

CHAPTER 6: SYSTEM DEVELOPMENT

While Chapters 4 and 5 describe system maintenance and management activities and strategies, the expected growth and development of the region as described in Chapter 2 makes system expansion necessary

This chapter summarizes the system expansion, or development activities and strategies identified in the MTP for each mode. System development includes adding capacity to the roadway system, expansion of transit services, constructing bicycle and pedestrian facilities, and enhancing intermodal connections. Within each modal system the individual MTP strategies and projects are outlined.

6.a BICYCLE & PEDESTRIAN SYSTEM

As Central Ohio continues to grow, more people are walking and bicycling as a form of transportation. Many communities within the region are investing more in higher quality facilities to accommodate the higher volumes of people walking and bicycling, but as a region we still have more work to do. The region is working to collect data on active transportation facilities and the usage of those facilities to demonstrate their importance, identify gaps that limit the mobility of people throughout the region, build more bicycle and pedestrian facilities, and ensure that educational, enforcement and encouragement programs are available to support bicycling and walking.

BICYCLE AND PEDESTRIAN STRATEGIES AND PROJECTS

1. Collaborate to build high comfort bicycle and pedestrian infrastructure through development regulations

Most communities require developers to install appropriate bike and pedestrian facilities in new developments, but there are other strategies and tools available to local communities to advance bicycle and pedestrian infrastructure through development regulations.

[insight2050](#)

Insight2050 is one example of collaboration around land use and development regulations. The study identified the various impacts that different growth scenarios will likely have on the region. As summarized in Chapter 2, initiatives such as insight2050 and insight2050 Corridor Concepts explore how more walkable, bike-able, transit-supportive neighborhoods can positively impact transportation, infrastructure, housing, and the environment. Connected and accessible pedestrian and bicycle infrastructure links people to places, supporting better access to jobs and mobility options. High comfort bicycle and pedestrian facilities help to meet the region's growing need and preference for better-connected neighborhoods.

2. Increase the quantity and quality of data on bicycle, pedestrian, and similar modes travel behavior

[Update Columbus Metro Bike Map](#)

Minor changes have been made to the Columbus Metro Bike Map since the last major update in 2016 to account for changes in the bicycle network. In 2020, MORPC will coordinate with regional stakeholders to initiate another major update that will improve upon the previous methodology for assessing the level of comfort for bicyclists.

[Complete Streets Equipment Library](#)

MORPC maintains a library of equipment that includes professional measuring wheels, a radar gun, and three different types of devices for collecting data on pedestrian and bicycle traffic. This equipment is available to local jurisdictions interested in collecting data in order to provide the information needed to adequately accommodate non-motorized traffic in facility design decisions.

Bikeway Inventory

MORPC continuously updates bikeway data based on information from local jurisdictions. The updates track both regionally significant bikeways and local bikeways. These data are available to local jurisdictions and the public using an interactive online map. MORPC also shares these data with ODOT and other MPOs in Ohio.

Sidewalk Inventory

In 2015, MORPC partnered with the City of Columbus and the Ohio Department of Transportation (ODOT) to compile an inventory of sidewalk facilities in the MPO planning area. The inventory is available online in an interactive webmap format and includes attributes such as where sidewalks are and are not located, and the location of marked and unmarked crosswalks. The inventory is maintained by ODOT, and local jurisdictions are responsible for providing and updating data. The inventory is used to support transportation planning activities throughout the region.

Bicycle and Pedestrian Counts

Since 2005, MORPC, together with many different volunteers and regional partners, has routinely collected bicycle and pedestrian volume counts across the Central Ohio region. This includes manual counts occurring in concert with the National Bicycle and Pedestrian Documentation Project. These manual counts occur twice a year at selected locations throughout the region. In addition to manual counts, automated counting devices are being used to continuously collect counts at select locations across the Central Ohio Greenways trail system and are being supplemented with additional short-duration counts. These efforts allow MORPC to create a regional inventory of non-motorist activity, better understand the factors that impact activity levels, and observe trends over several years. MORPC is coordinating with local and state partners to enhance this regional nonmotorized data collection program by utilizing new technologies that will help to expand the locations and areas we are able to monitor.

Bicycle and Pedestrian Crash Data

MORPC regularly evaluates data on pedestrian- and bicyclist-involved crashes and identifies priority safety locations for further study. This information helps identify areas in need of physical safety improvements as well as safety education programs.

3. Expand high comfort bicycle and pedestrian networks through the implementation of complete streets

As described in section 3.b, MORPC has adopted a Complete Streets Policy. MORPC staff will continue to hold workshops and give presentations to local governments, city councils, and the public on the concepts of Complete Streets and age-friendly communities. The goal of these presentations is to encourage local communities to think differently about their community development and adopt complete streets policies and other policies that support their implementation.

In 2010, MORPC was awarded a grant from the Ohio Department of Health (ODH) to create a Complete Streets Toolkit to supplement the regional Complete Streets Policy. MORPC is coordinating with regional stakeholders to update both the regional Complete Streets Policy and the Toolkit in 2020. This update will provide clearer expectations and additional resources to aid project sponsors in meeting the requirements of the Policy.

MORPC continues to review projects that have been awarded MORPC-attributable funding to ensure that they comply with MORPC's Complete Streets Policy. A Complete Streets Review Committee consisting of MORPC staff meets regularly to review projects as they move through the project development process.

As detailed in Section 4.c, MORPC continues to facilitate efforts aimed at improving pedestrian and bicyclist safety through various safety initiatives, including road safety audits, walk and bike audits, and systemic safety improvement projects.

4. Implement the Central Ohio Greenways trail vision

Since 2005, a group of cross-sector trail planners, managers, and advocates have been meeting and partnering as the Central Ohio Greenways (COG) group to develop a regional trail network to provide recreational and transportation opportunities and protect the waterways. In 2015, MORPC's board approved the formation of a 22-member COG Board with a mission to increase the number of trail miles and number of people using the trails throughout the central Ohio region.

Based on its strategic plan, the COG Board developed a community supported Regional Trail Vision Plan to add over 500 regional trail miles to the existing 230 miles of trails in its 7-county area of interest (expanding beyond the MPO planning area). The MORPC Board adopted the Regional Trail Vision in 2018. The proposed trails will extend existing trails, fill gaps in the trail corridors, connect neighborhoods to job centers and greenspace, and create a truly interconnected network useful for both transportation and recreation. To further ensure that the Regional Trail Vision was fully supported by our region's political, business, and philanthropic leaders, the COG Board conducted a study to help understand the appetite for such a bold vision among community leaders. The consultants interviewed nearly 40 community leaders and surveyed over 1,000 individuals as part of this effort, affirming that the perception and interest in trails is extremely high among leaders and residents alike. Leaders indicated that a fully connected trail network is necessary to ensure the region remains a desirable and competitive economic center supported by high quality of life amenities. They also believed that trails are something that will benefit anyone, no matter their race, social status, or political affiliation and that its values tie back to not only the environment, but also health, economic development, and social equity.

The COG Board and its associated working groups are focused on implementing the Regional Trail Vision by addressing key regional trail issues related to trail development, operations & access, marketing, and partnerships. Working group initiatives include projects such as:

- **COG Trail and Active Transportation Prioritization Study:** This effort is prioritizing proposed trail project and identified on the COG Regional Trail Vision as well as bike/pedestrian access from neighborhoods to the trails based on how they are expected to impact the economy, public health, social equity, and the environment. The results of the study are expected in 2020.
- **Strategic Greenspace Connectivity Framework:** This is a collaboration between COG and the Urban Land Institute to create a cohesive vision for improvement, development, and connectivity of land along waterways in Franklin County. The framework is intended to reframe the connectivity of the region based on the natural geography defined by our waterways. It will provided guidance to connect all Franklin County residents to the regions natural, cultural, and economic resources for recreation, commuting, commerce, education, and relaxation.
- **Wayfinding and Signage:** COG developed guide to support cohesive signage and wayfinding across jurisdictional boundaries. COG is exploring ways to update the signage guidelines to reflect how trails are an important piece of the regional active transportation network.

This MTP prioritizes trail projects that are part of the proposed COG trail network. Figure 6.1 shows the specific stand-alone bicycle and pedestrian projects included in the MTP, and Chapter 8 provides a list of projects.

5. Update the Active Transportation Plan and implement it to create high comfort regional pedestrian and bicycle transportation networks

The Active Transportation Plan (ATP) provides tools to assist Central Ohio communities in the Metropolitan Planning Area with planning efforts to ensure their residents and visitors can efficiently and safely travel by foot, bike, and other similar modes of transportation. The current ATP includes an interactive Story Map with active transportation best practices, and a Cost Estimator Tool to help communities budget for the incorporation of active transportation infrastructure into an already programmed infrastructure project. The key regional corridors of the ATP are incorporated into the MTP's project evaluation criteria, as well.

MORPC staff coordinate closely with communities to encourage collaboration across jurisdictional boundaries and ensure that those regional active transportation connections are being made. Additionally, MORPC will be coordinating with regional stakeholders beginning in 2020 to update the regional Active Transportation Plan (ATP). This update will improve upon the concepts developed in the 2016 ATP for regional connectivity and implementation of best practices regarding active transportation facilities, and provide clearer guidance for local decision makers to make more informed decisions about the planning and design of their active transportation networks.

This MTP prioritizes bicycle and pedestrian projects such as multi-use paths, bicycle lanes, and sidewalks focused along the key regional corridors identified in the Active Transportation Plan. Figure 6.1 shows the specific stand-alone bicycle and pedestrian projects included in the MTP, and Chapter 8 provides a list of projects.

6. Make neighborhoods walkable and bikeable through infrastructure projects that fill gaps in the high comfort pedestrian and bicycle networks

The non-freeway projects identified in this MTP are all assumed to include appropriate complete streets elements. The stand-alone bicycle and pedestrian projects identified are focused on the 12 key regional Active Transportation Plan corridors and proposed Central Ohio Greenways trails, which are regionally significant. The financial forecast of this MTP sets aside funding for other stand-alone bicycle and pedestrian projects that local communities identify as priorities, however most of these local priorities are not mapped or specifically listed.

7. Ensure neighborhoods and employment locations have high comfort connections for pedestrians and bicyclists to the regional pedestrian, bicycle and transit networks

Shared Micromobility

Over the last few years, many new and innovative transportation options have expanded across the country and within our region. The first of these new technologies included bikeshare systems that allowed anyone to rent a bike for a short trip, then leave the bike for another user. The City of Columbus first introduced its "CoGo" bikeshare system in 2013, which has since grown to over 80 stations across Central Ohio.

Since then, a number of additional bikeshare providers and other new technologies such as electric

scooters have become available in the region. All of these technologies provide exciting new transportation options that have been shown to replace short trips that have previously been made by automobile, but have also introduced some new challenges.

In an effort to build upon the successes of these new technologies, while mitigating the associated challenges, MORPC will be available as a resource to communities who wish to explore their options with shared micromobility. Keeping in alignment with the MTP theme of collaboration, MORPC will work with communities to help guide expansion of these systems in combination with the infrastructure needed to support them, in a manner that encourages sustainable transportation and is accessible to the diverse populations of Central Ohio.

Active Transportation Hubs

MORPC's Park-and-Pedal initiative encourages commuters who live in the outlying suburbs to park their cars before arriving into congested areas such as downtown Columbus where parking is sparse, and ride a bike for their last few miles to work. Working in conjunction with the City of Columbus, MORPC has identified parking lots owned by the City that are connected to bike-friendly roads or multi-use paths that safely lead into downtown. These lots have been branded with clear signage at their entrances and indicated on MORPC's digital bike map.

Mobility Hubs are also being implemented by the City of Columbus, the Central Ohio Transit Authority (COTA), and Smart Columbus to support multimodal travel. These alternative transportation stations include CoGo Bike Share stations, scooter parking, transit stops, and ridehail pickup and drop off zones. MORPC staff will continue to collaborate with stakeholders as the Mobility Hub locations are identified and implements to best support community access to transportation resources that support active travel.

Active Transportation Events

Bike to Work Week, Bike Month, and Pelotonia are among the variety of bike events happening every year within the region. The goal of these events is to encourage more commuters and residents to bike. MORPC is involved in planning and promotion of many of these events, and is in the process of developing additional events to expand on the region's efforts around supporting active transportation .

- Taste of the Trails Toolkit: Taste of the Trails series of events are intended to deepen Central Ohioans' sense of community pride by celebrating unique local, natural, and cultural assets found along trails. The events encourage residents to experience the trails and learn more about how the trails can support a healthy lifestyle, sustainable commuting options, and equitable recreational opportunities. COG has developed an event toolkit to support communities interested in hosting an event. The toolkit provides templates for event outreach related to sponsorship, marketing, as well as a passport template to highlight community assets.
- MORPC Block Party Toolkit: MORPC is creating a second event toolkit for communities to host a public event planned for and with residents that is intended to fill gaps in understanding of MORPC's programs and services and emerging transportation. The event aims to strengthen relationships between regional partner, local municipalities, and transportation providers. The events will incorporate engaging activities and resources that will be used to educate and empower residents on why and how to use emerging transportation modes and services. These opportunities will provide age, ability, and income inclusive resources to support quality of life of residents in Central Ohio.

8. Facilitate multi-jurisdictional dialogue to improve opportunities through collaboration

Active Transportation Working Group

MORPC launched the Active Transportation Working Group (ATWG) in early 2019 with a mission of providing a forum for discussion and education in Central Ohio regarding active transportation, as well as to serve as a guide for regional project development and implementation. The ATWG engages public, private, and non-profit partners all working toward the same goal of making Central Ohio more walkable and bikeable.

Host Central Ohio Greenways (COG) Forums

Since 2005, MORPC has held COG forums three times a year to collaborate on trail planning efforts, raise awareness of the importance of the trail system, and share best practices for planning, building, and managing trails. The Forums are suited for local governments, parks and recreation groups, and local trail advocacy groups.

Assist in Community Active Transportation Plans and Committees

MORPC will participate in the development of local active transportation plans to ensure regional consistency and continuity. Communities within the MORPC MPO Planning Area also have the option to apply to the insight2050 Technical Assistance Program for active transportation planning, which would provide them with dedicated MORPC staff assistance for their planning efforts.

MORPC's Central Ohio Greenways Program also supports state and local trail efforts by providing guidance to or serving on trail committees as the Union County Greenway Working Group, ODNR's State Trail Planning Committee, Delaware County's Trail Committee, and other similar groups.

Active Transportation Professional Training Opportunities

MORPC continues to work with partners such as FHWA, the American Association of State Highway and Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), the Association of Pedestrian and Bicycle Professionals (APBP), The League of American Bicyclists, the National Safe Routes to School Partnership, and YayBikes! – a Columbus-based bicycle advocacy group – to educate local engineers, planners and residents on bicycle- and pedestrian-related topics through a variety of webinars and trainings. Additional training opportunities are provided at conferences, such as ODOT's Ohio Transportation Engineering Conference, the Central Ohio Chapter of the American Planning Association's annual conference, and MORPC's annual Summit on Sustainability.

Encourage Bicycle-Friendly America and Bicycle-Friendly Business Applicants

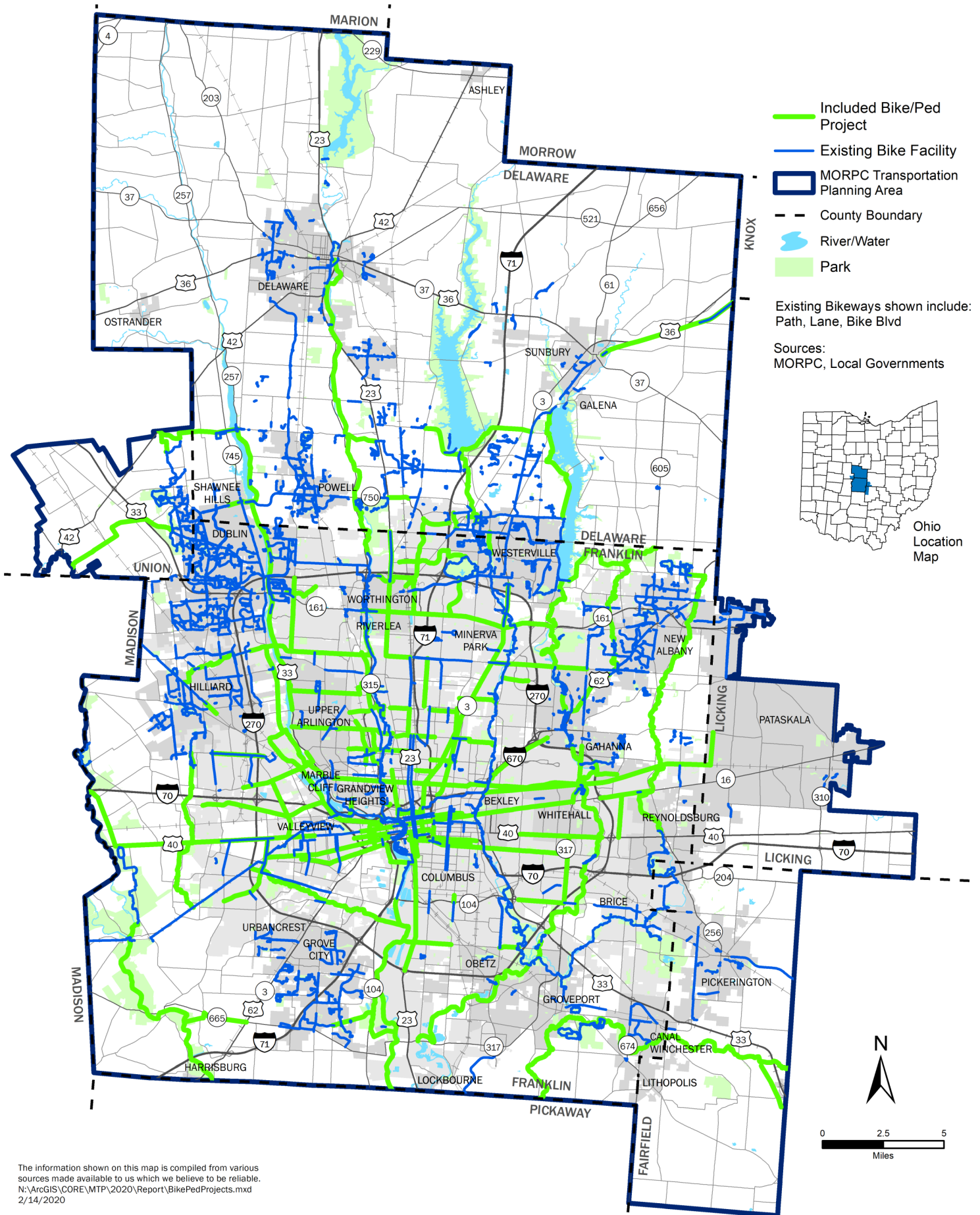
The League of American Bicyclists issues Bicycle-Friendly America and Bicycle-Friendly Business designations. The designations recognize municipalities, universities and businesses for actively supporting bicycling. The League has awarded a "Bronze" designation to the cities of Columbus (2009), Dublin (2012), and Westerville (2012). The League has also awarded a Silver designation to MORPC, Columbus Public Health, The Ohio State University, among other local organizations and businesses.

9. Develop transportation system to serve all demographic population groups.

In light of the findings of insight2050 that indicate that Central Ohio's population of 65 years or older is expected to double over the next 35 years, MORPC is identifying new ways to support older adults in the region.

MORPC's Mobility Management program is being implemented to support independence and quality of life for older adults, people with disabilities, and people with lower incomes. This program has the purpose of making transportation options for these populations easily accessible and useable for individuals themselves, their caretakers, or social service organizations. A significant part of this program supporting these populations to utilize active transportation modes safely and independently for mental and physical well-being. MORPC coordinates with Age-Friendly Communities to support their efforts around mobility for all ages. The Age-Friendly Communities program is a major step in ensuring that older adults can live an active and safe lifestyle in Central Ohio.

MORPC encourages and supports efforts to increase walking and bicycling to school among students, by coordinating with local SRTS partners and promoting their safety initiatives.



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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Figure 6.1
Stand-alone Bike/Pedestrian Projects Page 6-9

6.b TRANSIT SYSTEM

The growth of the region cannot be accommodated by expansion of the highway system alone. As the costs of automobile ownership, fuel and congestion continue to grow, there is a need to provide alternative means of transportation to sustain the social and economic well-being of Central Ohio. Investment in new and expanded transit services can ease growing congestion while reducing harmful emissions and providing an equitable transportation system.

ODOT Statewide Transit Needs Study

As the demand for public transit increases and budgets shrink, the Ohio Department of Transportation has developed recommendations to bring the most efficient and cost-effective improvements to transit riders and taxpayers alike.

Travel trends show that there is a definite rise in the need for convenient, affordable public transportation to jobs, medical appointments, shopping and recreational activities. Ohio transit agencies are struggling to fund this existing service, let alone meet the increased demand.

As of January 2015, ODOT's transit spending per capita at \$0.63 ranks among the lowest in the nation at 38th out of 51. The study identified nine strategies to meet needs and better position the state to strengthen services overall.

TRANSIT STRATEGIES AND PROJECTS

The regional transit service providers and their planning partners are actively working to improve transit services in Central Ohio. Specific improvements to local and express bus service are not listed in this MTP due to the frequent changes made by the service providers, however the financial plan does include funds for these types of improvements. Additionally, the following activities and strategies demonstrate other regional efforts to move transit forward.

1. Collaborate to build transit infrastructure through development regulations

MORPC has been working with a group of stakeholders to identify locations and funding for coordinating transit-oriented development in potential high capacity transit areas is association with the insight2050 Corridor Concepts Study Report in redevelopment and economically distressed areas.

Multijurisdictional stakeholders are being identified that specialize in planning, housing, public service and development. As part of TOD and other efforts, MORPC will be reviewing vehicle and pedestrian crash locations in proximity to bus stop locations. MORPC COTA and DCT will work with elected leaders, developers, and community members. As growth and density increase lessons learned can be applied to the DCT service area and potential mobility center locations.

2. Increase frequency on appropriate fixed route transit routes

In May of 2017 COTA overhauled its entire bus network for the first time in 40 years. The Transit System Redesign simplified routes, increased frequency, and made connections to more people and places. The new system provided twice as many high-frequency bus routes that arrive every 15 minutes or better on major streets. These simple, frequent, easy-to-understand routes form the backbone of the new system. Routes also now operate on more consistent schedules seven days a week. Saturday service increased almost 50% and Sunday by 120%. Moving forward, it is envisioned strategically to

increase frequency where appropriate to make it more convenient and meet demand.

Like COTA, DCT will continue to explore opportunities to provide more frequent service through grants and potential other local funding sources. In addition, DCT will continue to monitor the growth and need in the county and will continue to modify its services to best meet the needs and desires of the county.

3. Implement high capacity transit service along additional corridors

As the primary provider of public transit services in Central Ohio, COTA underwent a long-range planning effort, NextGen, to identify public transportation needs and opportunities through 2050. NextGen comprehensively considered how changing growth and demographic trends will shape opportunities and demand for public transportation. NextGen was completed in Spring 2017.

NextGen goals:

- Lead the community in envisioning what our public transportation system needs to accomplish in the coming decades to ensure Central Ohioans have access to jobs, housing, education, and services.
- Prepare Central Ohio for future growth by identifying transit investments that integrate with regional plans and goals. Critical regional goals include maintaining regional competitiveness, minimizing sprawl, and responding to demographic preferences.
- Create transit investment options to support local and regional efforts to develop transit-oriented and multi-modal communities.
- Identify conventional and creative revenue options that offer potential to support the recommended plan and ensure the plan can be implemented.

In addition to the transit agencies, there are other groups that are advocating for high capacity transit in the region. These include the Columbus Street Railway Company, Transit Columbus, and others.

High-Capacity Corridor Planning – insight2050 Corridor Concepts & LinkUS Mobility Initiative

Coordination between the MTP project evaluation process (described in Chapter 7), and other regional transit planning initiatives resulted in 6 high-capacity transit corridors being identified in this MTP.

The 2019 insight2050 Corridor Concepts study explored how more walkable, compact neighborhoods and high-capacity transit along five key routes in Central Ohio can improve quality of life by positively impacting transportation, infrastructure, housing, and the environment.

The LinkUS Mobility Initiative began in summer 2020. This initiative builds upon COTA's vision for high capacity transit identified in NextGen and the Corridor Concepts study to advance high capacity transit and other mobility improvements in specific corridors. While all of the corridors identified in the Corridor Concepts study are included in the LinkUS Mobility Initiative, four corridors were studied first to identify the preferred mode alternatives and route alignments. As a result of these studies, Bus Rapid Transit (BRT) was identified as the preferred mode on four corridors. The corridors are described below, and shown in Figure 6.2 and in Chapter 8.

- East Rich St./Main St. from High St. to Taylor Rd.
- East Broad St. from Souder Ave. to Taylor Rd.
- West Broad St from Washington Ave. to Westwoods Blvd.
- Northwest: Connects Downtown to Dublin via Olentangy River Rd, Bethel Rd, and Sawmill Rd. corridors

Two other corridors, described below and shown in Figure 6.2, are routes that have a high potential to support high-capacity transit (HCT), but specific transit modes have not yet been identified:

- Northeast: Enhance, reinvest in, and possibly re-align CMAX service to utilize former Mt. Vernon RR line between E. 5th Ave. and Ferris Rd.
- Southeast: Connects Downtown to the Rickenbacker Area.

High-capacity transit in these corridors could include:

- Commuter Rail (connecting cities in adjacent counties with Columbus)
- Light Rail (providing service to Columbus and adjacent communities)
- Streetcar (shorter lines in denser, urban areas)
- Bus Rapid Transit (expanded bus service with light-rail-like amenities)

The BRT and HCT corridors described above are consistent with the corridors studied in the insight2050 Corridor Concepts and the LinkUS Mobility Initiative, and represent the current vision for high capacity transit in the region. Those six corridors are included in this fiscally constrained MTP.

Additionally, four other areas have been identified for further study for the need for high capacity transit service, including:

- Columbus-Delaware: Connects downtown Columbus to Delaware, the largest city in Delaware County
- Columbus-Lancaster: Connects downtown Columbus to Lancaster, the largest city in Fairfield County
- Columbus-Grove City: Connects downtown Columbus to a rapidly growing suburb
- Columbus-Chicago: Connects Port Columbus to Chicago, with potential stops in Ohio and Indiana along the way.

4. Expand geographic coverage of fixed route transit service

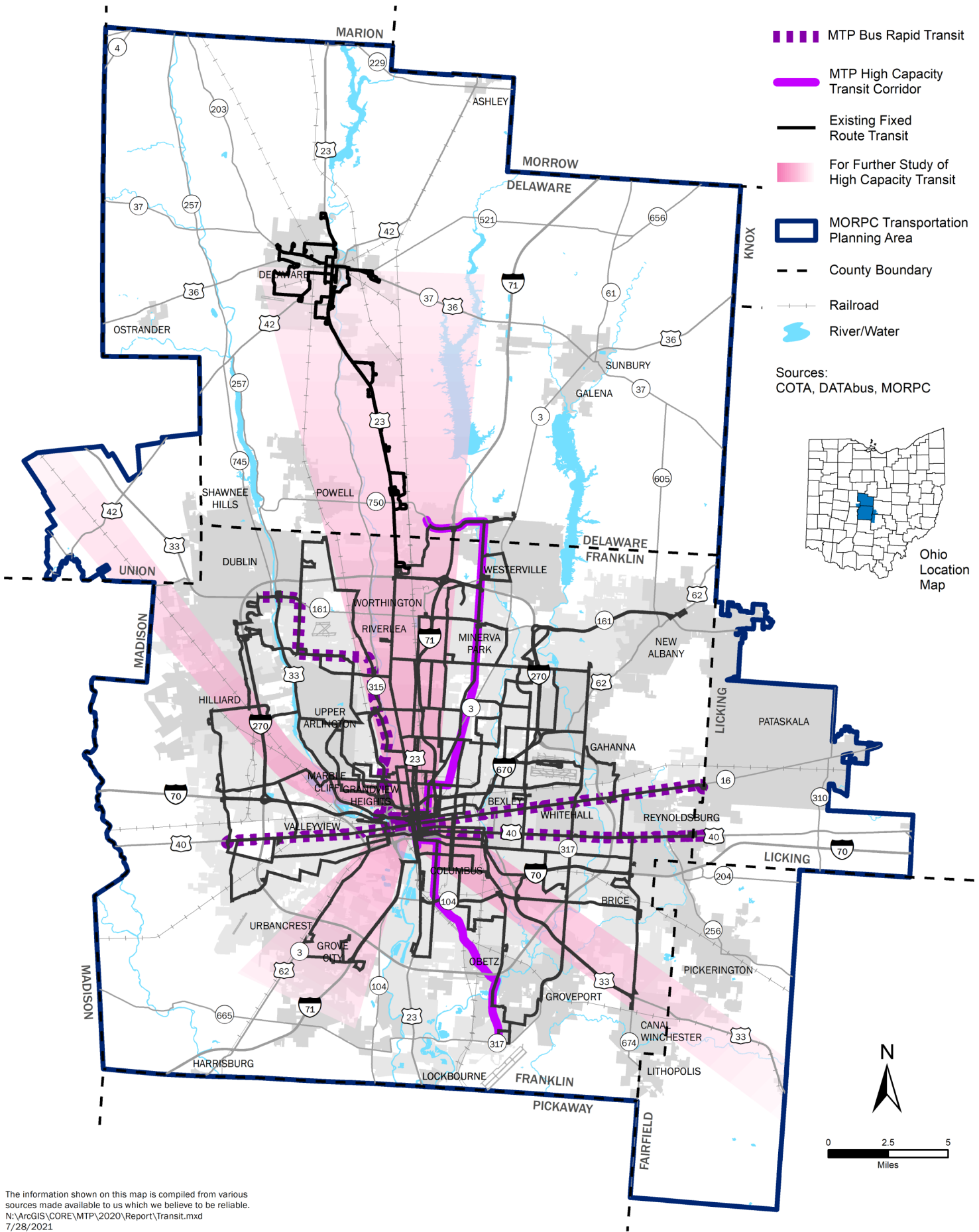
Although funding structures currently limit the service areas of the major transit providers in the region, ODOT, MORPC, and the transit providers are partnering to review policies and seek opportunities to expand fixed route transit coverage. One component of expanding the geographic coverage area of fixed route transit is having logical transfer points. Mobility Centers are needed to make transit connections from suburban and outlying areas to the Columbus area. Public and private partners are identifying sites for development of mobility centers.

There are a growing number of employment centers in Central Ohio outside of Downtown Columbus. In an effort to connect inner-city residents to suburban job opportunities, COTA offers several reverse-commute express lines that travel from Downtown Columbus to outlying areas. Because these lines often end at transit centers or Park & Rides, they do not directly connect employees to their job sites.

COTA's NextGen Plan identified potential future strategic investments, including the expansion of, improvement to, and addition of park-and-ride locations and transit centers to support potential improvements to transit services. These locations are shown in Figure 6.2.

5. Implement appropriate additional/innovative service to address first/last mile needs

Building of off first/last mile efforts such as the New Albany service, GREAT and the COTA plus implementation in Grove City, more of these are envisioned throughout the region. In particular COTA is



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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Figure 6.2
High Capacity Transit Projects

Amended September 2021

committed to implementing the COTA plus service in Grove City to other areas of the region.

COTA Plus is an on-demand service that will provide first/last mile service in partnership with local governments. The mobility option offers customers with point-to-point service at an affordable fare and connect COTA riders to fixed route service for free. COTA Plus is an on-demand, app-based rideshare service that can book multiple passengers heading in the same direction into a shared vehicle. This microtransit solution provides customers with further access to jobs, healthcare and more, while also offering a fast, convenient and comfortable transit solution.

Some communities are piloting first/last mile service with a private provider for transit riders to and from their jobs as a service with the hopes of employers participating in funding the service.

Both COTA and DCT have bike racks mounted on the front of their fixed-route vehicles, enabling bicyclists to complete a part of their trips with transit. Lancaster Public Transit System plans to add this capacity within the next few years. This bike-bus combination helps transit riders when their origin or destination remains far from a transit stop. Where suitable, COTA continuously seeks to add other bicycle amenities, such as racks, near transit stops to improve modal connection. COTA also participates in any updates to MORPC's Columbus Metro Bike map with park-and-ride and other route information.

6. Make neighborhoods transit supportive through infrastructure projects

Walking or biking are part of all transit trips. Thus, pedestrian and bicycle infrastructure is vital in the support of transit. Thus, most of the strategies and projects that expand the pedestrian and bike system in areas that connect to transit stops will benefit transit. COTA's plans also include the improvement of sidewalk connections that improve accessibility to passenger shelters and stops. The Franklin County Coordinated Plan also identifies these sidewalk deficiencies as a barrier to fixed-route transit, especially for the elderly and persons with disabilities. In response, COTA's Mobility Advisory Board convenes a subcommittee that advocates for sidewalk improvements, and funds limited improvements through FTA Section 5310, Enhancing the Mobility of Seniors and Persons with Disabilities. MORPC's Complete Streets Policy also encourages and, in some cases, requires the completion of such connections to transit.

COTA and DCT are involved in the development and will continue to be part of MORPC's Active Transportation Plan (ATP), described in Section 6.1. The ATP is a coordinated effort across the MPO to create interaction and integration of pedestrian, bicycle and transit facilities within the regional transportation network.

7. Facilitate multi-jurisdictional dialogue to improve opportunities for collaboration

Since FFY 2013, MORPC has grown in the role of being a designated recipient for FTA Section 5310 funds. Going forward MORPC will have more connection and contact with recipients to work toward more coordination efforts. To date and going forward, public transit, private operator, and private non-profit projects have been selected.

When MORPC updated its locally developed Coordinated Public Transit Human Services Transportation Plan for Franklin County 2018 MORPC included Delaware county to match the MPO planning area. As required by FTA Section 5310 funding to enhance the mobility of seniors and persons with disabilities, any program or projects selected must be included in the Coordinated Plan.

In January 2018, ODOT Office of Transit completed the Justification for ODOT Human Service Transportation Coordination Regions. ODOT investigated the merits of developing a regional structure for coordinated human services transportation for the state to assess the potential financial efficiencies of service provision and enhance mobility options for the urban and rural residents of Ohio. ODOT, reviewed resources, challenges, duplications, gaps, trip types, population and budgets available for

coordinated transportation and mobility management. This study recommended the regionalization of Ohio's HSTC programs in a manner that facilitates a more cost-effective use of available funding and to take advantage of regional deployment of enhanced technologies for all of Ohio's human services programs that utilize agency-sponsored and public transportation resources. As shown in the Figure below.

One of the outcomes of the Coordination Regions above is that most transit services would like to work regionally with out boarders

COTA, DCT LFPT and LCTB participate in or host the coordinating councils or boards for their counties. Such forums provide an opportunity to identify, maintain and expand human services and public transit coordination. Each seeks to implement its county's coordinated plan.

DCT, LPTS and LCTB continue to contract with human services agencies to provide transportation for human service agency clients. Such coordination eliminates potentially overlapping service and provides the transit agencies an additional source of revenue to maintain and operate their fleets.

Bus On Shoulder Program (BOS)

COTA began operating express buses on freeway shoulders in 2006. Buses traveling on I-70 between downtown Columbus and SR 256 east of Downtown are able to merge onto the freeway shoulder to avoid congestion delays. Buses may use the shoulder when traffic speeds drop below 35 mph, and buses may not exceed traffic speeds by more than 15 mph.

Utilized under bus operator discretion, the I-70 BOS project has resulted in reduced travel times and improved schedule adherence for the express routes using this freeway. The region will continue to implement BOS where appropriate. In 2015, COTA, ODOT, and MORPC partnered and implemented the region's second BOS corridor – I-670 between downtown Columbus and I-270 east of Downtown. This was discontinued in 2018 to build the SmartLane an extra travel lane that is only open during certain times when drivers need congestion relief the most.

6.c FREIGHT RAIL & MULTIMODAL CONNECTIONS

Our region's freight planning program actively supports a number of the Metropolitan Transportation Plan's goal strategies, particularly when it comes to positioning Central Ohio to attract and retain businesses that enhance our economic prosperity and position the region to compete on a global scale.

The intermodal freight and aviation industries have an impact beyond local, regional, state, and even national borders. Global trading patterns are shifting, and a competitive advantage will belong to regions that cannot only attract high skilled workers and businesses that employ them, but places that provide affordable housing options, a high quality of life, and transportation hubs that act as gateways to the global economy. Through its work in freight planning and other activities, MORPC works to position the Central Ohio region as an attractive area to workers and businesses. However, MORPC also understands its role in the larger picture, and that freight challenges span beyond regional boundaries.

INTERMODAL FREIGHT AND AVIATION STRATEGIES AND PROJECTS

Recognizing the importance that goods movement plays in the regional, state, and national economies, Central Ohio stakeholders actively collaborate to address the needs of this important sector of our economy. Strategies presented throughout the MTP seek to improve the flow of all modes of transportation, including intermodal freight and ground access to the region's passenger airports. For example, strategies and projects that address congestion not only help the commuting traffic but also the movement of goods. However, this section directly addresses four strategies related to intermodal freight and aviation ground access, and the activities and projects that implement these strategies.

1. Improve traffic and transit operations by increasing efficiency through investment in advanced technology

As a convener of public and private stakeholders, MORPC has been a key agency in the identification of traffic and transit needs in the region. This includes collaborating on testing innovative technologies to increase efficiency of traffic and transit operations. Working with COTA, Smart Columbus, ODOT, Drive Ohio and local municipalities, MORPC is facilitating pilot projects focused on autonomous shuttle services (such as the Linden self-driving shuttle), and the US-33 Smart Corridor, which involves enhancing the US-33 corridor in Union County and western Franklin County for testing of autonomous trucks.

Automated and Connected Vehicles

Along with other regional stakeholders, MORPC is working with The Ohio State University Center for Automotive Research (OSU CAR) to explore innovative transportation technologies such as automated freight vehicles. Currently, MORPC is working with OSU CAR and its partners to fund a pilot project along US 33.

2. Improve at-grade rail crossings and close or grade-separate crossings where feasible

As part of its services to our members, MORPC takes an active role in facilitating collaboration between local governments and the Ohio Railroad Development Commission (ORDC), particularly in the area of at-grade rail crossings. In 2018, MORPC worked with Prairie Township to assess the impacts of the Hillard-Rome Road south of I-70 and north of W Broad Street. This at-grade rail crossing is frequently

blocked by stalled trains due to congestion at the Buckeye intermodal rail yard. To help understand the extent of the blockage issue, MORPC provided a 7-day, 24-hour video surveillance summary that informed stakeholders of the frequency of blockages, the length of each, and what times during the day the problem was at its worst. This information was shared with ORDC, ODOT and other stakeholders to facilitate discussions with Buckeye rail yard management and private railroads using this rail crossing.

In addition, MORPC is participating in the Grade Crossing Adaptability Study's stakeholder workshops. This study, slated for completion in 2020, was funded by ODOT and ORDC with the purpose of providing an analysis tools for decision makers to prioritize safety around at-grade crossings across the state.

3. Address congestion points “bottlenecks” on the rail system

In 2019, MORPC completed components of a Tier I Environmental Impact Statement (EIS) study as part of the Rapid Speed Transportation Initiative (RSTI). This study yielded information on train frequency across various segments of the rail network in Central Ohio. This information, while collected for the purposes of the Chicago-Columbus-Pittsburgh passenger rail and hyperloop projects, yielded important information on congested rail segments, including those within downtown Columbus. This information is at hand and can help identify collaboration points between rail, highway, and local stakeholders to maximize multimodal improvement investments in Central Ohio.

4. Collect information on and analyze freight activity to identify developing trends and work to disseminate that information among partners and peers

Mid-State Freight Web Tool

In 2016, MORPC completed the Mid-State Freight web tool (<http://apps.morpc.org/midstatefreight/>). This tool provides an overview of the freight industry and its assets in Central Ohio, and provides information on the transportation system's travel time reliability (or system performance), freight system infrastructure improvement priorities (or MORPC's Freight Transportation Improvement Program, FTIP), and freight mode trends including air cargo (total cargo weight handled), rail (in number of intermodal lifts), and highway trends in the form of a comparison between Columbus and other metro areas in the U.S. of similar size. The highway trends used in Mid-State Freight include annual excess fuel consumed, delay per peak hour commuter, and total congestion cost.

Inventory of Railroad Operations and Right-of-Way in Central Ohio

An update to the Inventory of Railroad Operations and Right-of-Way in Central Ohio is underway. Generally updated every 10 years, the report was originally released in 1968 and previously updated in 1985 and 1995, with the most recent update completed in 2007. The original purpose of this study was to examine the rail lines within Central Ohio in order to identify physical constraints and operating parameters that affect the potential use of excess right of-way for other transportation purposes. This inventory was originally intended to provide a planning tool to assist in an objective analysis of a rail line's potential in other uses, such as trails or environmental buffers, as well as assist in intermodal planning, rail crossing studies, and potential infrastructure improvements. The upcoming update intends to broaden its scope and will feature web-based mapping to increase the public's access to this information.

Freight Scanning Tours

Previous freight-scanning tours have provided policy makers opportunities to get behind-the-scenes glimpses of major companies doing business in the region. In addition, it allows business leaders to ask questions of the group of policy makers with respect to future transportation plans and funding in the

region. MORPC will continue to work with regional stakeholders to conduct at least one freight scanning tour per year. This includes tours associated with the Conference on Freight within Central Ohio.

FHWA's Freight Professional Development Program

MORPC will continue to work with ODOT, FHWA and other U.S. Department of Transportation (USDOT) partners to help build freight planning staff capacity to ensure the long-term integration of the subject into all transportation planning initiatives.

5. Maximize the efficiency and provide needed capacity of rail terminals

6. Implement hyperloop technology for freight movement

In 2017 MORPC led a partnership of entities and won the Virgin Hyperloop One Global challenge to be one of 10 teams world wide to advance this new transportation technology. The Midwest Connect route is from Chicago to Columbus to Pittsburgh. Since 2017 MORPC has worked with Virgin Hyperloop One to advance planning of this route including completing a feasibility study and certain components of a Tier I Environmental Impact Statement. Partners have been involved in national discussions with U.S. DOT on the policies and standards needed at the national level to advance this new mode. MORPC is applying for additional funding from various sources to continue the next steps in making this technology a reality in our region.

Although the activity that jump started the technology discussion was a route to Chicago and Pittsburgh to Columbus, it is likely that a shorter route(s) exclusively for freight will be the first components as the technology is implemented. Although still in early planning stages, these could be routes that connect the major airports in our region and/or routes from these to initial destinations like Dublin or Marysville along the proposed, longer intercity route.

7. Make transportation decisions that positively impact freight movements and maximize the effectiveness of the region's integrated freight transportation system

Innovative Financing Initiatives

Traditional funding for transportation projects, including rail and roadway, is becoming increasingly more and more challenging. MORPC will work with transportation funding stakeholders, such as ODOT, counties, local agencies, and the private sector to increase knowledge and use of new innovative financing strategies for Central Ohio, such as Transportation Improvement Districts (TIDs), toll financing, automated truck corridors and other public-private partnership (P3) opportunities.

8. Forge public/private partnerships to provide resources to maintain and expand key linkages between air, rail and roadway transportation modes

Regional Policy Roundtable

The Regional Policy Roundtable is a group composed of representatives from diverse interest groups across the Central Ohio region, including local governments, businesses, non-profits and citizens. The Regional Policy Roundtable aims to sustain a strong, prosperous 15-county Central Ohio region by providing a voice on policy and legislative matters. The Roundtable's main task is to agree on the public policy initiatives that MORPC staff pursues.

MORPC will continue to monitor state and federal legislation for its impact on Central Ohio's freight transportation system. In the past, MORPC's Policy Committee has passed resolutions reacting to potential legislative and administrative decisions. Other resolutions have supported local partners'

applications for funding under various programs, such as the US 33 and I-270 Interchange project to address congestion issues at this bottleneck that affects regular as well as freight traffic flows. MORPC will monitor federal and state policy and inform the Roundtable when applicable, and, as required, pursue the Policy Roundtable's identified freight-related priorities.

FAST Act Freight Provisions

In December 2015, the FAST Act was signed into law to address funding of federal surface transportation programs for highways, highway safety and transit. The FAST Act includes funding for two new freight-specific programs. One is apportioned to state DOTs and will total \$42 million per year for the State of Ohio, while the other is discretionary and provides \$4.5 billion over five years for freight-significant projects. MORPC staff will work with its regional partners to capture federal freight funding for the region.

Over the past few years, several non-traditional funding sources have emerged that can address freight issues, such as TIGER I, II, III, IV (Transportation Investment Generating Economic Recovery), and the Ohio State Stimulus Logistics and Distribution program. MORPC continues to support and provide technical assistance for funding applications for area projects.

Freight TIP

MORPC will continue to refine the Freight TIP and the evaluation criteria used to identify priority freight projects while evaluating the conditions and performance of the NHS (National Highway System) connectors to move freight more effectively and efficiently through Ohio.

Rickenbacker Area Study

The Rickenbacker Intermodal Yard is Central Ohio's connection to the NS Heartland Corridor. Infrastructure connections are still necessary to maximize the value of this asset. MORPC worked with stakeholders in the area to conduct a comprehensive needs assessment that considered freight and workforce transportation needs, business attraction and retention strategies, resiliency in terms of preparedness for technology innovations and alternative fuel sources (such as solar, electric, and natural gas), and improvements in transportation safety. This study was completed in 2018.

9. Maximize efficiency of existing transit terminals and construct new transit terminals, mobility centers and park and rides with safe bike, pedestrian, and vehicle access where there is a convergence of transit routes or intercity rapid speed transportation modes

The 2018 Rickenbacker Area Study identified the need for a mobility center that would serve workers in the logistics hub. The concept and site selection are being further explored by area stakeholders.

10. Incorporate vehicle sharing needs at transit terminals, stations and major stops

11. Improve transit, bike and pedestrian connections to airports

In 2016 COTA began its AirConnect, providing regular bus service with direct connections between downtown hotels and John Glenn International Airport every 30 minutes, 7 days a week.

The 2018 Rickenbacker Area Study also identified transit, bike, and pedestrian improvements in the area that would help people move around in the area more safely.

12. Alleviate existing or anticipated congestion at roadway and rail terminal access areas

13. Alleviate existing or anticipated congestion at roadway and air terminal access areas

The maintenance, management, and expansion of the region's freeways, surface roads, last-mile facilities, and intermodal connectors is essential for efficient freight movement through and within Central Ohio. This MTP identifies funding for maintenance and preservation activities, management activities including coordinated Intelligent Transportation Systems, as well as specific freeway and surface roadway improvement projects.

14. Incorporate ground needs for flying intraregional transport such as drones for package delivery and personal transport

In 2018, MORPC provided data and transportation modeling information to a researcher from Oak Ridge National Laboratory. This information contributed to the completion of a study that focused on assessing the most energy-efficient methods for last-mile freight delivery in an urban area, including consideration of drone deliveries. The study found that drones are not as time and energy efficient in urbanized areas and are better suited for reconnaissance or for delivering medical supplies in remote areas than for delivering goods in dense urban areas. By facilitating information for this study, MORPC contributed to the advancement of understanding what land use conditions suit energy efficient drone transportation.

15. Facilitate multi-jurisdictional dialogue to improve opportunities for collaboration

OARC Freight Working Group

Through the Ohio Association of Regional Councils (OARC), MORPC coordinates the state's metropolitan areas to facilitate a statewide freight group. This group allows the state's MPOs to assist each other on freight-related issues when needed. The freight working group also enables ODOT and FHWA staff to share information on state and federal freight activities.

Ohio Conference on Freight

The Ohio Association of Regional Councils (OARC) sponsors the Ohio Conference on Freight, which is rotated between the cities of Cleveland, Columbus and Cincinnati and is held once a year. MORPC continues to support OARC and participates in conference planning efforts. MORPC represents Central Ohio's freight infrastructure interests at this annual event and utilizes knowledge gained in the development of our region's freight planning activities.

Columbus Region Logistics Council

The Columbus Region Logistics Council is an industry-led group, which is an initiative of the Columbus Chamber. The group also serves on MORPC's Transportation Advisory Committee. Likewise, MORPC serves as the Logistics Council's government liaison. This relationship has led to several tactical and strategic successes for the region's freight transportation system. This close partnership will continue into the future.

6.d ROADWAY SYSTEM

As described in Chapter 3, one operational measure of how the roadway system functions is vehicle miles traveled (VMT) under congested conditions. Due to the growing travel demand resulting from the growth described in Chapter 2, it will be increasingly challenging to maintain VMT under congested conditions to no more than 5% daily and 10% during peak periods. In addition to the management strategies described in Chapters 4 and 5, it is also necessary to identify roadway capacity expansion projects to accommodate the additional travel demand. Figures 6.3 and 6.4 show expected congestion levels in 2050, should none of the projects described later in this chapter be implemented and travel behavior remains the same.

MORPC’s approach when identifying roadway expansion projects is to assume that the appropriate bicycle and pedestrian facilities will be included in all new roadway, roadway widening, or intersection projects.

The roadway system is the primary component of the transportation system in Central Ohio. Because nearly all of the transportation systems described earlier in this chapter require access to the roadway system in order to function, MORPC’s approach when identifying roadway expansion projects is to assume that the appropriate bicycle and pedestrian facilities will be included in all new roadway, roadway widening, or intersection projects. This is consistent with MORPC’s Complete Streets Policy and complete street policies being adopted by communities throughout the region.

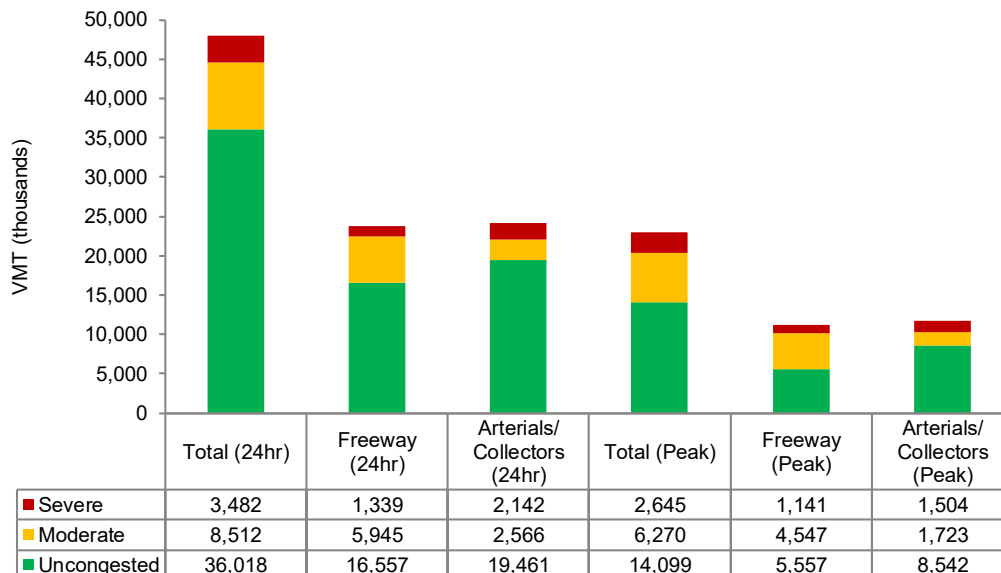
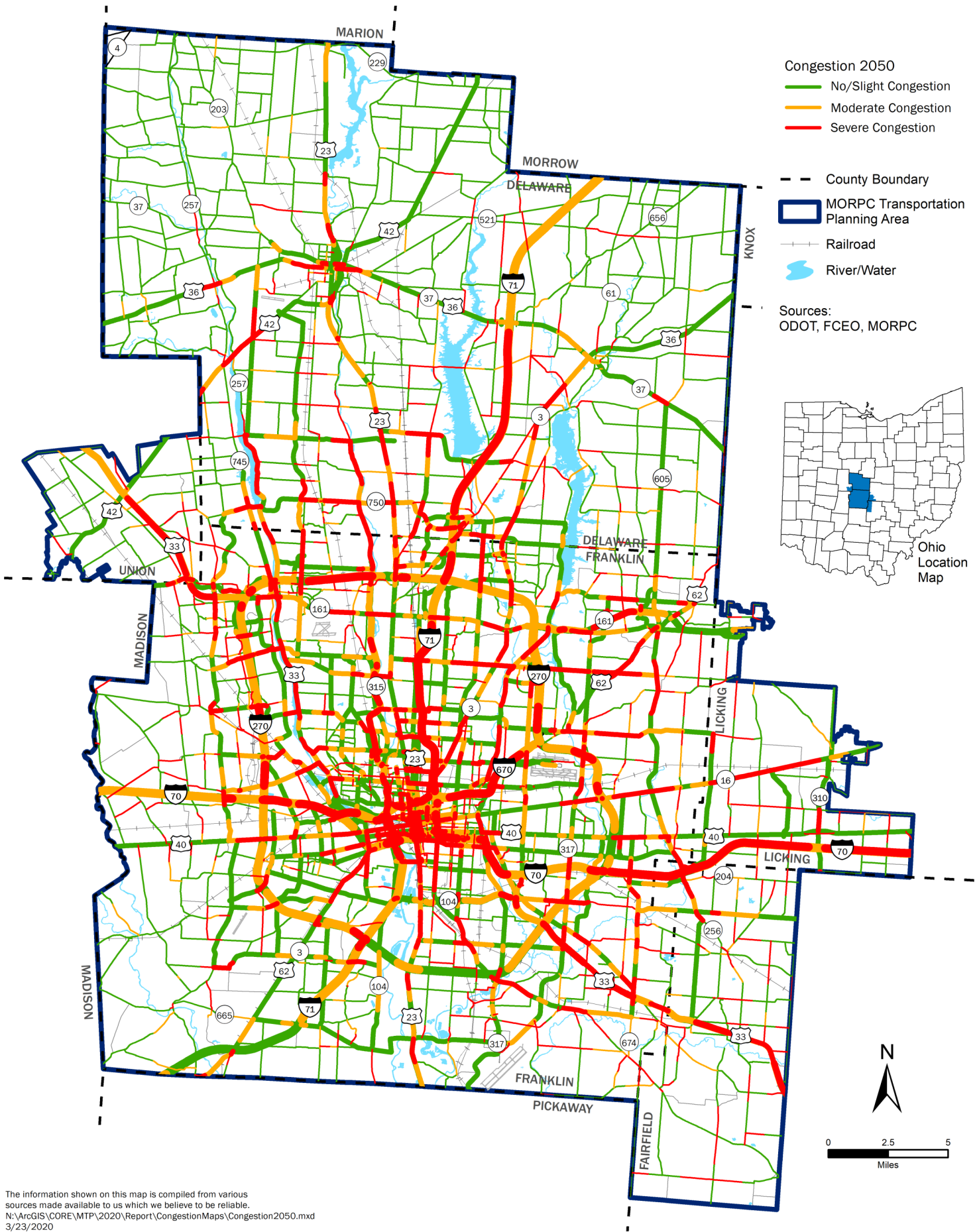


FIGURE 6.3 VMT by Congestion Level, 2050



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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Figure 6.4
Congestion Levels, 2050

ROADWAY STRATEGIES AND PROJECTS

Recommendations presented throughout the MTP will help improve conditions on the roadway system. For instance, strategies and projects that will address travel demand will also improve roadway congestion levels. One can make the same connection for any strategies and projects that improve transit, bicycle, and pedestrian systems. However, the following strategies and projects specifically address roadway system development.

All project references in the strategies listed below remain general and describe the categories of roadway projects identified in this MTP and shown in Figures 6.5 and 6.6. More detailed project descriptions of all specific projects included in the MTP can be found in Chapter 8. While these primarily relate to expanding the roadway system, Chapter 4 addresses the importance of maintaining and managing the existing system.

1. Add capacity, where appropriate, to alleviate existing or anticipated congestion along existing freeways and at interchanges

This plan identifies 26 miles of freeway to be widened and 25 interchange modifications.

MAJOR WIDENING OF FREEWAYS

Addition of travel lanes.



BEFORE



AFTER

INTERCHANGE MODIFICATION

Modification of existing interchange to improve operations and accommodate additional capacity, widen an overpass, and/or modify ramp intersections.



BEFORE



AFTER

2. Continue conversion of key divided expressways into limited access freeways

For certain facilities, whose role and function is to provide mobility through the region and not necessarily to provide access to developed areas, converting into limited access freeways can provide safety benefits, congestion relief, and preserve capacity for future growth.

This MTP identifies the following two expressways be converted to freeways:

- US-23 from I-270 (South Outerbelt) to Pickaway County
- US-33 (SE) from Hamilton Rd. to the US-33/Carroll interchange

3. Construct new interchanges, where appropriate, to alleviate congestion or support regional development goals

This plan identifies 6 new interchanges.

NEW INTERCHANGE

Adding a grade-separated interchange where an at-grade intersection or no intersection existed previously.



BEFORE



AFTER

Freeway system projects are implemented through ODOT's leadership and in partnering with local community stakeholders. These projects are typically the most expensive projects to build and usually take many years and project phases to complete.

4. Add capacity, where appropriate, to alleviate existing or anticipated congestion along existing arterial and collector corridors

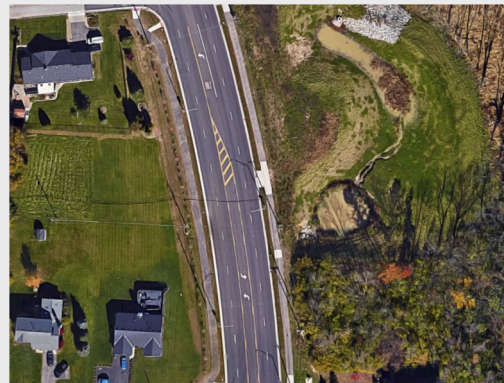
This plan identifies 86 miles of through travel lane additions and 119 miles of turn lane additions or other safety improvements along a corridor.

MAJOR OR MINOR WIDENING OF SURFACE ROADWAYS

Addition of travel lanes and/or turn lanes along a roadway corridor.



BEFORE



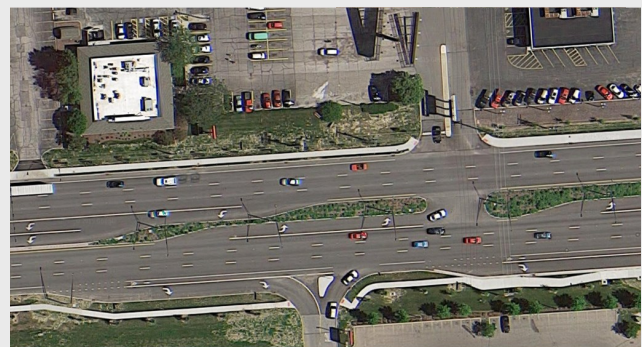
AFTER

ACCESS MANAGEMENT OF ROADWAY CORRIDOR

Limiting access points to and from a roadway by consolidating driveways and/or limiting turning movement options.



BEFORE



AFTER

5. Add capacity, where appropriate, at locations such as intersections to alleviate existing or anticipated congestion

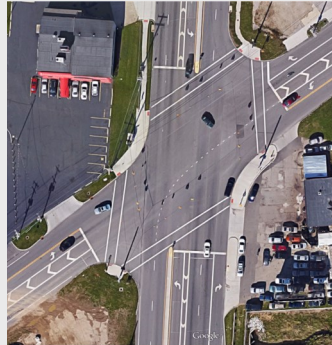
This plan identifies 152 intersection modifications.

INTERSECTION MODIFICATIONS

Addition of turn lanes or other reconfiguration such as a roundabout.



BEFORE



AFTER



BEFORE



AFTER

6. Construct new roadways, where appropriate, to alleviate congestion or support regional or local development goals

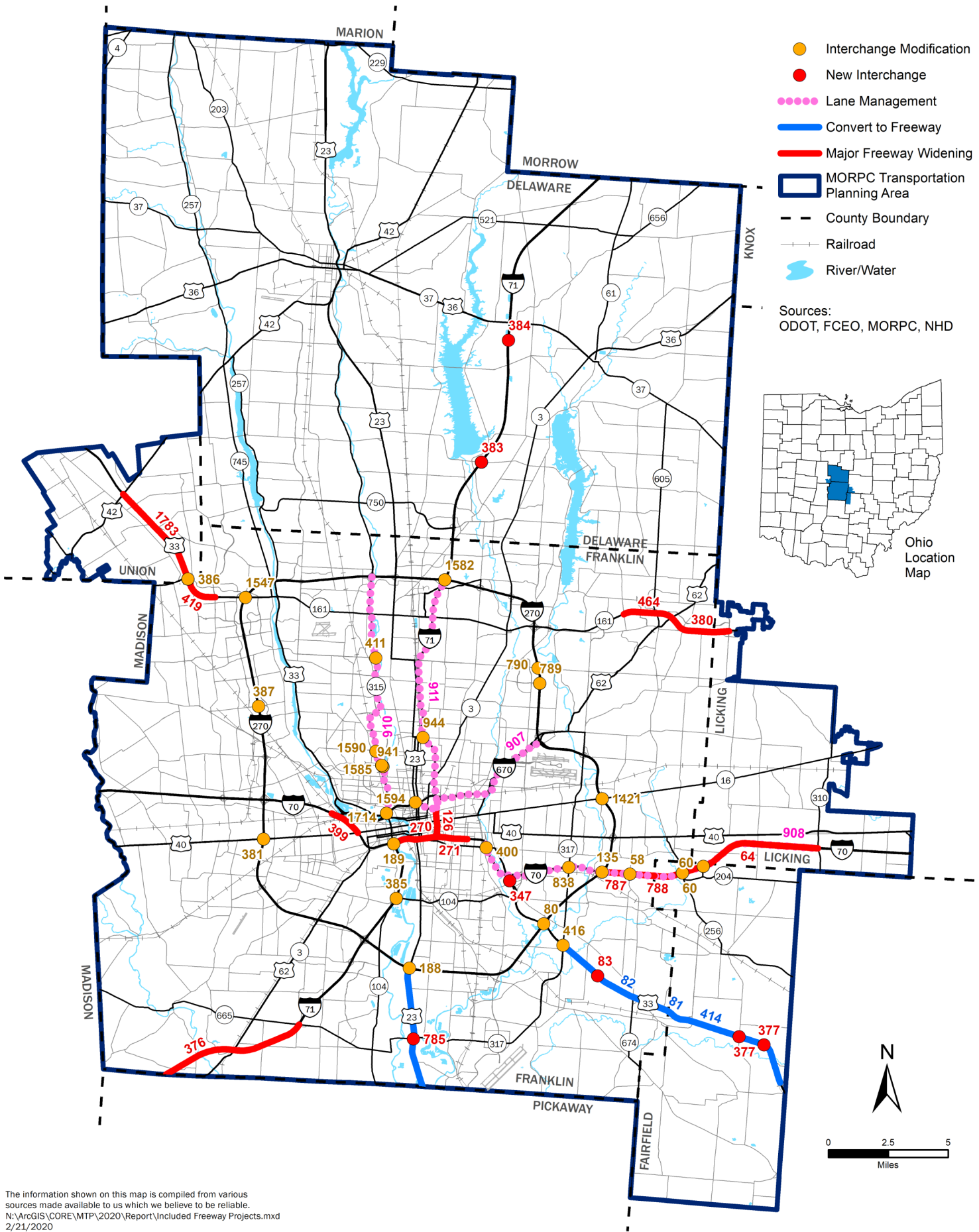
The MTP contains 109 new road projects consisting of 100 miles. Many of these will be built to support new development. However, there are also short road connections throughout the region to solve localized congestion and connectivity issues. There are also longer new road corridors to address more sub-regional travel needs.

7. Provide efficient connectivity of local roads to the arterial and collector roadway system

Although local roads do not provide for regional travel, their efficient connection to the rest of the system is vital. Improper intersection spacing or lack of appropriate intersection control not only impacts those on the local road, but those utilizing the collector or arterial facility also. Access management along the collector or arterial road, proper intersection sizing and signalization and ensure redundant connectivity from local system to the larger facilities are key ways to make good connections.

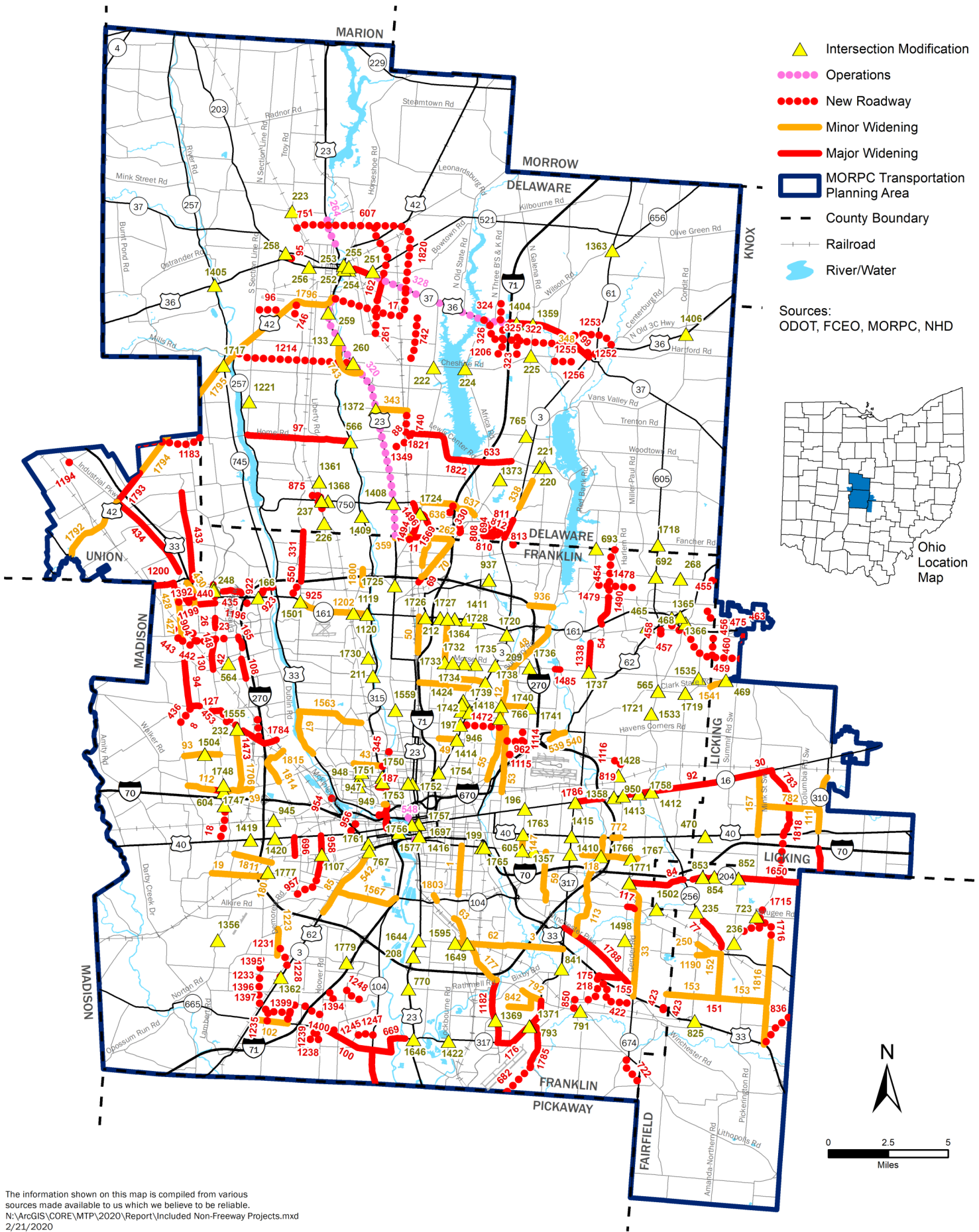
8. Facilitate multi-jurisdictional dialogue to improve opportunities for collaboration

MORPC's Committee structures are key in facilitating dialog and collaboration. Beyond the committee meetings, regional collaboration meetings are held in each quadrant of the region annually, and MORPC leadership meets individually with each member. The development of the TIP, the Paving The Way program and partnering on transportation studies are additional ways that will continue to be used to facilitate multi-jurisdictional dialogue.



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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 2/21/2020

Figure 6.5
Freeway Projects



The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
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 2/21/2020

Figure 6.6
Non-Freeway Roadway Projects