative landscaping; these elements create a pleasant environment for walking and biking to and from transit stations. To further encourage multimodal connections, the City and the RTA placed bike racks at stations, and bicyclists are able to enter through the rear of the bus to facilitate swift boarding. To fight pollution, the Health Line uses clean hybrid-electric buses, which decreased particulate emissions by 97 percent and increased fuel economy by 75 percent compared to standard diesel buses.³³ Originally named the Silver Line, the BRT service was renamed the Health Line after the Cleveland Clinic and University Hospitals committed to paying \$6.25 million over 25 years for naming rights.

Takeaways

- » For major urban communities, a BRT project can move large numbers of people for a fraction of the cost of a metro or light rail system. While a full BRT can be expensive for smaller communities, certain features (such as fewer, consolidated stations or dedicated bus lanes) can be achieved with fewer resources.
- » Large scale transit projects can draw on a combination of federal, regional, state and local funding sources.



A Cleveland Health Line bus and stop.

- » Biking and walking enhancements such as effective bicycle parking should be tied in to transit improvements. Transit projects often require road reconstruction, and this can be an opportune time to enhance biking and walking facilities in a cost-effective manner.
- » Due to the health benefits of public transit, hospitals and other healthcare providers are potential partners for funding transit and related active transportation infrastructure.
- » Hospitals and large businesses are also potential partners to provide transit passes or free bikeshare access as an alternative to employer-provided parking (this is currently being explored by the Cleveland Clinic).
- » Working with community development organizations to promote redevelopment can increase the number and diversity of destinations within close proximity to people, encouraging walking, bicycling, and transit use.

Advocating from the Grassroots: Cincinnati Better Bus Coalition

Project Description

Even when transit systems are in place, they do not always effectively serve the needs of the community, and political will must be built to direct local resources towards improving the system. The Cincinnati Better Bus Coalition is a community group advocating for investment in Hamilton County's bus system. The group calls for additional funds for increased bus frequency, the creation of BRT routes and bus-only lanes, and greater public support for mass transit.³⁴

Key points and innovations

The Better Bus Coalition has achieved some significant improvements in transit for the Cincinnati Region. The group started by raising money for and building benches at heavily-used bus stops throughout the city. The group is now raising additional funds for more benches in



A homemade bench installed by the Better Bus Coalition.

different sections of the city.³⁵ The Coalition also fought for and achieved new bus-only lanes along a heavily-congested, four-block stretch in Downtown Cincinnati. The bus-lanes were placed on a trial basis and were shown to effectively serve the city's 11,000 daily bus riders. The Coalition is currently exploring additional corridors on which to conduct trials as well as permanent bus-only lanes.³⁶

The Coalition also advocates for plans and policies to improve service. They collect and aggregate bus operation statistics (such as ridership and on-time performance) on their website, providing interactive access to the public. The Coalition produced the Hamilton County Better Bus Plan, a multi-jurisdictional plan for improved bus service with more frequency and cross-town routes (current bus service is overwhelmingly centered in Downtown Cincinnati), BRT, and bus-only lanes.

Currently, the group is calling for changes to the City Charter to allow the City Council to place a modest tax increase on the ballot to fund the improvements specified in the Better Bus Plan.³⁷

Takeaways

- » Community groups can raise money, improve health, and create plans. All of these help create coalitions for change and

greater regional cooperation. Public health professionals can play a role in convening and organizing such groups.

- » Small initial investments in transit stops can create further momentum to improve the system.
- » Pilot projects can increase public and institutional support for longer-lasting change. Public health practitioners can add value to these projects by sponsoring them or collaborating in relevant ad-hoc committees.
- » Transit providers and municipalities should engage community groups to determine where traditional active transportation projects could help achieve transit outcomes (for example, planning new sidewalks to connect to a heavily-used transit stop).

Expanding Rural Service: South East Area Transit

Project description

South East Area Transit (SEAT) is a Regional Transit Authority (RTA) serving Muskingum, Guernsey, and Noble Counties. In addition to fixed routes in Zanesville and Cambridge, SEAT operates demand response transit for the three-county area. As an RTA, SEAT is organized as a political subdivision of the state rather than a department of a municipality or county. The system originally served only Muskingum County. It then expanded into Guernsey County, and recently partnered with Noble County to provide non-emergency medical transportation and demand response services. It also contracts with local medical facilities to provide services, which brings in additional revenue.³⁸

Key points and achievements

SEAT's fixed route service also provides point-deviated service. This means that for several pre-identified locations, including a senior center and other key destinations that are just a few blocks off the fixed route, riders can

request the driver to deviate from the route to drop them off directly at the destination. When they are ready to return, they can call to request the next bus to deviate to pick them up directly.

SEAT undertook collaborative planning partnership with the health department, social service agencies, the United Way, and other actors. Through this process they were able to identify that many medical appointments were being canceled or missed because of a lack of transportation and knowledge about transportation options. As a result, SEAT obtained a TIGER grant (now BUILD) to implement a new software platform with an agency portal. When schedulers at hospitals and other service providers schedule a patient appointment, they can ask if that patient needs transportation. They then enter the software portal to request transportation for that client.

As an RTA, SEAT is dedicated to providing effective transit throughout the region. While the agency is currently served by a Mobility Manager who covers 20 counties, it has received funding for its own position starting in 2020 to support its service area.

In addition to localized transportation, SEAT helps riders make connections throughout the state. Greyhound and GoBus, two intercity providers, serve the county; SEAT shuttles passengers to those stops to connect to destinations such as the Columbus airport. Morgan and Perry County also operate routes into their transit center on a limited basis, which

then connect into the SEAT system to access destinations like Walmart.

Takeaways

- » As an RTA, SEAT operates as its own jurisdiction rather than falling under a city or county. This structure allows the agency to operate with a great deal of autonomy and move quickly; expansion to serve additional counties was far less challenging than it would have been if it were organized under a county government. However, there are also some negatives; SEAT has no local dedicated funding source, and it lacks organizational infrastructure for human resources, procurement, and other needs. Without a local match commitment from a dedicated source, there are many federal funds that SEAT has not been able to leverage. Communities looking to implement a new transit system should balance these needs.
- » Collaborative planning efforts that bring together stakeholders from across many areas can help reveal missing needs that might not otherwise be identified.
- » Small town and rural systems can provide more convenient and personalized service, such as deviated fixed routes.

Transporting Workers: Groveport Rickenbacker Employee Access Transit Shuttle Service

Project description

Provided through a partnership with the Central Ohio Transit Authority (COTA), the City of Groveport, and the Village of Obetz, the Groveport Rickenbacker Employee Access Transit Shuttle Service (GREAT) provides first mile/last mile connections to a major employment center. Located southeast of Columbus, the Rickenbacker Airport area is home to a large and growing number of



A SEAT demand response vehicle. (Source: SEAT)

warehouse jobs, with workers commuting from throughout the region. However, COTA does not provide fixed route service to all of the employers' sites. Many workers and potential workers at these low wage jobs rely on public transit but did not have a reliable connection to get to work. In 2015, employers began exploring shuttle service to address high turnover among workers without reliable transportation.³⁹

Key points and achievements

GREAT shuttles transport workers from the ends of COTA lines 22 and 24 to their places or employment. On weekdays, three different shuttle lines meet all arriving COTA buses and serve over 30 employers in the area. Shuttle service is designed to support worker shift changes. GREAT provides on demand return service from 8:15 to 10:15 PM; limited service is also provided on the weekends on demand. Riders pay normal fares for the regular COTA service; shuttle service is free.⁴⁰

Takeaways

- » The concentration of a large number of employers facilitates this project. Other employment hubs could benefit from a similar strategy, such as major employers who have trouble finding and keeping workers. Systems should provide flexibility



A GREAT shuttle bus in Groveport. (Source: City of Groveport)

for multiple shifts, and complement, not compete with, existing services.

- » The more than 30 employers serviced by the shuttles (many of which received tax abatements to locate in the area) have not yet provided long-term support for the service. Instead, Groveport and Oletz cover the \$700,000 annual cost of operating the shuttles. Employers need to become partners in financially supporting transit options to ensure the programs are sustainable.

Rethinking Mobility: Reimagine RTS Community Mobility Zones

Project Description

In an effort to boost ridership and ensure that it is serving the Greater Rochester, NY area as effectively as possible, the City of Rochester's Regional Transit Service began a system redesign process called Reimagine RTS. The RTS launched the redesign in response to several trends: changing travel patterns (a greater number of trips in low-density suburbs), the decline of Downtown Rochester as the dominant regional employment center, and the rise of transportation network companies (TNC), such as Uber and Lyft. The plan aims to maximize ridership, enhance the customer experience through decreased waiting and travel times, ensure sustainability by decreasing net costs, and expand service to include more mobility options.

The planning effort involved determining recommendations for the RTS fixed route transit system, studying the various transportation options available in outlying areas, and determining solutions for paratransit service.⁴¹

Key Points and Innovations

The proposed system redesign includes the creation of a frequent transit network comprised of ten routes that will operate at a frequency of 15 minutes during peak hours

on weekdays. This network was designed to allow access to most large destinations throughout the region with only one transfer. It also will create secondary local service network that supplements the frequent network, with frequencies of 30 minutes during peak hours on weekdays.

In addition, the redesign will create seven Community Mobility Zones (CMZ) in outlying sections of the community where fixed route service will be replaced with “customized, technology-rich solutions that are more flexible and innovative”.⁴² Possible options may include on-demand service, flex routes (microtransit with a fixed route that can deviate up to $\frac{3}{4}$ mile), personal mobility on demand, and van pools. Patrons will be able to connect to the wider bus network at 10 different connection hubs. RTS will use smaller buses within CMZs; these will be accessible to those with disabilities. Patrons will be able to travel door-to-door to any destination within a CMZ (\$3 cost) or can access a connection hub (\$1 cost). Patrons will use a mobile app to book rides and pay the fare.

The proposed CMZ system is projected to reduce traffic and emissions in peak hours and will improve connectivity to bike sharing and walkable areas. Levels of service within the CMZs will be partially determined by demand; the transit agency will continue to monitor demand levels and changes over time.⁴³

Takeaways

- » Reimagine RTS is a prime example of an effort to refocus traditional transit systems on the denser sections of cities, and run more frequent services in those areas, while at the same time providing demand-responsive and flexible service in outlying neighborhoods. This model could provide an example for other small cities to rethink their transit systems.
- » Smaller vehicles can improve air quality and reduce emissions because small electric vehicles can replace diesel burning buses.
- » Installing or upgrading pedestrian and



An RTS connection hub. (Source: Rochester Regional Transit Service)

bicycle infrastructure around the high-demand fixed route bus services, and at the connection hubs, can increase accessibility and encourage active transportation.

- » Health departments and aging task forces should be involved in making decisions about service changes.
- » Connection hubs should be placed around key community destinations, such as schools and hospitals, and in areas with high transit need.

Innovating Technology: Mobility on Demand Sandbox Program

Project Description

The Mobility on Demand (MOD) Sandbox Program is a Federal Transit Administration (FTA) effort to evaluate new forms of transportation, such as bikeshare, car share, and demand-response buses, and to study how new technology should best integrate with existing forms to improve the customer experience. The FTA is sponsoring 11 different projects in different locations to analyze how best to incorporate MOD projects into the transportation system.⁴⁴

Key points and achievements

Two example projects are:

» **Los Angeles County and Puget Sound MOD First and Last Mile Partnership with Via:**

A one-year pilot program in which Los Angeles County and the Puget Sound area are collaborating with Via, a privately designed ride-hailing network that is somewhat demand responsive, but only takes riders to and from their local transit stop or station.⁴⁵ Users pay the same price as a normal transit trip for an on-demand Via ride to designated transit stations from within a one to two-mile radius, and then can use the same fare card for a free transfer onto the bus or light rail system. In Seattle, the pilot project received over 300 rides per day within the few weeks and has continued to see growing ridership, providing over three rides per vehicle per hour, exceeding the project's initial goals.⁴⁶

» **Adaptive Mobility with Reliability and Efficiency of Project (RTA of Pima County):**

An effort to serve a sprawling and low-density but growing area of Pima County, AZ (the Tucson area). The project proposes to “establish a financially sustainable mobility ecosystem comprised of credits” where credits are distributed and can then be shared and purchased. Credits can be used on personal vehicles, carpooling, transit-hailing, and public transit (through an app). It will also introduce a subscription-based transit service (RubyRide) to help first and last-mile travel, and “integrate all forms of travel to make the system dynamic, adaptive, and capable of meeting peak-hour demand surges.”⁴⁷

Takeaways

» Because the MOD Sandbox project is currently in progress, available research is limited (although evaluation strategies have been released). However, a great deal of information will be released over the next few years. This may help public health practitioners and planners understand the



A VIA van in Seattle, WA.

future of transit (and specifically, how a more demand-responsive and flexible transit network will impact health).

- » Public health practitioners should use the results from the Sandbox to determine how transit and health outcomes can be achieved together.
- » The cities, transit agencies and FTA all contributed funding to the development of these projects. Communities interested in implementing new technologies will need to consider multiple funding sources and partnerships.
- » Marketing and publicity of new forms or mobility are crucial to the success of such projects. The Seattle project included extensive in-person engagement with potential riders through street teams, and marketing materials available in multiple languages.⁴⁸

Changing Behavior: King County Metro's In Motion Program

Project description

In Motion is a twelve-week community-based Transportation Demand Management (TDM) program that encourages participants to switch two drive-alone trips per week to another mode

of transportation. The program supports this behavior change by providing incentives, such as a free two-week unlimited bus pass or bike lights, and informational materials, such as a customized neighborhood travel options map. Different focus areas are selected each year and are usually based on factors such as a major transportation change in the area or long-term construction that is impacting people's daily travel patterns. Participants are engaged throughout the twelve-week program through various strategies including posters at local businesses, event opportunities such as a bike ride to transit or a group transit ride to a popular destination, weekly emails with travel tips and tricks, and social media.

Participants fill out a pre- and post- program survey about their travel habits and log their changed trips throughout the program. King County Metro has also implemented a legacy survey in some focus areas to evaluate participants 18 months after the program has ended. In addition, King County Metro collects aggregate travel data through the distributed transit pass. This includes data such as number of transit boardings, fare re-loading value, and if a participant loads a pass on the card after the two weeks of unlimited rides has ended.⁴⁹

Key points and achievements

During the program, on average participants have reduced 10.7 drive alone trips, reduced 151 vehicle miles traveled, saved 7.5 gallons of gas, and helped avoid releasing 143 lbs. of CO₂ into the atmosphere.⁵⁰ Overall since 2004, the program has served over 40 neighborhoods, reduced over 3.2 million miles of drive alone trips, saved over 157,000 gallons of gas, and helped avoid releasing over 1,500 tons of CO₂ into the atmosphere.⁵¹

Over the course of the implementing the program, King County Metro realized that majority of trips taken were non-commute trips less than three miles. They saw this as major opportunity to encourage participants to change these shorter personal trips to other modes of transportation.⁵²

Takeaways

- TDM programs, such as In Motion, can educate residents about their transportation options and help support them changing their behavior by providing incentives and tools to explore their options.
- Taking advantage of a major transportation change can be a good way to engage people. They may be already considering changing their transportation choices if their daily travel habits are being impacted by construction, a new service, or restructuring of service.
- Focusing on both commute and non-commute trip choices is key. People may find it easier to change their shorter personal trips to the places like the grocery store or school than their daily commute trips.
- Measuring the success of the program through a pre and post program survey is a good way to understand the behavior changes of participants.
- As community educations, public health practitioners are well-positioned to help with educational efforts such as TDM and active commute programs.



An In Motion program outreach ambassador.
(Source: King County Metro -via Facebook)

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