

MMMPO 2050 MTP

Date: May 2022



Acknowledgment

This project would not be possible without the help from the following:

- MPO Policy Board and Officers
- Advisory Committee Members
- MPO Staff
- Members of the Community

Thank you.

***"Need more sidewalks
in Westover"***

*- Public Workshop
Attendee*

***"I don't want to be
dependent on a car for
getting to class"***

- WVU Student

***"Crossing University
Avenue is dangerous"***

- WVU Student

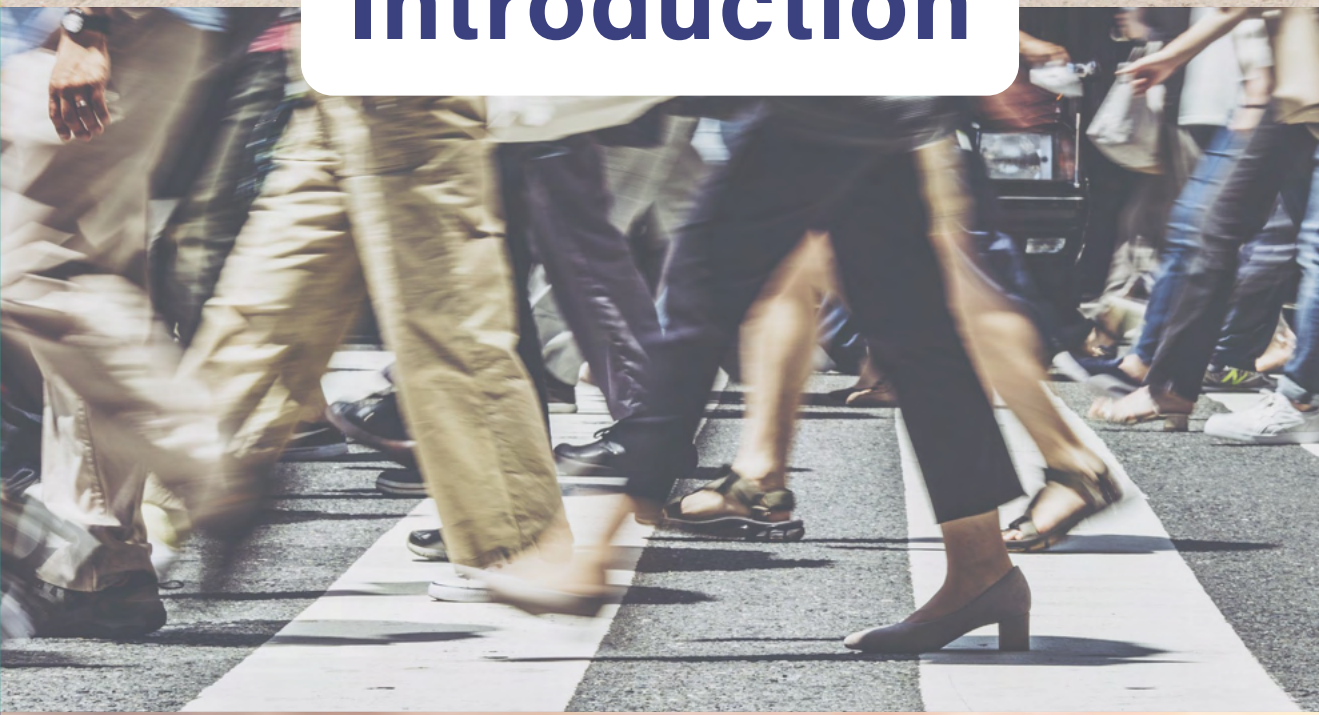
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Introduction



CHAPTER 01

Introduction



Mon River Trail.

The Metropolitan Transportation Plan (MTP) is a foundational document for transportation infrastructure, policy, and planning in the Morgantown-Monongalia County metropolitan area. Looking 20+ years into the future, the MTP establishes the transportation infrastructure investments for the region. Every five years this MTP is revised to remain current with recently completed projects and regional strategies.

This chapter introduces the Morgantown-Monongalia Metropolitan Planning Organization (MPO), the MTP, and the broader transportation planning process, all of which influence the plans and recommendations culminating in this document.

This Chapter Covers:

- What is a Metropolitan Transportation Plan?
- Why are we doing this?
- What is the Morgantown-Monongalia Metropolitan Planning Organization?



What is a Metropolitan Transportation Plan (MTP)?

The MTP serves as a guide for planning and improving the transportation system in support and promotion of a future vision for the region. It examines strategies for the future transportation network, based upon time periods prescribed by federal legislation. Guided by federally-defined planning factors, MTPs form the basis for the ongoing planning efforts, pursuit of improvement projects, programs, and policy development for the next twenty-five years. The MTP is **based on a vision for the future of the region in 2050**. This plan builds upon and incorporates the previous planning efforts of this MPO and its members, including the previous MTP completed in 2017.

Why are we doing this?

The preparation of this plan is part of an ongoing planning process by the Metropolitan Planning Organization (MPO) as required in the U.S. Code of Regulations (23 CFR 450.300(a)) :

"...each urbanized area is to carry out a continuing, cooperative, and comprehensive multimodal transportation planning process, including the development of a Metropolitan Transportation Plan... that encourages and promotes the safe and efficient development, management, and operation of surface transportation systems to serve the mobility needs of people and freight (including accessible pedestrian walkways and bicycle transportation facilities) and foster economic growth and development, while minimizing transportation-related fuel consumption and air pollution..."

Transportation Authorization

(FAST Act/INVEST in America Act)

Transportation project funding is defined and driven by federal transportation legislation. Our current authorization, the INVEST in America Act, was enacted during the development of this MTP and replaced the FAST Act, which expired in 2020. INVEST continues many of the same funding programs for transportation improvements while expanding funds available for new types of projects and programs that remain to be defined. **This Plan should be considered a living document** for recommendations, prioritization, and funding.



View of Downtown Morgantown.



What is the Morgantown-Monongalia Metropolitan Planning Organization?

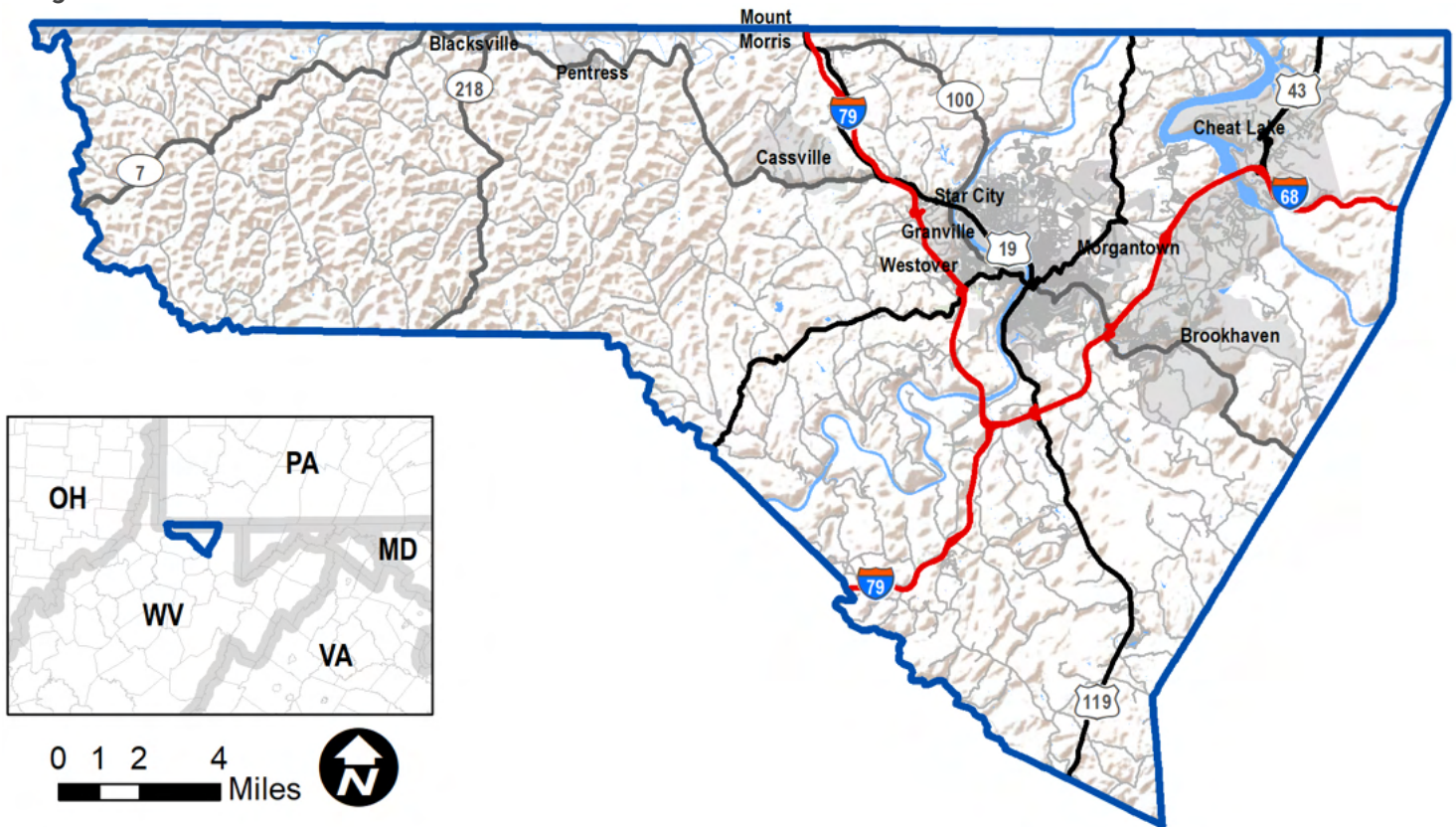
An MPO is a **federally-designated agency** that **coordinates and directs the transportation planning process** for defined metropolitan areas of over 50,000 in population. MPOs were first created by Congress in 1962 as part of the Federal Aid to Highways Act, and have grown in importance with successive transportation authorization bills. MPOs follow a formal set of regulations, preparing plans and programs designed to ensure that **existing and future transportation projects and expenditures are based on a continuing, cooperative, and comprehensive planning process**; these regulations are laid out by Congress when authorizing funding for our Nation’s surface transportation.

MPO Service Area

The Morgantown-Monongalia MPO (MMMPO) is one of over 400 such agencies across the United States, and one of eight (8) in West Virginia, which through their structure guide federal transportation funding to local projects, while providing local officials input and oversight into the planning process.

The MMMPO was established in June 2003 as the regional agency responsible for administering the continuing, cooperative, and comprehensive transportation planning process in Monongalia County. Within the MPO’s jurisdictional limits may be found the cities of Morgantown and Westover, the towns of Blacksville, Granville, and Star City, and many other communities (Fig. 1.1).

Figure 1.1: MPO service area.



MPO Structure

The MPO is an agency **governed by a Policy Board** that includes Monongalia County, Morgantown, Westover, Star City, Granville, Blacksville the Monongalia County Board of Education, the Mountain Line Transit Authority, the West Virginia Department of Transportation (WVDOT), and West Virginia University (WVU). The MPO also has several **advisory committees** and a **permanent staff** to carry out its tasks (Fig. 1.2).

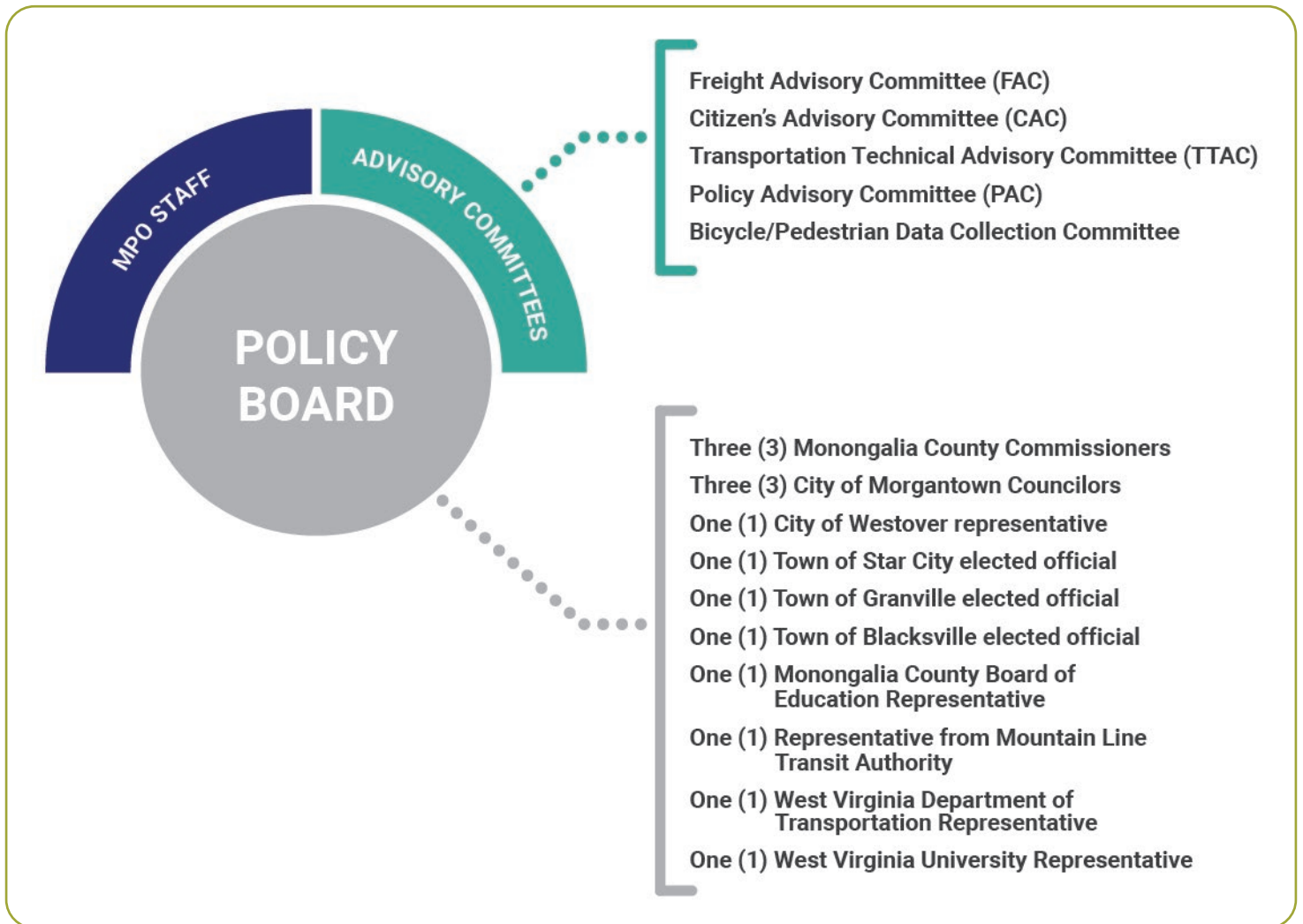


Figure 1.2: Structure of the MPO.

WHERE CAN I FIND OUT MORE?

The MMMPO maintains a website with all of its policies, programs, and plans for the public. You can check it out [HERE](http://www.plantogether.org) at www.plantogether.org



MPO Functions, Key Plans & Programs

The Transportation Planning Process is summed up in the **four major plans and programs** required of every MPO: the Metropolitan Transportation Plan, the Transportation Improvement Program (TIP), the

Unified Planning Work Program (UPWP), and the Public Involvement Plan (PIP) (discussed in Chapter Four, Public Engagement).

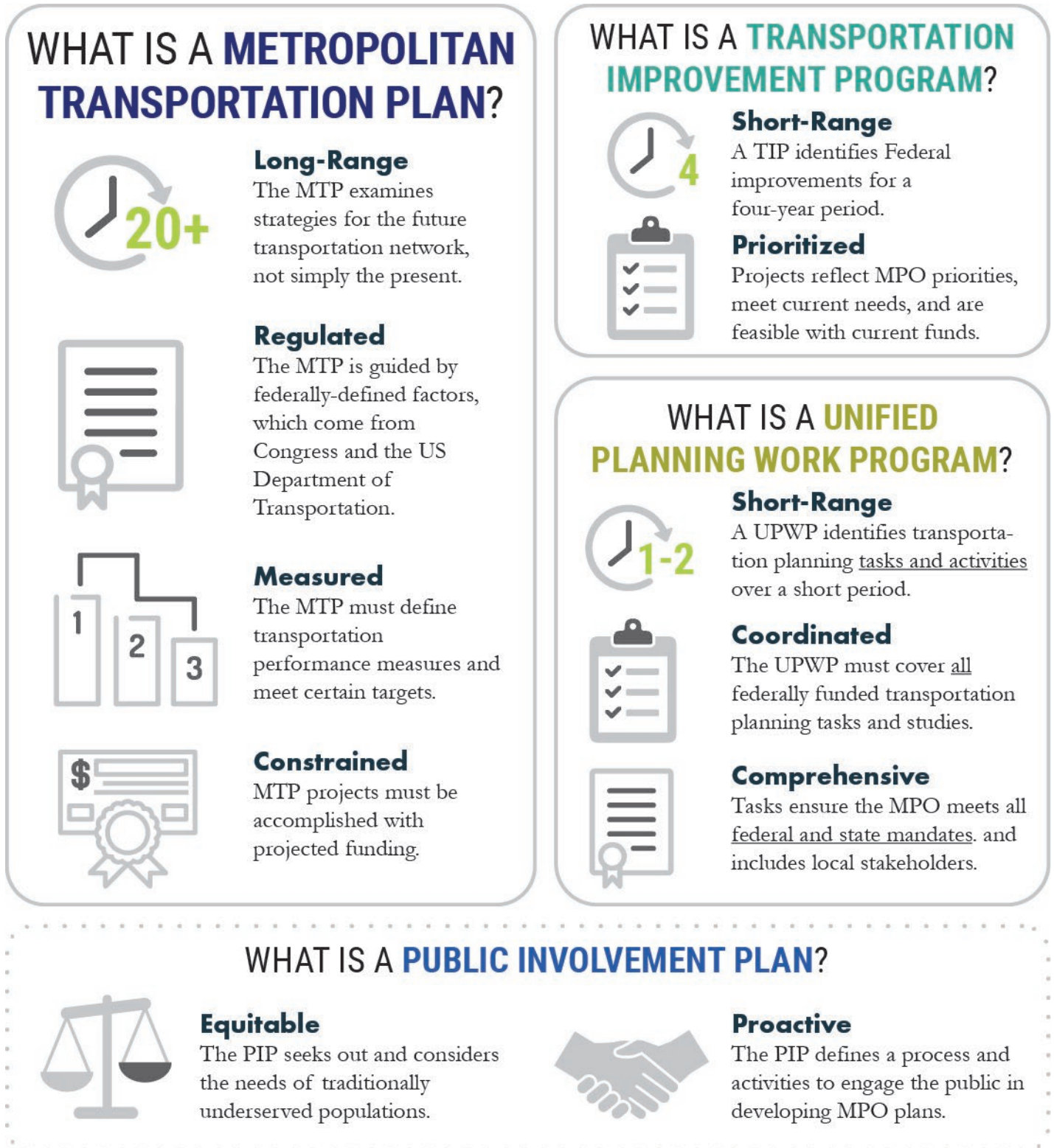


Figure 1.3: MPO plans and programs.



Funding Overview

One of the core functions of an MTP is to implement transportation projects that align with sources of funding for improvements. For most, if not all communities, the primary sources of funding for transportation improvements are the Federal and State governments, and this is the case in West Virginia.

FEDERAL FUNDING

The primary source of funding on the federal level is the Highway Trust Fund, which historically has been funded by the gasoline tax. **Federal funds are allocated by the type of service they provide** – roadways construction and maintenance, and transit service – made available through the following federal funding programs:

National Highway Performance Program (NHPP)

NHPP funds may be used for capacity, operational, or maintenance improvements to National Highway System (NHS) highways and bridges. Depending upon the type of road (interstate v. non-interstate), the required local match may differ (10% for interstates, 20% for non-interstate roads).

Surface Transportation Block Grant (STBG)

STBG funds may be used for improvements to roads functionally classified as rural major collectors and above. Funds can be utilized on projects in rural and urbanized areas. These funds are WVDOH-administered, and typically used on state and federal routes. These projects can include bicycle/pedestrian facilities, as well as environmental mitigation.

Highway Safety Improvement Program (HSIP)

HSIP funds may be used for improvements at high-hazard locations on eligible roadways, including highway-rail grade crossings. Projects are selected based on crash rate and frequency. A 90% Federal share of project costs is typical, but the required match may vary depending upon improvement type.

Congestion Mitigation and Air Quality (CMAQ)

CMAQ funding is primarily aimed at alleviating congestion and transportation issues for non-attainment areas. However, the funds may be “flexed” to be used for congestion mitigation in some attainment areas, such as the MMMPO.

Urban Surface Transportation Block Grant

U-STBG funds are provided to large MPOs (Transportation Management Areas TMAs) based on a population-based formula, to be used on a broad array of projects including construction, operations improvements, transit projects and travel demand management. Unfortunately, the MMMPO is not eligible for U-STBG funds because it does not qualify as a TMA. Typical federal share for U-STBG projects is 80%, although certain projects may receive 100% support.

Transportation Alternatives Program (TAP)

TAP funds are allocated as a portion of the U-STBG program. A continuation from previous acts, TAP projects remain the same as before, and includes pedestrian and bicycle facilities, recreational trails, and safe routes to school projects. TAP funds may also be spent on historic preservation projects, vegetation management, and environmental mitigation.

National Highway Freight Program (NHFP)

NHFP funds are dedicated to projects improving efficient movement of freight on the National Highway Freight Network. These projects may include ITS installation or expansion railway/highway grade crossing improvements, traffic signal optimization, and mitigation of impacts.

LEARN MORE AT:

<http://www.fhwa.dot.gov/federalaidessentials>



STATE FUNDING

In West Virginia, proceeds from certain State taxes and fees are allocated to the WVDOH for maintaining and expanding the transportation system. These dedicated revenues are deposited into the State Road Fund, which is WVDOH's operating fund for maintaining State roadways. The State Road Fund is considered a special revenue fund of the State and thus funds are not a part of the State's General Fund. However, the State legislature may make funds available to WVDOH from the State's General Fund and/or authorize the sale and issuance of road bonds outstanding from previous voter-approved bond referendums.

State revenue sources include:

- Motor Vehicle Privilege Tax
- Certificate of Title & Registration Fees
- Motor Carrier Road Tax
- Wholesale Motor Fuel Tax
- Sale of Bonds
- General Fund Appropriation
- Investment and Interest Income
- Miscellaneous Revenues

LEARN MORE AT:

https://transportation.wv.gov/highways/programplanning/LRTP/Documents/FactSheet_Funding_Final.pdf

TRANSIT FUNDING

FTA Section 5307 Urbanized Area Formula Grants:

Funds to urbanized areas with populations of more than 50,000 for transit operating and capital assistance and for transportation-related planning. Funds are apportioned on the basis of population and population density. Federal share must not exceed 80% of the net project cost for capital projects, or 50% for operating projects.

FTA Section 5309 Fixed Guideway and Capital Investment Grants:

Capital assistance for new and replacement buses and facilities. Four categories of eligible projects: new fixed guideway projects of extensions of existing projects costing \$300 million or more; projects of less than \$300 million where less than \$100 million in federal funding is sought; projects increasing system capacity by greater than 10 percent; or projects of any combination of the three.

FTA Section 5310 Elderly & Persons with Disabilities Grants:

Transit capital assistance for private non-profit organizations and public bodies that provide specialized transportation services to elderly and/or disabled persons. Funds are appropriated annually based on a formula considering the number of elderly individuals with disabilities in each State. Federal share must not exceed 80% of net project costs for capital projects (50% for operating projects).

FTA Section 5339 Bus & Bus Facilities Grants:

Federal resources, by formula and grants, to states and designated recipients to replace, rehabilitate and purchase buses/related equipment, and construct bus-related facilities. This includes changes to modify or accommodate low and zero-emission vehicles. A sub-program provides competitive grants for bus and bus facility projects that support low and zero-emission vehicles.





Goals, Objectives, & Measures



Goals, Objectives, & Measures



View of Downtown Morgantown, WV.

Every good plan has a well-defined purpose, smart goals, and specific objectives that guide it from vision to implementation. The MTP is no different. While many of these goals, objectives, and criteria are defined through federal legislation, the nuances of each are still in the hands of local officials and policy-makers, so they may be tailored to their communities' needs. Laying out these goals and objectives, and the performance-based measures by which the plan's success will be judged, helps all to understand the thinking guiding the planning process.

This chapter introduces the performance-based planning framework, including the MPO's goals and defined performance measures, and lays out the goals and objectives guiding the 2050 MTP.

This Chapter Covers:

- Federal Planning Factors
- Performance-Based Planning
- MTP Goals, Objectives & Measures

Federal Planning Factors

The regulations guiding MPOs define the factors they must consider throughout the planning process. These factors orient transportation funding for projects towards community outcomes, ensuring that projects benefit the communities in which they are built and make the **most effective use of limited funds**.

The federal factors are listed below. Table 2.1 lists each of this MTP's goals, and how each goal of this MTP accomplishes and relates to each factor.

1. ECONOMIC VITALITY

Enabling **global competitiveness, productivity, and efficiency**

2. SAFETY

For **all users**, not just motorized users

3. NATIONAL SECURITY

For **all users**, not just motorized users

4. ACCESSIBILITY & MOBILITY

For both **people and freight**

5. CONSISTENCY

Of transportation improvements with local land use and economic development plans for **environmental protection, energy conservation, and quality of life**

6. CONNECTIVITY

Both **across and between modes**, for people and freight

7. EFFICIENCY

In **system management and operations**

8. PRESERVATION

Of the **existing** transportation system

9. RESILIENCY & RELIABILITY

Of the **overall** transportation system--including **stormwater impact reduction**

10. ENHANCEMENT

Of **travel and tourism**



Federal Planning Factors

2050 MTP Goals established by Advisory Committee members

	Economic Vitality	Safety	National Security	Accessibility & Mobility	Consistency	Connectivity	Efficiency	Preservation	Resiliency & Reliability	Enhancement
Safety <i>A safe, secure transportation system for all users that reduces fatalities and severe injuries.</i>		✓	✓	✓		✓		✓	✓	
Mobility Choices <i>An integrated and connected multimodal system that provides safe, convenient options for bicyclists, pedestrians, and transit users as well as motor vehicles.</i>	✓	✓		✓		✓	✓	✓	✓	✓
System Reliability <i>Improve the reliability of the movement of people and goods across the region in support of time-sensitive freight movement and logistics.</i>	✓	✓	✓		✓		✓		✓	✓
System Preservation <i>Maintain and enhance existing transportation infrastructure assets in a good state of repair.</i>	✓	✓	✓		✓	✓		✓	✓	
Equity <i>Provide healthy, convenient, and equitable transportation choices for those communities that are underserved or traditionally underrepresented.</i>	✓	✓		✓	✓	✓		✓	✓	✓
Economic Vitality <i>A transportation system that supports and enhances economic development goals and improves regional competitiveness in commerce.</i>	✓		✓	✓	✓	✓	✓	✓		✓
Livability <i>A transportation system and region that is attractive, sustainable, and contributes to regional well-being.</i>	✓	✓		✓		✓		✓		✓

Table 2.1: 2050 MTP Goals.



WHERE DO THESE FACTORS COME FROM?

Every MPO is required to establish goals, objectives, and performance measures based on these factors. Learn more about how other agencies address these factors and evaluate their transportation systems [HERE](#) (chapter 3).




Performance-Based Planning

Goals, Objectives, Measures, Targets

Every good plan has a set of specific, measurable, realistic goals that provide the framework for evaluating and selecting projects as well as determining success. For our MTP, these Goals were **developed by local stakeholders through the Advisory Committee**. Each goal is accompanied by a set of objectives, representing key action steps to be taken to implement each goal. While these objectives are not exhaustive, they nonetheless provide a set of guidelines important to addressing the system’s issues. These goals, objectives, and measures all inform project prioritization, the crux of this Plan -- which we’ll discuss more in Chapter 5.

MEASURES, TARGETS, AND PERFORMANCE-BASED PLANNING

Setting performance measures and targets keeps agencies accountable by continually evaluating success, and the effectiveness by which it achieves its goals. MPOs are required to adopt the federal performance measures and given the option to make them more restrictive or create additional measures. **The MMMPO has agreed to performance targets set by WVDOH for consistency and efficiency in meeting federal requirements.** Tables 2.2 to 2.4 summarize the MPO’s current transportation system performance based on the selected measures.



A

PERFORMANCE MEASURE

tells us the metric by which we can evaluate *progress* over time.

Performance measures compare


Past Performance

↔
with
↔

Present Performance

Transportation examples might include:

- + Level of Travel Time Reliability (LOTTR)
- + Population (%) living within 1/4-mile of transit service
- + Serious Injury Rate per 100 Million Vehicle Miles Travelled (VMT)



A

PERFORMANCE TARGET

defines success for a given *measure*, like hitting a score of **501**.

Performance targets compare

Actual Performance

↔
with
↔

Present Performance

for a given *measure*.

Transportation examples might include:

- + Reduce total miles traveled along congested roadways 25% by 2050
- + Increase population living within 1/4-mile of transit service 5% by 2030
- + Reduce the rate of Serious Injury Crashes 5% by 2025



Previous MTP Goals & Objectives

Federal regulations require MPO transportation planning to be a “3C” process:

- Continuous
- Comprehensive
- Cooperative

One simple way the MPO ensures the continuity of planning processes is by examining and building upon previously articulated Goals and Objectives for the MPO Area. Over time, **these goals are updated and/or changed to reflect the changing needs and demands of the Monongalia County region**, and progress made by the MPO and its member communities in improving its transportation network.

The 2017 MMMPO Metropolitan Transportation Plan established goals and objectives for its transportation network, which formed the basis for the Goals & Objectives of this MTP, found later in this Chapter.

System Performance Report

The MMMPO supports WVDOH performance measures and targets. System performance is measured through data collected and reported by WVDOH within its annual West Virginia Highway Safety Plan. The MPO’s system performance reporting consists of reporting trend data and targets released annually by WVDOH, tracking performance over time.

The MMMPO is interested in establishing local performance measures and targets for some aspects of the network’s operations moving forward.

Safety performance measures (PM1) set a 5-year performance target for vehicular crashes that result in serious, incapacitating injuries or fatalities. These measures evaluate the safety of the system for all users. **Infrastructure Conditions performance measures (PM2)** include both 2- and 4-year targets and assess the conditions of pavements and bridges along the National Highway System (NHS) that are in good or poor condition. Finally, **Reliability performance measures (PM3)** assess roadway reliability with regards to freight movement, congestion, and overall reliability. The MPO includes projects that support WVDOH PM1, PM2, and PM3 targets within its planning documents. MPO member jurisdictions collaborate with WVDOH efforts in the planning, design, and implementation of PM1, PM2, and PM3 projects.

Like roadways, transit systems also must adopt and track performance measures over time. MMMPO-adopted performance measures and targets are summarized in Tables 2.2-4.



	Performance Measure	Annual (2019)	WVDOH Average	WVDOH Target	Status	Better than Baseline?	Progress?
Safety (PM 1) (5-Year Average 2015-2019)	Number of Fatalities	260	279	263.7	Yes	-	Yes
	Fatality Rate per 100 Million Vehicles-Miles Traveled	1.36	1.438	1.457	Yes	-	Yes
	Number of Serious Injuries	906	1081.4	1002.4	No	Yes	Yes
	Serious Injury Rate per 100 Million Vehicle-Miles Traveled	4.75	5.57	5.023	No	Yes	Yes
	Number of non-Motorized fatalities and serious injuries	93	97.2	86.2	No	No	Yes

Table 2.2: MMMPO-adopted Safety Targets.

	Performance Measure	Baseline (2019)	WVDOH Target	WVDOH Actual	Status	Better than Baseline?	Progress?
Infrastructure Condition (PM 2) (4-Year Target 2018-2021)	Percentage of interstate pavement in good condition	80.6	75	-	-	-	-
	Percentage of interstate pavement in poor condition	0.2	4	-	-	-	-
	Percentage of non-interstate NHS pavement in good condition	-	40	43	Yes	-	Yes
	Percentage of non-interstate NHS pavement in poor condition	-	5	2	Yes	-	Yes
	Percentage of NHS bridges classified in good condition	13.9	14	11.6	No	No	No
	Percentage of NHS bridges classified in poor condition	11.9	10	13.5	No	No	No

Table 2.3: MMMPO-adopted Infrastructure Condition Targets.

	Performance Measure	Baseline (2017)	WVDOH Target	WVDOH Actual	Status	Better than Baseline?	Progress?
Reliability (PM 3) (4-Yr Target 2018-2021)	Percentage of reliable person-miles traveled on the Interstate	99.8	98	99.1	Yes	-	-
	Percentage of reliable person-miles traveled on the non-interstate NHS system	93.7	87	-	-	-	-
	Interstate Highway Truck Travel Time Reliability Index	1.21	1.25	1.28	No	No	No

Table 2.4: MMMPO-adopted Reliability Targets.

WHERE CAN I FIND THESE MEASURES?

FHWA maintains a performance dashboard for West Virginia, which you can track online [HERE](#).

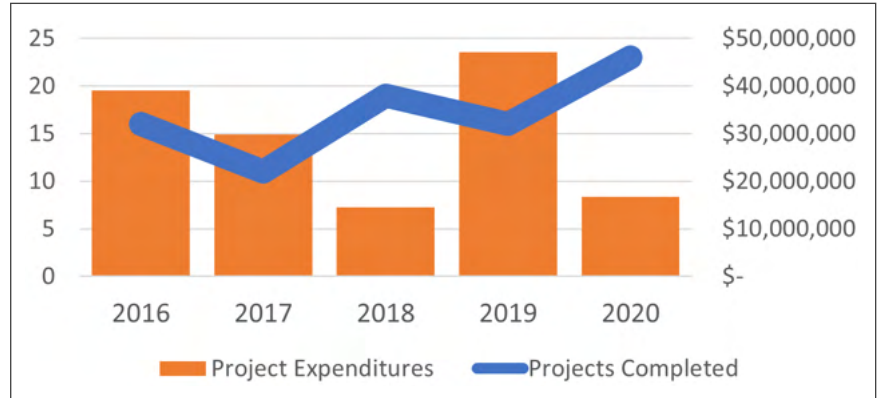
The National Performance Management Research Data Set (NPMRDS) is a free data source from the FHWA to monitor and report transportation system performance measures.



PROGRESS ACHIEVED SINCE THE PREVIOUS MTP

Through the System Performance Report, MTP updates provide an opportunity for each MPO to demonstrate projects completed and other accomplishments since the previous MTP, providing a baseline for successive updates from which new activities can be identified and improvements tracked. The MMMPO has agreed to support WVDOH’s System Performance Measures. In doing so, the MPO agrees to:

- Work with WVDOH and relevant stakeholders to address areas of concern related to transportation and mobility in the MPO area;
- Coordinate with WVDOH and include system performance, freight, and emissions reductions targets for those measures in successive MTP updates; and
- Integrate system performance, freight, and emissions reductions goals, objectives, measures, as well as targets described within the WV Highway Safety Plan into the MTP process.

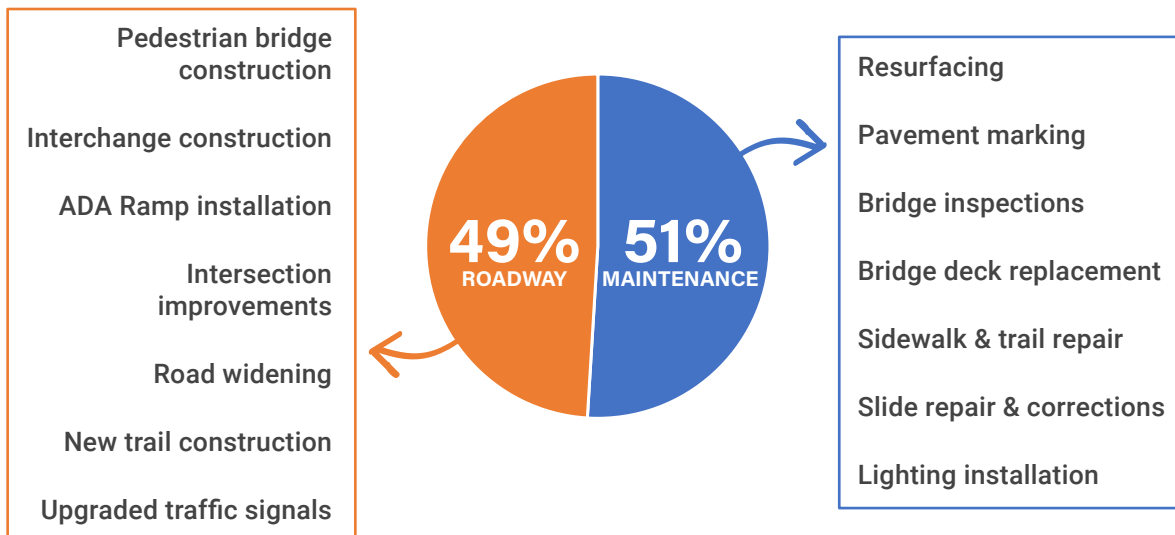


Since 2017, **86 unique transportation projects have been completed in the MMMPO area** in furtherance of these performance measures:

- ▶ **\$147.6 million dollars** spent to repair or enhance the transportation network
- ▶ Fix it First: 51% of all dollars spent on **maintenance** of existing roadways
- ▶ **28** resurfacing projects

Major projects:

1. I-79 interchange at Exit 153
2. US 119/Mileground Road widening to four lanes from Airport Road to Easton Elementary School/ Cheat Road (construction phase),
3. Morgantown Airport Industrial Parkway



MTP Goals, Objectives & Measures

Goal #1: Safety.

A safe, secure transportation system for all users that reduces fatalities and severe injuries.

Objective	Measure
Minimize crashes through improvements to high-crash locations. Also consider local enforcement of traffic laws, and user education.	<ul style="list-style-type: none"> ■ Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries ■ Number of Fatalities ■ Rate of Fatal Crashes per 100 Million VMT ■ Number of Serious Injuries ■ Rate of Serious Injury Crashes per 100M VMT
Ensure that future growth and related transportation improvements prioritize transportation safety needs in planning and design.	
Reduce the number of crashes and serious injuries across all modes.	
Provide safe and comfortable networks for people of all ages and abilities.	
Reduce truck traffic on streets and in areas where significant numbers of bicyclists and pedestrians are present.	

Goal #2: Mobility Choices.

An integrated and connected multimodal system that provides safe, convenient options for bicyclists, pedestrians, and transit users as well as motor vehicles.

Objective	Measure
Allow for convenient transfer between modes in the region to maximize travel efficiency.	<ul style="list-style-type: none"> ■ Miles of new sidewalk, trail, and/or bike lane constructed ■ Growth in observed users along existing trail network ■ % change in non-single occupancy vehicle mode share (ACS 5-Year Estimate of travel to work) ■ % population residing within 1/4-mile of existing sidewalks and/or trail network
Improve and expand infrastructure for pedestrians, bicyclists, transit users, and people with disabilities.	
Increase use of existing rail-trails for transportation purposes.	
Increase the geographic area in which people have convenient access to non-automobile modes.	
Encourage the use of the most efficient mode based on trip characteristics.	



Goal #3: System Reliability.

Improve the reliability of the movement of people and goods across the region in support of time-sensitive freight movement and logistics.

Objective

Eliminate or reduce current congestion and multimodal traffic flow restrictions on arterial and collector roadways.

Ensure that future development and related transportation improvements proactively address capacity and connectivity needs.

Provide adequate capacity and access to support current businesses.

Increase options for freight movement that minimize truck traffic on non-interstate roadways.

Measure

- Percent of person-miles traveled on the interstate that are “reliable”
- Percent of person-miles traveled on the non-Interstate NHS that are “reliable”
- Annual Hours of Peak Hour Excessive Delay per capita

Goal #4: System Preservation.

Maintain and enhance existing transportation infrastructure assets in a good state of repair.

Objective

Maximize the average of the weighted WVDOH Composite Condition Index (CCI) rating over a 10-year analysis period, subject to budget constraints.

Replacing bridges to minimize the number and deck area of bridges in Poor condition, and minimize the number of load posted bridges.

Reduce or mitigate stormwater impacts of surface transportation systems.

Measure

- % pavements in the Interstate System in Good Condition
- % pavements in the non-Interstate NHS in Good condition
- % NHS Bridges in Good condition



Goal #5: Equity.

Provide healthy, convenient, and equitable transportation choices for those communities that are underserved or traditionally underrepresented.

Objective

Create new opportunity for access to key destinations and jobs for underserved or disadvantaged populations.

Invest in transportation improvements that encourage and support development/land use patterns that reduce the cost of transportation.

Minimize any detrimental impacts of proposed transportation improvements upon neighborhoods.

Measure

- % of population residing within 1/4-mile of transit service
- % of jobs within 1/4-mile of transit service
- % of households spending >30% of income on housing and transportation costs

Goal #6: Economic Vitality.

A transportation system that supports and enhances economic development goals and improves regional competitiveness in commerce.

Objective

Enhance travel and tourism in the Morgantown-Monongalia urban area.

Improve truck access to key industrial areas, and provide alternative truck routes that avoid our downtown areas.

Address bottlenecks and first-mile/last-mile access to transit service.

Measure

- Truck Travel Time Reliability Index
- Annual Hours of Peak Hour Excessive Delay per capita

Goal #7: Livability.

A transportation system and region that is attractive, sustainable, and contributes to regional well-being.

Objective

Integrate the local context of the area into planning, design, and construction of transportation improvements.

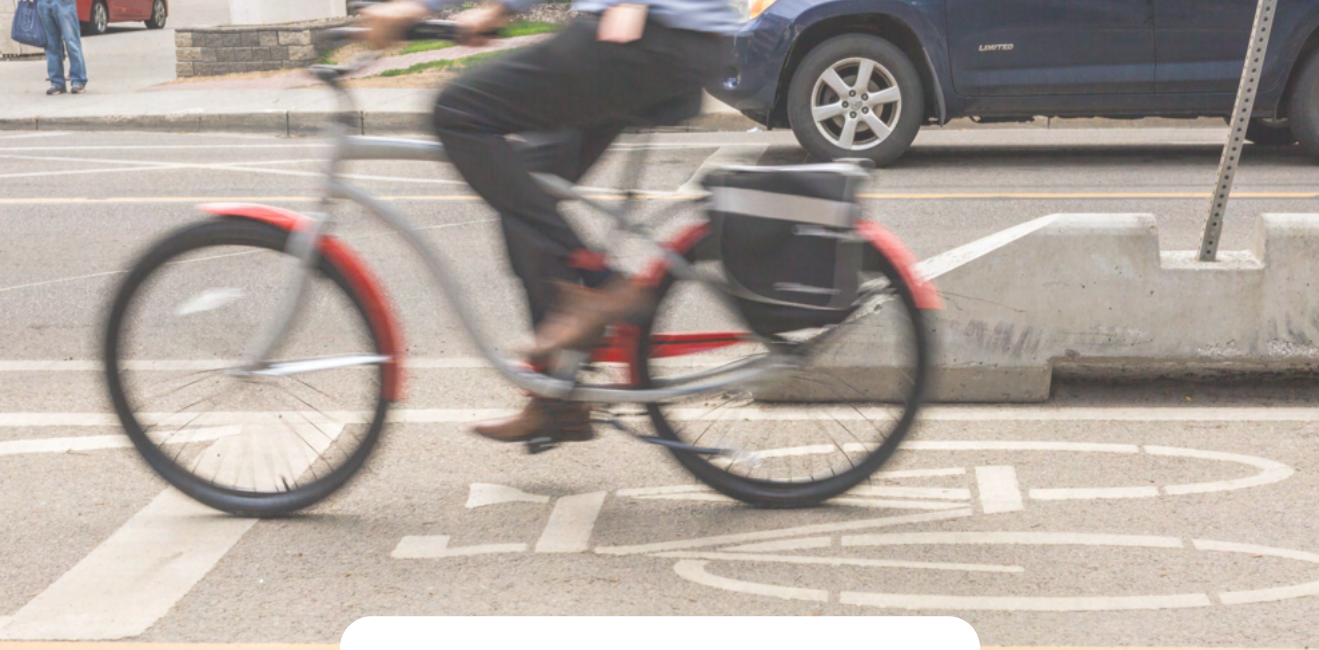
Address multimodal system needs in all planning, design, and construction of transportation improvements.

Reduce automobile emissions and improve air quality.

Measure

- Daily NO_x, CO, and VOC emissions per mile of roadway
- % of population within 1/4-mile of transit service or bike/ped facility

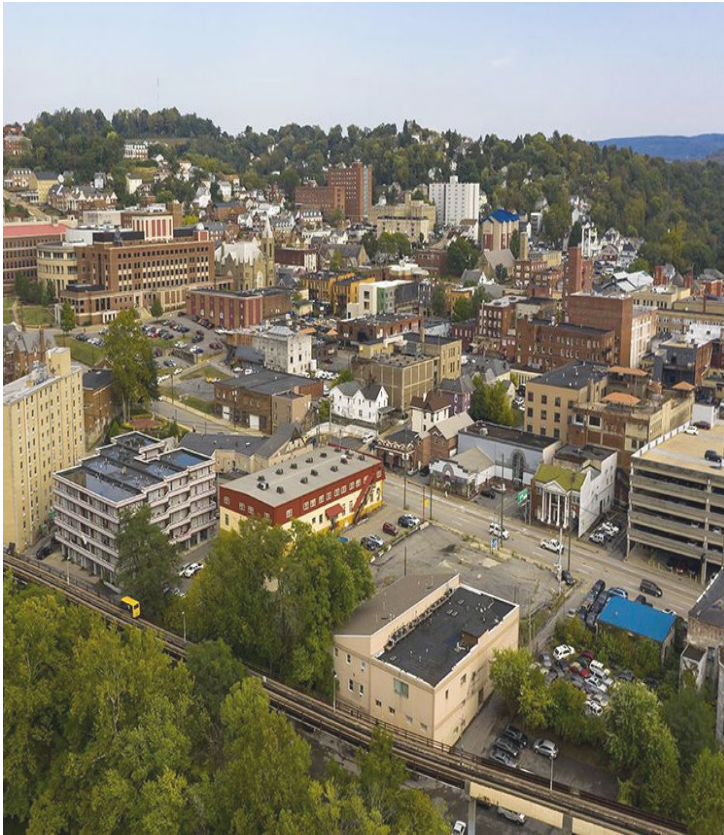




Existing Conditions



Existing Conditions



View of Downtown Morgantown, WV.

This chapter examines the MPO area holistically, beginning with a summary of community demographics, followed by a review of previous planning studies, and ending with a synthesis of the region’s multimodal transportation system. The latter includes a review of existing conditions, system performance, and steps to move forward with implementation.

This Chapter Covers:

- Community Characteristics
- Previous Plans & Policies
- Transportation System Security
- System Performance

Major Employers, Monongalia County
WVU School of Medicine
West Virginia University
Viatrix (Mylan Pharmaceuticals)
Monongalia County Board of Education
MonHealth
Walmart
Gabriel Brothers Inc.
Kroeger Grocery
WVU Research Corporation
Lowe’s Home Center

Table 3.1: Major employers of Monongalia County. Source: WorkforceWV.org

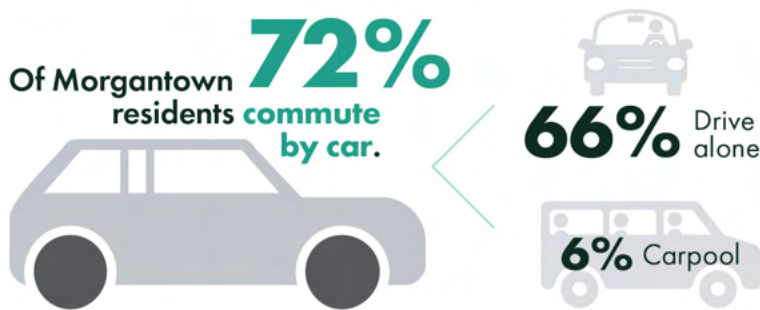
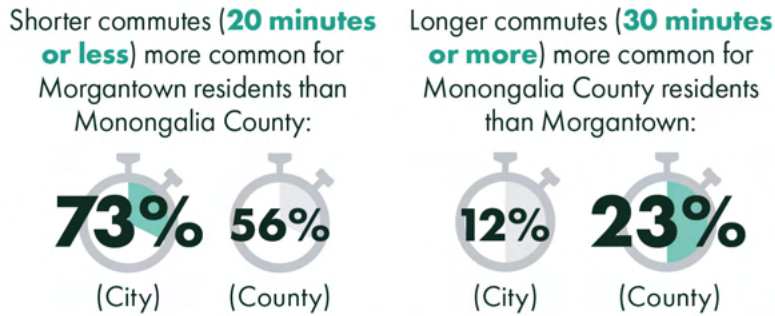
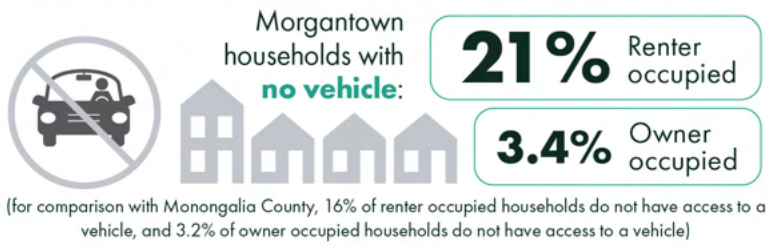
Community Characteristics

Demographic Changes

In contrast to trends in West Virginia over the past decade, Morgantown and Monongalia County have grown in population. **Monongalia County saw 10% growth from 2010 to 2020**, increasing its total population to nearly 106,000 and overtaking Cabell County for **third-most populous county in the state**. This growth has spilled into adjacent counties, with Putnam County also experiencing modest growth. Monongalia County’s non-white population has growth to over 14% of the population, a nearly +6% increase since 2010.



Renters may need **public transportation** more than home owners.



Source: Esri Business Analyst - US Census ACS 5-year (2015-2019)

Figure 3.2: Demographic summary of Morgantown and Monongalia County.

Employment

Residents of the MPO area are predominantly employed in healthcare or education, perhaps not surprising given the presence of West Virginia University in Morgantown. **Nearly 25% of the area's population works in Healthcare and Social Assistance**; 16% of residents work in education. Major employers in the MPO Area reflect this trend. Viatrix - Mylan Pharmaceuticals (Table 3.1) has been a major employer in the manufacturing field, although during the time in which this Plan was prepared it ceased operations at its manufacturing plant.



Land Use

The Morgantown-Monongalia MPO area encompasses all of Monongalia County, which is largely rural. The Morgantown metro-area accounts for a majority of the occupied residential, commercial, and industrial land uses in the county. Developable land is constrained by steep terrain and unstable rock layers that fracture and slide downhill (Figure 3.3). A desktop review of land use types suggests that a majority of land is undevelopable (60%), followed by farm/vacant land (30%), and the remaining portion is either residential (6%), commercial (3%) or parks/recreation space (1%).

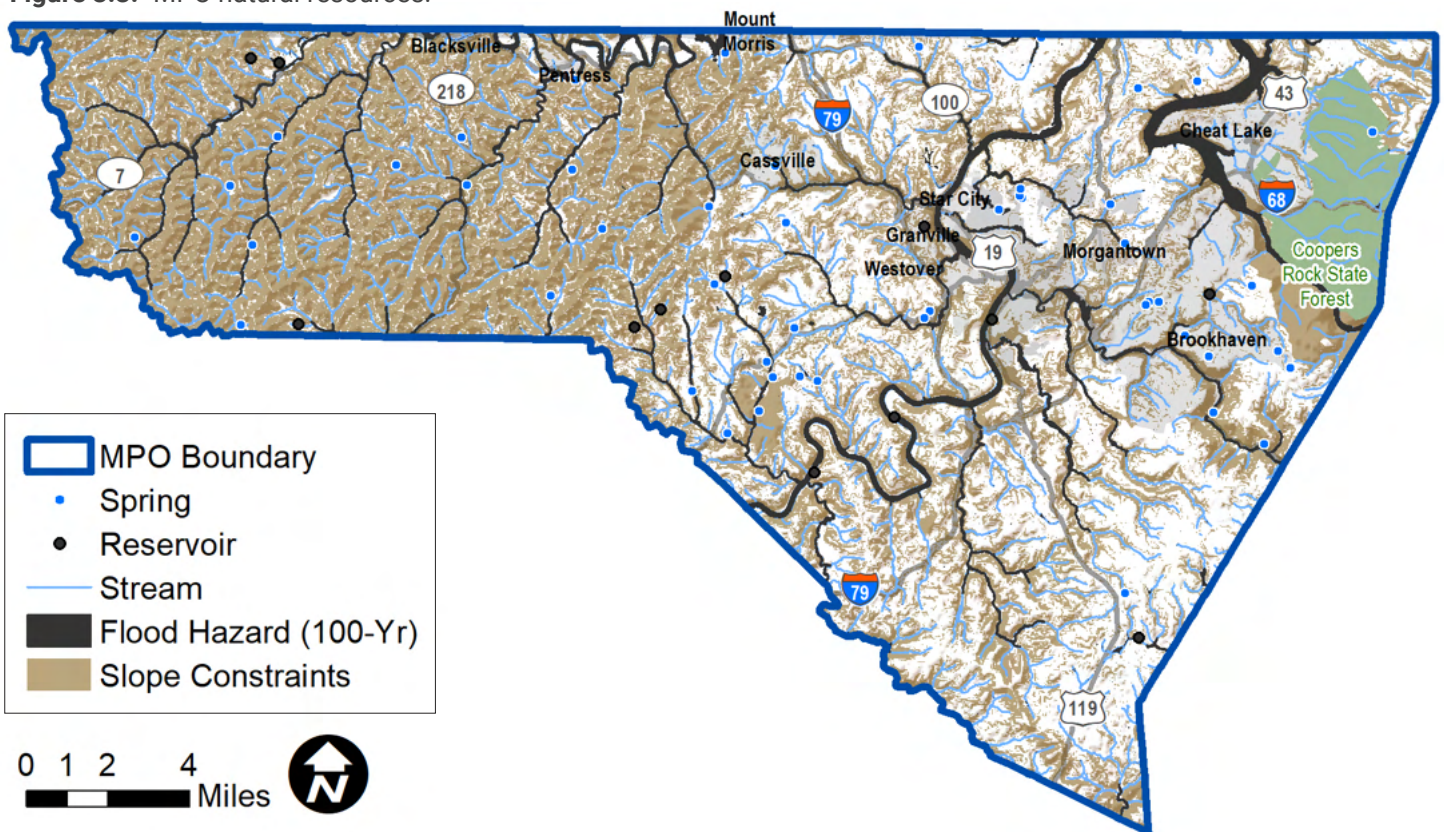
Natural Resources

Monongalia County, like much of West Virginia, lies in the Appalachian Plateau, the westernmost region of the Appalachian Mountains. East of Morgantown, terrain begins to transition into the Valley-and-Ridge

Province, defined by its characteristic **long, even mountain ridges and continuous valleys**. To its west, the landscape is defined by **narrow valleys and steep ridges** cut from stream erosion. most of this last is undevelopable due to steep slopes (Figure 3.3). Like other communities in the Appalachian Plateau, **the area is rich in coal and shale resources**.

The **Monongahela River, referred to as “the Mon”, bisects the eastern half of Monongalia County** and its two principal cities. A navigable water, the Monongahela connects to the Ohio River at its confluence in Pittsburgh, and is managed by the US Army Corps of Engineers. The Cheat River, a tributary of the Mon, flows north through remote eastern Monongalia County; the Lake Lynn Dam, located approximately at the border between Pennsylvania and West Virginia, forms Cheat Lake. East of Cheat Lake, **Coopers Rock State Forest** and Chestnut Ridge Regional Park provide recreational opportunities and timber resources.

Figure 3.3: MPO natural resources.



Previous Plans & Policies

The currently adopted plans for the MMMPO area, both those of the MMMPO as well its partner jurisdictions, are summarized below. These plans and studies provide a guiding framework; they have had an influence on the built environment throughout the region, and will continue do so. Each of these plans helps to shape the recommendations contained in this MTP update. With each plan, common themes emerge, which are incorporated into the planning process to guide our long-range recommendations. Though completing and adopting this MTP is only one part of the process of guiding regional growth, it provides a vision and guidance for successful modifications to the built environment that will help increase the mobility, comfort, health, and quality of life of residents throughout Monongalia County.

Plans Reviewed & Documented:

- MMMPO Transit Strategic Plan (2021)
- WVDOH State Rail Plan (2020)
- Morgantown Regional Bicycle & Pedestrian Plan (2019)
- WVDOH State Freight Plan (2018)
- MMMPO Morgantown Industrial Park Access Study (2018)
- WVDOT Bicycle System Plan (2017)
- MMMPO 2017-2045 Metropolitan Transportation Plan Update (2017)
- I-79 Access Study Report (2017)

Other Plans Reviewed:

- MMMPO 2020-2023 Transportation Improvement Program (2020)
- MMMPO Greenbag Road Corridor Study (2015)
- MMMPO 2013-2040 Long Range Transportation Plan (2013)



MMMPO Transit Strategic Plan (2021)

The Transit Strategic Plan provides a guide for enhancing the customer experience of the transit system and strategic improvements to pursue over the next five years. Recommendations extend beyond expansion of service with new lines and expanded hours, and includes technological improvements, strategic partnerships, and improving ease of use for the transit user. These fall broadly into five categories:

- Transit operations improvements
- Transit-supportive infrastructure improvements
- Improved transit information
- Emerging technology and new mobility
- Partnerships support access to opportunity

The Plan highlighted a lack of consistency in transit services during weekdays, as well as a growing reliance on non-fare revenues to sustain operations. Improving service to attract new riders and grow revenues is crucial. Recommendations include:

- **Increase frequency of bus service on key routes:** Route 38 to 10-minute headways; Route 30 West to 10-minute headways; and Route 39 to 10-minute headways;

- **Increase Directness of Routes** using demand-responsive zones rather than circulator models on Routes 47 (Northern Circulator), 476 (Eastern Circulator), 13 (Crown), and 15 (Grafton Road);
- **Increase the number of designated bus stops** by implementing stop improvements on a new priority corridor each year on Routes 30, 38, 39, and at the Sabraton Goodwill and Fort Pierpont transfer locations;
- **Create safer and better walking connections to bus service** through implementing the Regional Bike and Pedestrian Transportation Plan recommendations, aligning connections with transit, and making targeted sidewalk and crosswalk improvements near stops;
- **Build upon the smartphone app success** to increase reliability and provide greater real-time information to users;
- **Improve on-street information** at top bus stops and connection locations;
- **Implement microtransit service** in designated zones on six month, year-long review periods; and
- **Partner with mobility providers** to expand transit service's reach.



MLTA transit service in action.



WVDOH State Rail Plan (2020)

Like its counterparts, the State Freight Plan and Port Master Plan, the Rail Plan aims to provide the framework for managing the State's rail planning activities, both passenger and freight, over the next twenty years. The plan describes a series of objectives accompanying its six main goals:

- Promoting rail **safety**,
- Maintaining dedicated funding sources to **preserve, evaluate, and improve** state rail infrastructure,
- Leveraging rail infrastructure and goods movement to **support statewide business development** and environmental stewardship initiatives,
- Preserving, evaluating, and improving **intercity passenger rail service**,
- Supporting **rail-related tourism** as part of overall economic development,
- Preserving and supporting **commuter rail service**.

The Plan highlights existing rail infrastructure, including the Class I railroad and transload facility in Monongalia County owned by Norfolk Southern, which connects into neighboring Pennsylvania. It also notes the existing multimodal infrastructure to which rail connects, including the Morgantown Municipal Airport and multiple intermodal facilities in the vicinity of I-79 and I-68.

Recommendations are broken into passenger rail, tourist rail, and freight categories, and include the following pertinent to Monongalia County:

- **Upgrading of Cardinal service:** Establish funding and operational strategy; Establish state partnerships and collaboration for regional routes, i.e., WV/VA, WV/PA, WV/OH.
- **Create regional routes and state partnerships** with Virginia, Pennsylvania, and Ohio to support upgrading Cardinal passenger rail service.
- Improve rail access within the **Morgantown Industrial Park**.



Morgantown Regional Bicycle & Pedestrian Plan (2019)

The Plan focuses on critical regional bicycle and pedestrian improvements within the MPO region, paying special attention to specific intersections and pedestrian crossing locations in need of safety enhancements. The Plan also notes needed ADA improvements, and prioritization of sidewalk repair and new sidewalks, while making recommendations for the regional bicycle network and expanding the rail-trail system. Eight goals are specified:

- **SAFETY:** Increase pedestrian and bike safety with projects, policies, and programs;
- **CONNECTIVITY:** Link the region’s network of walking and biking routes, especially with transit;
- **DESIGN:** Reduce the pedestrian and bike Level of Stress on state and local roads;
- **POLICY:** Develop stronger local policies that promote walking and biking;
- **EQUITY:** Promote equity in pedestrian and bike planning and project funding;

- **ECONOMY:** Leverage walking and biking to promote economic development and quality of life;
- **FEASIBILITY:** Plan walking & biking projects that minimize engineering/funding challenges; and
- **HEALTH:** Improve public health through increased walking and biking

Objectives include **development of educational campaigns** for driver safety; promoting **vision zero policies** and strategies maximizing bike and pedestrian access near schools; completing **on-street connections** to link neighborhoods, commercial centers, community resources, and WVU; narrowing travel lanes and **incorporating traffic calming measures**; investing in underserved communities; **encouraging local land use policies** that promote walkability and biking. Recommendations include a host of facilities, including greenways and trails, shared-use paths on-street lanes, improved lighting, signalization, and traffic calming measures.

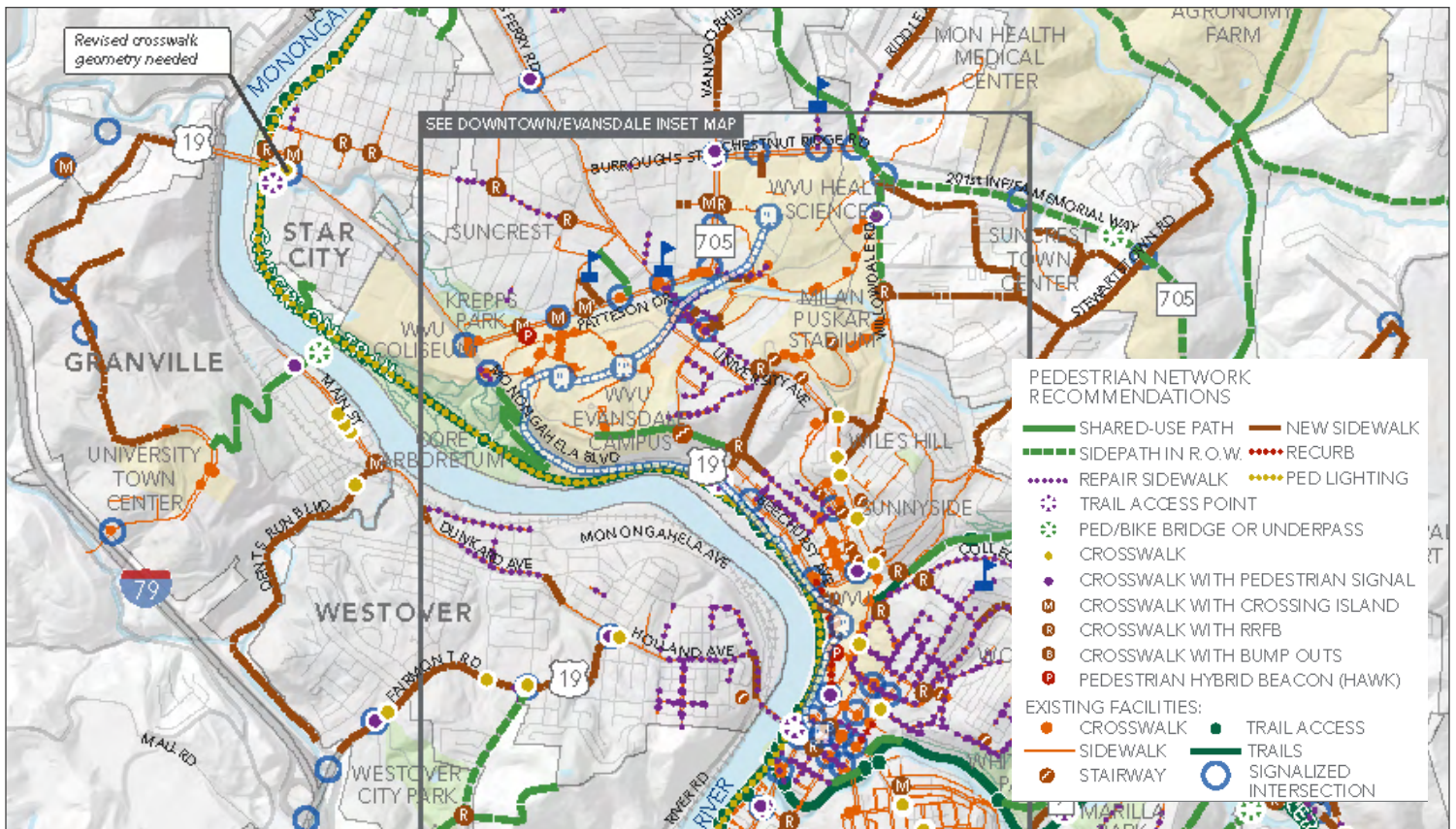


Figure 3.4: Morgantown Regional Bicycle & Pedestrian Plan.



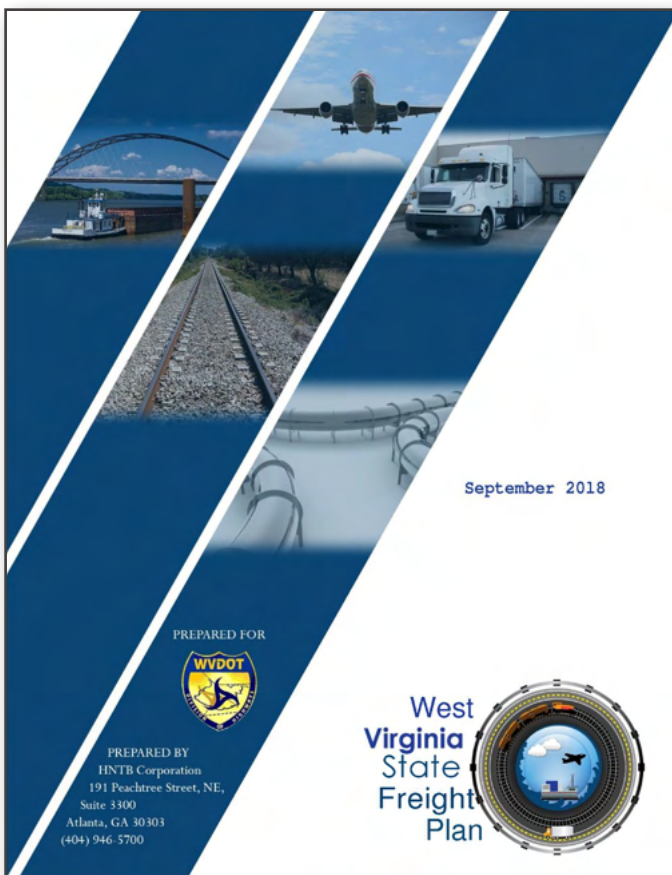
WVDOH State Freight Plan (2018)

The 2018 Freight Plan takes a comprehensive look at the existing and future freight network within the state. Building upon the national freight network, the Plan identifies those state and local facilities that will best complement the national network and improve freight movement in West Virginia. The plan's goals include:

- **Evaluate existing transportation systems** and how they are used by different industry sectors in and through West Virginia;
- **Identify a comprehensive freight route network** and a future freight-planning framework for West Virginia;
- Develop a **tiered truck route network** for West Virginia that meets FAST Act requirements;
- Better position West Virginia for **Federal funding**;
- **Strengthen relationships** with the freight industry through continued outreach activities.

Within the Monongalia MPO area, a total of 14 freight "needs" are identified. The Plan only makes four recommendations for the upcoming years for improvements to the state freight network, none of which are located within the MPO area; however, these needs areas may be considered recommendations for improvements:

- Support planned runway extension of the **Morgantown Municipal Airport**
- Widen road/add lanes up **Easton Hill**
- Morgantown **truck bypass** of central business district
- Improve signal timing from Hartman Run Road onto **Mileground Road**
- Improve safety, left turn onto **Deckers Creek** from Earl Core
- Improve **unsafe areas of congestion** and poor roadway conditions
- Increase operating hours for **lock systems**
- Improve rail access within the **Morgantown Industrial Park**
- Improve waterway access to Morgantown Industrial Park for true multimodal service
- **River Road** improvements to eliminate slide hazards, improve truck safety
- Improve **port development**
- Develop interchange to improve safety on **River Road/Dupont Road**
- Improve safety & road condition along **Route 7** though western Monongalia County
- **I-79** congestion and safety



MMMPO Morgantown Industrial Park Access Study (2018)

The Access Study seeks to identify viable alternatives to increase overall accessibility to the Morgantown Industrial Park, with the goal of identifying a project for inclusion in the Long-Range Transportation Plan. Previous efforts identified three overarching issues affecting access to the site:

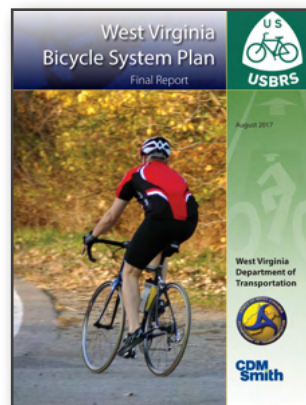
- Impacts to Westover from increasing truck traffic using Dupont Road and Fairmont Road to access I-79;
- Lack of alternatives to Dupont Road for access to the park; and
- Future expansion of the site requiring enhanced access from I-79 (new interchange).

The Study identified seven alternatives for site access, including a new interchange, new access roads, increased connections to area roads having access to I-79, and a bridge connection across the Monongahela River. While each project improves upon projected conditions where no action was taken (the “No Build” scenario), **each poses significant concerns related to construction costs and impacts to the existing transportation network.** While each of the seven alternatives mitigated traffic impacts in Westover and increased site access, the actual benefit for each alternative is low relative to the high construction costs, particularly for those alternatives requiring an interchange or bridge connection. Ultimately, **the Study does not recommend a particular alternative**, but instead recommends further consideration during the Metropolitan Transportation Plan’s development, and that a more detailed engineering study be conducted to establish a preferred alternative.

WVDOT Bicycle System Plan (2017)

The statewide Bicycle system plan identifies and finalizes a system of designated, signed bicycle routes using West Virginia’s highway system. A prime objective is to develop routes that would connect to other states, allowing expansion of the US Bicycle Route System and connecting West Virginia cities and communities. Stated goals include the following:

- Establish designated bicycle routes within the state;
- Provide connections to other state & national routes;
- Encourage bicycle transportation and its effects on the tourism economy; and
- Improve quality of life.



Development of the plan drew from several datasets, including the existing US Bicycle Route System, the 2009 Statewide Bicycle Plan, Adventure Cycling Association routes, national and state scenic highways, connecting routes from neighboring states, public input, and off-road trails,

ultimately settling on nine routes, one of which passes through Monongalia County. **Route 7, and alternate Route 7A, follow US 119 and US 19, respectively.**



MMMPO 2017-2045 Metropolitan Transportation Plan Update (2017)

The 2045 MTP provides an update to the 2013-2040 Long Range Transportation Plan, providing new guidance for projects and strategies, fiscal constraints and projections, and defining new regional transportation goals and objectives. Goals for the 2017 MTP Update are retained from the 2013 MTP, with some strategies updated:

- Reducing or mitigating stormwater impacts of Surface Transportation (6D)
- Enhancing Travel & Tourism in the Morgantown-Monongalia urban area (6E)
- Improve understanding of critical transportation system-related homeland security issues in the region, improving transportation system resiliency and reliability.

The 2017 MTP Update commits to **\$237 million of programmed projects broken into four Tiers** based

I-79 Access Study Report (2017)

The I-79 Access Study evaluated the current transportation network in the MMMPO region with regards to how it facilitates connections between Morgantown, WVU, key employment centers, and other critical transportation facilities to I-79. Goals of the Study were to:

- **Improve mobility** and access to major transportation facilities and key employment centers in northern Morgantown;
- **Improve traffic operations** and safety;
- Support on-going and projected growth areas; and
- **Enhance multi-modal opportunities** to reduce single-occupancy trips.

The study evaluated twelve alternatives, including a transportation system management (TSM) strategy, against their operational performance, community and environmental impact, regulatory impacts, and

upon their importance to the region. Tier 1 projects include access improvements to I-79, University Avenue Complete Streets Improvements Phase I, the North Side Connector Bus Rapid Transit, and the Grant Avenue Bicycle/Pedestrian Connector. Tier II projects include spot projects on WV-705, Phase II of I-79 access improvements, the White Park/Caperton Trail connection, and Phase II of the University Avenue improvement project. The Update reclassifies projects within Tiers, and several make large jumps in prioritization:

- **Fairmont Road/Holland Avenue** Improvements Phase I, moved from Tier III to Tier I;
- **Stewart Street Improvements**, moved from Tier IV to Tier II; and
- **Smithtown Road Improvements**, newly appearing as Tier II.

financial implications. Based upon this evaluation, the Study recommended **Alternative 12**, which includes:

- New connection between Van Voorhis/West Run and Collins Ferry Road;
- New river crossing to WV-100; and
- New I-79 interchange in Pursglove.

Recently, the locally preferred alternative has been re-evaluated and is no longer considered to be feasible from a benefit-cost ratio.



MMMPO Metropolitan Transportation Plan 2040 (2013)



I-68 Bridge with traffic.

The 2013 Metropolitan Transportation Plan is the last MPO document to discuss the planning factor of **System Security**. The emphasis on transportation security results from the identification of surface transportation facilities as a common target for terrorism. The importance of addressing the transportation system infrastructure's vulnerability to natural and human actions can be attributed to several factors:

- Transportation infrastructure (roadway networks, vehicles, airports and transit facilities) serve high concentrations of people, thereby increasing the potential number of casualties.
- Transportation systems provide essential services to the public, thereby threatening our way of life if they are damaged and/or shut down through a natural or social act.
- Transportation systems can be used to both deliver a blow impacting a large number of people and as an escape avenue for the terrorist.

In the 2013 MTP, the MMMPO identified key security elements and elements of future work programs that should be incorporated into the transportation planning process. These include:

- Working with Monongalia Emergency Centralized Communications Agency (MECCA) 9-1-1, West Virginia Department of Transportation (WVDOT), Federal Highway Administration (FHWA), and the U.S. Department of Homeland Security (DHS) to establish a definition of "security" for the transportation system.
- Using the definition of security developed, establish security goals and objectives.
- Identify a list of key transportation assets, including:
 - The Osage Bridge, the Westover Bridge, and the I-79 Bridge over the Monongahela River
 - Each of the interchanges along I-68 and I-79 with particular attention to the I-79/I-68 system interchange
 - The WVU Coliseum and Milan Puskar Stadium/Mountaineer Field, which house large crowds and would need to be evacuated in the event of an attack during an event or used as evacuation centers in the event of an attack
- Improve the inter-relationships, planning processes, and communication between transportation system owners and managers and public health and safety officials and staff. Included in coordinated security planning efforts should be:
 - Police departments from each of the communities in the county
 - Monongalia County Sheriff's department
 - West Virginia State Police
 - Fire departments and rescue squads
 - Federal response agencies such as the Federal Bureau of Investigation (FBI)
 - Agencies within the U.S. DHS, such as the Federal Emergency Management Agency (FEMA), Transportation Security Administration (TSA), and the U.S. Coast Guard



System Performance

Transportation choices are shaped by their surrounding context; choices of mode and of route are affected by the cost and benefit calculations each individual makes before starting their trip. In order to plan for how present and future Monongalia County area residents will travel, the existing transportation network must be well understood.

Roadways

The MPO area's transportation network is defined by two interstates, I-68 and I-79, which frame the Morgantown metropolitan area. I-79 connects the MPO area with Pittsburgh to its north and Clarksburg and Charleston to its south; I-68 is an east-west connection beginning in Morgantown and connecting to Western Maryland and I-70. Other key

thoroughfares, which make up the area's National Highway System (NHS), include US 19 and US 119, Cheat Road, WV-7/Mason Dixon Highway, WV-100/Fort Martin Road, WV-218/Daybrook Road, WV-43/Mon-Fayette Expressway, and WV-705/Chestnut Ridge Road.

FUNCTIONAL CLASSIFICATION

For planning purposes, roads are often designated in terms of their functional classification, which is based on the character of the transportation service they are intended to provide. The MPO's functional classification map designates roads as interstates, freeways / expressways, principal arterials, minor arterials, major collectors, minor collectors, and local roads. Functional classifications are updated as necessary by WVDOH and the MPO (Figure 3.5)

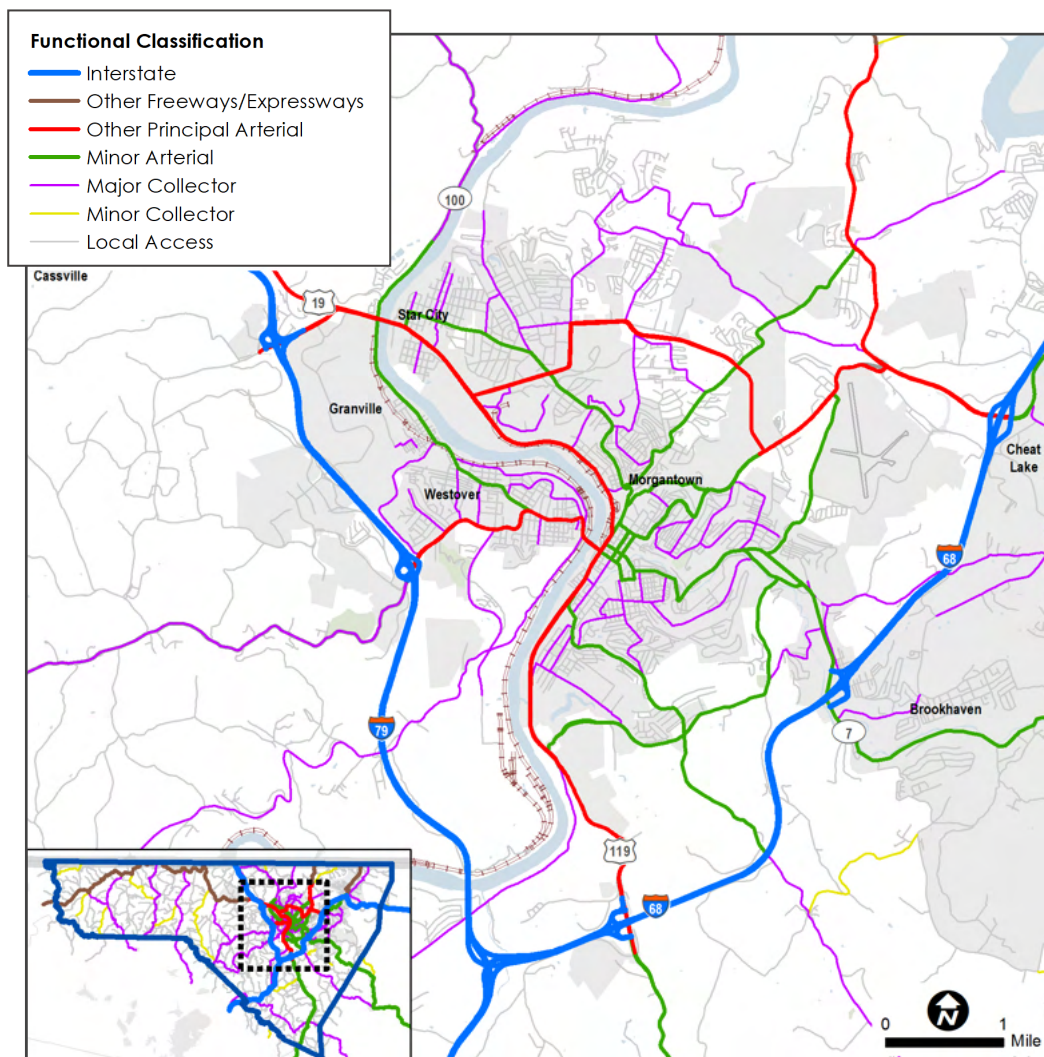


Figure 3.5: MPO's functional classification map.



SYSTEM PERFORMANCE

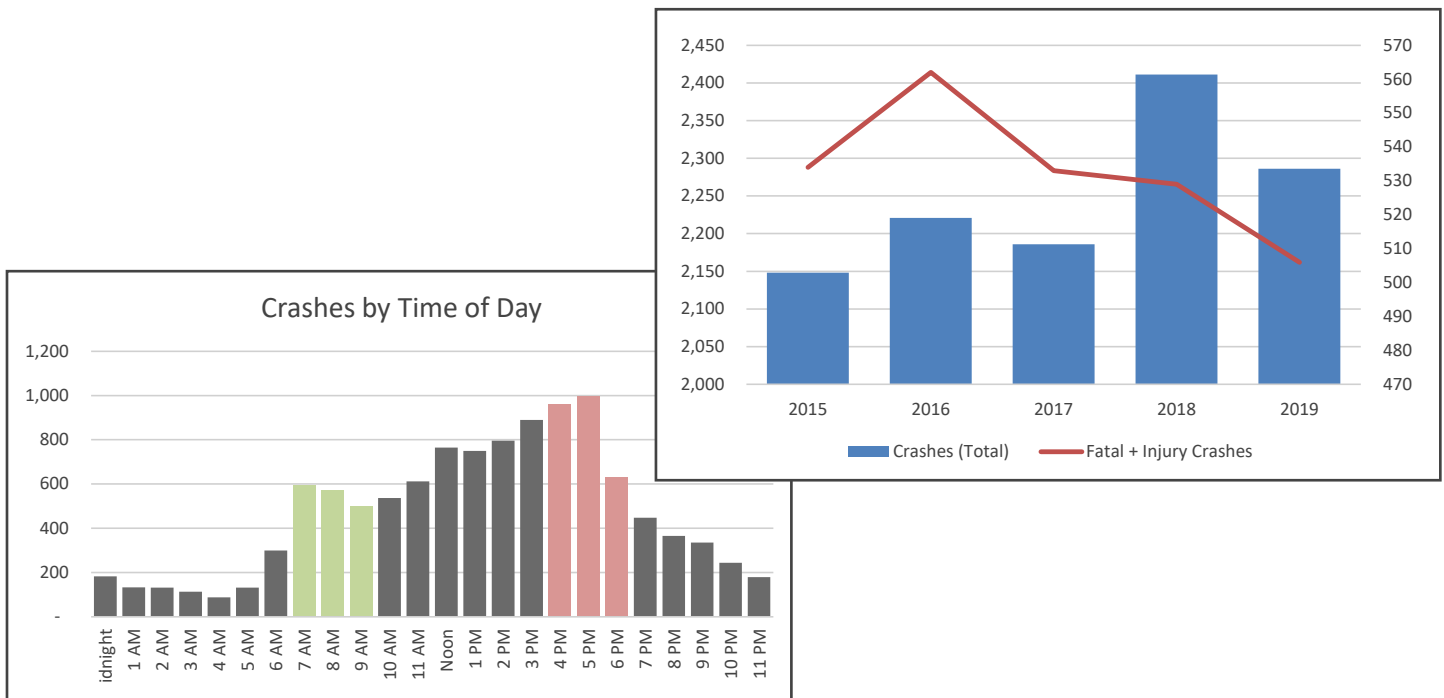
Figure 3.7 depicts current traffic volumes and change in volume over the previous five years. I-79 and I-68 carry daily volumes approaching 45,000 vehicles. North of the WV-7 exit, volumes on I-68 decrease, but these two roads remain workhorse thoroughfares within the MPO region, moving traffic to destinations both locally and regionally. **US 19 (Beechurst Avenue) and the WV 705 corridor (Patteson Drive, Van Voorhis Road, Chestnut Ridge Road) are significant roadways that accommodate** close to 40,000 vehicles per day. Traffic growth highlights different corridors, however, and reflects broader changes within the MMMPO area. **Fairmont Road (US 19)** through Westover has seen high growth in the previous three years, along with **University Avenue** near downtown Morgantown. Other roads seeing high growth include **Earl Core Road/ Sabraton Avenue (WV 7), Cheat Road (HWY 857), and Mileground Road (US 119).**

Crashes have been on an upward trend in the MPO area, although 2019 experienced a slight decline (Table 3.6). **Approximately one-third of all crashes occur within Morgantown**, with the remaining two-thirds occurring outside of the city limits. Along with its high traffic growth, University Avenue likewise stands out as a high crash corridor, with 8% of all

	Fatality	Injury	Property Damage Only
2015	11	523	1,614
2016	12	550	1,659
2017	7	526	1,653
2018	11	518	1,882
2019	8	498	1,780
TOTAL	49	2,615	8,588
PERCENT	0.4%	23.2%	76.3%

Table 3.6: Trends in Crash Severity, 2015-2019.

reported crashes from 2015-2019 occurring along the roadway. Other higher-crash roads include Grafton Road, Monongahela Boulevard, Patteson Drive, and Cheat Road. **Weekdays have a higher proportion of all crashes (80%) than expected (~71%),** with Fridays experiencing more crashes during the week than other days. Coinciding with peak demand periods, the hours from 3-5 PM, 12-2 PM, and 7-9 AM all experience more crashes than non-peak demand periods.



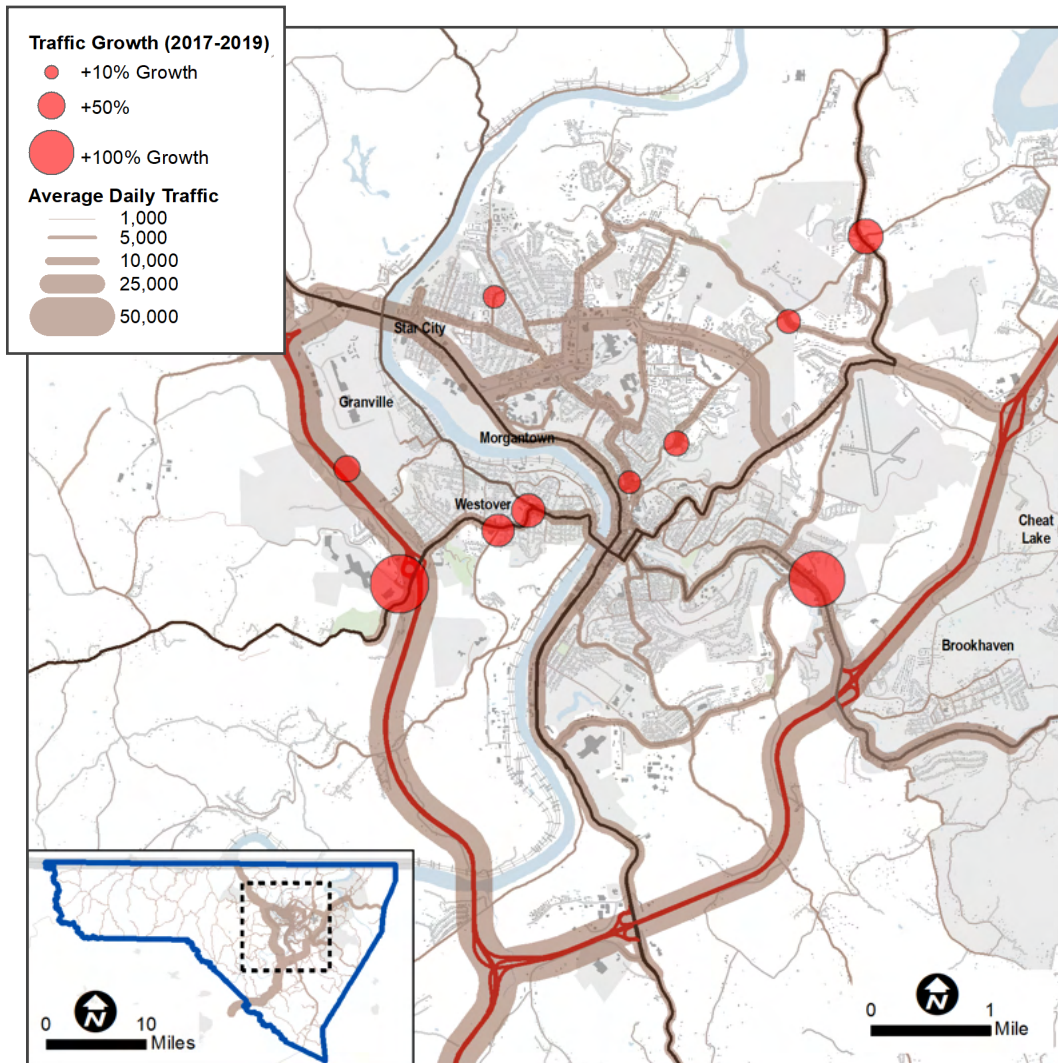


Figure 3.7: Average Daily Traffic (AADT) growth.

BRIDGES

Two routes in Monongalia County have bridge height or weight restrictions, according to a 2017 list published by WVDOH.

- WV 7 Monongalia County – MP 27.73 – Restricted to 37 tons
- WV 100 Monongalia County – MP 3.95 – Restricted to 12' 9" vertical clearance

Other bridges have been found to have structural designs (steel deck truss) that may be cause for concern or are functionally obsolescent.

According to West Virginians for Better Transportation, those bridges in Monongalia County are:

- **Harmony Grove Overpass** carries County Route 45 over I-79 in Monongalia County (built in 1971);
- **Cheat Lake Bridge** carries I-68 over Cheat Lake in Monongalia County (1976); and
- **Corporal Thomas Bennett Bridge** carries I-79 over the Monongahela River in Monongalia County (1971; listed as functionally obsolescent).

Additionally, the 2021 bridge inventory listed 21.1% of West Virginia bridges as structurally obsolescent. In all, there were **47 bridges in Monongalia County listed as being in "Poor" condition in 2019.**



Freight

Freight movement is critical to the MPO area's economy, with several major employers involved in the manufacturing of goods and other freight-dependent industries. Trucking routes over land feature I-79 and I-68, which converge south of Morgantown, with I-79 continuing south to Bridgeport and beyond. Two US Highways, 19 and 119, connect Morgantown with

US 50 (South). US Highway 119 and WV 43 (tolled in PA) connect Morgantown with Uniontown, PA (north) and the larger freight network. Drive times out of Morgantown starting at 7pm on a weekday include **Pittsburgh at two hours; and Cleveland, Washington D.C., and Philadelphia within five hours**. An eight-hour drive is the maximum legal allowance for a truck driver to operate without a 30-minute rest, and this amount of drive time reaches Toronto, New York, Charlotte.

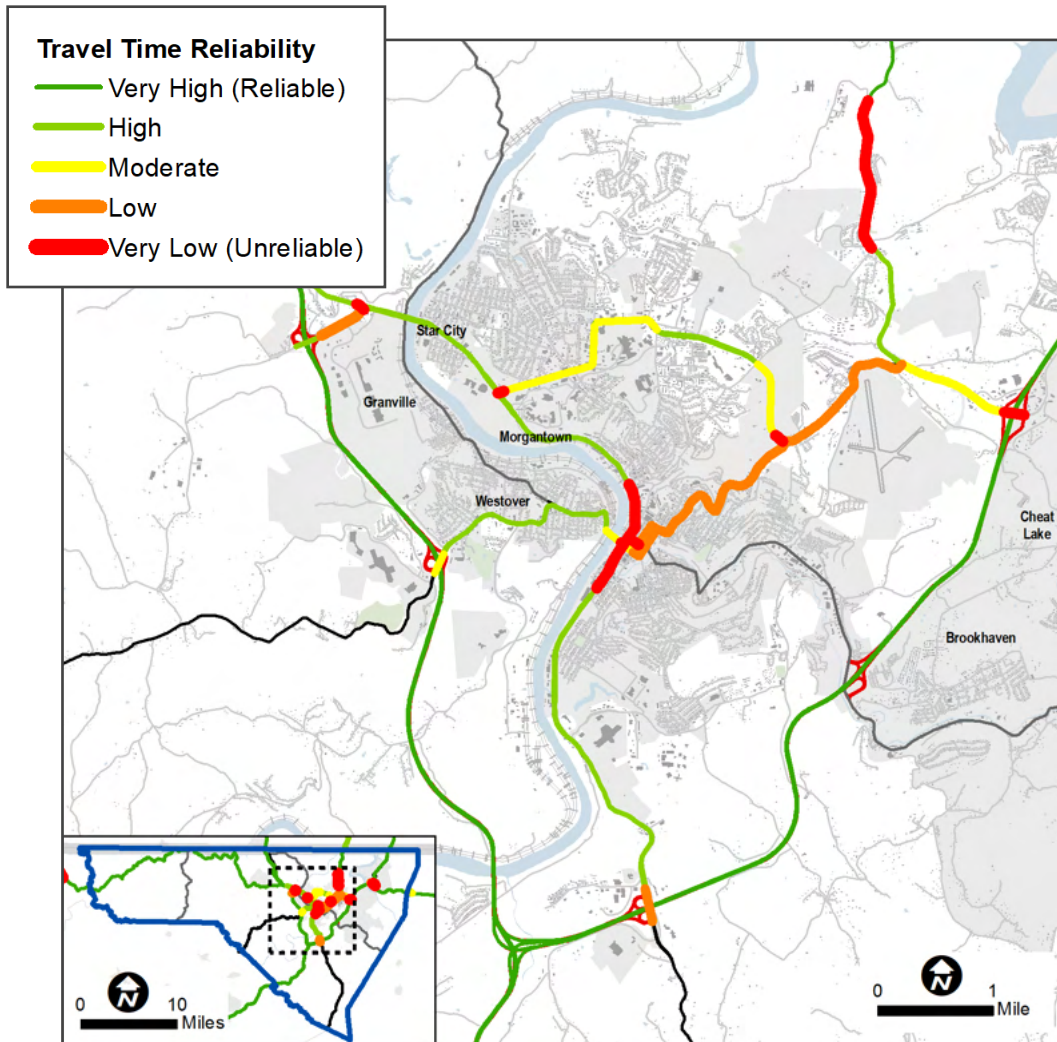


Figure 3.8: Travel time reliability.

SYSTEM PERFORMANCE

Freight movement throughout the MPO area is generally considered highly reliable. I-79 and I-68 display high levels of reliability during all hours of the day, and other major regional arteries provide multiple routes to and through the MPO area. However, along key corridors this is not the case. In the Morgantown area, **US 119 (Willey Street /**

Mileground Road) shows low-to-moderate reliability from downtown to its intersection with Cheat Road. Likewise, near downtown US 19 (Beechurst Avenue) shows very low reliability during peak hours, which may be attributable both to outbound traffic or limited alternatives and Mon River crossing opportunities to nearby truck routes. As these roads and intersections have also experienced significant growth in traffic volume, capacity issues noted above may be driving



this unreliability. However, this is not the sole cause of freight unreliability. **Traffic signal timing, number of driveways, or frequent crashes are additional contributors to lower reliability index values.**

Public Transportation

The Mountain Line Transit Authority (MLTA) is the primary provider of public transportation service within Morgantown and Monongalia County offering deviating route and specialty demand-response service seven days a week, 365 days a year. **MLTA is governed by a seven member Board of Directors appointed by the City of Morgantown and the Monongalia County Commission.** WVU also provides public transportation service within Morgantown and Monongalia County offering a variety of shuttles and buses as well as a unique fixed guideway system known as Personal Rapid Transit (PRT). The following section briefly summarizes the existing MLTA and WVU services in terms of service coverage, hours of operation, and service frequency as well as a brief description of other transit services in the area.

SERVICE

MLTA operates **24 deviating routes, with 1 intercity route within the MPO area**, with most of these routes operating around or connecting to downtown Morgantown. MLTA’s service is deviating route service, which provides flag-down service (with some express route exceptions) with opportunities for customers to request (in advance) deviations up to 0.75 miles to safely pick up patrons along routes. Presence and condition of sidewalks are a primary safety concern for MLTA and its riders, necessitating its flag-down route operation (exception of three routes with designated stops). Many routes operate Monday through Saturday between the hours of 6:00 AM and 9:00 PM (several routes run until midnight or later) on a weekday schedule, with reduced service on Sundays. **Headways are generally 60 minutes or greater**, with seven routes (1, 3, 30, 38, 39, 44, and 51) operating with headways between 10-30 minutes. Routes 38 and 39 operate in opposite directions along the same roads, with 10-minute headways. Rural routes include Routes 11 (Cassville), 13 (Crown), 14 (Mountain Heights), 15 (Grafton and Fairmont Road), 46 (Eastern Circulator), and 52 (Wadestown).

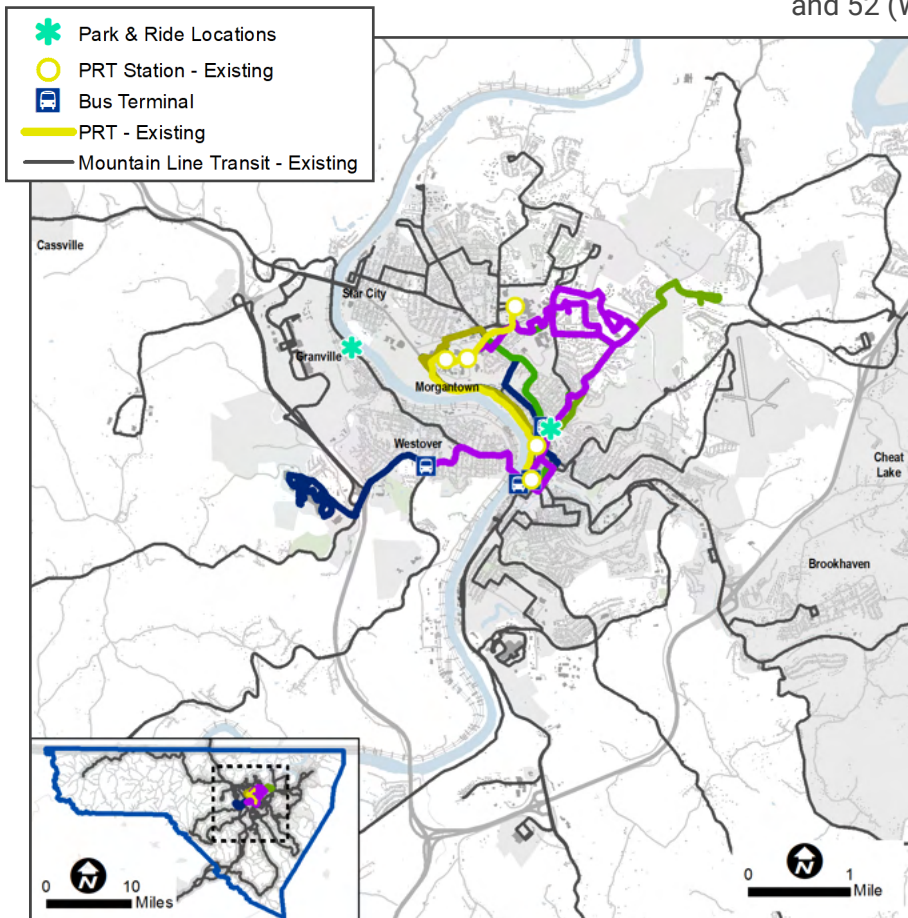


Figure 3.10: Transit service map.

Table 3.9: Annual transit trips along select routes.

Rte.	Name	Annual Trips
38	Blue & Gold**	~23,000
30	West Run**	~14,000
39	Beechurst Express	~10,000
1	Campus PM*	~9,000
9	Purple Line	~9,000

*Thursday-Saturday operation only.

**Routes are subsidized.



The cost to ride MLTA is \$0.75 per trip and has not changed in more than 25 years since Mountain Line began. Route deviations are an additional \$0.50. Other reduced fare options include 15-ride passes, 30-day passes, and a monthly Monster Pass that includes intercity service. **Half fare programs** are available for seniors over 65 years and Medicare participants, and **fare-free options** are offered to High School students, WVU students/employees (subsidized by the University), and Monongalia County property owners via the Property Tax Bus Pass Program. The convenience of Mobile payment is now available with the **Token Transit Mobile App**.

CONTRACTED SERVICES

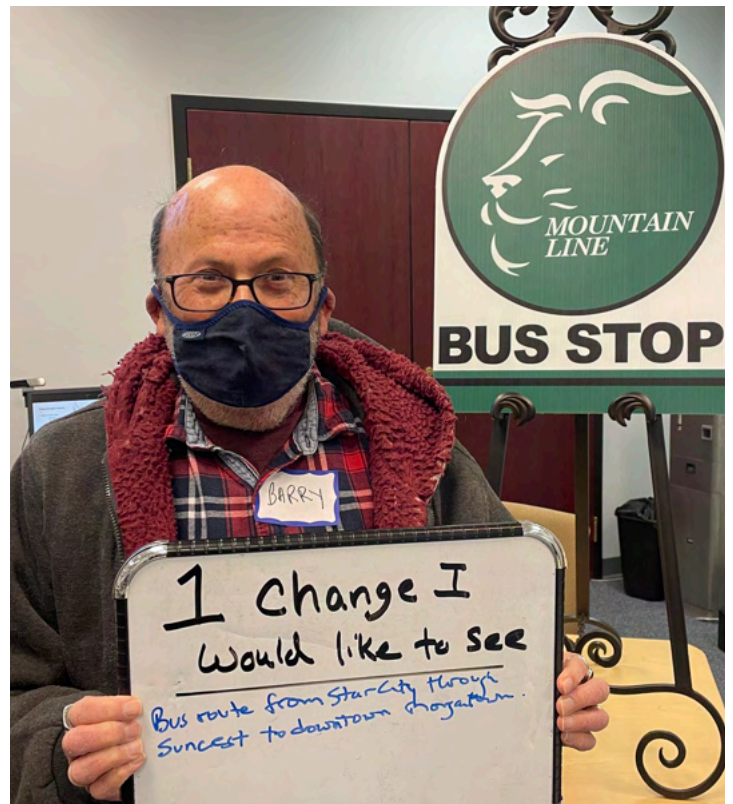
At the start of 2019 the specialty demand response NewFIT service began providing **critical medical trips** to residents who had no other transportation options. This service was created in response to the closure of In Touch and Concerned, a local social service agency previously providing such trips in Monongalia County. Ridership on this service has increased by 50% since 2019 despite the impact of the Covid-19 pandemic on public transportation ridership. A similar ridership increase has been observed for the specialty demand

response service for the West Virginia **State Opioid Recovery (SOR)** program, which launched in 2020. MLTA ridership through this program has grown to more than 700 riders per month (Monongalia County and vicinity) for substance abuse disorder treatment.

SYSTEM PERFORMANCE

Transit ridership on MLTA routes is concentrated in its five most productive routes (Table 3.9), which together account for **over half of all system ridership in the service area**.

Despite these figures, total passenger trips have maintained a downward trend since its peak in 2012. Total unlinked passenger trips across all lines for 2021 totaled just over 400,000, roughly half as many as 2019. Like many transit systems across the United States, ridership during the COVID-19 pandemic has caused a steep decline in these totals as well. Despite this decline in trips, total vehicle miles has increased over the same time period; the Strategic Plan (2021) notes that this may be influenced by the 2018 relocation of the MLTA administrative and operations facility to Westover, and modification of most routes.



Open House Attendee.



Monthly ridership began to increase in January 2020 until the pandemic abruptly altered commuting patterns in March 2020. Since this time remote work and public perceptions onboard public transportation have obscured ridership patterns. In 2022 MLTA began a market research survey of residents to identify perceived ridership issues and directly address them. Integrating a touchless payment technology with MLTA, the WVU PRT system, and Downtown parking is one such improvement that is being researched through an **Accelerating Innovative Mobility (AIM)** grant from the Federal Transit Administration (FTA).

Despite increased mileage, operating expense per revenue mile remains relatively unchanged from mid- 2010s performance at \$3.95/mile. Certain

populations, including those living in poverty, elderly, persons with disabilities, and zero-car households, are more dependent on transit service, having limited mobility options. These populations are often referred to as **Communities of Concern** and displayed within Figure 3.11. An index that captures the population density of these communities within an area can be used to evaluate existing service. MLTA current service does an adequate job of reaching these populations; **only one block group with multiple communities of concern lies outside of a 500- foot radius of fixed-route service.**

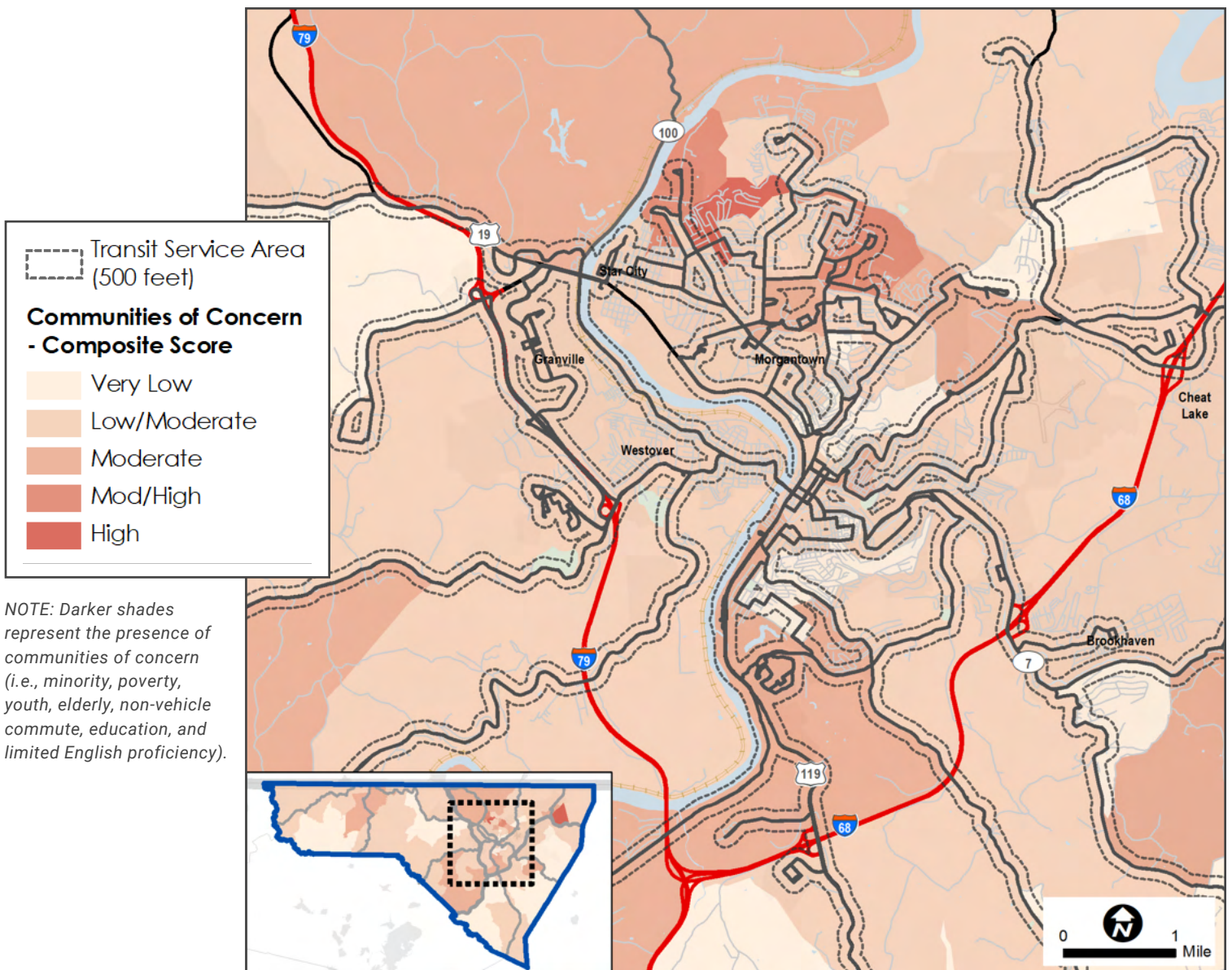


Figure 3.11: Transit Service Areas and Communities of Concern map.





Decker's Creek Rail-Trail.

Bicycle & Pedestrian

While the vast majority of trips in the region are made via automobile, the ways in which people move continues to change. This section takes a closer look at the bicycle and pedestrian network in the MPO area to understand its performance and opportunities for improvement.

SYSTEM PERFORMANCE

The Mon River Trail system traverses the county from the Pennsylvania border south towards Fairmont and the Marion County border, following the course of the Monongahela River. Within the Morgantown area, the trail becomes paved for 5.5 miles and is known as the Caperton Trail. Connecting to the Caperton Trail, **the Deckers Creek Rail-Trail is a 20-mile trail** that follows a northwest-to-southeast route eastward from downtown Morgantown, connecting to Preston County and Masontown. Other trails in the MPO area include the Cheat Lake Rail-Trail.

Figure 3.12 depicts existing bicycle and pedestrian facilities in the MPO area, an estimate of miles per facility type is included. **For the approximately 230 miles of roads within the MPO's urban area, only 32% have sidewalks**, and no roads outside of the urban areas surrounding Morgantown have sidewalks or pedestrian facilities. Morgantown is home to a network of sidewalks that is growing but lacks uniformity. Of the 74+ miles of sidewalks in the MPO, the majority are concentrated in the downtown area and around West Virginia University; gaps in existing sidewalks become more significant outside of the downtown area. Outside of Morgantown, sidewalk coverage decreases dramatically, with Westover, Star City, and Granville featuring short, disconnected segments. **Residents in these areas lack connectivity to employment centers and other community destinations**, including public services such as schools and medical facilities, by alternative means of transportation. Lacking these bicycle or pedestrian connections, families with school-aged children – and access to a vehicle – may opt to drive short distances to drop children off at school, rather than allow them to walk in unsafe conditions.



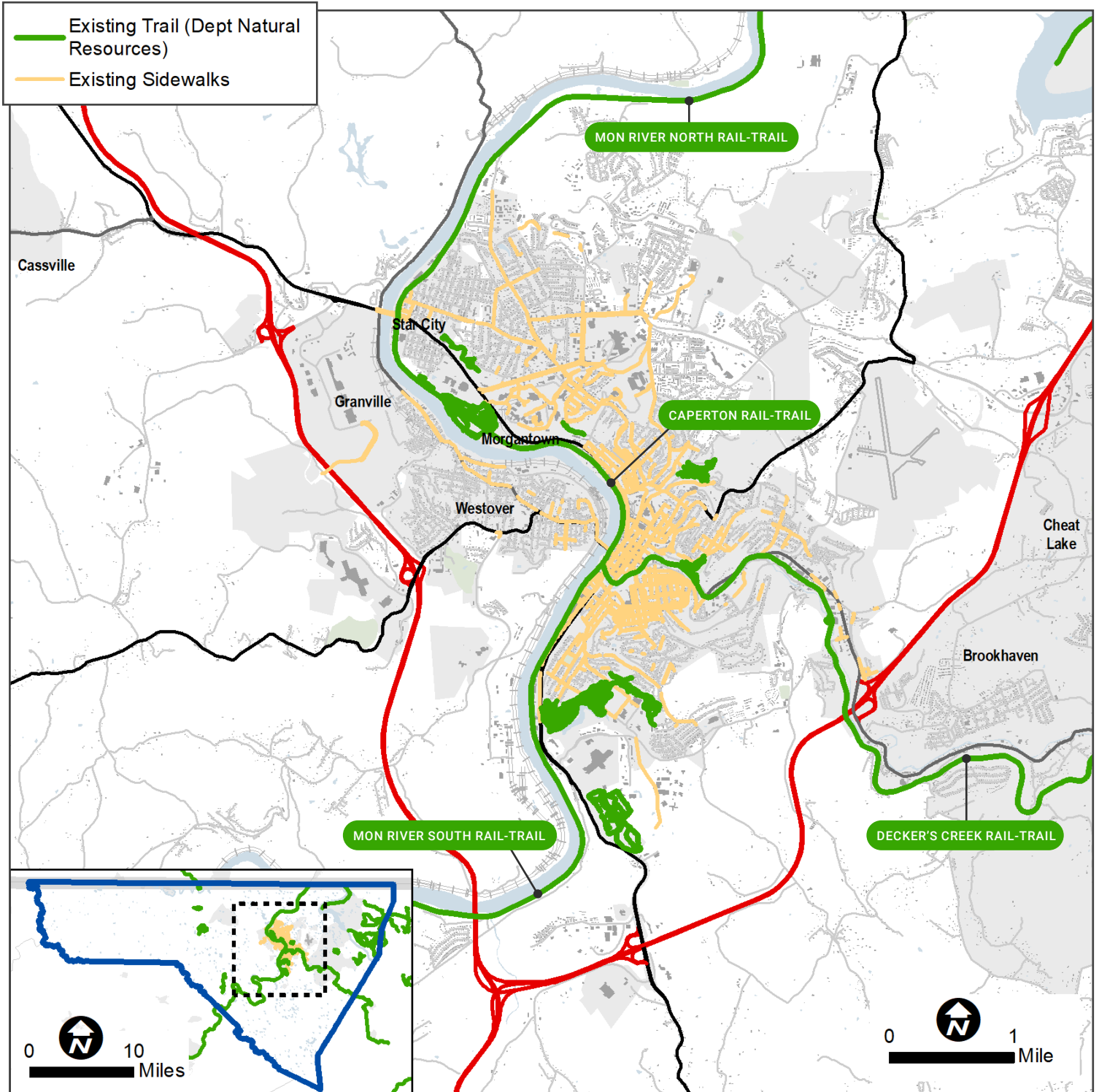


Figure 3.12: Pedestrian and rail-trail facilities in the MPO area.



Other Multimodal Facilities

RAIL

Monongalia County is served by CSXT (trackage rights) generally along the Monongahela River in an joint ownership agreement with Norfolk Southern. Mileage inside Monongalia County is not designated as a Class I railroad. The two companies bought out Conrail, which had purchased much of the Monongahela Railway system in Monongalia County extending into Pennsylvania. Passenger service ran on the Monongahela Railway until it stopped operations in 1950. The mileage extending east and west from Morgantown has been abandoned. CSXT has previously suggested that **additional rail spurs extending from its lines to industrial sites in Monongalia and other counties could produce more activity** and business on these lines, however a suitable partnership has not been formalized.

Rail banking is a way of preserving rail lines and repurposing them as recreational trails. Two sections of rail line were banked in 1991 in Monongalia County, totaling 36 miles. These are part of an extensive rails-to-trail conservancy that includes the Mon River, Capertown, and Deckers Creek Rail-Trails.

AVIATION

The Morgantown Municipal Airport (MGW) represents the **largest airfield in Monongalia County**, providing daily service to Pittsburgh, and Washington (Dulles), as well as local aviation needs. The airport averaged 152 enplanements per day in 2019 and is the fourth-largest of the seven commercial airports in West Virginia.

MGW is undertaking a **1,001' runway expansion** at the time of this writing, amounting to a \$40 million infrastructure investment. Material removed to expand the runway will be used at the I-68 Commerce Park just to the north of the airport. The expansion will improve the safety of existing airport operations and may attract more service or carriers but is not anticipated to attract larger commercial aircraft.

RIVER PORTS

The history of Monongalia and Morgantown are deeply associated with the Monongahela River, or “Mon” as it is locally known. Atypically flowing south to north for nearly 129 miles, the Mon reaches Pittsburgh, and was once the most efficient transport to move shipments to the Ohio River Valley. Traditionally used to transport lumber and coal, today **coal and limestone are the only substantial waterborne shipments moving out of West Virginia by water** freight.

The known dock locations in Monongalia County are located exclusively along the Monongahela River, including those used for bulk shipments of coal and limestone. The Morgantown lock and dam, located just south of the US 19 bridge at mile marker 102 on the Mon, is **one of nine such structures along the Monongahela River** that allows year-round navigation. These include the Hildebrand and Opekiska lock and dam structures further south, opened in the summers on weekends primarily for recreation access with funding provided by the Upper Mon River Association.



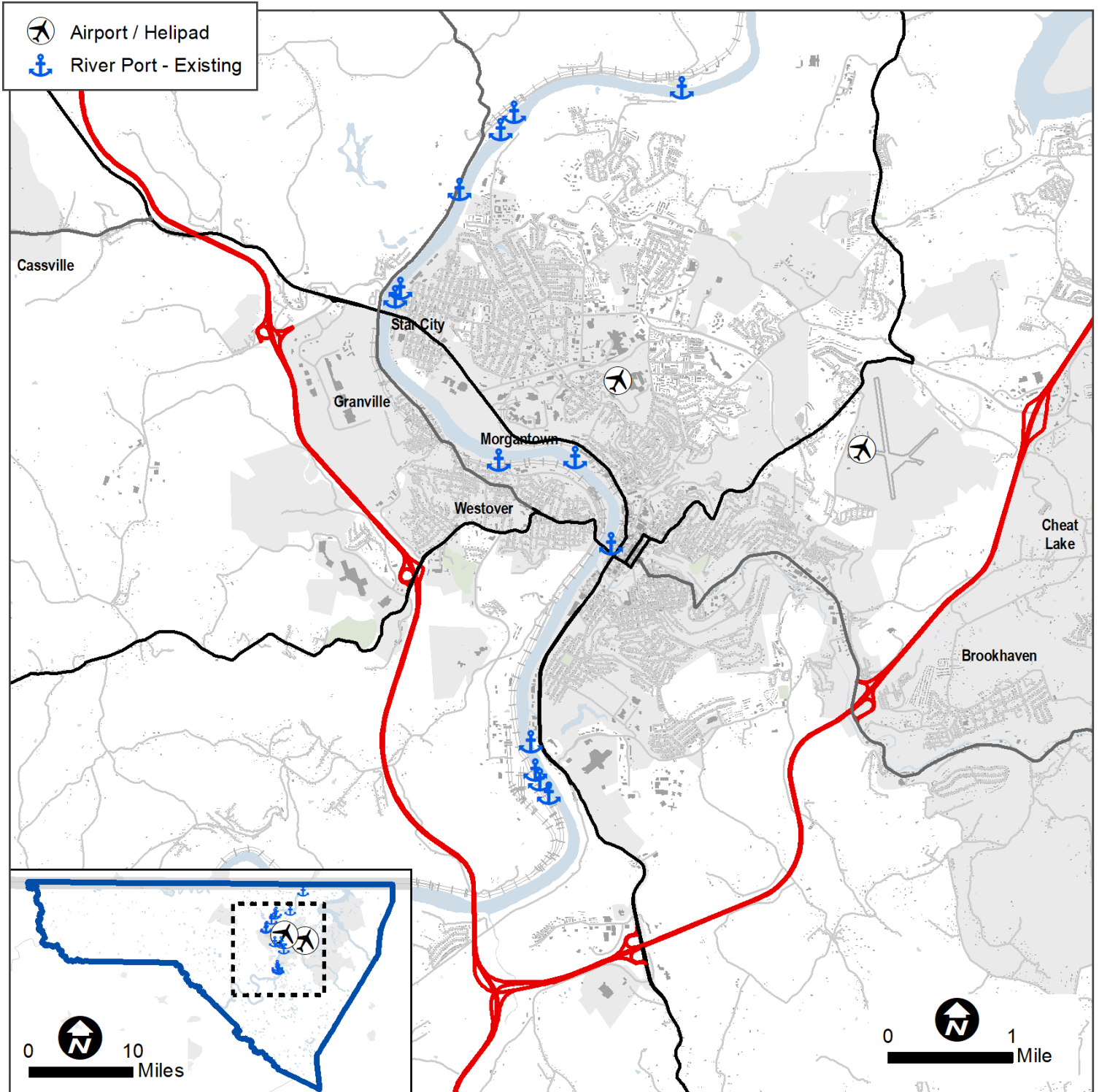


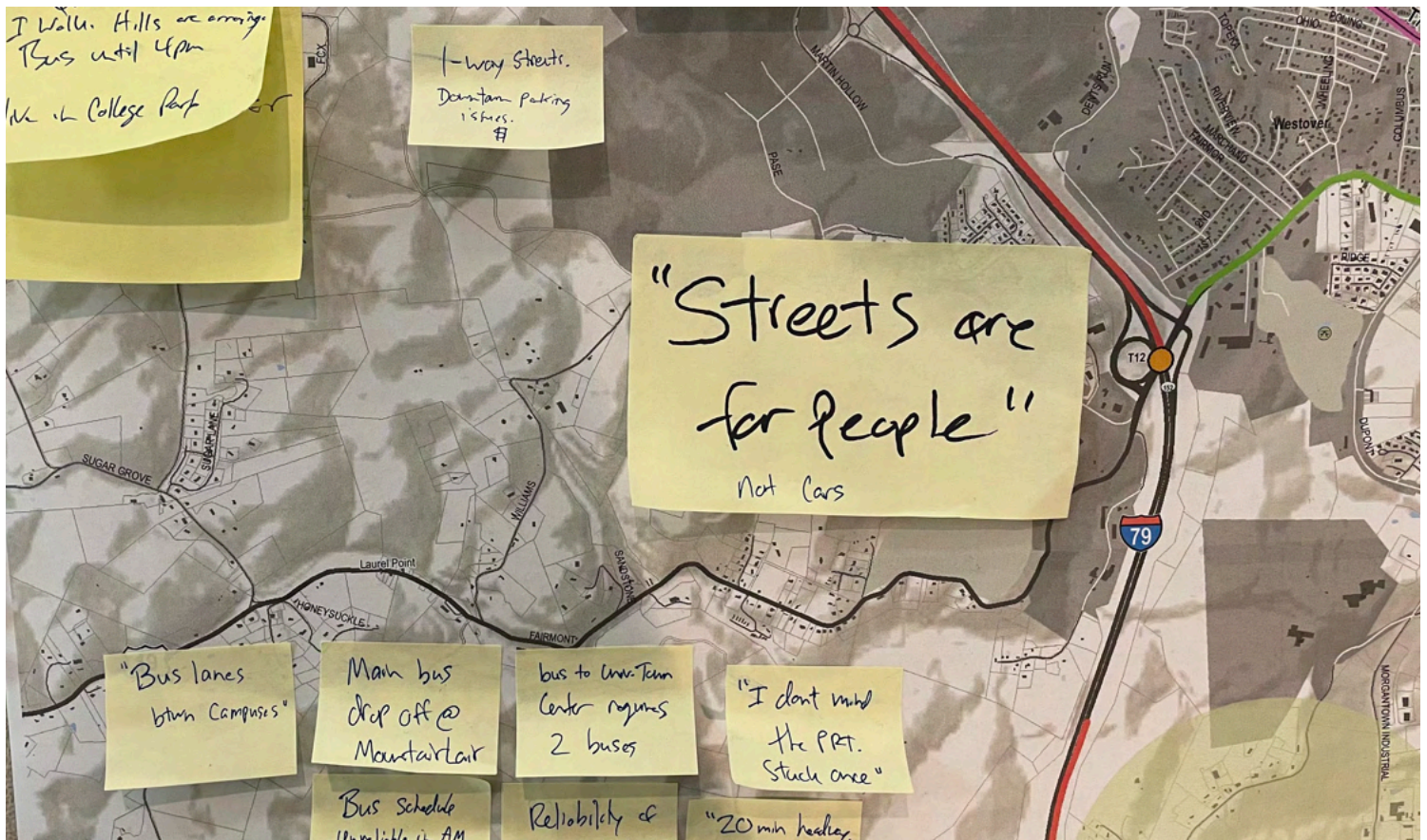
Figure 3.13: Aviation and river ports.



**Public
Engagement**



Public Engagement



Markup from WVU outreach event (Dec 2021).

Public engagement plays an integral role in any design or study, as its results will impact the daily lives of community members and local businesses. Planning for a community of any size is more successful when we **plan with the community**. Meaningful engagement means stronger results, tighter community bonds, and implementation becomes more likely. Furthermore, engagement provides invaluable feedback to planners, engineers, and designers regarding current conditions and problems that might not be fully understood looking at data alone. The human element and a diversity of perspectives helps to reframe the project team’s view of the issues and provide better suggestions for improvement.

This chapter describes the processes, strategies and activities used to engage with the Morgantown-Monongalia Metropolitan Planning Organization

(MMMPO) area community during the 2050 MTP’s development, which was concurrent with Comprehensive Plan updates for both the City of Morgantown, and the Monongalia County. This chapter also summarizes information received from the public, including local, state, and regional agencies, stakeholders, and the community at large.

This Chapter Covers:

- Public Involvement Process
- Virtual Engagement
- Stakeholder Discussions
- Public Meetings



Public Involvement Process

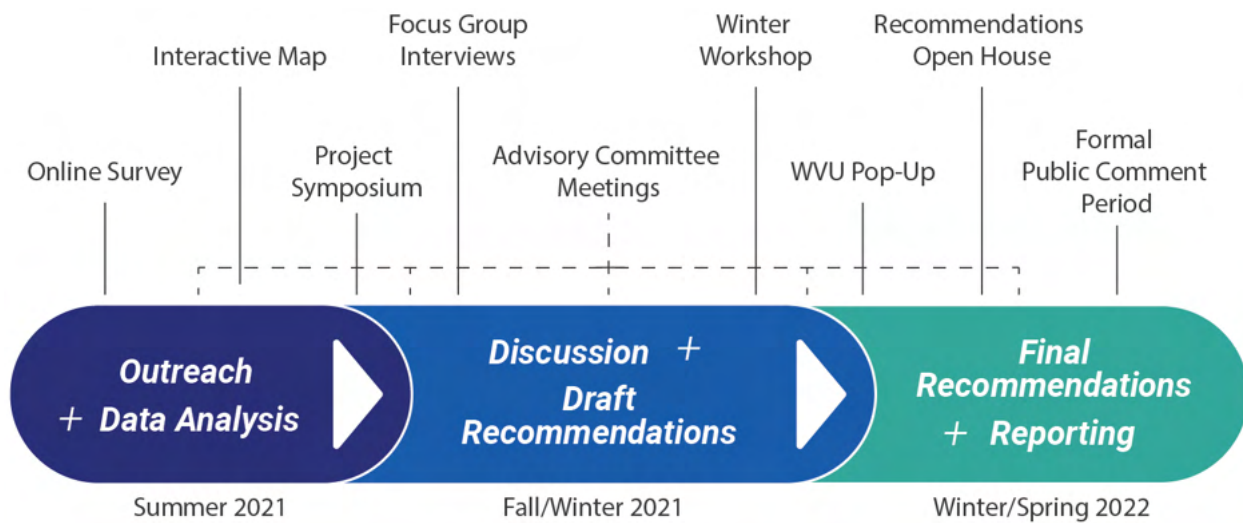


Figure 4.1: Generalized Project Timeline with Public Engagement activities.

Federal legislation requires MPOs to develop and use a Participation Plan that defines how residents and stakeholders can become involved in the transportation planning process. This process must include those people who are directly impacted by transportation planning, as well as those from traditionally marginalized populations. The ultimate goal is to **ensure that plans reflect community values and equitably benefit all communities.**

Public involvement took place throughout all phases of the MTP’s development (Fig. 4.1). During Outreach & Data Analysis, the Online Survey and Interactive Maps, accessible through the project website, gave residents the opportunity to provide input on area issues and opportunities in the transportation network. Public meetings and focus group interviews took place during the second phase of the MTP development process, enabling residents to interact directly with the planning team and voice more specific concerns on topics of interest that may not be captured through traditional quantitative analysis. The public involvement opportunities shown above are described in further detail in the following pages.

Date	Category	Event Name
5/3/2021	Advisory Committee	AC Meeting #1
7/7/2021	Focus Group	Mountain Line Transit
8/2/2021	Focus Group	Regional Trail Network
8/11/2021	Focus Group	Freight
8/12/2021	Focus Group	Emergency Services
8/17/2021	Focus Group	Transit-dependent Population
8/18/2021	Focus Group	Health Care Providers
8/18/2021	Focus Group	Transit-dependent Population
8/24/2021	Focus Group	Transit-dependent Population
8/26/2021	Open House	Symposium - Afternoon
8/26/2021	Open House	Symposium - Evening
9/14/2021	Focus Group	Development Community
9/28/2021	Advisory Committee	AC Meeting #2
12/8/2021	Popup Event	WVU Mountainlair Event
12/8/2021	Open House	Open House - Evening
12/9/2021	Advisory Committee	AC Meeting #3
1/6/2022	City Focus Group	Downtown Morgantown
1/6/2022	Advisory Committee	AC Meeting #4
1/7/2022	Focus Group	Richwood Avenue
1/10/2022	City Focus Group	Transportation
1/12/2022	City Focus Group	Economic Development
1/27/2022	City Focus Group	WVU Student Government
2/10/2022	Open House	County Comp Plan Open House
3/3/2022	Open House	City Comp Plan Open House
3/5/2022	Open House	City Comp Plan Open House

Table 4.2: Public engagement events and meetings of the project.

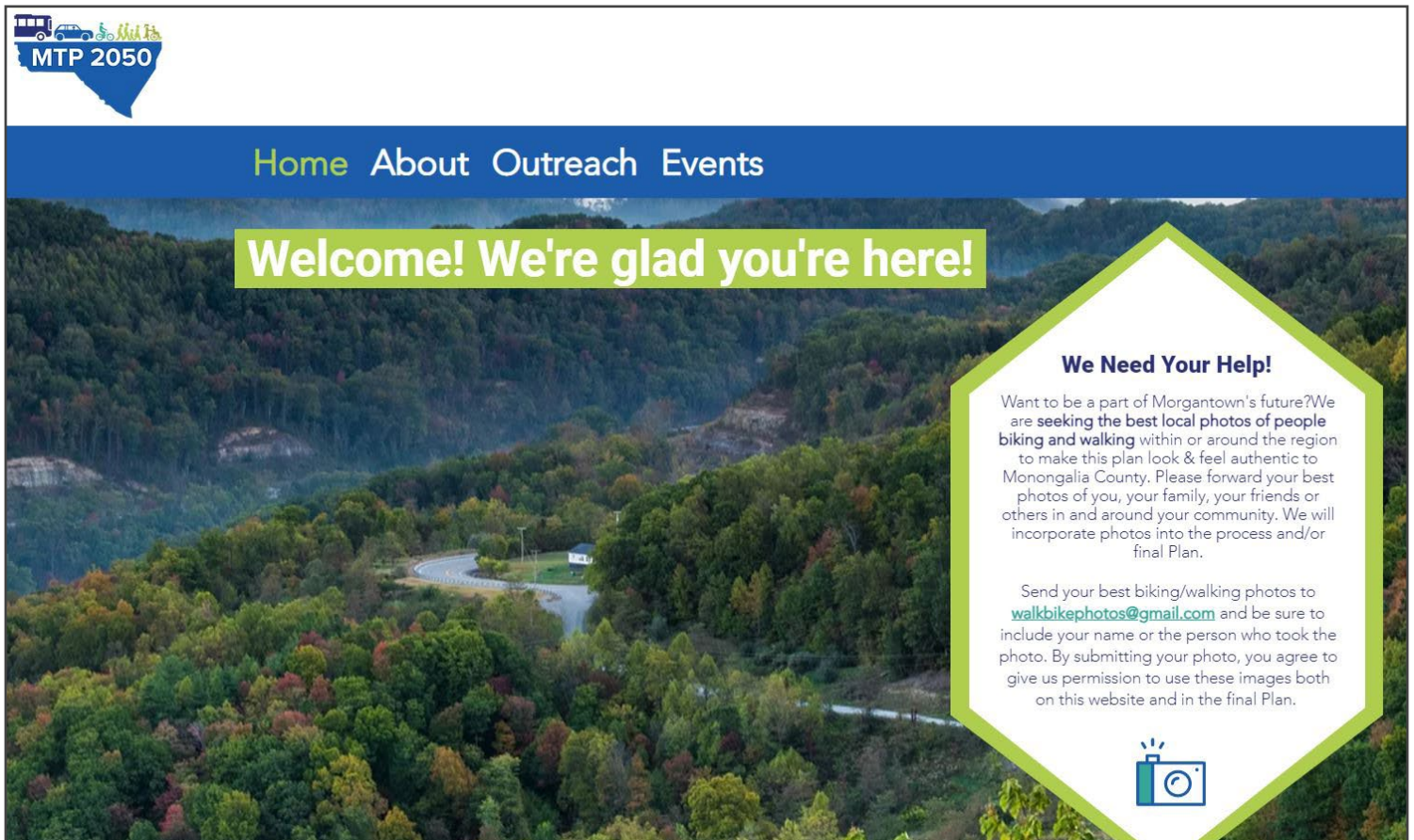


Virtual Engagement

Project Website

The 2050 MTP website, www.mmmmpo2050.com, was launched in June 2021 so residents, property owners, business owners and other stakeholders could access information and provide input on the discussions surrounding the plan's development. The website featured information on project purpose, dates and locations of upcoming meetings, meeting results, related documents, and ways to get involved with the project. Ahead of major public events, **event notices were sent out by email and social media alerting** the public and inviting them to attend. When combined with the efforts to publicize them by the MMMPO as well as local news organizations, thousands of people were able to hear about the MTP during its development.

Among the ways to get involved through the website were a comment box, an online survey, and an interactive map tool. The comment box allowed for residents to leave general thoughts or ask questions which the project team could respond to directly. The survey and map were launched in June 2021 and remained open for participation through January 2022, when draft recommendations were being refined. The results were left viewable on the website and are documented in the digital appendices of this report. Summaries of both are shown in the following pages.



MTP Project Website.



Online Survey

The online survey measured community sentiment regarding the transportation network's present, as well as their expectations for future growth. The survey featured a set of 15 questions related to transportation conditions and development. These responses complemented discussions with focus groups and the Advisory Committee to help complete the picture of the MPO area's challenges

and opportunities. Major takeaways from the survey are summarized below. A full summary of survey responses for each question is provided within the digital appendix.

377 survey responses

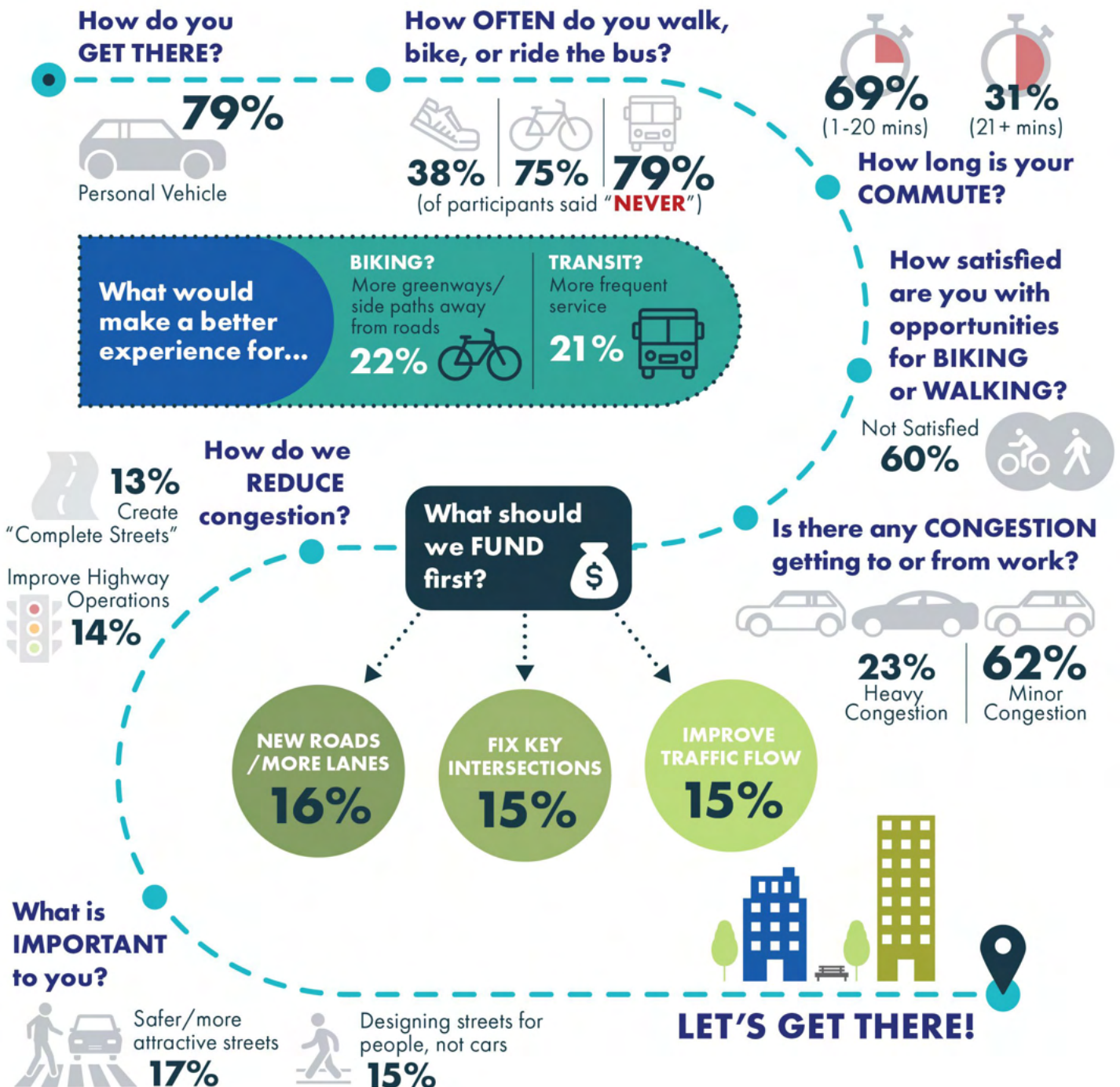


Figure 4.3: Summary of survey findings.



Interactive Map

The interactive map identifies problem areas and points of interest within the Monongalia County area. Using ArcGIS Online mapping capabilities, respondents identified a variety of features, including needed intersection improvements, safety hazards, and community landmarks, among others that were portrayed as points and icons on the interactive map. The web map provided a different and needed

perspective on corridor-level issues that could not be fully captured through face-to-face discussions or traditional survey methods.

475 comments total

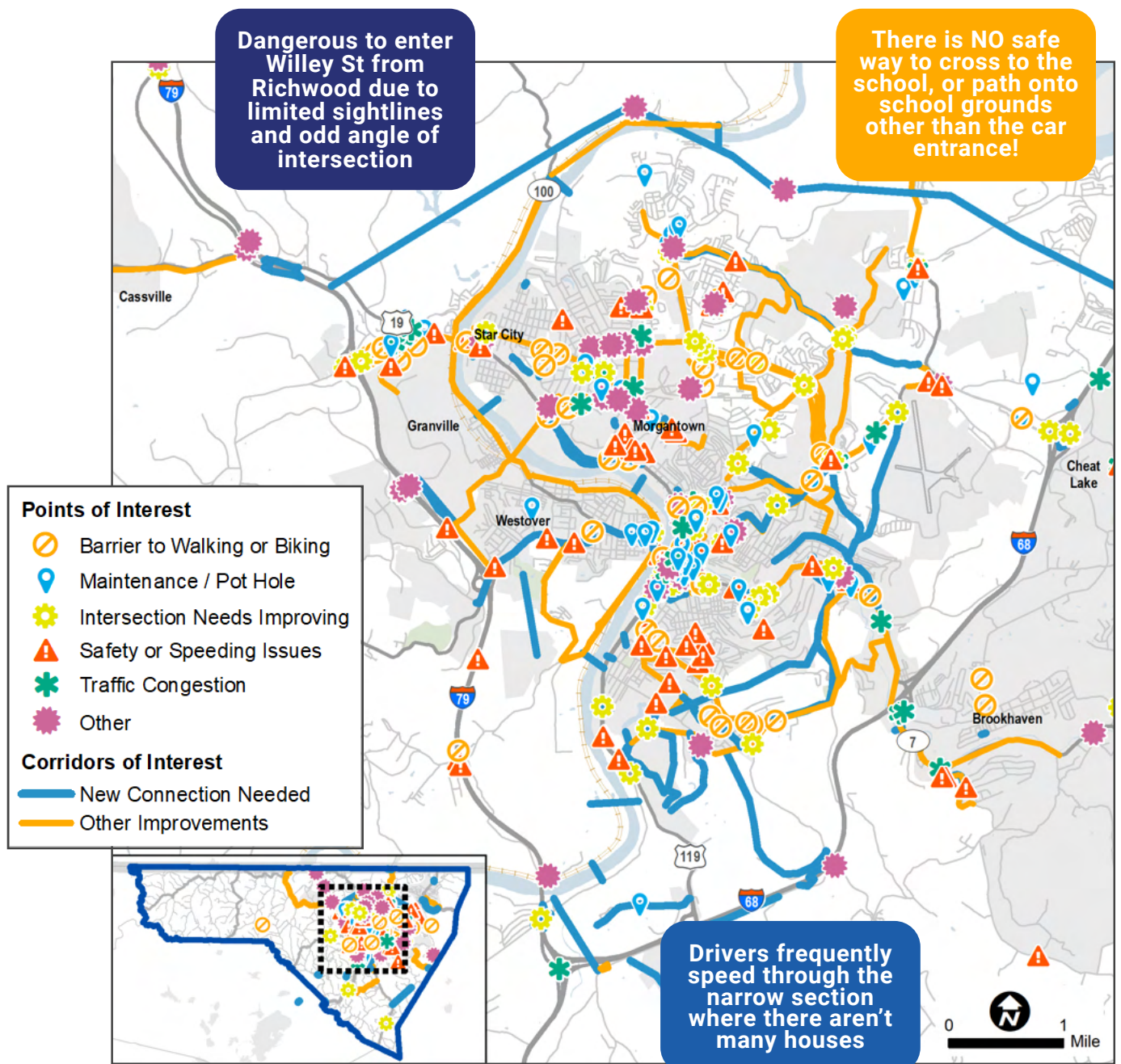


Figure 4.4: Interactive Map points of interest and comments.



Stakeholder Discussion

Advisory Committee (AC)

The Advisory Committee (AC), comprised of technical staff, practitioners and representatives of various groups that implement policy inside the MMMPO planning area, acted as an advisory board for the project. The committee met with the Stantec project team a total of five times, generally on bimonthly basis, during the timeframe of the study. Meeting both virtually and in-person, the committee reviewed progress, gave direction and input, and provided feedback to the project team. AC members were also helpful to publicize the project website, survey, and public meeting opportunities with their constituents.

Focus Group Meetings

During the initial phase of information gathering, focus group interviews were held with representatives comprised of community stakeholders, including residents, agency representatives, community leaders, advocates, and elected officials. Meetings were held as a series of one-hour interviews and centered on a single subject of importance to their organization.

Focus group members were identified by members of the Advisory Committee based on their ability to provide different perspectives significant topics, including: **Mountain Line Transit; Regional Trails; Freight and Economy; Emergency Services / First Responders; Healthcare Providers; Transit-dependent Populations; Development Community; and West Virginia University.** Focus group meetings provided an opportunity to obtain qualitative feedback on targeted topics and areas of interest or concern within the study area. In contrast to the volumes of *quantitative* data produced during the initial investigation phase of the project, these '*listening sessions*' with community members in a virtual format allowed the project team to verify data with group perspectives, as well as to supplement the same information with local insight and *qualitative* perspectives. The City and County comprehensive plans hosted a number of additional focus group meetings attended by MPO and consultant staff, several of which overlapped with transportation topics and needs.

10+
Focus Groups
hosted

53
Total
Attendees

1

Bus service adjustments are needed for underserved populations

3

Availability of accessible, developable land constrains growth.

2

Better connectivity is needed between residents, jobs, and education

4

Terrain and maintenance of sidewalks limits biking and walking trips.

Key Themes from the Focus Group interviews



Public Meetings

Three rounds of public meetings took place during the planning process and offered opportunities for stakeholders and members of the public to engage with the planning team and provide input as to plan recommendations and priorities.

The Public Workshop offered the first opportunity for the public to collaborate with the project team. **Held virtually in late August 2021**, this workshop introduced attendees to Metropolitan Transportation Plans and the MMMPO, presented early analysis and, most importantly, sought feedback on key challenges and opportunities in the area's transportation network.

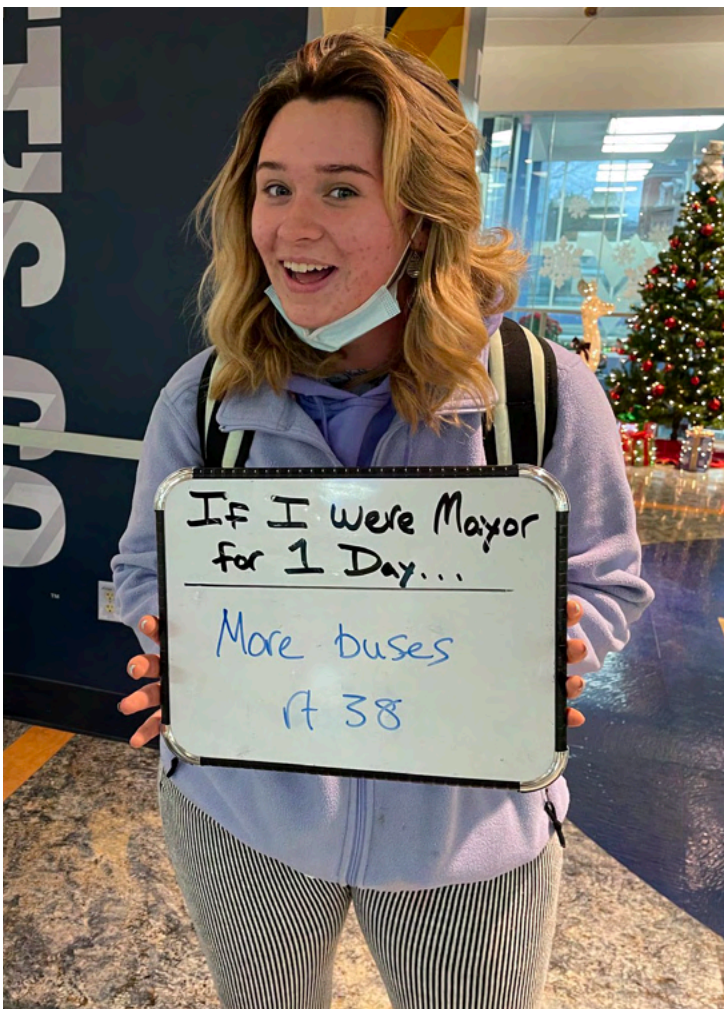
A second round of public workshops took place in December 2021. The first event, a pop-up style engagement activity took place at the Mountainlair

on the West Virginia University campus, sought input from university students and visitors. Over 70 provided input and their feedback. Later that evening, a second Public Workshop event was held to present key takeaways from the investigation phase of the planning process and seek input on mobility needs not reflected in the current existed and committed projects (transportation gaps within the draft network).

The final round of public meetings took place in February 2022. This workshop offered community members an opportunity to review and comment on the draft recommendations developed through the planning process. The community provided excellent feedback on which projects were local priorities, as well as recommendations for implementation and phasing of the project's completion.

130
meeting
attendees

6
meeting
sessions



Above: Public meeting and outreach.
Left: WVU pop-up event.



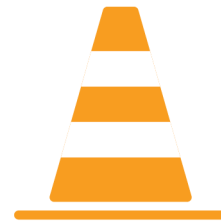
Key Takeaways

The planning process engaged the public throughout all stages both to understand the area's current challenges and opportunities, formulate new project needs and subject them to scrutiny, and refine the Plan's ultimate recommendations. From this engagement, key themes emerged as particularly

important to understanding and improving the transportation network. These takeaways, summarized below, helped to define the Plan's Goals, Objectives, and Measures, ultimately shaping evaluation criteria and the priorities reflected in this Plan's recommendations.



Need for multimodal improvements to serve all users.



Adequate maintenance of area roadways is lacking.

(particularly for pavement, striping, shoulder width, and ditch sections.)



Enhance the existing network and roadway infrastructure.

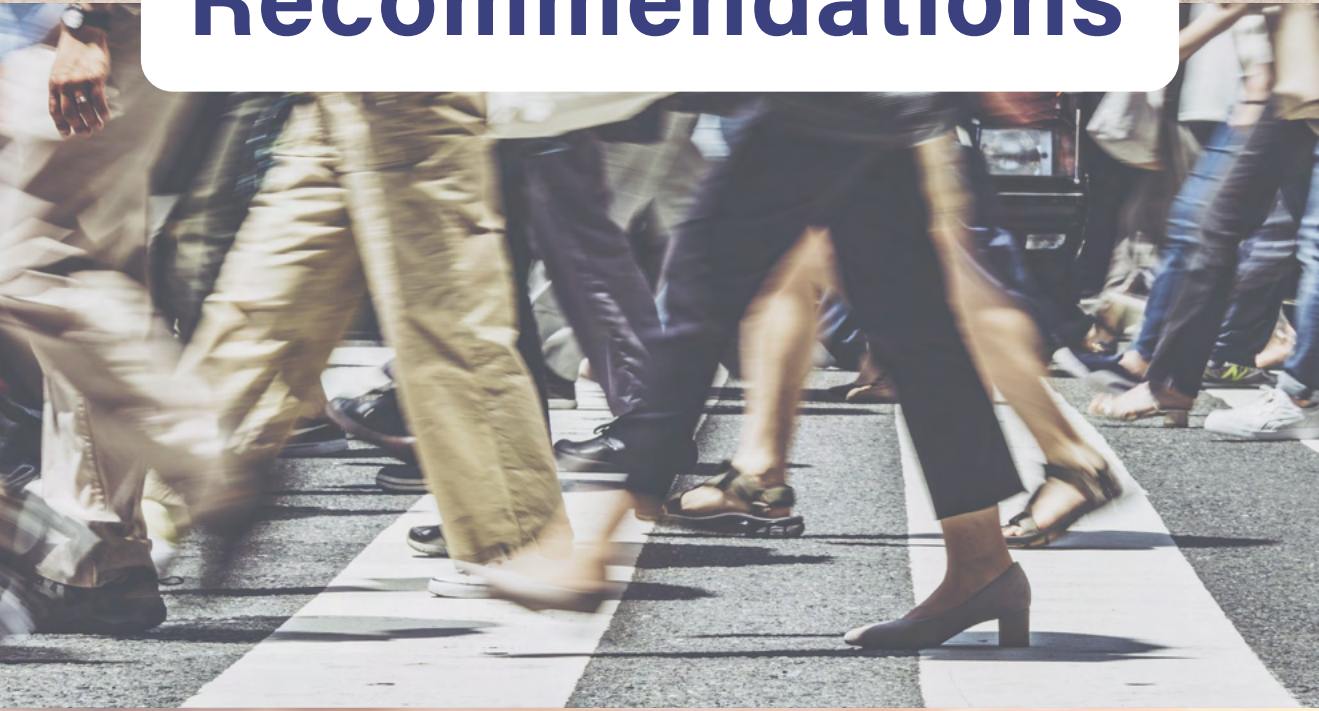


Mobility is constrained by the area's terrain & physical features.





Recommendations



CHAPTER 05

Recommendations



University Avenue looking north, near Grumbein's Island.

The Morgantown-Monongalia MPO area is experiencing moderate growth and development, which has brought new prosperity as well as new transportation challenges. Residents of the area recognize that an improved, multimodal transportation network not only provides mobility choices to relieve congestion, but also spurs economic opportunity, improves public health, increases security and community resiliency, strengthens community capital, and raises the quality of life for all community members.

The recommendations in this chapter strive to achieve the goals set forth previously in this Plan, improving safety, strengthening economic vitality, fostering equity, preserving the system and enhancing reliability, expanding mobility choices and increasing regional livability over the coming years to meet the needs of this growing community. Recommendations are separated by mode and have been compiled from existing local, regional, and state plans, as well as the engagement activities of this MTP update.

This Chapter Covers:

- Planning for Growth
- Project Recommendations by Mode
- Conceptual Designs
- Project Evaluation
- Environmental Screening

"Roads are too narrow. "

- Survey Feedback



Planning for Growth

In developing the MTP, MPOs must consider how its communities will grow and change over the lifespan of the MTP. Concurrent with this MTP update process, Comprehensive Land Use plans were undertaken for Monongalia County, the Cities of Morgantown, Westover, and the Towns of Granville and Star City, allowing for a cohesive regional land use projection to be utilized for all planning projects. Identifying both the size of population growth and the type of land use and development that will occur enables us to better identify future transportation needs.

Regional Growth & Land Use Change

Regional population is expected to grow modestly through 2050 at a rate of ~1% per year, reaching a total regional population of 148,000. Employment growth may outpace total population, with 88,800 employed in the area by 2050 (Table 5.1). The largest share of this growth is expected to take place within the City of Morgantown and unincorporated county areas, but adjacent communities like Westover and Star City are also expected to grow in both population and employment. Industrial development will concentrate near existing industrial areas, with expansion of the Morgantown Industrial Park and new properties near the airport/I-68 vicinity.

Jurisdiction	2020 Population	2050 Population	Net Growth	Percent Change	2020 Employment	2050 Employment	Net Growth	Percent Change
Granville	1,355	1,870	+515	38%	1,355	2,404	+1,049	77%
Morgantown	30,347	37,878	+7,531	25%	30,347	35,210	+4,863	16%
Star City	1,779	2,655	+876	49%	1,779	2,434	+655	37%
Westover	3,955	6,564	+2,609	66%	3,955	6,133	+2,178	55%
Blacksville	118	444	+326	276%	118	194	+76	64%
Unincorporated County	67,920	98,646	+30,726	45%	23,627	41,151	+18,824	80%
Monongalia County	105,474	148,058	+42,584	40%	61,181	88,827	+27,646	45%

Table 5.1: Projected population and employment change 2020 - 2050, Monongalia County and jurisdictions.

Note: Projections are based on the best available input data, and should be continually updated as more information becomes available.

“New buildings and businesses are being built with no consideration for traffic and parking issues.”

- Survey Feedback

Each of the concurrent Comprehensive Planning projects is evaluating alternative growth scenarios at a more granular scale, identifying local policy enhancements to help manage growth for their jurisdiction. Alternative growth scenarios help validate the planning process and build support – both empirical and political – for a preferred growth scenario and land use plan, which also influences socioeconomic data utilized for future iterations of the MTP and regional travel demand model.



Forecasting Transportation Demand

Reviewing the regional travel demand model for (assumed) capacities and deficiencies within the roadway network is one of several tools to review for transportation planning purposes, but it is not intended to be the most significant resource. Travel demand modeling uses known travel characteristics and modes of travel, socioeconomic data developed through the scenario planning process, and review of both the existing transportation network and roadway improvements programmed for construction to identify areas of unmet demand within the network at a future year. A regional model, if used effectively, can be valuable for an objective, consistent, and relative comparison between corridors or subareas within the region. Model output such as volume over capacity (v/c) values help a region visualize its “good-fair-poor” road segments, approximate their change over time or between different scenarios, and help to develop a prioritized list of projects along with other criteria.

A review of the model suggests that several roadway segments in the Monongalia County transportation network may require capacity improvements by 2050. **Downtown Morgantown and the Beechurst Avenue corridor** suggest future year traffic volumes that would exceed planned roadway capacities. Several corridors extending north of Morgantown are similarly identified by the model as over capacity, including **Van Voorhis Road, Riddle Avenue, Stewartstown Road, and Mileground Road**. Capacity improvement project types are varied, including traditional widening to add lanes, addition of turn lanes, access management, traffic signal system upgrades (ITS), or intersection alignment improvements. The regional travel demand model is helpful for identifying corridors that may need improvement, but it does not accurately describe the type of improvement that would be most effective or desirable.

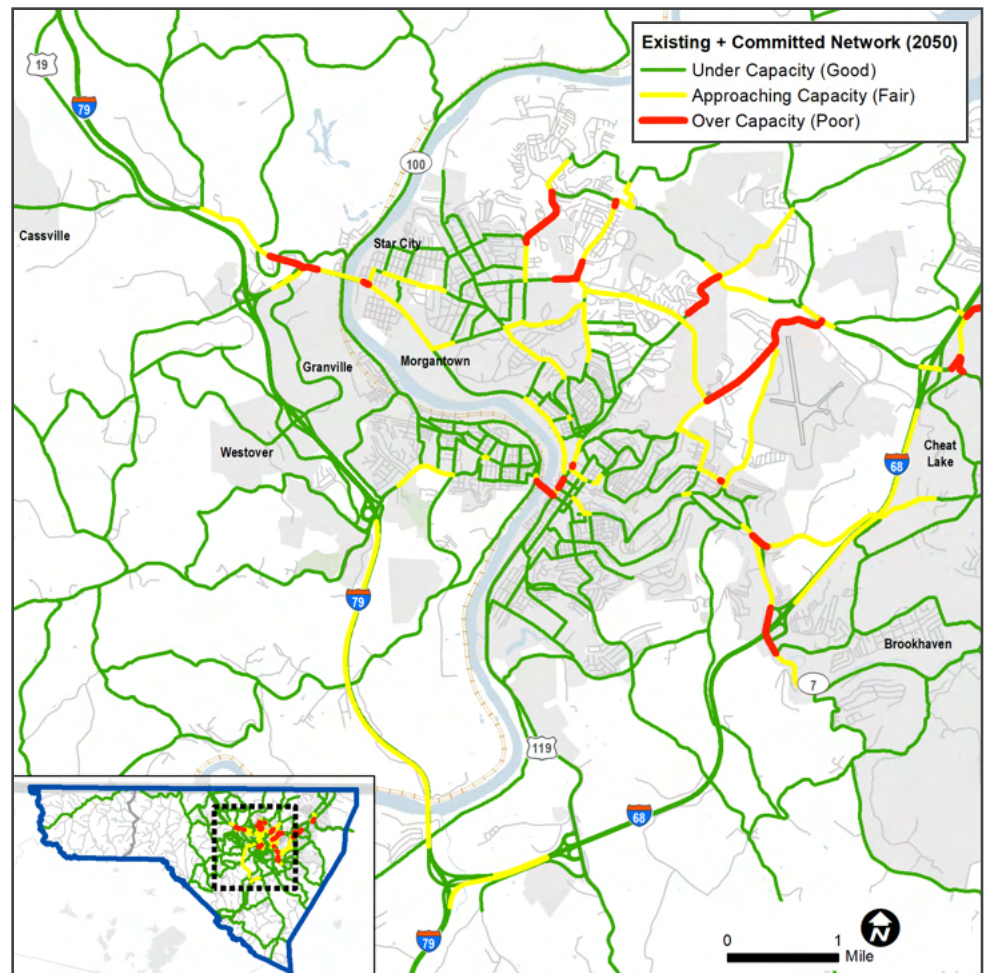


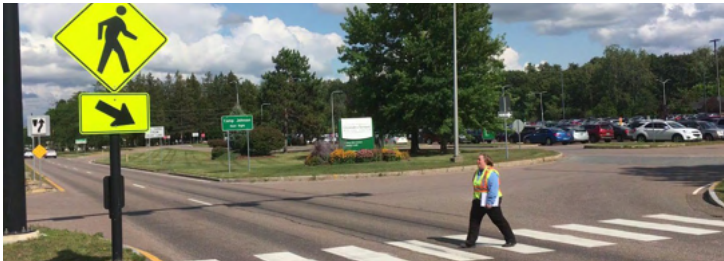
Figure 5.2: Travel Demand Model Output for the Existing + Committed Network (2050).



Project Recommendations by Mode

Roadways & Freight

The majority of trips in Monongalia County are made by automobile, making roadway improvements vitally important to the future network. Recommended projects are intended to improve upon the current network in a number of methods, from reducing safety conflicts, to improving capacity, providing alternative routes (or modes of travel), or balancing traffic more evenly. Public outreach was incredibly helpful to identify problematic corridors and intersections, supplementing our data analysis of roadway performance. Figure 5.3 shows the location of these projects. There are five categories of improvement types:



INTERSECTION SAFETY: includes spot improvements at intersections that may involve improved geometric design, visibility, traffic signalization, and/or pedestrian crossing improvements.



ACCESS MANAGEMENT & STREETScape: these projects focus on reducing potential conflict points along corridors, by consolidating driveways or limiting excess turning movements, to improve safety and traffic operations. Enhancing streetscape, sidewalks, crosswalks, and driveway entrances are also included because they likewise improve safety.



ROADWAY WIDENING: these projects add travel lanes to an existing roadway, which may include a center turn lane (3-lane roads), or converting a 2-lane roadway to 4-lanes.



MODIFY TO URBAN STANDARD CROSS-SECTION: these projects do not add new lanes, but upgrade the roadway's existing cross-section to a consistent 11-foot wide travel lane width, with a minimum of two-foot wide paved shoulder. This project category includes the majority of project recommendations in this plan.



POTENTIAL ROADWAY CONNECTION: these projects will construct new roadways, connecting two roadway segments, balancing traffic more evenly, or bridging over the Monongahela River. This category includes the fewest project recommendations.



Key areas of emphasis among projects in this MTP are a rebalancing of priorities among different transportation users along major corridors and in small areas. First, three projects focused on Morgantown's downtown: the **Morgantown Two-Way Street Study**, **Grumbein's Island Improvements**, and the **Beechurst Avenue Corridor Study**, will address existing deficiencies in bicycle and pedestrian safety and shift transportation patterns from vehicle and freight-oriented to a more multimodal, walkable and bikeable area. Outside of downtown, **segmented improvements to Greenbag Road** continue, creating an alternate truck route working in concert with downtown street improvements to shift truck traffic along a modernized route. Intersection improvements

are also prioritized in this MTP. Geometric design changes will reduce conflict points and ultimately improve safety at problematic intersections. Finally, bolstering regional freight movement and economic development goals, the MTP includes two projects: first, the **construction of a new interchange at River Road on I-79** will implement the Industrial Park Access Study's recommendations and increase access to the park from a critical regional freight corridor. Second, improvements around the Morgantown Municipal Airport, including **Cheat Road improvements** and a **new roadway connection from Mileground Road/WV-705 to Hartman Run Road**, will improve access to growing industrial facilities near I-68.



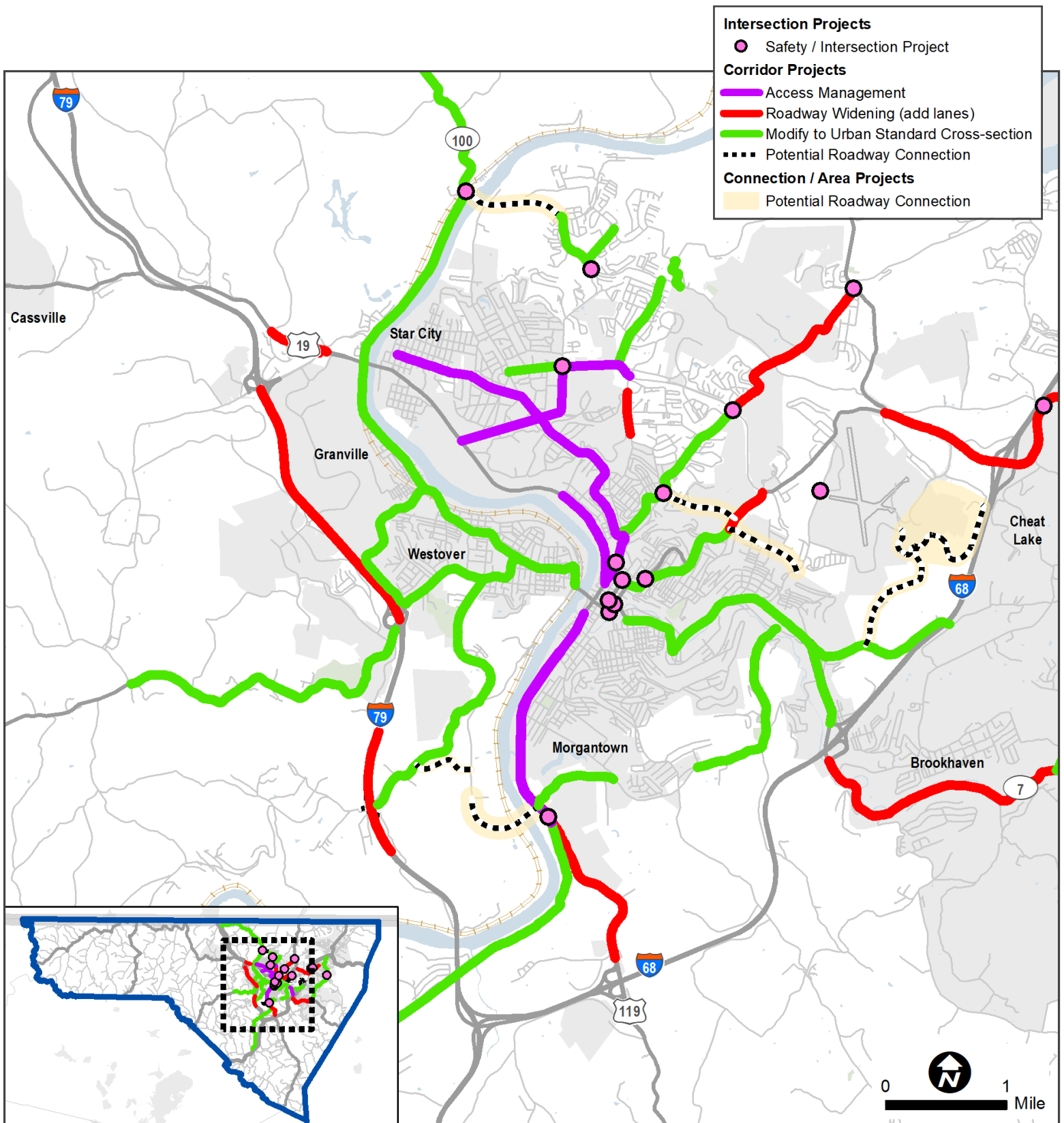


Figure 5.3: Roadway Project Needs by Improvement Type.



Multimodal

BICYCLE & PEDESTRIAN

Bicycle and Pedestrian projects represent opportunities to correct deficiencies identified during the development of this Plan and prior planning efforts (e.g., 2019 Bicycle and Pedestrian Plan), creating more and better options for all users of the transportation network. Multimodal recommendations have been selected to improve connectivity and expand upon

the existing bicycle and pedestrian network, creating more and better options for all modes and users. Like roadways, Figure 5.4 shows the location of these projects. The full list of multimodal projects is included as an appendix.

Multimodal improvement recommendations are grouped into four categories:



PEDESTRIAN SAFETY: projects within this category are spot improvements at or near intersections where pedestrian safety has been identified as a problem. Improvements include geometric improvements, installation of ADA curb ramps, high visibility crosswalks, pedestrian signals, pedestrian refuge islands, and/or visibility improvements.



MULTIMODAL IMPROVEMENT (BIKE/PED): projects within this category include the greatest variety of potential treatments, such as the addition of dedicated bicycle facilities, sidewalks or sidepath facilities, pedestrian level lighting, or similar infrastructure along or near intersections.



MULTIMODAL IMPROVEMENT (TRAIL): projects within this category are exclusively off-roadway improvements that connect with existing trails.



MULTIMODAL IMPROVEMENTS (TRANSIT): projects within this category include adjustments to roadways for the benefit of transit service improved stops/shelters, sidewalk extensions, or crossing improvements to access transit) along certain corridors. Extension of the WVU PRT system (above grade) is also included within this category.



Public engagement revealed intersection safety improvements and trail development are important multimodal needs. Recommendations in this Plan focus on improvements to trail connectivity. In the long-term, other trail improvements focus on creating more recreational opportunities, such as extending

the Cheat Lake Rail Trail to Coopers Rock State Forest. Pedestrian safety improvements, particularly along the Patteson Drive/WV-705 corridor, focus on intersection improvements to facilitate more and safer crossings, including new crosswalks and countdown signals at signalized intersections.

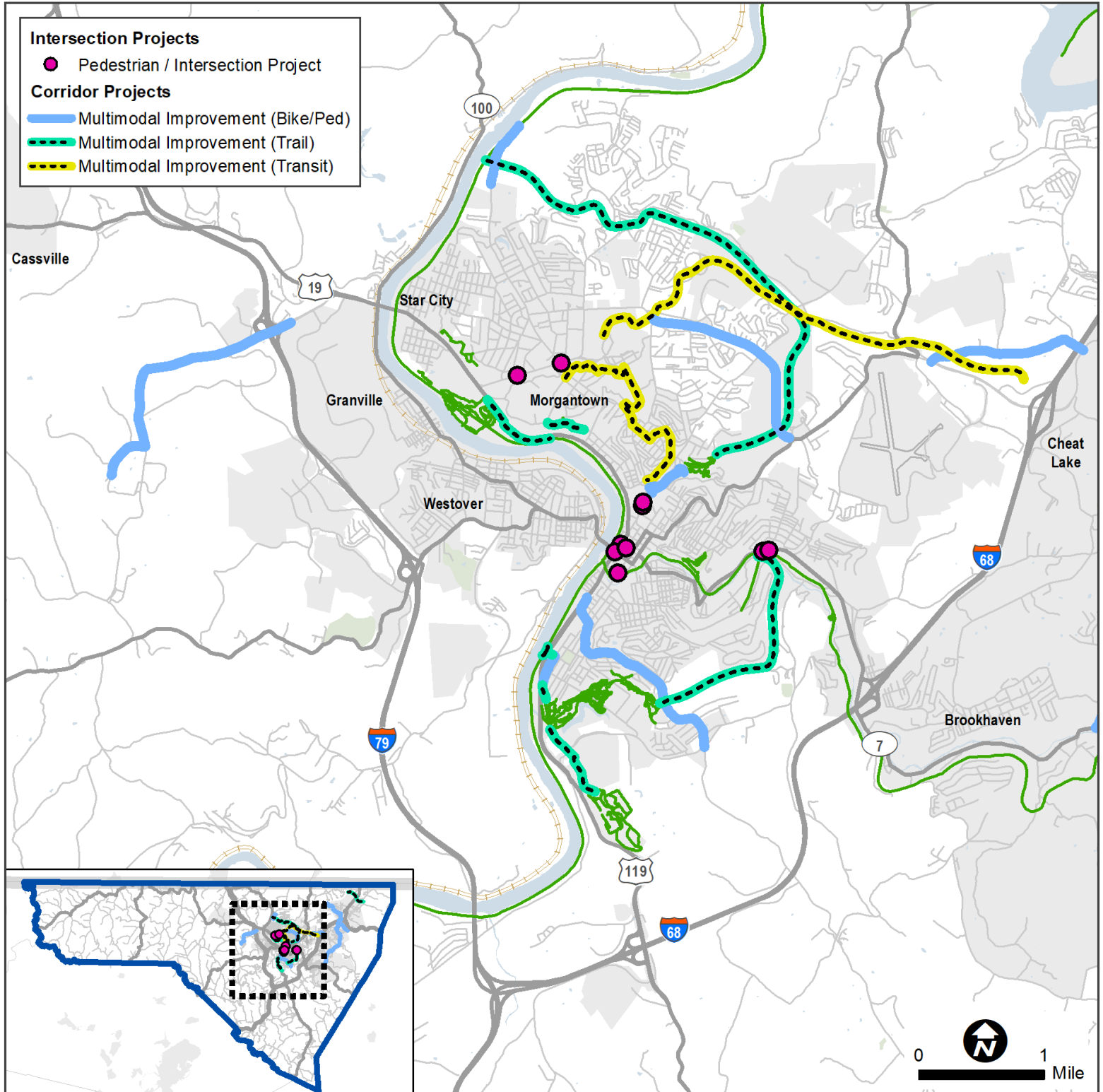


Figure 5.4: Multimodal Project Needs by Improvement Type.



TRANSIT

Mountain Line Transit Authority (MLTA) operates a coverage-based public transit service that **maximizes the service area covered and provides flexibility for riders**. Routes are incrementally and continually modified based on rider feedback and changing development patterns within the region. A 2016 Monongalia County local tax levy generates \$2.2M in revenues for Mountain Line service operations. This levy was renewed in 2020 with strong local support. Additional operating revenue is generated by WVU Students and employees who ride fare-free

through a route subsidy and fare reimbursement from WVU. The combination of Federal and local revenues allow for **continual service modifications to simplify and/or consolidate routes as the service needs of riders change over time**. Market research and review of ridership data metrics are the tools utilized to investigate such service modifications. Mountain Line's five year strategic plans (operating and maintenance) are the primary planning tools used to forecast service needs, route adjustments, and provided bus stop/shelter amenities, with the overall goal of *"enhancing the customer experience and pursuing improvements over the next five years."*



"Levy-funded" MLTA Bus.

***One change I would like to see...
"A bus route from Star City
through Suncrest to Downtown
Morgantown."***

- Public Workshop Attendee

***If I were mayor for one day... "I'd
provide more frequent buses on
Route 38."***

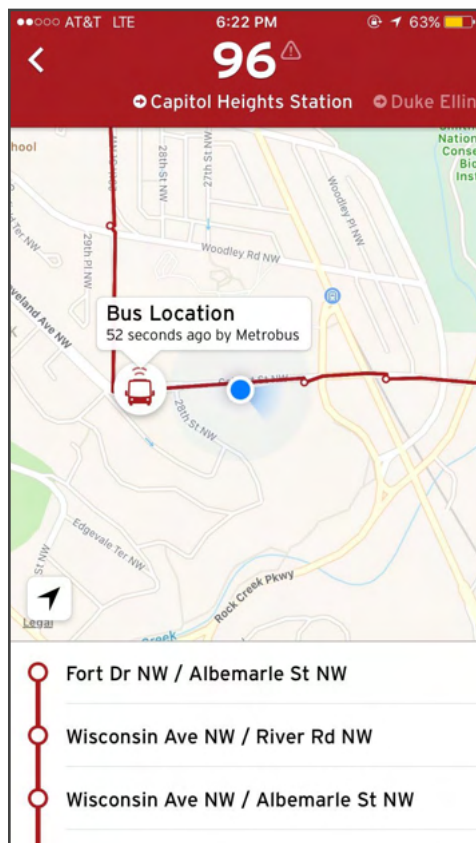
- WVU Student



Annual bus replacement is an on-going capital improvement once vehicles have reached their useful lifecycle. Bus replacements are funded with a mix of local and federal monies on an on-going basis.

MLTA is continually making **service adjustments for growth areas in Monongalia County**, including Granville, Westover, Star City, and Morgantown. As new regional developments are planned, MLTA advocates for **transit-supportive facilities** through representation on various policy or advisory boards, allowing MLTA to be knowledgeable of, and plan for, route adjustments or enhancements. The concurrent Comprehensive Land Use Plans for Monongalia County and the City of Morgantown, which emphasize nodal development patterns with transit-supportive densities, have similarly involved MLTA as an advisory committee member and exemplify this coordinated regional planning effort.

Transit service in the vicinity of the WVU campuses would greatly benefit from the implementation of **Complete Streets roadway improvements projects** planned along University Avenue (projects M49a-c), Beechurst Avenue (project M110), and several Evansdale Campus streets (project 72). These corridor enhancements are not transit-specific projects, rather they are ‘incidental’ multimodal improvements constructed simultaneously with a roadway project that offer frequency and reliability benefits to riders in the form of **bus rapid transit (BRT) improvements**. Physical roadway improvements to support BRT implementation includes dedicated bus lanes and alignment, bus pullouts and re-entry features (e.g., Don Knotts Blvd, Beechurst Ave, where appropriate), with enhanced stop or shelter amenities (e.g., vehicle-level boarding platforms, lighting, benches, bike parking, information kiosks), and intersection treatments, such as marked crosswalks for pedestrians crossing to transit stops, prohibition of turn lanes across dedicated bus lanes, or traffic signal priority for buses.



GPS-tracked buses can provide greater real-time information to transit users.



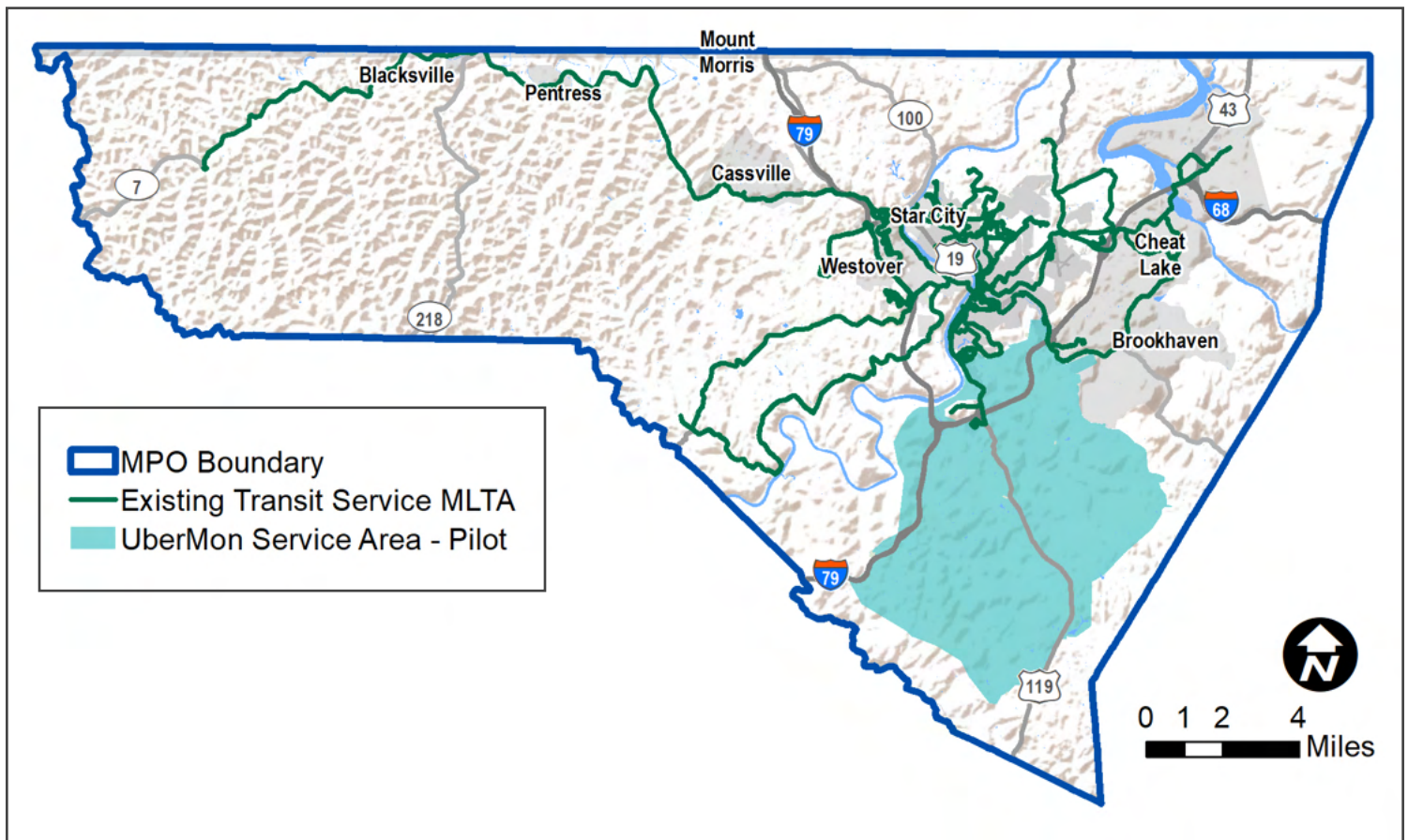
Transit shelters, dedicated pads for stops and bus pullouts are all examples of bus rapid transit improvements that are implementable through incidental roadway projects.



MLTA is continually reviewing **new technology options** that have the potential to improve the customer experience. Digital payment of fares is available with the Token Transit Mobile App, and further research on **touchless payment methods** is likewise on-going. AA next step may involve improvements to the existing GPS bus tracking system to better view buses in real time. **Traffic signal upgrades that would allow bus priority along certain BRT corridors** would require a significant investment to replace existing traffic signals. This type of capital infrastructure project would be initiated with cooperation from WV Department of Highways and local Public Works Departments in response to a federal grant award.

A pilot microtransit project (UberMon) is being implemented in May 2022, which has the potential to be expanded if proven to be a reliable and cost-effective alternative. The service area aligns with three low-ridership routes located to the south of Morgantown. This will be a six month pilot project to provide more access and higher frequency for this relatively rural area. A data-driven analysis of this service will be performed before considerations to continue, expand, or end this pilot project.

Figure 5.5: Pilot microtransit service area.



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Conceptual Designs

Patteson Drive (Complete Street Redesign)

PROBLEM STATEMENT

Patteson Drive from Monongahela Boulevard to Elmer Prince Drive (4,500 ft) is a major east-west corridor in Morgantown. One end of the corridor hosts the West Virginia Coliseum, while the other end is anchored by WV University Hospital. This corridor is heavily trafficked by WVU students/staff, commuters and shoppers to commercial areas. The average daily traffic ranges from 32,000 vehicles per day to 41,000 vehicles per day. Currently there is a lack of high-quality intersections (accommodating all modes) along the corridor. There exists a lack of access management, connectivity and multimodal facilities along the entire corridor. Patteson Drive also represents a major gateway for the City and University.

DESIGN CONSIDERATIONS

- Potential Gateway Treatment into the community
- High Quality Intersections (supporting all modes) needed, with audible pedestrian crossings
- Midblock crossing opportunities
- Lacks bicycle facilities and access
- Commercial/Shopping corridor lacks cross access between complimentary uses
- Sidewalks currently present on both sides
- Free-flow Rights at Monongahela Blvd and Elmer Prince Drive presents unsafe movement for peds and bicyclists
- Residential neighborhood and Krepps Park on North Side
- 5-lane Corridor with Center-Turn Lane creates a problem with unpredictable turning movements
- Adjacent to WVU Evansdale Campus, which needs better/safer pedestrian access to the coliseum
- Poor streetscape, landscaping and gateway features
- PRT Stations Nearby

Recommendations

- Planted pocket medians
- Street trees
- High-visibility crosswalks, audible pedestrian signals, and lighting
- Potential retaining wall near St. Paul Lutheran Church
- 8'-10' Multiuse path southside through Morrill Way, switches to northside east of Morrill Way
- Remove southbound free-flow right at Elmer Prince Drive and free-flow northbound and southbound right at WVU Coliseum entrance
- Improve stormwater drainage capabilities

Cost Estimate: **\$4.8 - 5.8M**
(planning level)



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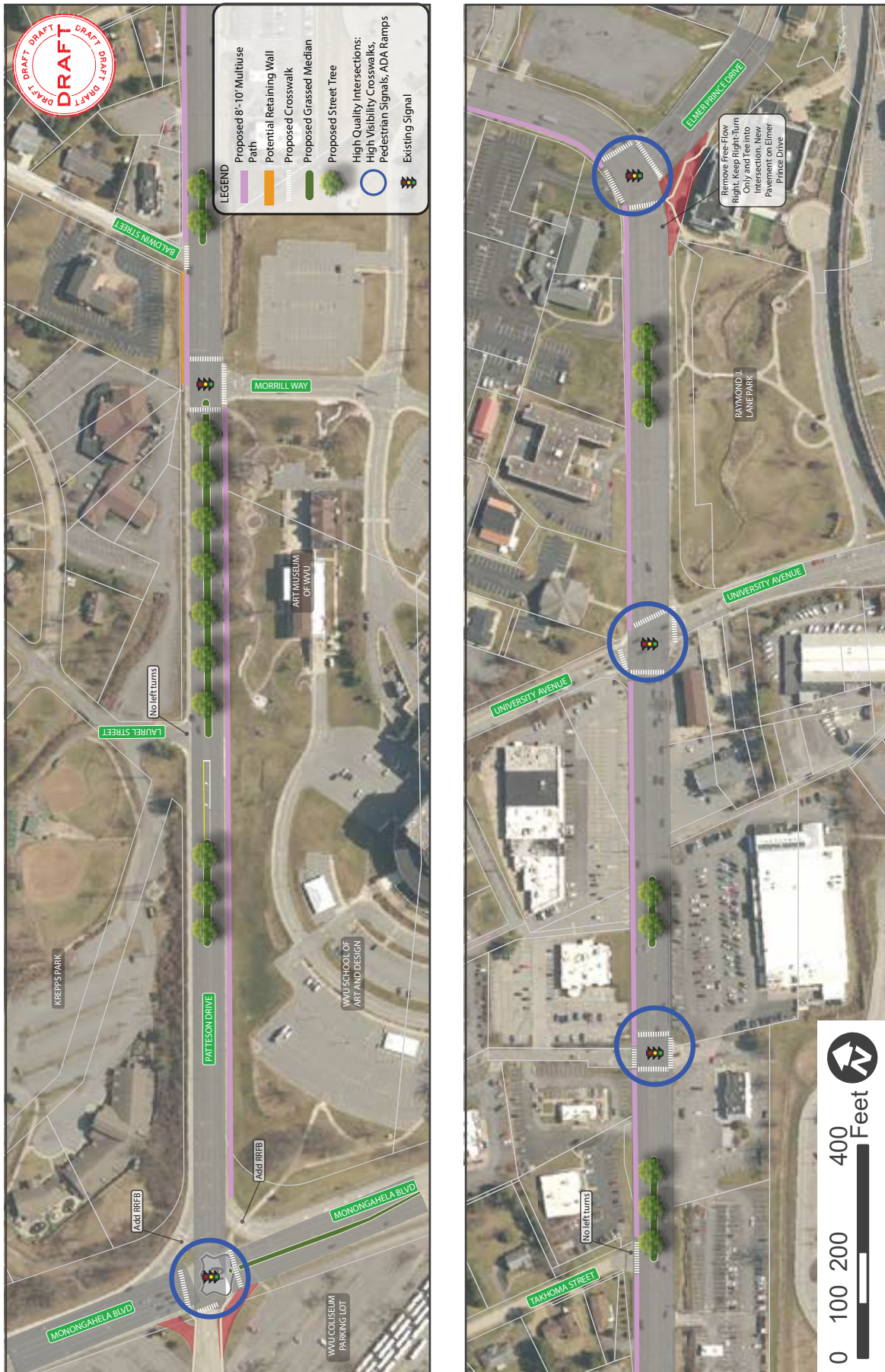


Figure 5.6: Conceptual design of Patteson Drive.



Point Marion/Stewartstown - Two Treatments (Farm View Road Realignment and 5-Leg Single-Lane Roundabout)

PROBLEM STATEMENT

Currently Point Marion Road and Stewartstown Road meet at a five-legged intersection. Farm View Road approaches the intersection with no formal signal head, allowing for confusion among drivers. There are no pedestrian or bike facilities at this intersection. This intersection also has no formal curb lines or drainage features.

DESIGN CONSIDERATIONS

- Five-legged signalized intersection adds to driver confusion relative to right-of-way
- Farm View Rd entrance – no signal and offset to intersection
- Driveways/streets too close to Intersection as well as too wide; adds to vehicle turning conflicts
- Traffic signal mast arms (north-south)
- Billboards and street clutter
- Lack of pedestrian crossings
- Commercial land use predominantly
- Topographical challenges for Stewartstown Rd

Cost Estimate: \$2.5 - 4.0M
 (planning level)

Recommendations - Signalized Intersection (Option #1)

- **Realign Farm View Road to intersect with Stewartstown Road across from Cathy Drive (requires new ROW)**
- **Alignment determined by topography**
- Install curb and gutter
- New sidewalks
- Street trees
- High-visibility crosswalks and pedestrian countdown signals
- Cross-access between adjacent businesses
- Close off Denny's Service Center driveway closest to intersection

Recommendations - Roundabout (Option #2)

- **120' Inscribed circle single-lane roundabout with truck taper to accommodate WB 50 tractor trailer**
- **Roundabout allows all five legs/ approaches to remain**
- **Pedestrian refuge crossings**
- Install curb and gutter
- New sidewalks
- Street trees
- High-visibility crosswalks and pedestrian countdown signals
- Cross-access between adjacent businesses
- Close off Denny's Service Center driveway closest to intersection



DRAFT CONCEPTS - NOT FOR CONSTRUCTION

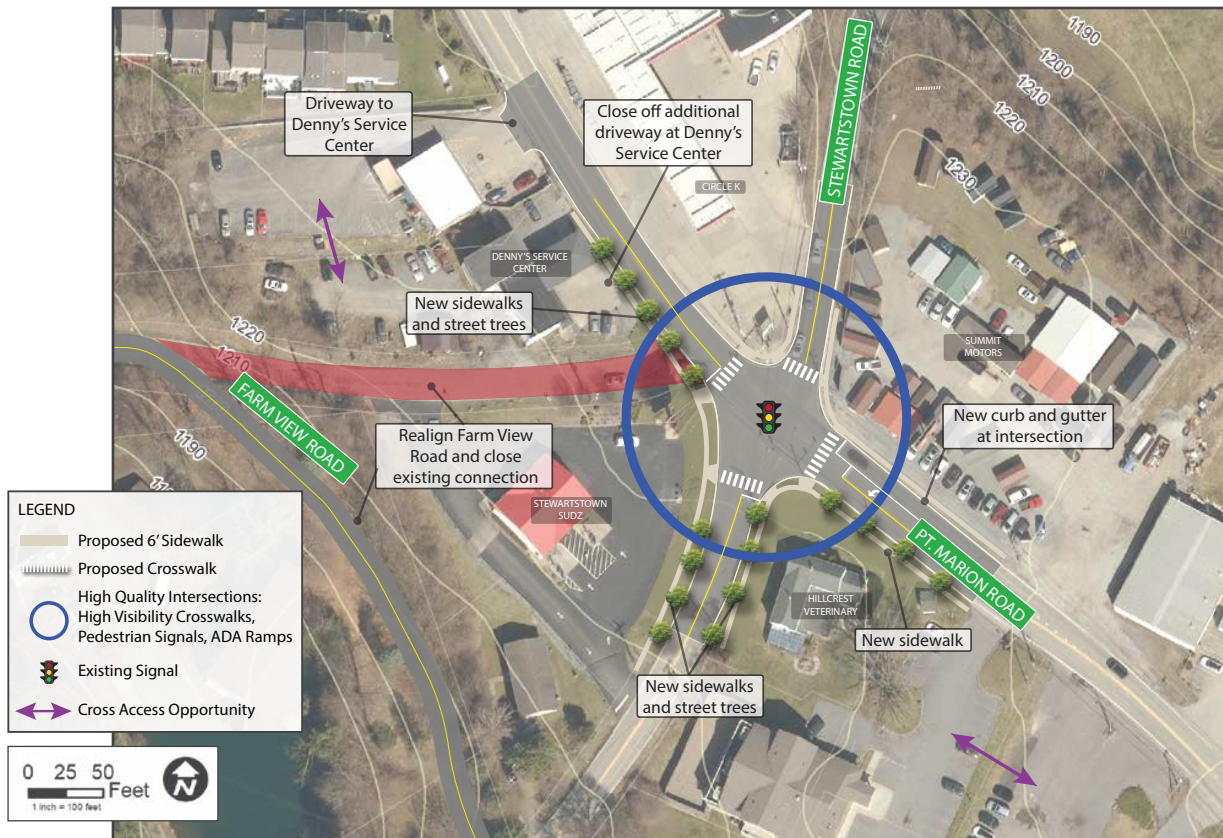


Figure 5.7: Conceptual design of Point Marion Road /Stewartstown Road - Farm View Road realignment.



Figure 5.8: Conceptual design of Point Marion Road/Stewartstown Road - 5-leg single-lane roundabout.



Van Voorhis Road/Chestnut Ridge Road/Burroughs Street (Intersection Redesign)

PROBLEM STATEMENT

The Van Voorhis Road and Chestnut Ridge Road/Burroughs Street intersection is a major intersection primarily serving east-west movement along Chestnut Ridge Road, where the eastbound lanes of Van Voorhis Road merge into Chestnut Ridge Road at the intersection. These three roads form the WV 705 route, which facilitates truck traffic movements through Morgantown. Because of the heavy east-west movement, there is a need to have dual-right turns heading east on Chestnut Ridge. Formal studies in the past have looked at dual-lane roundabouts and reconfiguring the design of the intersection to prioritize the east-west movement.

DESIGN CONSIDERATIONS

- Heavy east-west traffic flow
- Dual-rights necessary onto Chestnut Ridge Road
- Future widening of Van Voorhis Road north of the intersection
- Drainage constraints in northwest quadrant
- Tight right-of-way at Burroughs Street approach
- Burroughs Street through movement not aligned with eastbound through lane

Recommendations

- Meter-ramp signal at southbound through movement at Van Voorhis Road to coordinate with new two-phase signal at Patteson Drive/Chestnut Ridge Road intersection
- Redesign intersection to combine single-lane roundabout and two-phase signal
- Construct high visibility crosswalks at roundabout and intersection
- Connect sidewalks to existing sidewalks near WVU campus

Cost Estimate: **\$3.2 - 4.4M**
(planning level)



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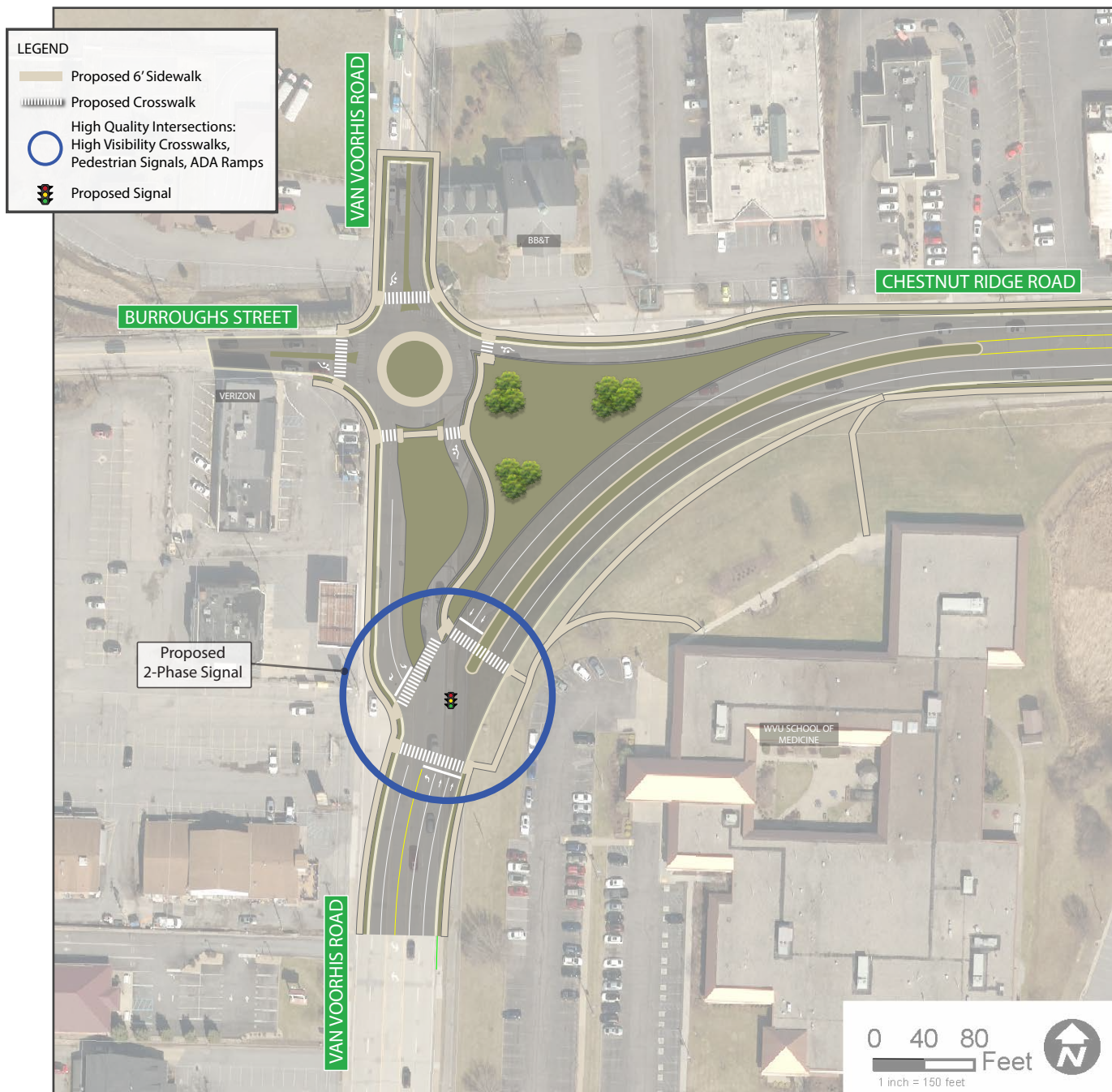


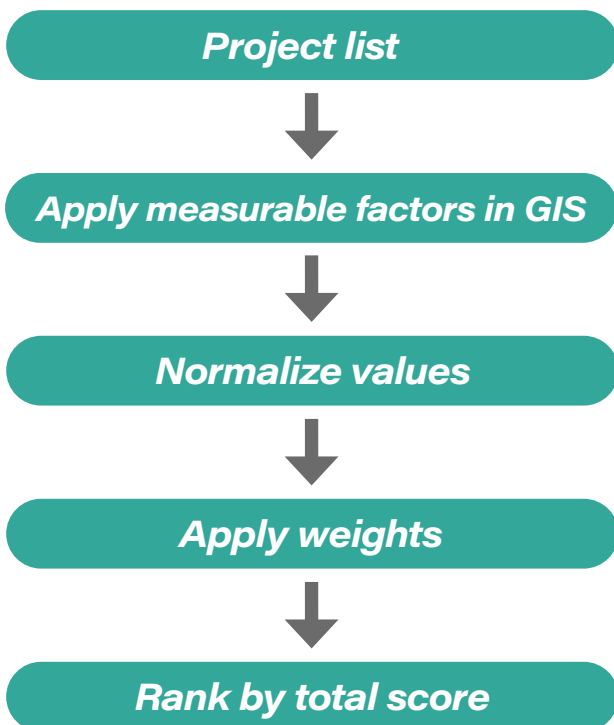
Figure 5.9: Conceptual design of the Van Voorhis Road, Chestnut Ridge Road, and Burroughs Street intersection.



Project Evaluation

Many transportation needs and limited funding means that only some projects can be completed. Prioritization is critical to developing a Plan that meets community needs through an effective, efficient use of transportation funding.

Project prioritization used a data-driven process to rank projects relative to needs, goals, and objectives. Seven factors were identified through the public outreach process to evaluate each of the projects identified in this Plan. The Advisory Committee ranked these factors from one to seven, discussing their relative importance for project ranking. Cumulative scores (out of 100) became the weight assigned to each of the seven factors. GIS was used to apply measurable datasets to each of the project recommendations, with proximity to features corresponding to each factor contributing to an overall score. Scores were normalized on a 1-10 scale for each of the seven factors, and then weighted in relative importance to committee members. The total score represents a relative order of priority, which was then reviewed and modified by the Advisory Committee.



Evaluation Criteria & Weighting Factors

With input from the public and Advisory Committee members, all seven factors were ranked from most to least important. The percentage of total votes were summed to generate a total weight for each factor, out of 100 (Table 5.9).

Factor	Weight
Safety & Security <i>Refers to crash severity and public feedback on speeding issues.</i>	21%
Reliability <i>Refers to traffic congestion, the travel demand model and public feedback.</i>	16%
System Maintenance <i>Refers to National Highway System roads and public feedback on maintenance.</i>	15%
Modal Choice <i>Refers to 2019 Bike-Ped Plan, PRT system, regional trails, and MLTA bus.</i>	14%
Local Priority <i>Refers to Advisory Committee direction, the prior MTP, and public feedback.</i>	14%
Equity & Environmental Justice <i>Refers to Communities of Concern analysis, and proximity to transit hubs.</i>	10%
Consistency with Existing Plans <i>Refers to 2013 MTP, 2017 MTP, and current planning initiatives.</i>	10%

Table 5.10: Weight of importance for criteria, as voted on by the Advisory Committee.

“Thanks for taking our input and all the work that you do. Cheers!”
- Survey Feedback



Environmental Screening

ENVIRONMENTAL CONSULTATION PROCESS

The MMMPO conducts environmental consultation and review throughout the lifespan of the project, beginning with MTP development and continuing through planning and design. As part of the MTP planning process, MPOs must consult with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. In the MTP's development, the following agencies were invited to review and comment on the draft Plan during the public review period:

Federal Agencies

- US DOT / FHWA
- US Army Corps of Engineers
- Environmental Protection Agency
- US Fish & Wildlife Service

State Agencies

- WV Department of Highways
- WV Division of Natural Resources
- West Virginia Land Trust
- West Virginia University

Local Agencies

- Mon Valley Greenspace Coalition
- Mountain Line Transit Authority

Comments were received, reviewed, and addressed accordingly in this plan.

Outside of the MTP process, the MMMPO engages local stakeholders and agencies in project development to identify potential environmental concerns and impacts. MMMPO advisory committees and project steering committees include local stakeholders from environmental agencies and organizations to provide specialized knowledge on potential impact may occur. As projects proceed through the WVDOT TIP process and subsequent stages of the environmental review process occur, the MMMPO coordinates with WVDOT staff to discuss appropriate mitigation strategies.



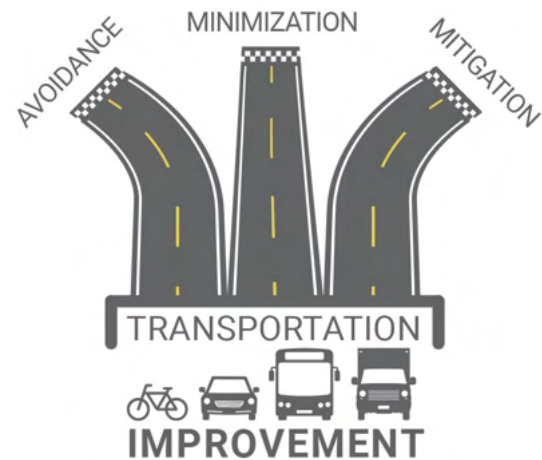
NATURAL RESOURCE SCREENING

Incorporating environmental considerations early in the transportation planning process helps to streamline project development by providing realistic assumptions about potential environmental considerations, impacts and costs.

MPOs must identify projects that may impact wetlands, floodplains, and environmental resources, but they must also consider impacts to historic districts, both local and national, historic structures on the National Register, and other historic sites.

During the planning process, the team gathered natural, cultural, and historic resources (GIS format) and overlaid funded transportation recommendations to screen for potential impacts (Figure 5.10). Project types vary, from intersection improvements to construction along new alignments, which would present different levels of potential impact. Locations shown are still at a planning level of detail, and do not necessarily represent the final limits of design or construction. All federally funded transportation projects must follow a more detailed review of potential impact required by the National Environmental Policy Act (NEPA). As a project develops, its footprint will continue to be refined. This screening satisfies federal requirements for long-range transportation plans.

While not every project will have impacts, and among those that do, not all will have the same impacts or require the same mitigation, steps can be taken up front with regards to protecting these communal resources:



- **Avoid the impacts:** The first strategy in the environmental process is to avoid adverse impact altogether. To do this, the project team assembled a GIS database resource with natural, cultural, and historic resources early in the process.
- **Minimize impacts:** Exploring alternative routes for a new road construction to minimize distance through a wetland, or considering access management as an alternative to widening, may reduce impacts to these resources.
- **Mitigate impacts:** Where necessary, compensation for environmental impacts by providing suitable substitute resources of value, whether on-site or off-site, may be considered during the engineering design or construction phase.

“Drainage and road paving needs to be a priority. New development must pay for impacts on streets and roads.”

- Survey Feedback



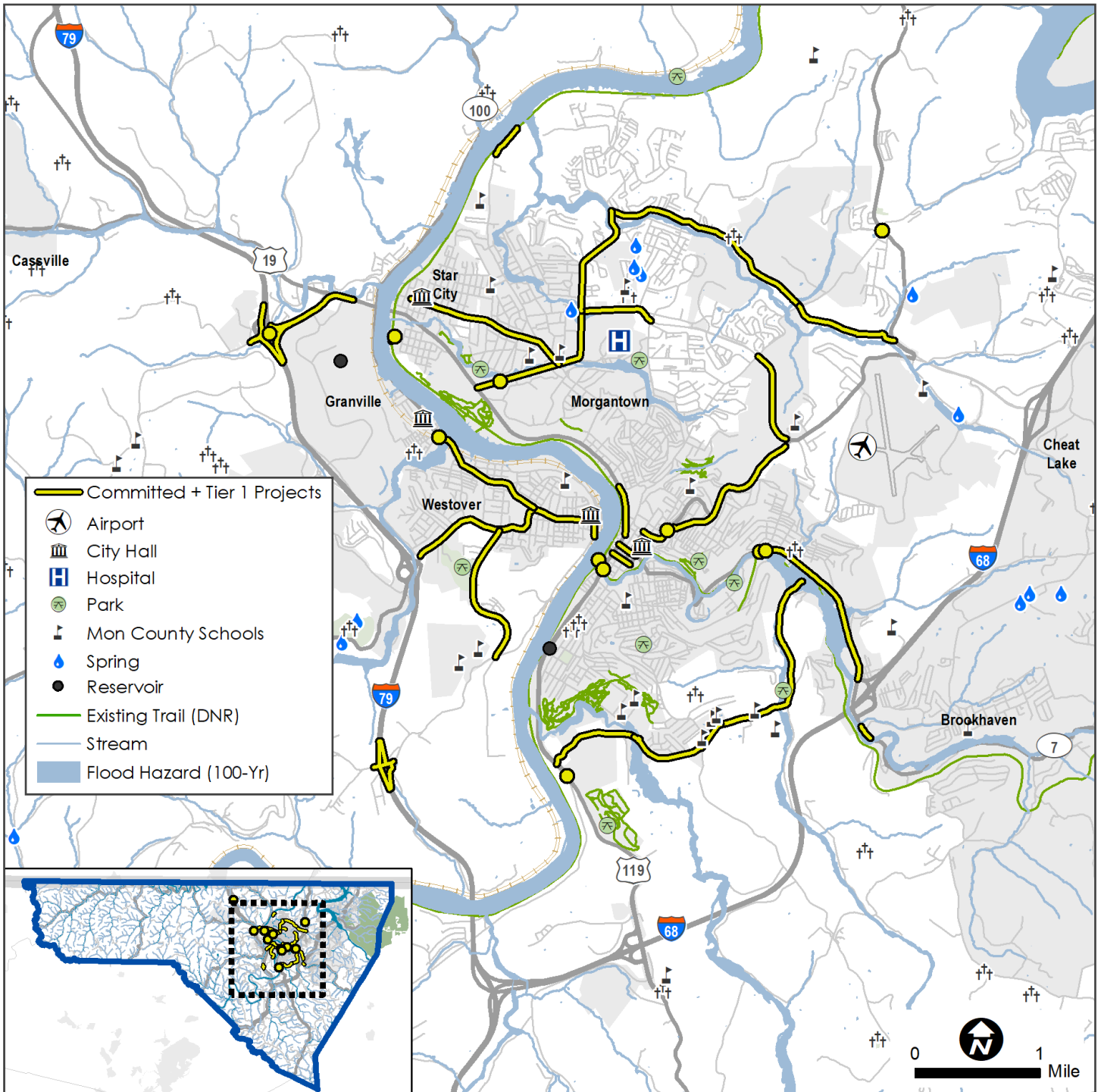


Figure 5.11: Natural Resources Features in proximity to near-term transportation projects.

ENVIRONMENTAL JUSTICE SCREENING

The term “Environmental Justice” (EJ) refers to the federal policy that minorities and low-income populations should not suffer unduly as a result of programs, policies, and activities of any Federal agency. As a mandate, evaluating environmental justice is an important component of any transportation plan. **Investments in transportation projects are generally viewed as a benefit to communities of concern**, improving mobility conditions. As these communities are particularly vulnerable to the negative effects of transportation projects, care must be taken in planning transportation projects in these areas (Fig. 5.11). The Federal Highway Administration (FHWA) identifies three important guiding principles of environmental justice, which shape the treatment of minority and low-income communities in the transportation planning process. These are:

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

As part of the MTP update, the most recently available census data (ACS 5-Year Estimate, 2016-2020) was used to **identify the geographical distribution of environmental justice populations**. In the MMMPO area, these populations are minorities; low-income residents; limited English-proficiency populations; those with less than a high school education; and elderly individuals over 64 years old, in percentages higher than county averages.

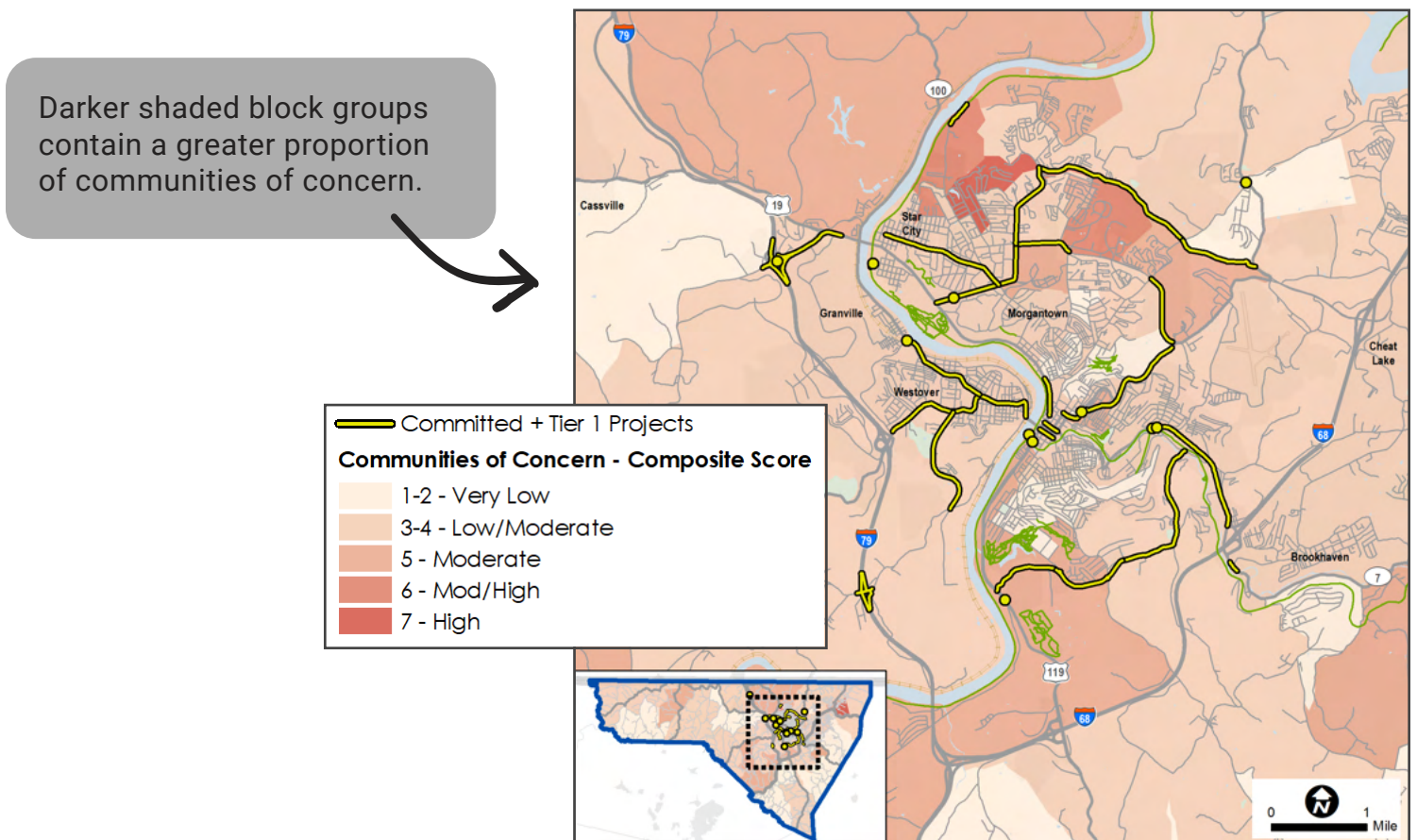


Figure 5.12: Communities of Concern areas in proximity to near-term transportation projects.



Project Number	Project Name	Proximity to Communities of Concern
TIP 1	University Avenue Multimodal Improvements	Very High <i>(refers to several communities of concern)</i>
TIP 18	Greenbag Road Improvements TIP	
TIP 27	Van Voorhis Road Widening	
TIP 30	Patteson Drive Multimodal RRFB Improvements	
M73b	WV-705 Corridor Improvements	
M49c	University Ave Complete Street Improvements Segment 3	
M50	Fairmont Rd/Holland Ave Improvements	
M64	Willey St/Mileground Rd Improvements	
TIP 4	Holland Avenue Multimodal Improvements	High
TIP 7	Dunkard Avenue Multimodal Improvements Segment 5	
TIP 15	Beechurst Ave Improvements	
TIP 20	Morgantown Multiuse Path	
TIP 2	Pleasant Street Streetscape	Moderate
TIP 19	West Run Road Improvements - Western	
TIP 24	Walnut Street Streetscape	
TIP 14	Star City Connector Trail	
TIP 22	Brookhaven Road Improvements	
TIP 23	West Run Road Improvements - Eastern	
TIP 26	Foundry Street Linkage Trail	
TIP 31	Caperton Trail Lighting	
M51b	Greenbag Rd Improvements Segment 2	
M123	Trail Connection-Collins Ferry to Mon River North Trail	
M51a	Greenbag Rd Improvements Segment 3	
M1	Grafton-Smithtown-Don Knotts Intersection Improvements	
TIP 17	Star City Interchange Improvements (I-79 Exit 155)	Low <i>(refers to few communities of concern)</i>
TIP 21	WV 100 @ Dents Run Intersection Improvements	
TIP 9	I-79 SB Welcome Center	
M52	Earl Core Road (WV 7) - Northern Section Improvements	
M14	Point Marion-Stewartstown Intersection Improvements	
M20	WV7-Deckers Creek-Mineral Pedestrian Improvements	

Table 5.13: Transportation projects within proximity to Identified Communities of Concern Block Groups.





**Funding &
Implementation**

CHAPTER 06

Funding & Implementation



Roundabouts are one example of an intersection safety improvement.

This final chapter describes how projects are scheduled in the MTP, based in part on a data-driven scoring method and the insights of the Committees that form the working structure of the Morgantown-Monongalia MPO (MMMPO). The first section describes this “fiscally constrained” planning element and identifies anticipated revenues for transportation projects (based on past revenue collections) as well as planning-level project cost estimates.

The second section describes how the MMMPO and its partners can potentially improve their planning process and even project delivery. MPOs are evolving organizations that are rare example of formalized, inter-governmental cooperation to guide services and infrastructure to meet the needs of more than just one local government. Therefore, they are able to not only see the “big picture,” but to work with their members, the public, and partner agencies to take real action to meet the future needs of the communities that each MPO serves.

This Chapter Covers:

- Projected System Revenues
- Funding Sources
- Projects by Tier
- Policy Considerations

“I think traffic circles are very effective. Keep using them.”

- Survey Feedback

“People don’t know how to use a roundabout.”

- WVU Student



Fiscal Constraint

Federal requirements that govern the development of an MTP include a demonstration of fiscal constraint, meaning: (1) future revenues must be projected through the plan horizon year - 2050, in this instance, and (2) planning-level project costs must reflect a year of expenditure (YOE), meaning that future projects should cost more due to the effect of inflation. Projected system revenues are further described below, using the prior 10-year trend of TIP funding. Year of Expenditure (YOE) factors were applied for each horizon years of 2030, 2040 and 2050. Specifically, project costs within the Tier 1 Interim Year (2030) include a 1.06 YOE factor, projects within Tier 2 Interim Year (2040) include a 1.36 YOE factor, and projects within the Tier 3 Horizon Year (2050) include a 1.77 YOE factor.

	Total Projects	Projected Revenues	Cumulative YOE Project Costs	
TIP (Committed)	19	\$118,950,000	\$118,950,000	
Tier 1 (2030) <i>Alternative Funding</i>	14 1	\$99,900,000 +\$31,200,000	\$99,875,000 +\$31,200,000	
Tier 2 (2040)	31	\$155,675,000	\$155,675,000	<i>Fiscally-constrained projects, by funding tier</i>
Tier 3 (2050)	12	\$161,850,000	\$161,850,000	
Tier 4 (Illustrative)	27	--	\$471,800,000	
Alternate Funding Dependent	6	--	\$600,300,000	

Table 6.1: Demonstration of fiscal constraint.

Note: Projected revenues represent total funds (Federal & Local).

As noted in the US Federal Code of Regulations, projects that cannot be incorporated inside of the fiscal constraint portion of the MTP are still able to be included as “illustrative projects” (see Tier 4) that can proceed should more funding become available for their completion.

As this MTP was in development, US Congress passed into law the Bipartisan Infrastructure Bill, the current transportation authorization bill, which has created some uncertainty in forecasting transportation funding. Although funding programs can and will change over the course of such a long-range planning

document, techniques to reduce uncertainty can be applied to provide direction in planning new projects. Assuming that overall revenues—and project costs—would follow existing trends, revenue growth forecasts and inflation factors for project costs used ten-year (State, Federal and Local funding programs) rolling averages over the 25-year projection period. Any changes to funding programs may affect allocation among projects and should be revisited accordingly. With this in mind, **we consider this MTP to be a living document** for project recommendations, prioritization and funding programs.



Projected System Revenues

Projected Roadway Revenues

Reviewing the 10-year trend of TIP project funding for the MMMPO region suggests a highly volatile funding pattern, with **swings of more than \$40 million between individual years**. This is common for states with front-loaded 4-year TIP cycles that include Interstate highway projects. Using the US Bureau of Labor Statistics consumer price index (www.bls.gov/data/inflation_calculator.htm) to adjust 2011 dollars into net present values, we found that on average the MPO has spent approximately \$15 million annually (53%) for roadway improvement projects, and approximately \$13 million annually (47%) for ongoing operations and maintenance of infrastructure.

Future year revenue projections were developed using this 10-year trend, and then discussed with WVDOH and MMMPO staff to validate observations and assumptions. **A future year floating trend calculation was used to project future revenues to 2050**. The projected pool of funds was then split into the same proportions as prior years, 53% for capital improvements and 47% for maintenance (Figure 6.3). Year of Expenditure (YOE) factors were applied to account for the effect of inflation on future year construction costs (approximately 2.5% per year).

CAPITAL IMPROVEMENTS REVENUES

Capital Improvements Projects, including funding for roadway improvements, intersection safety, and bicycle or pedestrian facility improvements, are approximated in net present value (NPV) dollars for interim years (2030, 2040) and the horizon year (2050) in Table 6.2. Remaining funds that have been committed within the current TIP (2020-2025) are programmed to be spent within the 2030 Interim year, meaning fewer funds are available for new roadway projects. Additional discretionary funding programs may be pursued by the MPO in the future, such as RAISE grants, GARVEE Bonds, Tax Increment Financing (TIF), or Municipal Fuels taxes; however, these potential sources are not included within revenue projections.

Reporting Period	Projected Funding*	Average Ann'l Funds
Previous 10-yr Trend (2011-2020)	--	\$15.2 Million
Current TIP (2020-2025)	\$118,950,000 (remaining)	\$19.8 Million
Projected Interim Year (2026-2030)	\$99,900,000	\$19.9 Million
Projected Interim Year (2031-2040)	\$155,675,000	\$15.5 Million
Projected Horizon Year (2041-2050)	\$161,850,000	\$16.2 Million

Table 6.2: Projected Funding for Roadways Improvement Projects, 2021-2050.

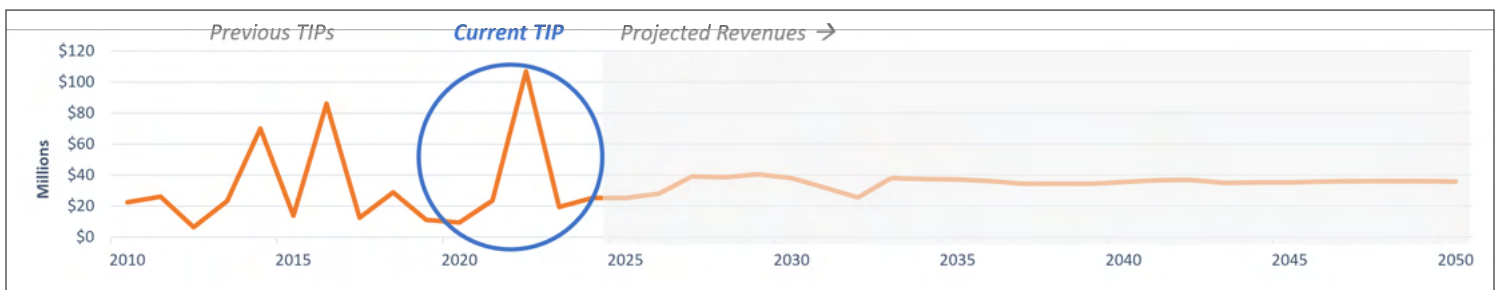


Figure 6.3: Previous, Current, and Projected Roadway Revenues for the MMMPO Region.
 Note: Total revenues include both Capital Improvements and Maintenance projects.



OPERATIONS & MAINTENANCE REVENUES

Ongoing operations and maintenance of roadways accounts for activities like road paving and sidewalk repair, as well as maintenance of streetlights, signs and striping, traffic signals, mowing and street sweeping. Using the same 10-year period and floating trend calculation described previously, projections through 2050 are reported in Table 6.4.

Projected Transit Revenues

Capital and operating revenue projections for public transit were developed in direct consultation with the Mountain Line Transit Authority (MLTA) staff, and utilized the trend forecasting method discussed earlier. **Revenue trend is based on annual reporting from the National Transit Database (NTD) and current reporting from MLTA.** The same floating trend calculation was used to project future revenues to 2050, with adjustments to account for the effects of inflation (note the flattening curve over time, Fig. 6.6).

The linear growth trend of the MLTA system is anticipated to remain consistent with the prior 5-years, as MLTA staff continually modifies routes to maximize ridership performance, and replace its fleet on a rotating, regular basis.

Reporting Period	Projected Funding*	Average Ann'l Funds
Previous 10-yr Trend (2011-2020)	--	\$13,500,000
Current TIP (2020-2025)	\$20,950,000 (remaining)	\$13,100,000
Projected Interim Year (2026-2030)	\$188,600,000	\$17.7 Million
Projected Interim Year (2031-2040)	\$138,100,000	\$13.8 Million
Projected Horizon Year (2041-2050)	\$143,600,000	\$14.4 Million

Table 6.4: Projected Funding for Operations & Maintenance Projects, 2021-2050

Reporting Period	Projected Funding*	Average Ann'l Funds
Previous 10-yr Trend (2011-2020)	--	\$6,600,000
Current Funding (2021-2024)	--	\$7,300,000
Projected Interim Year (2025-2030)	\$48,100,000	\$8.0 Million
Projected Interim Year (2031-2040)	\$89,900,000	\$9.0 Million
Projected Horizon Year (2041-2050)	\$102,400,000	\$10.2 Million

Table 6.5: Projected Funding for Mountain Line Transit Operations and Capital Improvements, 2021-2050.

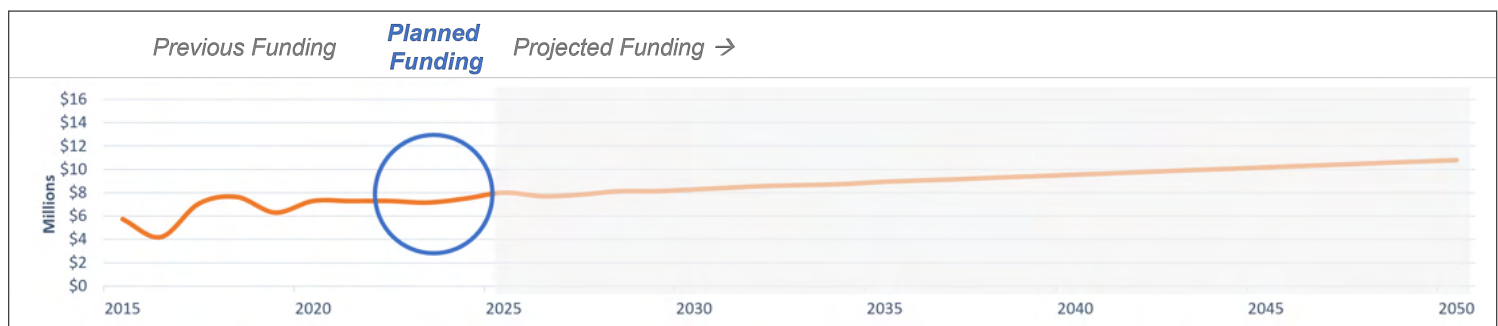


Figure 6.6: Previous, Current, and Projected Revenues for the Mountain Line Transit Authority. Note: Total revenues include both Capital Improvements and Operations of the MLTA system.



Funding Sources

Funding by program was approximated using the relative proportions of fund obtained over the past ten year from each funding source, and applied to future years accordingly. Certain projects may be eligible for more than one funding source, and it may be necessary to combine multiple funding sources a given timeframe.

Funding Source	Mode	Relative Proportion	Horizon Year (2050)
Surface Transportation Block Grant (STBG)	Roadway & Multimodal	46%	\$192,000,000
National Highway Performance Program (NHPP)	Roadway & Freight	25%	\$104,400,000
Congestion Mitigation Air Quality (CMAQ)	Roadway & Multimodal	8%	\$33,400,000
Highway Safety Improvement Program (HSIP)	Roadway	5%	\$20,900,000
Transportation Alternatives (TAP)	Multimodal	5%	\$20,900,000
Earmark (STP)	Varies	1%	\$4,200,000
Others	Varies	10%	\$41,750,000

Table 6.7: Relative Proportion of Future Year Funding by Program. (Note: Estimated total funding represent total funds, including Federal, State, and Local contributions. Relative proportions are approximated from prior 10-year trends.)

Mountain Line Transit Authority relies largely on Federal funding programs and local funding sources to provide service. Federal programs such as Section 5307 – Urban Area Program Grant, Section 5339 – Grants for Bus and Bus Facilities, and Section 5311 – Rural Area Program account for approximately half of total MLTA funding. Local funding sources include the local property tax levy, WVU subsidy for employees and students, and the farebox account for the remaining half. Operating expenses account for 85% of its budget, and capital expenses account for the remaining 15%, as the MLTA system is not currently seeking to renovate or relocate its current service depot. The PRT system is not funded through MLTA and thus is not represented in these figures.

“Bus lanes on WV 705 (Chestnut Ridge Rd) are needed.”

- WVU Student

“The bus schedule is unreliable, particularly in the morning.”

- WVU Student



Projects by Tier

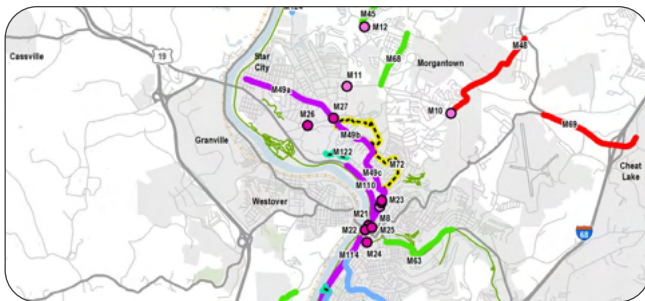
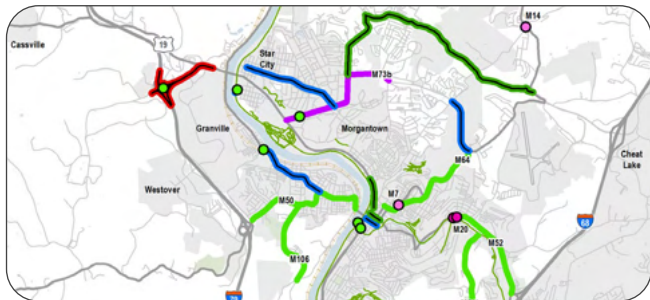
Initial chapters of this MTP covered the overall goals, objectives, and targets for regional mobility, as well as our strategy for public outreach to guide their development. The previous chapter presented recommendations by mode and a method for prioritization. **This chapter describes how we've projected future revenues** that go toward implementation by 2050.

The following figures and tables lay out the fiscally-constrained plan for improving the Monongalia County transportation system. Projects are fiscally constrained and assigned into one of four (4) Tier categories that correspond with estimated funding.

- **Tier 1 Projects** (TIP Projects + Interim Year 2030)
- **Tier 2 Projects** (Interim Year 2040)
- **Tier 3 Projects** (Horizon Year 2050)
- **Tier 4 Projects** (Illustrative or Alternate Funding Dependent)

Tier 1 (TIP Projects + Interim year 2030)

These projects represent the highest priority transportation improvements for the MMMPO area and can reasonably be funded with the revenues projected to be available during this time period. ➔

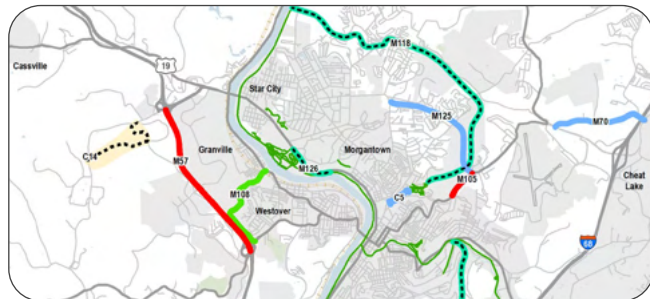


← Tier 2 (Interim year 2040)

These projects represent medium-priority transportation improvements for the MMMPO area that can reasonably be funded by 2040.

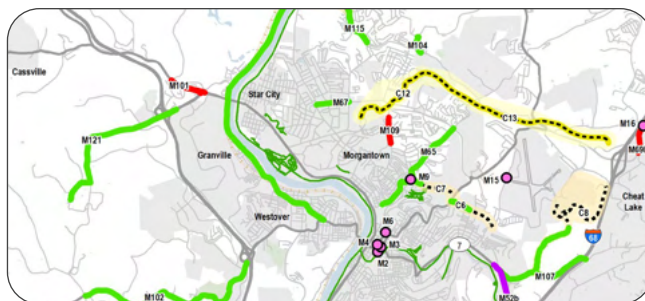
Tier 3 (Horizon year 2050)

These projects represent medium-priority transportation improvements for the MMMPO area and can reasonably be funded with the revenues projected to be available during the years 2041-2050 ➔



← Tier 4 (Illustrative & Alternative Funding-Dependent)

These projects represent lowest-priority transportation improvements that cannot reasonably be funded during the time period without an alternative funding source, based on current projections.



Tier 1 Projects (TIP + Interim Year 2030)

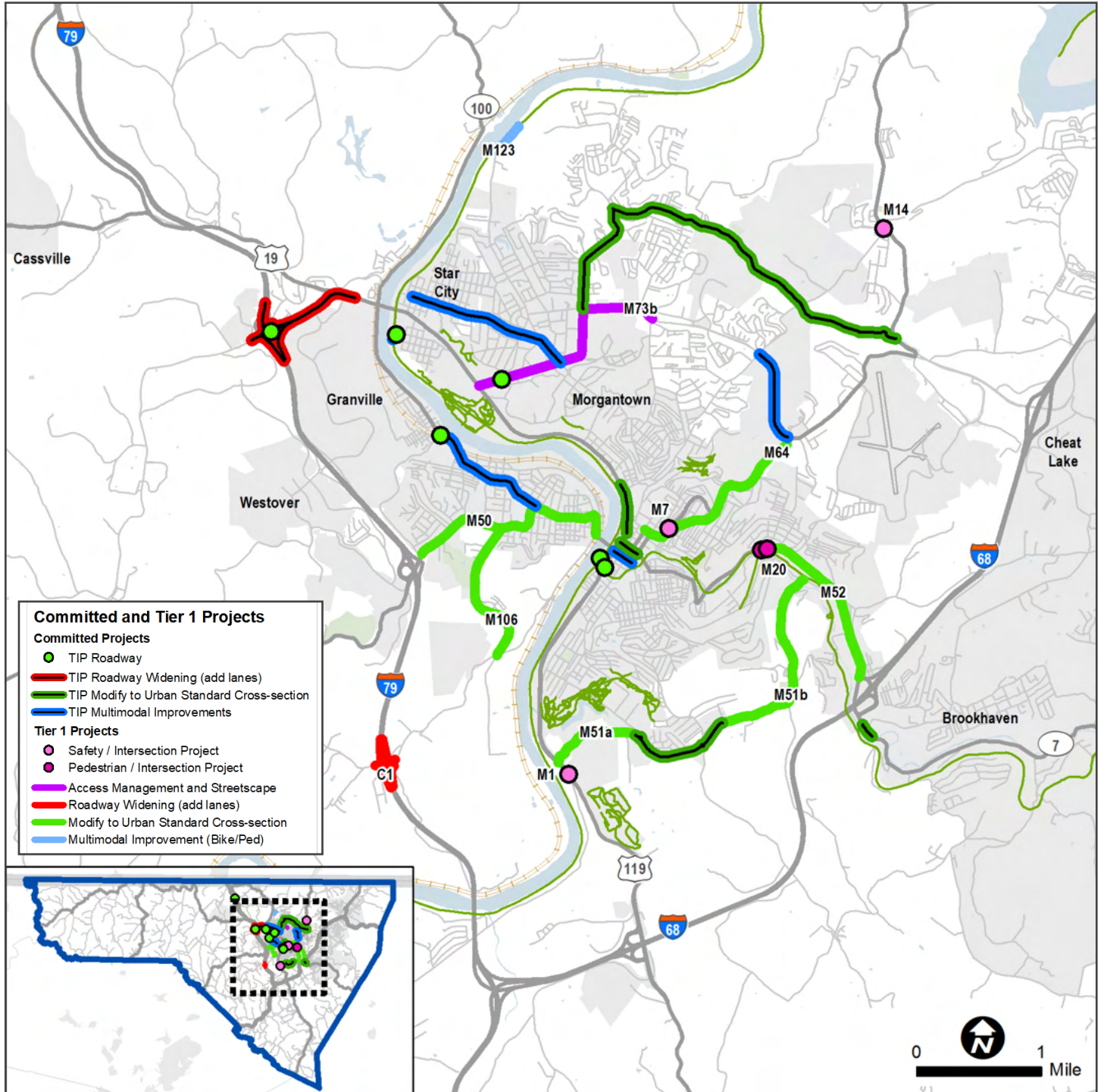


Figure 6.8: Committed (TIP) and Tier 1 Projects for 2030.



TIER 1 (TIP + INTERIM YEAR 2030) PROJECTS				
MTP ID	Project / Location / Description	Category	Length	Project Cost
-	Current TIP Projects Various roadways and multimodal projects already programmed for construction in the TIP. Including, but not limited to the Roads to Prosperity projects: Greenbag Road Segment 1, West Run Road (eastern and western sections), Van Voorhis Road Segment 1, Mileground Road, I-79 exit 155 reconstruction, and Beechurst Avenue/Campus Drive.	Varies	-	\$118,950,000
M73b	WV 705 Corridor Improvements From Monongahela Blvd to Mon General Dr / Don Nehlen Dr	Access Management	1.82	\$15,300,000
M52	Earl Core Road (WV 7) - Northern Section Improvements From Deckers Creek Bvd to I-68 Interchange	Modify / Capacity	1.45	\$10,900,000
M50	Fairmont Rd / Holland Ave Improvements From I-79 Interchange to Westover Bridge	Modify / Capacity	1.79	\$13,300,000
M64	Willey St / Mileground Rd Improvements From High St to WV 705	Modify / Capacity	1.67	\$15,700,000
M14	Point Marion - Stewartstown Intersection Improvements Intersection of Point Marion Rd at Stewartstown Rd	Safety / Intersection	-	\$2,100,000
M106	Dupont Road Improvements From River Rd to Fairmont Rd (US 19)	Safety / Intersection	1.24	\$8,800,000
M7	Richwood - North Willey Intersection Improvements Intersection of Richwood Street and North Willey Street	Safety / Intersection	-	\$1,600,000
M51b	Greenbag Rd Improvements Segment 2 From Lucky Ln to Earl Core Rd (WV 7)	Modify / Capacity	1.86	\$12,400,000
M51a	Greenbag Rd Improvements Segment 3 From Don Knotts Blvd (US 119) to Mississippi St	Modify / Capacity	0.75	\$5,600,000
M20	WV7 - Deckers Creek - Mineral Pedestrian Improvements Intersection of Mineral Ave at Deckers Creek Blvd	Pedestrian Safety / Intersection	-	\$400,000
C1	Industrial Park Access Improvements - Harmony Grove Interchange Exit 150 (River Road) <i><Tax Increment Financing (TIF)></i>	New Roadway Connection	-	\$10,400,000 <i>\$31,200,000</i>
M1	Grafton - Smithtown - Don Knotts Intersection Improvements Intersection of Grafton Rd / Don Knotts Blvd at Smithtown Rd	Safety / Intersection	-	\$2,100,000
M123	Trail Connection - Collins Ferry to Mon River North Trail From Collins Ferry Rd to Mon River North Trail	Multimodal (Trail)	0.27	\$500,000
-	Design Study - White Park / Caperton Multimodal Trail Connection White Park to Caperton Trail with pedestrian crossing over US 119	Study	-	\$300,000
-	Downtown Microsimulation Model Downtown Morgantown	Study	-	\$500,000

Table 6.9: Committed (TIP 2020-2025) and Tier 1 Projects.

All project costs are planning-level estimates with Year of Expenditure Factors (YOE) and are subject to change.

TAX INCREMENT FINANCING (TIF)

A revenue tool that leverages **future** tax dollars to pay for new infrastructure that is needed today. TIFs are common in all 50 states, and are treated separately from this MTP's funding revenue projections.



Tier 2 Projects (Interim Year 2040)

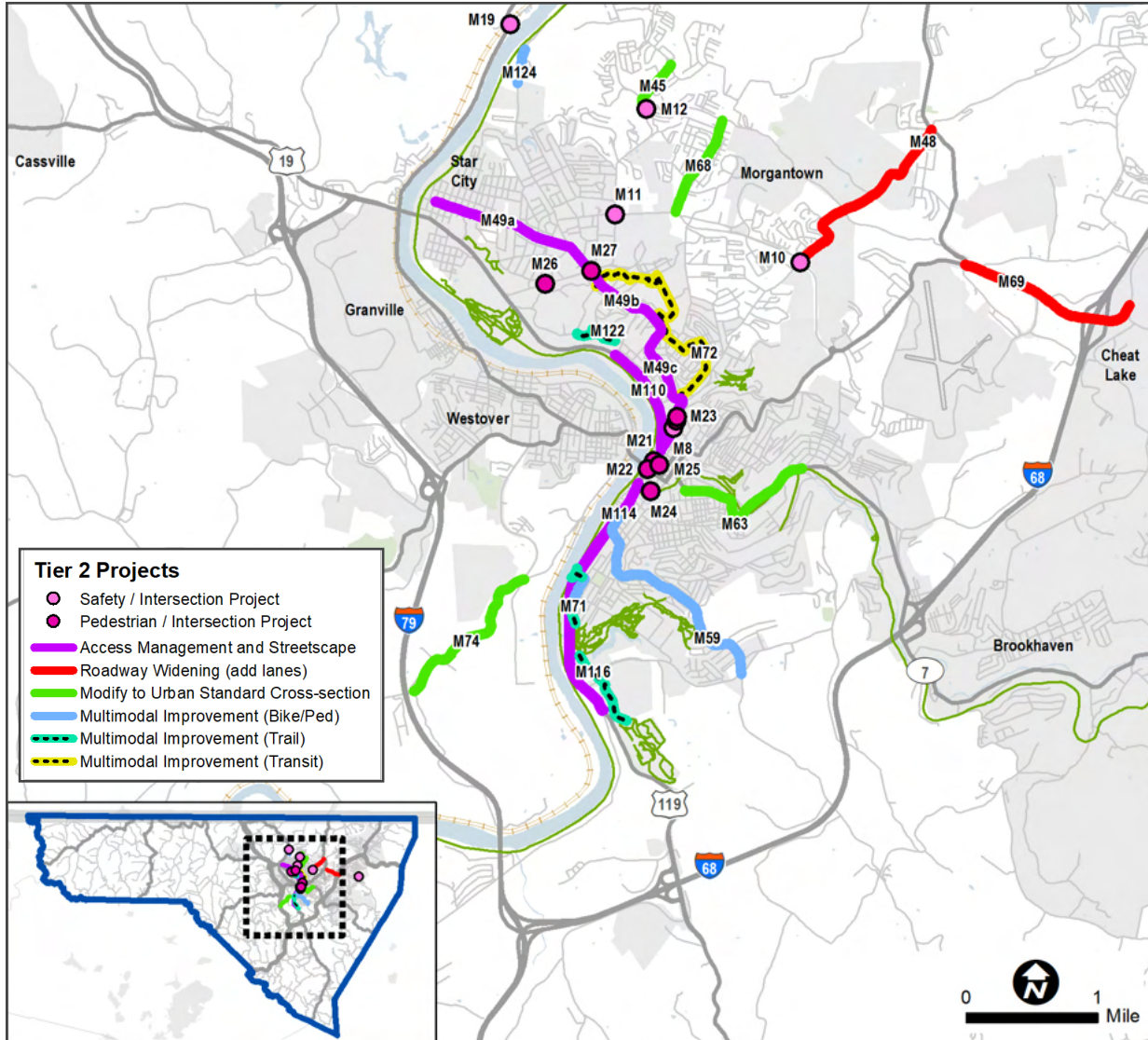


Figure 6.10: Tier 2 Projects for 2040.

TIER 2 (INTERIM YEAR 2040) PROJECTS				
MTP ID	Project / Location / Description	Category	Length	Project Cost
M49c	University Ave Complete Street Improvements Segment 3 From 8th St to Fayette St	Access Management	1.34	\$23,700,000
M45	Van Voorhis Road Improvement Segment 2 From West Run Rd to Bakers Ridge Rd	Modify / Capacity	0.43	\$8,800,000
M49a	University Ave Complete Street Improvements Segment 1 From Boyers Ave to Patteson Dr / Van Voorhis Rd	Access Management	1.33	\$23,550,000
M69	Cheat Rd Improvements From West Run Rd to S Pierpont Rd	Widen	1.79	\$9,300,000
M21	University - Walnut Pedestrian Improvements From University Ave to Walnut St	Pedestrian Safety / Intersection	-	\$600,000
M59	Dorsey Ave Sidewalk Improvements From High St to Greenbag Rd	Multimodal (Bike/Ped)	1.85	\$6,200,000
M48	Stewartstown Rd Improvements From WV 705 to Point Marion Rd	Widen	1.56	\$18,600,000

Table 6.11: Tier 2 (Interim Year 2040) Projects.



TIER 2 (INTERIM YEAR 2040) PROJECTS				
MTP ID	Project / Location / Description	Category	Length	Project Cost
M63	Brockway Ave / Rodgers Ave / Powell Ave (WV 7) Improvements From Walnut St to Deckers Creek Rd	Modify / Capacity	1.24	\$9,300,000
M22	Don Knotts - University - Pleasant Pedestrian Improvements Intersection of University Ave / Don Knotts Blvd at Pleasant St	Pedestrian Safety / Intersection	-	\$600,000
M25	Chestnut - Walnut Pedestrian Improvements Intersection of Chestnut St at Walnut St	Pedestrian Safety / Intersection	-	\$150,000
M114	Don Knotts Blvd (US 19) Improvements From Smithtown Rd (WV 73) to Foundry St	Access Management	1.79	\$8,250,000
M49b	University Ave Complete Street Improvements Segment 2 From Patteson Dr / Van Voorhis Rd to 8th St	Access Management	0.48	\$8,600,000
M23	Grumbeins Island Improvement Intersection of University Ave at College Ave	Pedestrian Safety / Intersection	-	\$4,700,000
M26	Patteson Dr - Morrill Way Pedestrian Improvements Intersection of Patteson Dr at Morrill Way	Pedestrian Safety / Intersection	-	\$400,000
M68	Riddle Ave / Pineview Dr Improvements From WV 705 to West Run Rd	Modify / Capacity	0.80	\$4,000,000
M27	Patteson Dr - University Ave - Van Voorhis Rd Pedestrian Improvements Intersection of Patteson Dr at University Ave	Pedestrian Safety / Intersection	-	\$400,000
M11	WV 705 - Burroughs - Van Voorhis Intersection Improvements Intersection of WV 705 / Burroughs St at Van Voorhis Rd	Safety / Intersection	-	\$2,650,000
M122	Trail Connection - Campus Connection From Grant Ave to Riverview Dr	Multimodal (Trail)	0.42	\$3,400,000
M72	North Side Connector Bus Rapid Transit From Evansdale Campus to Downtown Campus	Multimodal (Transit)	2.15	\$1,550,000
M10	WV 705 - Stewartstown Intersection Improvements Intersection of WV 705 at Stewartstown Rd	Safety / Intersection	-	\$1,700,000
M8	University - Prospect Intersection Improvements Intersection of University Ave at Prospect St	Safety / Intersection	-	\$860,000
M28	University Ave - College Ave Pedestrian Improvements Intersection of University Ave at College Ave	Pedestrian Safety / Intersection	-	\$400,000
M12	Van Voorhis - West Run Intersection Improvements Intersection of Van Voorhis Rd at West Run Rd	Safety / Intersection	-	\$650,000
M71	White Park / Caperton Multimodal Trail Connection From White Park - Callen Rd to Caperton Trail (includes pedestrian bridge)	Multimodal (Trail)	0.54	\$3,000,000
M24	High - Foundry Pedestrian Improvements Intersection of High St at Foundry Ave	Pedestrian Safety / Intersection	-	\$400,000
M110	Beechurst Avenue Access Management Improvements From 8th St to University Ave	Access Management	0.86	\$6,900,000
M124	Collins Ferry Rd Multimodal Improvements From WV 705 to West Run Rd	Multimodal (Bike/Ped)	0.27	\$840,000
M74	River Rd Improvements From Master Graphics Rd to DuPont Rd / Industrial Park Rd	Modify / Capacity	1.31	\$2,900,000
M116	Trail Connection - Woodland Trail to Dorsey's Knob From Woodland Trail to Dorsey's Knob Park	Multimodal (Trail)	0.65	\$1,400,000
M19	WV100 - Fort Martin Intersection Improvements Intersection of WV 100 at Fort Martin Rd	Safety / Intersection	-	\$1,450,000
M18	Tyrone - Tyrone Avery Intersection Improvements Intersection of Tyrone Rd at Tyrone-Avery Rd	Safety / Intersection	0.65	\$550,000

Table 6.11: Tier 2 (Interim Year 2040) Projects, continued.



Tier 3 Projects (Horizon Year 2050)

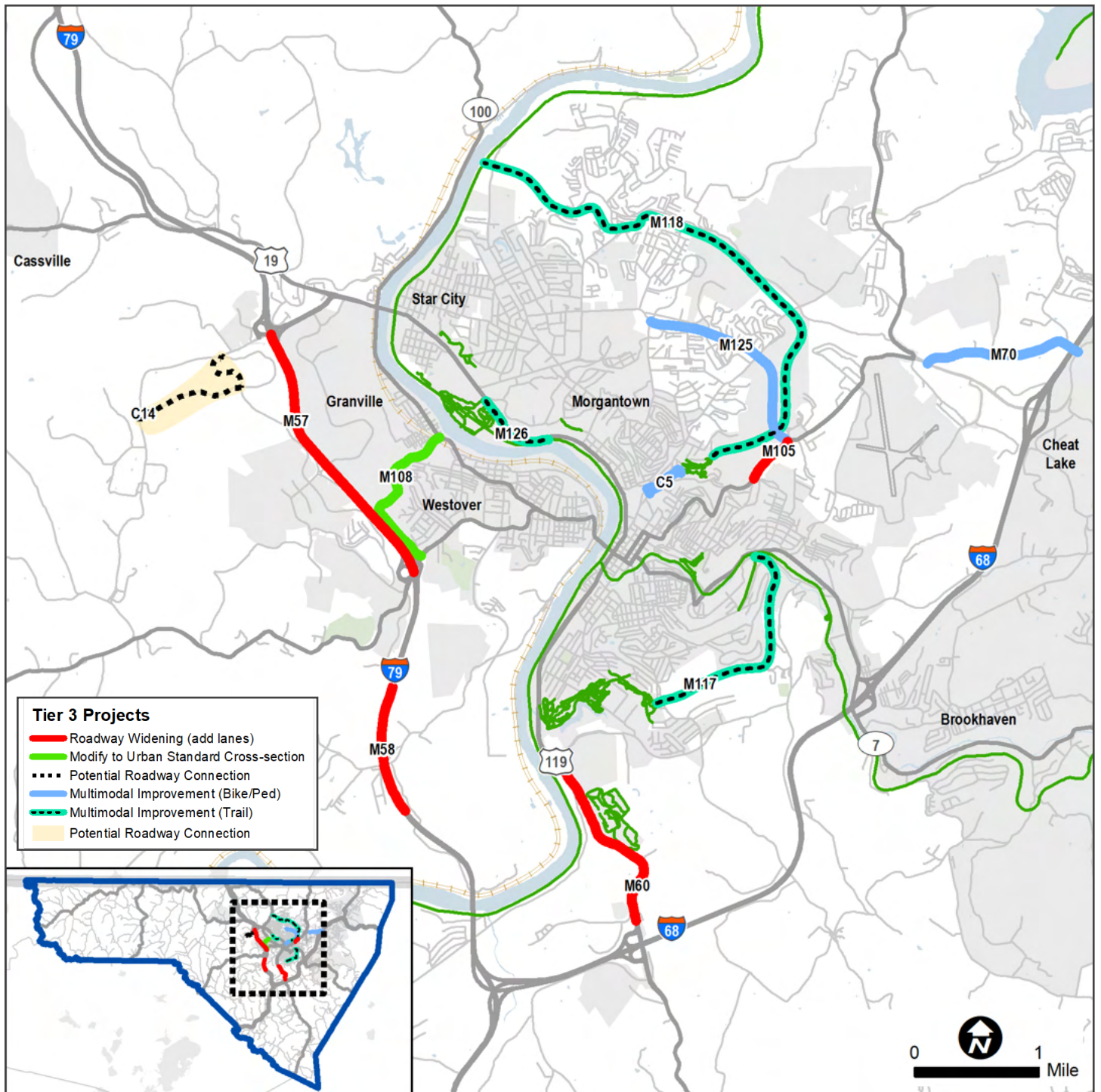


Figure 6.12: Tier 3 Projects for 2040.



TIER 3 (HORIZON YEAR 2050) PROJECTS				
MTP ID	Project / Location / Description	Category	Length	Project Cost
M60	Grafton Rd (US 119) Improvements From Greenbag Rd to 4H Camp Rd / Walmart	Widen	1.59	\$10,100,000
M125	WV 705 Multiuse Path From Don Nehlen Dr / Mon General Dr to Stewartstown Rd	Multimodal (Bike/Ped)	1.68	\$4,700,000
M105	Mileground Rd Widening Segment 1 From Hampton Ave to WV 705	Widen	0.41	\$6,100,000
M57	I-79 Granville Section Improvements From Exit 152 to Exit 155 (Widen to six lanes)	Widen	2.29	\$30,300,000
M70	Old Cheat Rd / Cheat Rd Bike Lanes From Cheat Lake Bridge to Cheat Rd / Old Cheat Rd	Multimodal (Bike/Ped)	1.29	\$14,100,000
M58	I-79 Westover Section Improvements From Exit 148 to 152 (Widen to six lanes)	Widen	1.05	\$8,100,000
C5	Protzman St / Falling Run Pedestrian and Bicycle Connector From End of Trail to University Ave	Multimodal (Bike/Ped)	2.11	\$3,100,000
M126	Trail Connection - Caperton Trail to Evansdale Rd From Caperton Trail to Evansdale Rd	Multimodal (Trail)	0.65	\$4,000,000
M118	Trail Connection - Northern Greenbelt Trail From Falling Run Trail to Caperton Trail	Multimodal (Trail)	4.80	\$13,200,000
M117	Trail Connection - Southern Greenbelt Trail From Learning Trail Loop to Deckers Creek Trail	Multimodal (Trail)	1.91	\$5,300,000
M108	Dents Run Blvd Improvements From Fairmont Rd (US 19) to Dunkard Ave (WV 100)	Modify / Capacity	1.37	\$18,800,000
C14	New Roadway Connection - Multimodal Access to Mylan Park From Chaplin Rd to Solomon Rd <Potential Tax Increment Financing (TIF)>	New Roadway Connection	2.00	\$44,000,000

Table 6.13: Tier 3 (Horizon Year 2050) Projects.



Illustrative Projects (Unfunded) and Alternative Funding Dependent

TIER 4 (ILLUSTRATIVE) PROJECTS				
MTP ID	Project / Location / Description	Category	Length	Project Cost
M65	Stewart St Improvements From University Ave to WV 705	Modify / Capacity	1.53	\$25,100,000
M52b	Earl Core Rd (WV 7) Access Management From I-68 Interchange (SB Ramps) to Greenbag Rd	Access Management	0.56	\$33,800,000
M101	Blue Horizon Dr Widening From Scotts Run Rd to Chaplin Rd (US 19)	Widen	0.56	\$24,700,000
M62	Earl Core Rd (WV 7) Southern Section Improvements From I-68 Interchange to Tyrone Rd	Widen	2.34	\$20,500,000
M55	Lazzelle Union Rd (WV 100) Improvements From US 19 to PA State Line	Modify / Capacity	9.52	\$50,200,000
M121	Chaplin Rd Multimodal Improvements From I-79 Interchange to Mylan Park	Multimodal (Bike/Ped)	2.26	\$14,700,000
M67	Burroughs St Improvements From Collins Ferry Rd to Van Voorhis Rd WV 705	Modify / Capacity	0.45	\$9,100,000
M61	Smithtown Rd Improvements From Don Knotts Blvd (US 119) to Goshen Rd (CO77)	Modify / Capacity	5.59	\$27,350,000
M4	High - Walnut Intersection Improvements Intersection of High St at Walnut St	Safety / Intersection	-	\$450,000
C6	New Roadway Connection - Mileground to Hartman Run From Mileground Rd to Hartman Run Rd (Alignment TBD)	New Roadway Connection	0.40	\$26,800,000
C7	New Roadway Connection - Stewart to Mileground From Stewart St to Mileground Rd (Connect with VanGilder Ave)	New Roadway Connection	0.49	\$29,250,000
M16	Cheat - Old Cheat Intersection Improvements Intersection of Cheat Rd at Old Cheat Rd	Safety / Intersection	-	\$350,000
M3	Spruce - Walnut Intersection Improvements Intersection of Spruce St at Walnut St	Safety / Intersection	-	\$450,000
M103	Tyrone Rd & Cheat Rd Improvements From Earl Core Rd (WV 7) to Mont Chateau Rd	Modify / Capacity	5.22	\$44,300,000
M69b	Cheat Rd Widening Segment 2 From S Pierpont Rd to Stone Creek	Widen	1.39	\$27,450,000
M2	Spruce - Pleasant Intersection Improvements Intersection of Spruce St at Pleasant St	Safety / Intersection	-	\$500,000
M6	High-Willey Intersection Improvements Intersection of High St at Willey St	Safety / Intersection	-	\$450,000
M9	Stewart - Protzman Intersection Improvements Intersection of Stewart St at Protzman St	Safety / Intersection	-	\$2,200,000
M17	Cheat - Tyrone-Avery Intersection Improvements Intersection of Cheat Rd at Tyrone-Avery Rd	Safety / Intersection	-	\$1,500,000
M115	Ackerman / Mountain Valley Drive Improvements From Van Voorhis Rd to Scenic View Dr	Modify / Capacity	0.54	\$9,700,000

Table 6.14: Tier 4 (Illustrative) Projects.



TIER 4 (ILLUSTRATIVE) PROJECTS

MTP ID	Project / Location / Description	Category	Length	Project Cost
M102	Fairmont Rd US 19 Improvements From Sugar Grove Rd to I-79 Interchange Exit 152	Modify / Capacity	2.79	\$43,100,000
M15	Hartman Run-Airport Access Intersection Improvements Intersection of Hartman Run Rd at Airport Access	Safety / Intersection	-	\$2,400,000
M109	Willowdale Rd Widening From Ira Errett Rodgers Dr to Medical Center Dr / Northwestern Ave	Widen	0.37	\$9,050,000
M120	Trail Connection-Cheat Lake Southern From Cheat Lake Rail-Tail to Coopers Rock Park - Mon Chateau Trail	Multimodal (Trail)	4.17	\$26,300,000
M104	St Clair Hill Rd Improvements From West Run Rd to Bakers Ridge Rd	Modify / Capacity	0.28	\$5,700,000
M107	Dug Hill Rd Improvements From Sabraton Ave to Snider Hill Rd	Modify / Capacity	1.32	\$21,100,000
M119	Trail Connection - Cheat Lake Northern From Cheat Lake Tail - Morgan Run to Darnell Hollow Rd	Multimodal (Trail)	1.86	\$15,300,000

Table 6.14: Tier 4 (Illustrative) Projects (continued).

ALTERNATIVE FUNDING DEPENDENT (AFD) PROJECTS

MTP ID	Project / Location / Description	Category	Length	Project Cost
C8	Extension of Airport Industrial Rd From Morgantown Municipal Airport (near I-68) to WV 7 in Sabraton	New Roadway Connection	3.88	\$24,600,000
C9	New Roadway Connection - Mountain Valley Dr Extension From Mountain Valley Dr to Lazelle Union Rd	New Roadway Connection	0.86	\$72,000,000
C10	New Roadway Connection - Southern Mon River Bridge From Greenbag Rd to Industrial Park Dr	New Roadway Connection	0.77	\$131,400,000
C11	New Roadway Connection - Industrial Park From River Rd to Industrial Park Dr	New Roadway Connection	0.51	\$7,500,000
C12	PRT Extension Segment 1 From University Health Sciences to Mon General Hospital	Multimodal (Transit)	2.75	\$130,000,000
C13	PRT Extension Segment 2 From Mon General Hospital to Glenmark Centre	Multimodal (Transit)	6.21	\$234,800,000

Table 6.15: Alternative Funding Dependent (AFD) Projects.



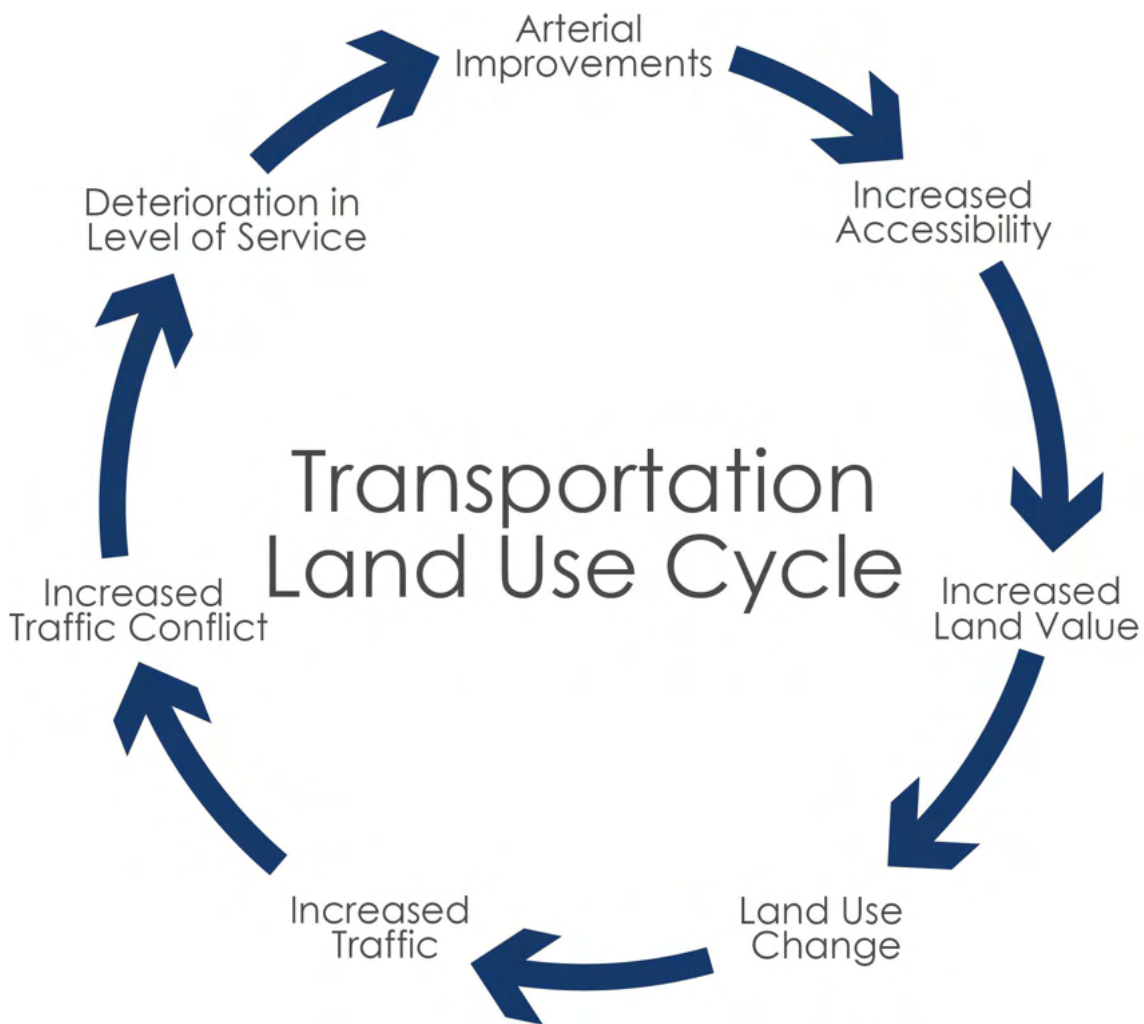
Policy Considerations

Over the lifetime of a 25-year plan the most important component of success is not an individual project or program, but rather the relationship between transportation and development patterns. In many places a mindset of “development first” has translated into longer-term problems associated not only with traffic congestion, but also with a loss of community character.

The following pages describe policies that communities can undertake to complement transportation investments. These recommendations also improve safety (and delays from crashes) and enhance other community objectives like economic vitality and aesthetics.

Policy Considerations

- VISION ZERO
- COMPLETE STREETS
- CONNECTIVITY
- SIDEWALKS
- RESILIENCY



The cyclical relationship between transportation investment and land use development.



Vision Zero

Metropolitan Planning Organizations have an opportunity to create, support, and implement measures to reduce injuries, fatalities, and expenses from crashes. An important resource is the Vision Zero Network, which contains resources for both municipal and MPO entities to implement safety objectives in their work.

The Vision Zero movement, which began in the 1990s, regards safety as the number-one goal in planning, design, operation, and maintenance of transportation facilities. It's important to understand that Vision Zero is not simply a single program, but a **fundamental shift of mindset to incorporating safety at every stage** of the transportation planning and design process.

TRADITIONAL APPROACH TO PLANNING

- Traffic deaths are INEVITABLE
- PERFECT human behavior
- Prevent COLLISIONS
- INDIVIDUAL responsibility
- Saving lives is EXPENSIVE

VISION ZERO APPROACH TO PLANNING

- Traffic deaths are PREVENTABLE
- Integrate HUMAN FAILURE in approach
- Prevent FATAL AND SEVERE CRASHES
- SYSTEMS approach
- Saving lives is NOT EXPENSIVE

NINE COMPONENTS OF A STRONG VISION ZERO COMMITMENT

Political Commitment: an official, public commitment to achieve zero traffic fatalities and severe injuries among all road users within a set timeframe. Include passage of a local policy with goals, timeline, stakeholders, and a commitment to community engagement, transparency, and equitable outcomes.

Multi-Disciplinary Leadership: Create a Vision Zero Taskforce to lead this effort and include, high-ranking representatives from the Office of the Mayor, Police, Transportation, and Public Health.

Community Engagement: Create opportunities for meaningful community engagement. Select community representation on the Task Force, broaden input through public workshops, online surveys, and other feedback opportunities.

Action Plan: an Action Plan is created with clear strategies outlined, owners of each strategy, interim targets, timelines, & performance measures.

Transparency: Include regular updates on Action Plan progress and performance measures, to the local governing board.

Data-Driven: Gather, analyze, use, and share reliable data to understand traffic safety issues and prioritize resources based on evidence of need and impact.

Equity: Establish inclusive, representative processes and equitable outcomes by creating measurable benchmarks to provide safe transportation options.

Cooperation & Collaboration: Encourage meaningful cooperation and collaboration that set shared goals and focus on coordination and accountability.

Systems-based Approach: Focus on the built environment, systems, and policies that influence behavior – not merely the infrastructure – and discuss preventability of traffic losses.



Complete Streets

Complete Streets is the umbrella term that supports all modes of travel. Complete Streets are known for bringing transportation choices to vulnerable users, spurring economic development, reducing traffic fatalities and injuries, providing recreation options for people, and improving public health outcomes.

The development and continual refinement of a Complete Streets policy should consider existing policy, practice, and politics to better understand how decisions regarding transportation priorities are made in the community. But Complete Streets can be implemented in a variety of ways besides a dedicated policy, and the MPO is the regional agency that facilitates this discussion with local governments.



Complete Streets application on Moultrie Street

TEN ELEMENTS OF A SUCCESSFUL COMPLETE STREETS POLICY

–National Complete Streets Coalition

Vision: A motivating reason why the community wants Complete Streets, whether improving safety, promote better health, expand mobility choices, or others.

All users and modes: “all modes” – walking, bicycling, riding public transportation, driving trucks, buses and automobiles – and “all users” – people of all ages and abilities – are considered in transportation planning and design processes.

All projects and phases: All transportation projects are subject to the policy, including design, planning, construction, maintenance, and operations.

Clear, accountable exceptions: Any exceptions are specified and approved by a high-level official.

Network: Recognition of the need for a comprehensive and connected network for all modes.

Jurisdiction: All agencies governing transportation activities clearly understand the policy’s application and are involved in its process.

Design: The policy recommends use of the latest and best design criteria and guidelines, while recognizing the need for design flexibility to balance user needs.

Context sensitivity: The current and planned context—buildings, land use, transportation, and community needs—is considered when planning and designing transportation strategies.

Performance measures: The policy includes measurable performance standards.

Implementation steps: Specific next steps for implementation are described.

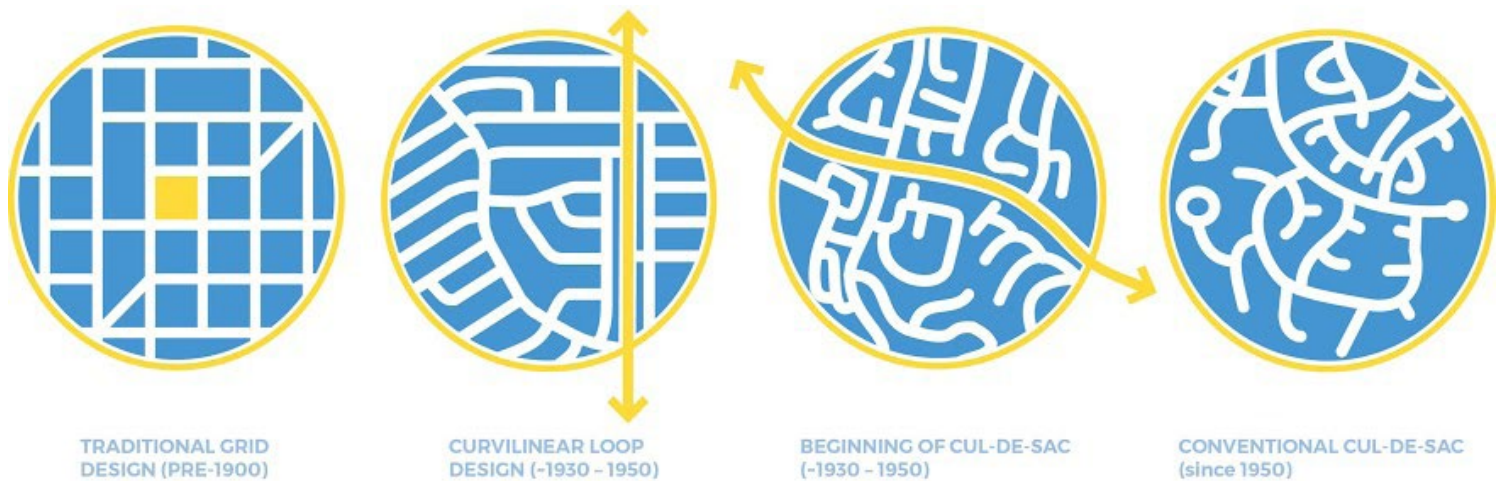


Both Vision Zero policies and Complete Streets **refocus attention in the transportation network on vulnerable users.** Policies and infrastructure work hand-in-hand to protect these users both in the present and future by creating a safer environment to move around. Improving pedestrian and bicyclist safety through an expanded sidewalk and trail network, and increasing connectivity with improved pedestrian crossings, were key priorities of this MTP. Looking forward, the following are key policy considerations related to these two items:

**“Streets are for moving people
-- not cars.”**

- Survey Feedback

CONNECTIVITY



Roadway connectivity means a connected street grid, an old idea that is making a comeback.

The scenic mountains of Monongalia County pose significant restrictions on roadway construction and private development. This makes transportation network connections even more important: concentrated development in pockets of developable land increases demand on the transportation network in these areas while also limiting the ability to build new roadway connections. Good connectivity policies require shared driveways and cross-access between complementary uses. Through coordinated action with private development, local and collector streets can contribute to connectivity in small areas, but a well-connected network has many benefits:

- Street systems with greater degrees of connectivity offer greater resiliency during emergencies
- Higher connectivity implies a more robust transportation system that provides users with greater mobility choices during periods of heavy traffic and accommodates trip chaining
- Greater connectivity typically equates to a greater capacity for moving and distributing traffic, thereby reducing congestion levels
- Areas with greater connectivity have better land access to local businesses, with implications for potential developments in those areas



SIDEWALKS, GREENWAYS & TRAILS

Safe places to walk and recreate, including sidewalks, greenways, and trails, are hallmarks of community and often rank at or near the top of the most desired features for homeowners. Sidewalks are not created equally, or cheaply. Here are some concepts and practices to consider as the role of the pedestrian continues to grow in the urban landscape.

Topography presents challenges to sidewalk development and construction, as the physical difficulties of walking up steep slopes prevent many from choosing to walk or use these features. However, other barriers are often present that can increase the cost -- and decrease constructability -- of sidewalks along roadways:

- **Narrow Streets or Limited Rights-of-Way:** Narrow rights-of-way make land acquisition for sidewalks expensive, especially if buildings and parking lots are in the way.
- **Existing Development:** retrofitting existing development with sidewalks, or connecting new greenways or trails facilities through existing neighborhoods or across streets often involves easement acquisition and may bring political costs to complement higher construction costs.
- **Utility Relocation:** If power lines, curb-and-gutter, or storm drain inlets have to be relocated, costs for construction go up - fast.
- **More Pavement = More Stormwater Runoff:** Alternative pavement technologies or allocating space to allow rainwater to infiltrate work, but will change initial and lifecycle costs.
- **Lack of Desire:** If adjacent property owners do not want them, sidewalks usually do not happen.



Stormwater infiltration areas (green streets infrastructure).



Here are some policy items and strategies to help facilitate more rapid construction and network growth:

- Incorporating greenways within (or through) private developments by allowing an equal or even double amount of area be applied towards open space requirements or provide other incentives like density bonuses. This can help smooth the policy pathway for private sector greenway construction and connections.
- The sidewalk width and choice of material should be flexible to meet the needs of the environment; 10' and wider sidewalks in commercial and high-traffic areas are appropriate; brick pavers and integrated streetscaping can fit into historical environmental contexts.
- Sidewalks should be required to be constructed by new development on both sides of the street, every time except in very low-density (e.g., less than two units per acre) residential communities.
- No room for sidewalks? Consider a shared street instead. Shared streets balance cars, pedestrians, and cyclists in primarily residential and highly mixed-use communities.
- Accessibility is key to an aging population, so installing curb ramps and pedestrian signals - even during routine utility construction - is important.

"Its important that Morgantown be more pedestrian-friendly."

- Survey Feedback

"Streets should support children comfortably walking to school - that sets life long patterns."

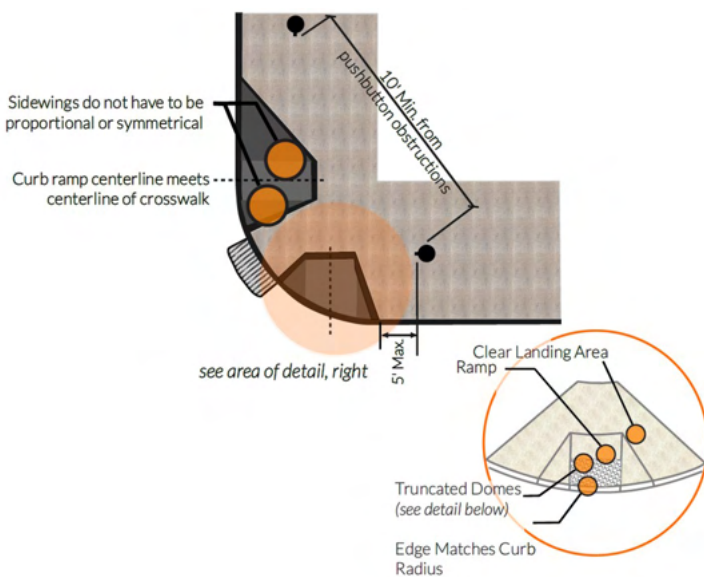
- Survey Feedback

"Walking along Van Voorhis Rd is not possible – no shoulders; steep drop off."

- WVU Student

"People won't bike because of the hills."

- Survey Feedback



Typical ADA Curb Ramp features.



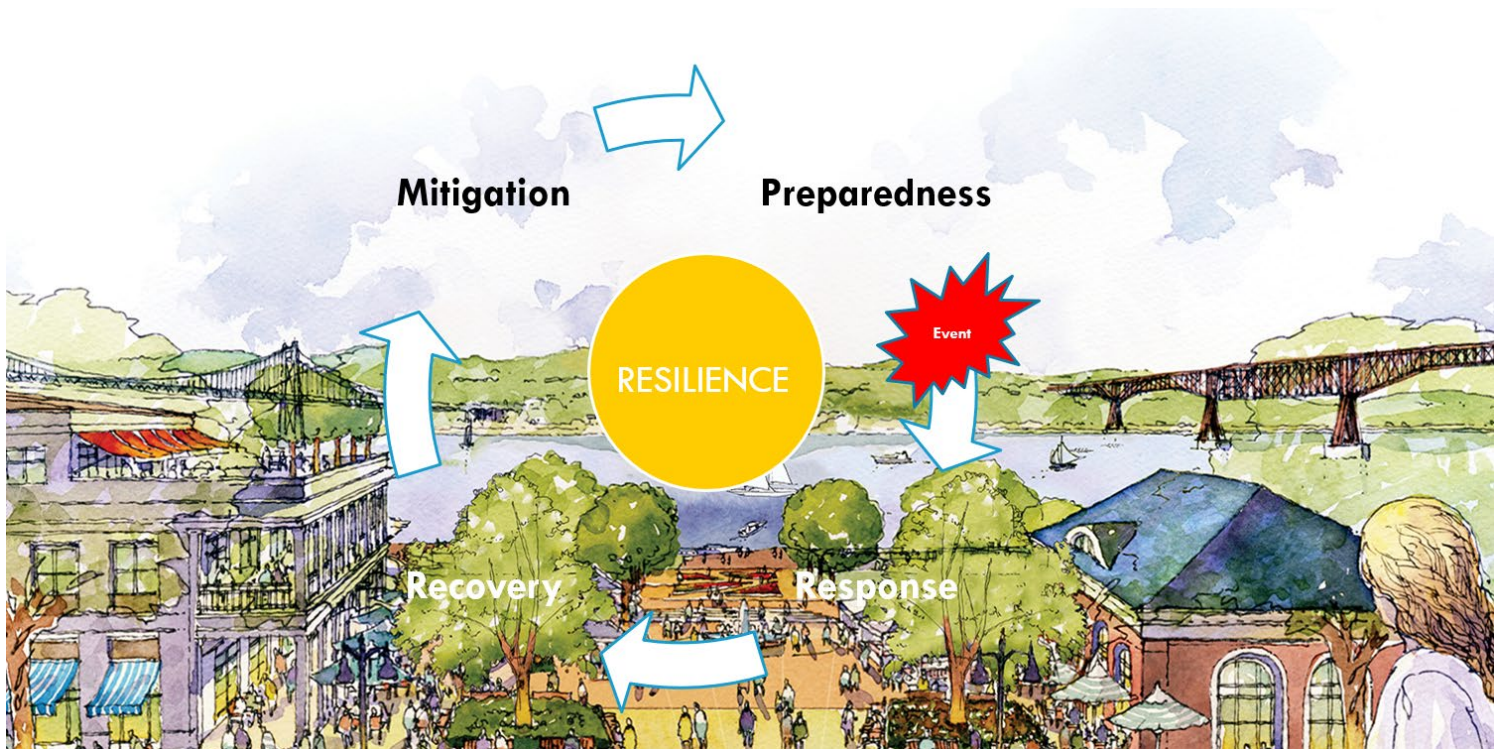
Resiliency

While the MMMPO area may not be as vulnerable as coastal communities, it is nonetheless subject to the effects of ongoing climate change. Climate change impacts our transportation infrastructure through increases in days with excessive heat, intense rainfall, flooding events, winter storms, fog, wildfires, drought, and other effects. These naturally occurring events cause shocks to the transportation network, which can cripple mobility of people and goods. Building resilient transportation networks, and making decisions that increase the system's resiliency, helps to mitigate these impacts by anticipating and adapting during disruptions.

Under the newly implemented INVEST in America Act, MPOs are charged with planning to make transportation infrastructure more resilient. This can involve large-scale efforts to rebuild a critical facility that could be impacted by climate change or build a new road or bridge as an alternative to that facility. However, there are also **relatively small decisions that can be made by individual agencies to increase system resiliency** as they replace or upgrade equipment.

To combat the effects of natural hazards, the MMMPO and its member communities can take actions now to prepare for and mitigate impacts to the transportation system, reducing dependency on a single mode of transportation and build regional resiliency. These include:

- Encouraging adoption of low-carbon fuels and alternative fuels vehicles, particularly as fleet vehicles for local governments;
- Influencing road users' mode choices and travel patterns with transit improvements, bicycle and pedestrian facilities, and support for ridesharing, vanpooling and carpooling with park-and-ride lots;
- Identifying electric vehicle charging stations within public parking areas and significant regional destinations (such as commercial shopping areas, community centers, or entertainment districts);
- Restricting development along steep slopes and within floodplains along creeks and rivers, reserving this land for open space, greenways, and other purposes;
- Incorporating stormwater retention areas along curbs (Green Streets) with any new roadway reconstruction projects.



The Planning Resiliency cycle.



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