DIRECTION 2050

LONG RANGE TRANSPORTATION PLAN

HEPMPO Hagerstown/Eastern Panhandle Metropolitan Planning Organization

FINAL REPORT • MAY 18, 2022

FINAL PLAN

DIRECTION2050 - LONG RANGE TRANSPORTATION PLAN

For the Hagerstown/Eastern Panhandle Metropolitan Area

PREPARED FOR:

Hagerstown/Eastern Panhandle Metropolitan Planning Organization
Hagerstown, Maryland

PREPARED BY:

Michael Baker International
Linthicum, Maryland

WITH:

Foursquare Integrated Transportation Planning
Washington, D.C.

Integrated Designs Incorporated
Glen Burnie, Maryland

Fehr and Peers
Washington, D.C.

EBP Incorporated
Boston, Massachusetts

July, 2022

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Hagerstown/Eastern Panhandle Metropolitan Planning Organization
33 W. Washington St., 4th Floor, Suite 402, Hagerstown, MD 21740
Phone: 240-313-2080, Fax: 240-313-2084
www.hepmpo.net

RESOLUTION NUMBER 2022-14

A RESOLUTION BY THE HAGERSTOWN/EASTERN PANHANDLE METROPOLITAN PLANNING ORGANIZATION (HEPMPO) TO ADOPT THE DIRECTION 2050: LONG RANGE TRANSPORTATION PLAN

RECITALS

WHEREAS, the MPO is required to approve an updated Long Range Transportation Plan in accordance with federal requirements stated in the Infrastructure Investment and Jobs Act (IIJA); and

WHEREAS, the updated Long Range Transportation Plan was prepared by consulting firm Michael Baker International, with extensive input from local elected officials, county and city staff, and the public; and

WHEREAS, opportunities for public input prior to development and after preparation where provided for; and

WHEREAS, the update plan has been developed to be fiscally constrained; and

WHEREAS, the proposed Long Range Transportation Plan will cover the time period from July 2022 through July 2027;

NOW, THEREFORE, BE IT RESOLVED by the HEPMPO that the Direction 2050: Long Range Transportation Plan is hereby adopted.

PASSED AND DULY ADOPTED after motion this 18th day of May 2022;

HAGERSTOWN/EASTERN PANHANDLE
METROPOLITAN PLANNING ORGANIZATION

By: _____
Kevin Cerrone, Chairman

Attest: _____

DRAFT FOR PUBLIC REVIEW

CHAPTER 1 UNDERSTANDING THE PLANNING PROCESS

INTRODUCTION

Direction2050, the Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO) long range transportation plan (LRTP), represents a 25-year vision for maintaining and enhancing the regional multimodal transportation system. In the face of economic uncertainties due to accelerated demographic and commuting changes resulting from the COVID-19 pandemic, the plan identifies the region's critical needs and challenges and provides a framework to guide decision-making for future transportation investments. It will serve as the region's guiding document to visualize these changes and how these changes impact the transportation system, policies, and investments.

The HEPMPO LRTP, ***Direction2050***, presents a balanced plan for preserving, managing, and expanding the region's multimodal transportation system. The approach relied on state and local partners, and public input to provide key insights in identifying solutions for enhanced efficiency and functionality. By understanding future fiscal constraints and emphasis on low-cost alternative solutions, the LRTP presents an analytical approach to improve multimodal connectivity through the enhancement of highway, freight, transit, and bicycle/pedestrian facilities in the region, while also ensuring environmental compliance and transportation safety.

HEPMPO

HEPMPO is the federally designated Metropolitan Planning Organization (MPO) for the Hagerstown, MD-WV-PA urbanized area. The MPO is responsible for developing the ,regional LRTP and four-year Transportation Improvement Program (TIP) by allocating federal transportation funding through a comprehensive, cooperative, and continuing transportation planning forum for public decision-makers.

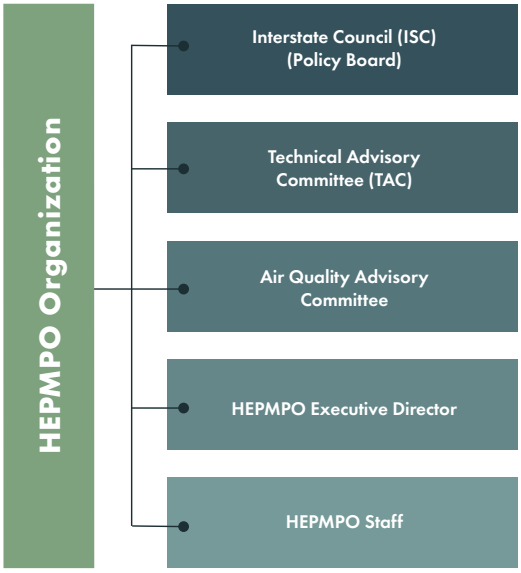


Figure 1: *HEPMPO Organization*

HEPMPO MISSION

Our mission is to provide a cooperative forum for regional collaboration, planning, and public decision-making for short and long-term solutions that support mobility needs, economic development, environmental sensitivities, and multimodal connectivity for a safe, secure, and efficient transportation system.

HEPMPO works closely with the Region 9 Planning and Development Council in West Virginia and the Washington County Planning Department in Maryland in efforts towards accomplishing the transportation goals of the region. One of these efforts is the creation and periodical updating of the LRTP.

ORGANIZATION OF THE HEPMPO

The HEPMPO tiered structure, shown in **Figure 1**, is governed by the Interstate Council (ISC), the policy board comprised of representatives of the respective State departments of transportation, public transit operators, and local elected officials. ISC serves as the MPO decision-making body and is responsible for formally adopting the LRTP and endorsing all MPO activities including planning studies.

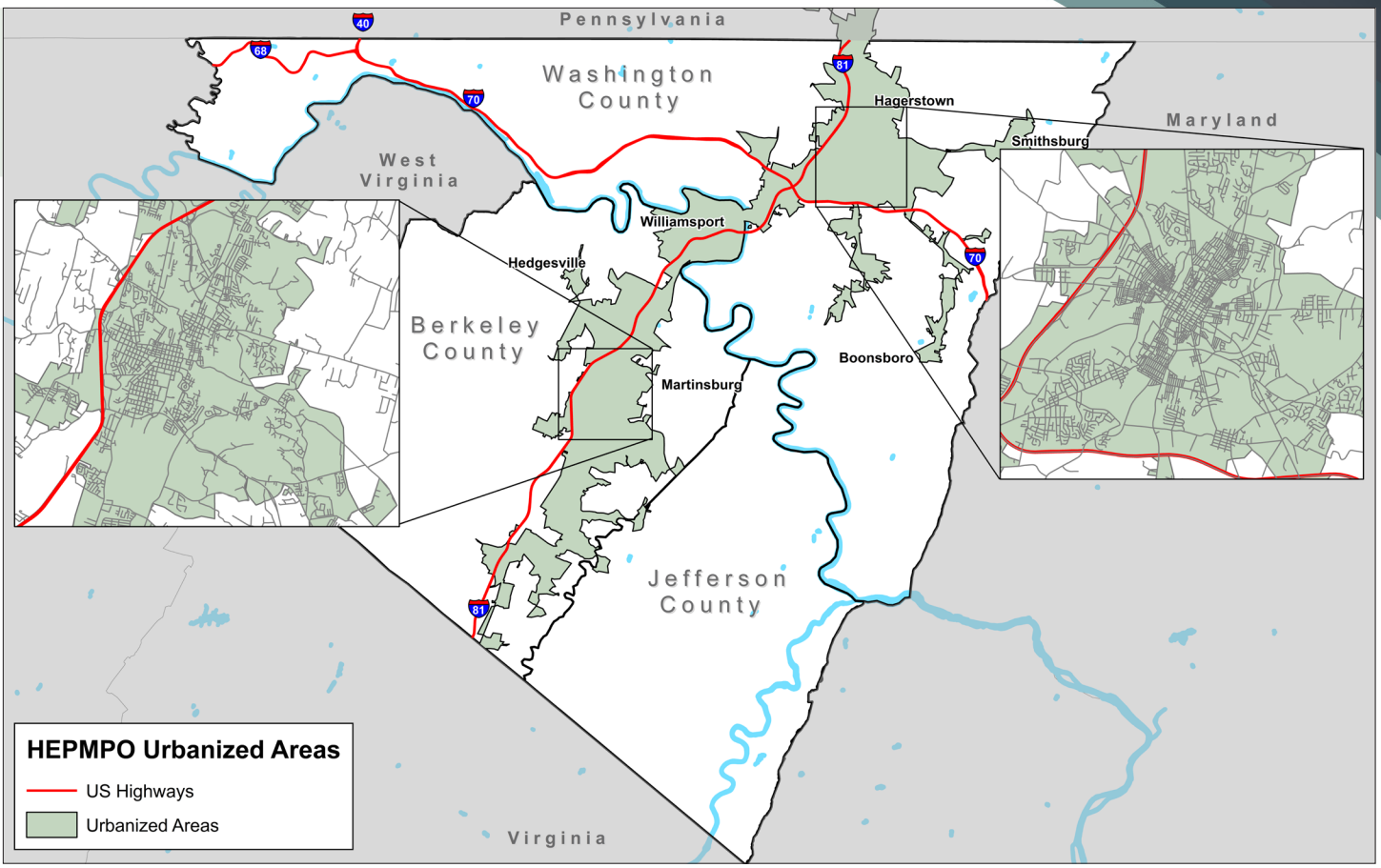


Figure 2: *HEPMPO Study Area with Urbanized Areas*

The Technical Advisory Committee (TAC) provides technical assistance, oversight, and recommendations to the ISC and is comprised of transportation professionals from Maryland and West Virginia including representatives from aviation, freight, economic development, traffic, engineering, and transit communities. The Air Quality Advisory Committee (AQAC) ensures compliance with transportation conformity requirements on an as-needed basis. The HEPMPO region is currently in attainment of all the criteria air pollutants for the National Air Quality Standards (NAAQS) and is not currently subject to transportation conformity.

The 2020 Census population totals influence the designation and boundary of HEPMPO's urbanized areas (UZA), shown in **Figure 2**. For UZAs with populations greater than 200,000 people, the Federal Highway Administration (FHWA) designates Transportation Management Areas (TMAs) to address the increased planning and regulatory burdens faced by larger UZAs. The HEPMPO region, while currently not designated as a TMA, may exceed this population threshold in the future. The TMA designation will affect HEPMPO's transportation planning responsibilities and would include establishing a congestion management process as well as potentially providing additional funding and match requirements for planning and transit.

THE MPO PLANNING PROCESS

Transportation planning is a collaborative process led by HEPMPO with the key stakeholders in the regional transportation system, including state and federal transportation agencies, environmental organizations, local business community, transit operators, community groups, and the general public. HEPMPO has implemented a proactive public participation process, which includes holding public meetings to hear and address community concerns, conducting outreach surveys, as well as outreach to underserved areas and communities ensuring their feedback is incorporated.

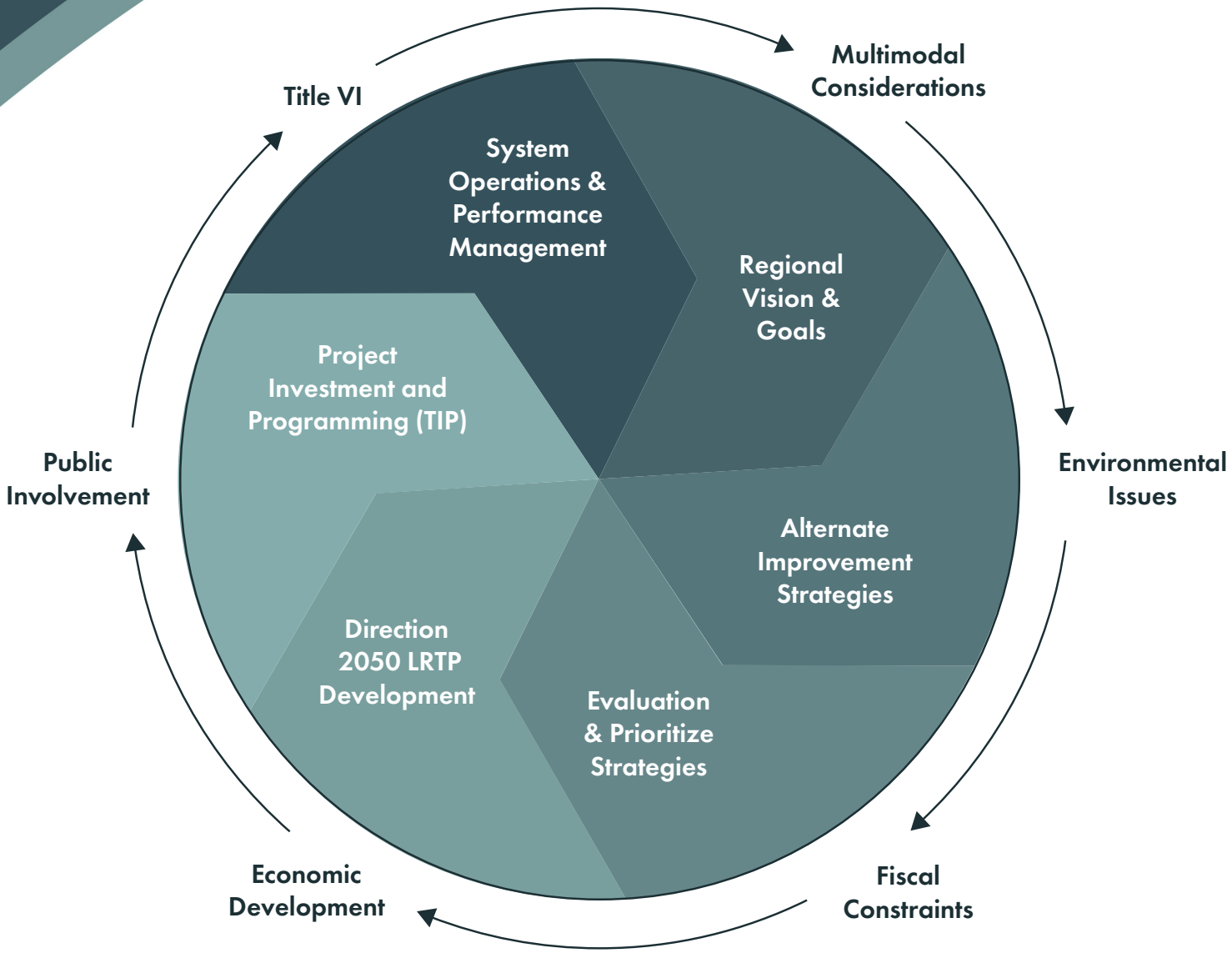


Figure 3: *Transportation Planning Lifecycle*

Direction2050 establishes the regional long-term vision through goals, objectives, and strategies that lead to the development of an integrated intermodal transportation system that facilitates the safe, efficient movement of people and goods. It is the culmination of the transportation planning cycle that integrates the region's vision, strategic planning activities, prioritization, and investment plan along with performance management activities. The planning lifecycle, shown in **Figure 3**, depicts the Federal Transportation Performance Management (TPM) as required under the new federal infrastructure law. FHWA defines TPM as a strategic approach that uses system information to make investment and policy decisions to achieve performance goals.

BIPARTISAN INFRASTRUCTURE LAW

Infrastructure Investment and Jobs Act (IIJA) also known as the "Bipartisan Infrastructure Law" (BIL) is the federal infrastructure investment plan signed into law in November 2021. The BIL provides funding for roads and bridges while promoting safety for all road users and supports new investment strategies to:

- improve the condition, resilience, and safety of road and bridge assets,
- promote and improve safety for all road users, particularly vulnerable users,
- make streets and other transportation facilities accessible to all users,
- address environmental impacts from stormwater runoff to greenhouse gas emissions,
- prioritize infrastructure that is less vulnerable and more resilient,
- future-proof our transportation infrastructure by accommodating new and emerging technologies like electric vehicle charging stations, renewable energy generation, and broadband deployment in transportation rights-of-way,
- reconnect communities and reflect the inclusion of disadvantaged and under-represented groups in the planning, project selection, and design process, and
- direct Federal funds to their most efficient and effective use, consistent with these objectives.

To support these strategies, the BIL requires HEPMPO to use a percentage of planning funds on specified planning activities to increase safe and accessible options for multiple travel modes. This supports HEPMPO's "Complete Streets" policy adopted in April 2018 that requires an integrated approach that supports safe and convenient travel for all users in designing and operating new and improved facilities.

GOALS AND OBJECTIVES

Federal legislation, coupled with state and local agency direction, is primarily responsible for shaping the regional transportation planning process. The BIL and previous infrastructure legislation (FAST Act and MAP-21) identify ten planning factors that guide the MPO long-range transportation planning process. The goals developed for ***Direction2050*** closely resemble the FAST Act Planning Factors, shown in **Figure 4**.

The ***Direction2050*** goals and objectives, shown in **Table 1**, guide HEPMPO through project programming and implementation. Goals define the desired result, while objectives support a specific goal and provide additional details or strategies for achieving each goal. Both provide a roadmap toward the region's future transportation vision and HEPMPO and our transportation partners measurable benchmarks to ensure transportation advancements and priorities keep moving forward.

FEDERAL PLANNING FACTORS:

- Support economic vitality,
- Increase the safety for all users,
- Increase the security for all users,
- Increase accessibility and mobility of people and freight,
- Protect and enhance the environment, and promote consistency with State and local plans,
- Enhance the integration and connectivity,
- Promote efficient management and operation
- Emphasize preservation,
- Improve the resiliency, and
- Enhance travel and tourism

Figure 4: *Federal Planning Factors*

Goals	Objectives
System Preservation	Improve the efficiency and quality of the transportation network through proactive planning, technology, and maintenance. • Maximize useful life of assets through prioritized infrastructure repair and maintenance. • Ensure safe travel along the region's multimodal transportation system through a properly preserved system.
Roadway Safety	Promote a safe and secure regional transportation network that will reduce traffic incidents, fatalities, and serious injuries. • Reduce injuries and fatalities along the region's multimodal transportation system. • Improve the security of the transportation system's users through the coordination of agencies, responders, and departments (transportation and non-transportation).
Traffic Congestion	Improve the reliability of the transportation system and promote efficient system management and operations. • Reduce traffic congestion on primary travel corridors within the region. • Maintain reliability and performance for freight, transit, bike and pedestrian modes of travel. • Integrate technologies, techniques, and programs to maximize the efficiency of the existing system.
Land Use	Align local planning efforts with regional transportation initiatives and promote smart growth practices. • Incorporate and coordinate transportation improvements with existing and planned future land uses to minimize infrastructure costs.
Economic Prosperity	Improve access to social and economic opportunities. • Provide safe, reliable, and affordable connections to employment, education, healthcare, and other essential services. • Provide for the efficient movement of goods by rail and truck and improve connections to global markets. • Enhance travel and tourism connectivity to regionally and nationally significant resources.
Environment	Minimize the impacts of the transportation network on the environment and increase the resiliency of transportation assets. • Improve air quality through the reduction of emissions. • Increase system resiliency to existing and future climate and extreme weather impacts. • Promote coordination of planning to avoid disturbance of sensitive natural areas and historical properties while minimizing transportation impacts on neighborhoods.
Multimodal Transportation	Encourage alternative modes of transportation through multimodal network improvements and innovative marketing strategies. • Improve and enhance regional and long-distance transit usage and coverage within the region. • Improve and enhance bicycle and pedestrian facilities within the region.

Table 1: *HEPMPO Regional Goals and Objectives*

CHAPTER 2 STAKEHOLDER & PUBLIC INVOLVEMENT

Stakeholder and public participation, required under the FAST Act, played a critical role in the transportation planning process. Throughout the development of ***Direction2050***, input and feedback from a diverse group of stakeholders was solicited and incorporated through a series of Technical Advisory Committee (TAC) and public meetings, as well as through a web-based survey. The stakeholders represented various organizations and interests throughout the Region and included state and local officials, transit operators, HEPMPO's TAC, and the public.

To keep stakeholders informed during the planning process, a project website was developed along with a data repository, which houses all of the maps and data for the LRTP. The website provided an overview of the process, timelines, meeting information, and progress updates. Additional updates were also provided on HEPMPO's website and Facebook page.

LRTP Project Website

TECHNICAL ADVISORY COMMITTEE

HEPMPO's TAC, comprised of professionals with local knowledge of the Region's transportation network and infrastructure, provided technical oversight and input throughout the plan's development. The committee met three times and reviewed technical planning documents and draft reports. In addition, the committee provided demographic, future development and land use, roadway characteristics, and external traffic data that were critical for the LRTP update. Meeting information is in **Table 2**.

Date	Topic
January 27, 2021	Kick-off Meeting
July 27, 2021	Existing Conditions
February 23, 2022	Prioritization

Table 2: *TAC Meetings*

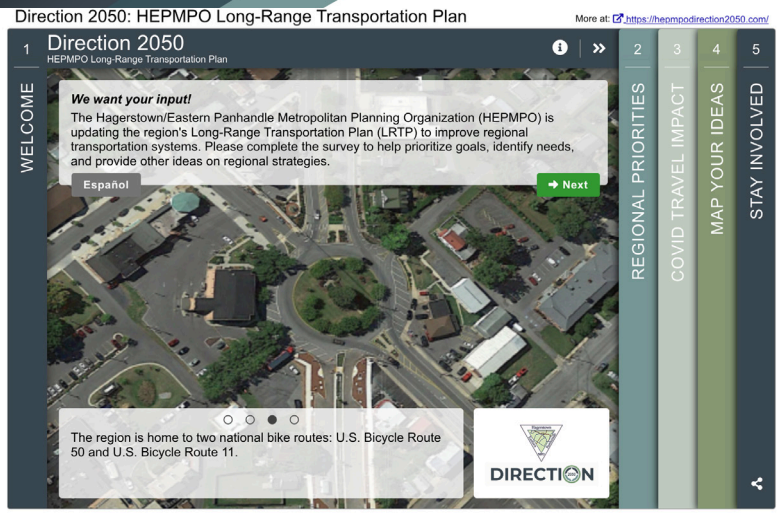
PUBLIC MEETINGS

Two sets of public meetings were conducted over the course of the LRTP planning process and held in accordance with HEPMPO's Public Participation Plan. Public meeting dates and locations can be found in **Table 3** and additional details about the public meetings, including announcements, can be found in **Appendix D**.

Topic	Date	Location
Existing Conditions & Survey	June 22, 2021	Martinsburg Public Library
	June 23, 2021	Ranson City Hall
	June 29, 2021	Washington County Free Library
Draft LRTP	May 4, 2022	Ranson City Hall
	May 5, 2022	Martinsburg Public Library
	May 12, 2022	Washington County Free Library

Table 3: *LRTP Public Meeting*

The first set of meetings were held in June 2021. The meetings in each of the three counties provided an overview of the transportation planning process, goals and objectives, existing conditions, and initial forecasts for the region. Attendees were also invited to complete a web-based survey, which was introduced to the public at the meetings.



Direction2050 Public Outreach Survey

Once a draft of the LRTP was completed, the public was given a 30-day period from April 15 to May 15, 2022, to review the draft plan and provide comments in accordance with federal and state regulations. In addition, a second set of public meetings were held in May 2022. The meetings provided an overview of ***Direction2050*** and allowed for public comments to be received and answered.

PUBLIC SURVEY

A web-based survey was developed to provide a unique perspective on community needs related to transportation, regional priorities, and potential highway, transit, and pedestrian projects. The survey, which was open from June 1 through June 30, 2021, consisted of ranking the LRTP goals, mapping transportation-related concerns, as well as answering questions focused on understanding the impact of COVID-19 on commuting patterns and behavior.

SURVEY RESULTS

During the month the survey was open, 499 people participated in the survey and identified regional priorities that aligned with the goals of the LRTP and the impacts of COVID-19 on commute behaviors. Key takeaways have been identified in **Table 4**.

Regional Priorities	
Roadway Safety	• Reduce vehicle speeds on roadways. • Reduce the number of accidents as a result of speed, vehicle volume, construction, and/or other factors.
Traffic Congestion	• Widen roadways to reduce congestion and accommodate the increasing number of trucks and vehicles on the roadway as well as expected future growth. • Invest in public transit and commuter services to expand access within the region and provide connections to employment areas outside the region. • Improve and expand bike/ped facilities (bike paths, crosswalks, sidewalks) to allow for access between communities and economic/employment centers.
Land Use	• Impacts of new developments on current roadway and infrastructure capacities.
Environment	• Flooding and its impact on existing infrastructure.
COVID-19	
Impacts	• Expect minimal or no long-term change to commute or non-work trips. • Employed in fields where the opportunity to work from home may not be possible or are limited (Healthcare, manufacturing, education, etc.).

Table 4: *Survey Key Takeaways*

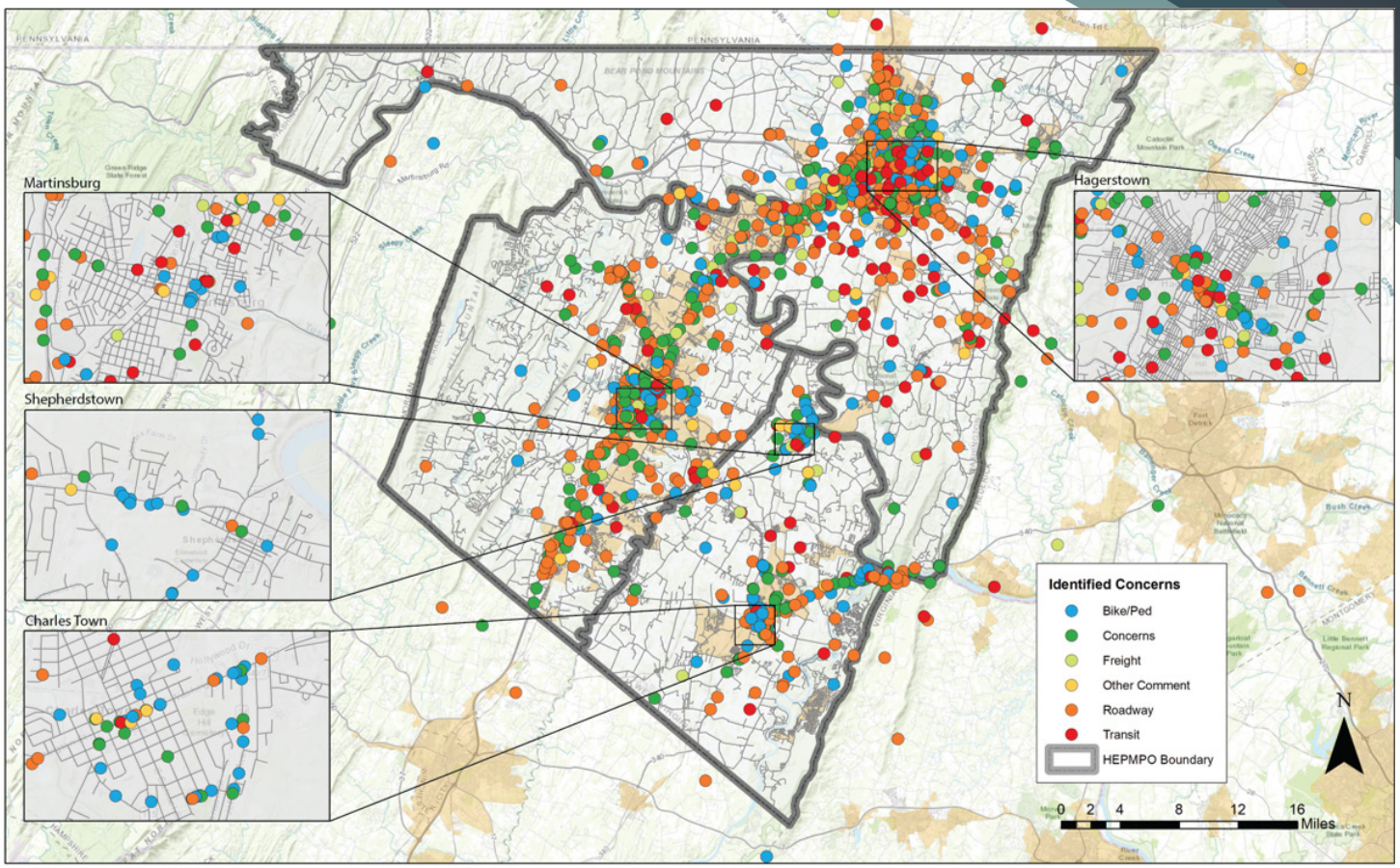


Figure 5: *Survey Map Markers*

In addition, over 1,200 markers, shown in **Figure 5**, were placed on the interactive map. The markers were used to identify transportation needs, projects, and improvements and were integrated into the project prioritization process. Survey results can be found in **Appendix C**.

ENVIRONMENTAL JUSTICE

HEPMPO considered environmental justice issues throughout the planning process. This ensured that potentially disadvantaged populations would not experience disproportionately high and/or adverse impacts from transportation projects and would have the opportunity to share equally in the benefits resulting from the identified transportation projects.

INTERCEPT SURVEY

Input from the environmental justice populations was specifically sought out during the LRTP process through a series of intercept surveys. This ensured full and fair participation in the transportation decision-making process by all potentially affected communities. The survey, which was available in both English and Spanish, was conducted in-person on June 29, 2021, by persons who were bi-lingual at businesses and other public places in Charles Town, Martinsburg, and Hagerstown. Survey cards were also provided to those who wished to complete the survey later. The intercept survey locations, shown in **Figure 6**, were picked due to high transit use and likelihood of environmental justice population presence.

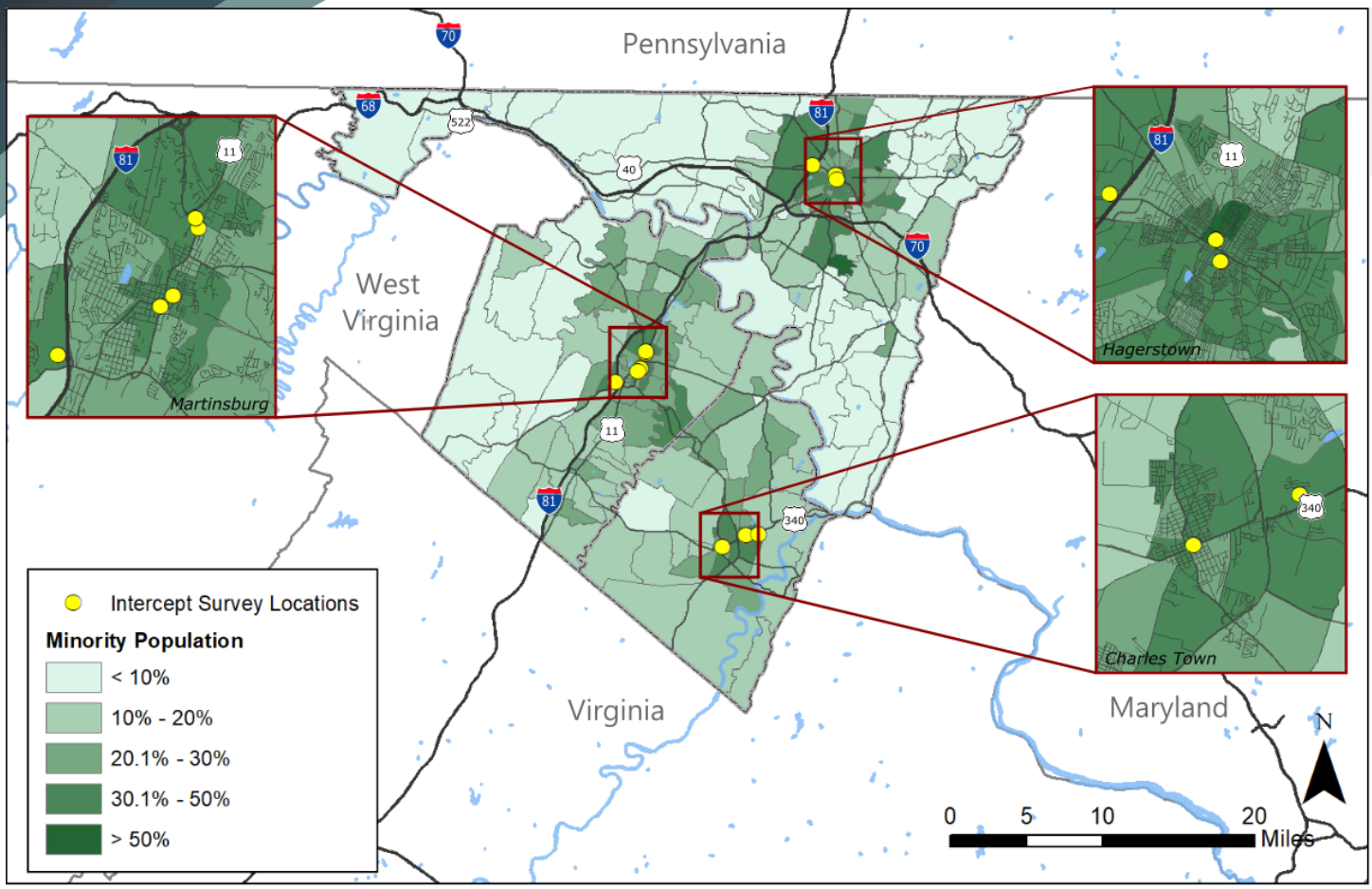
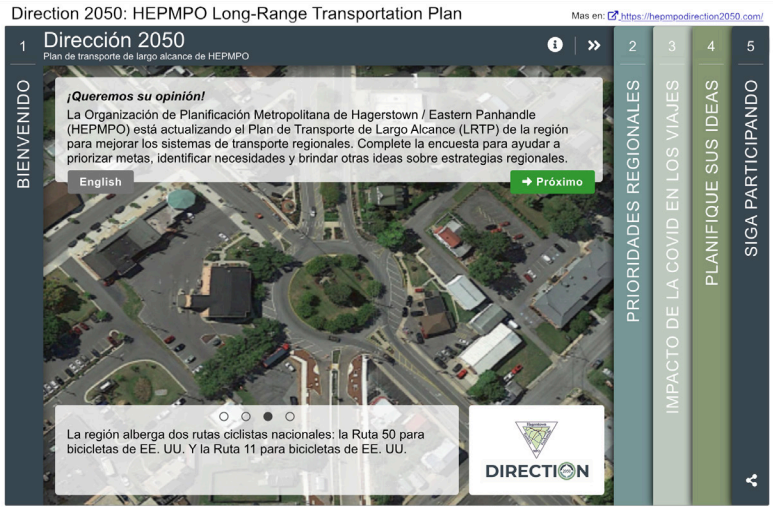


Figure 6: *Survey Intercept Locations*



Direction2050 Spanish Intercept Survey

The intercept survey had 148 respondents, with almost one-fifth being Spanish-speaking. The respondents identified economic prosperity as one of the top priorities for the region and also indicated a higher percentage of shorter commute distances. This highlighted the need for higher paying opportunities and the potential reliance on transit and/or walking for commuting. Respondents also placed over 60 markers on the map, which were used to identify transportation needs, projects, and improvements. Intercept Survey results can be found in **Appendix D.**

CHAPTER 3 OUR REGION'S TRANSPORTATION NEEDS AND ISSUES

INTRODUCTION

Understanding the region's transportation needs and issues serves as the basis for identifying and prioritizing transportation investments, assessing future studies and work plans for the HEPMPO, and informing the coordination between state, regional, and local planning agencies on transportation programs and initiatives.

This section provides highlights of the regional needs across multiple topic areas that address the key planning factors required by the metropolitan planning regulations. Many of these needs are translated into criteria or measures that are addressed in the prioritization of our region's highway expansion projects as included later in this plan.

The region's needs and issues have been identified through coordination and outreach with the public and supporting transportation planning agencies. Other needs and priorities have also been extracted from state, regional, and local plans or studies. In addition, the HEPMPO integrates data analyses conducted through their studies and long-range planning process. Identifying and monitoring needs is an ongoing process that is continually updated and revised based on new trends and issues.

Land Use

Traffic Congestion

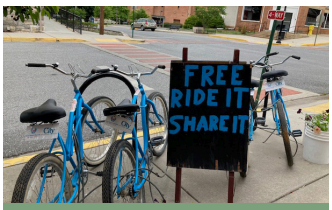
Travel Connections

Safety

Asset Management

Freight, Rail & Aviation

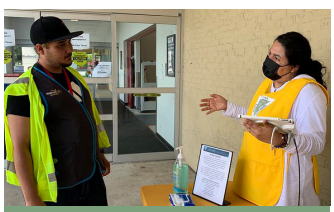
Transit



Active Transportation

Travel & Tourism

Environment



Equity

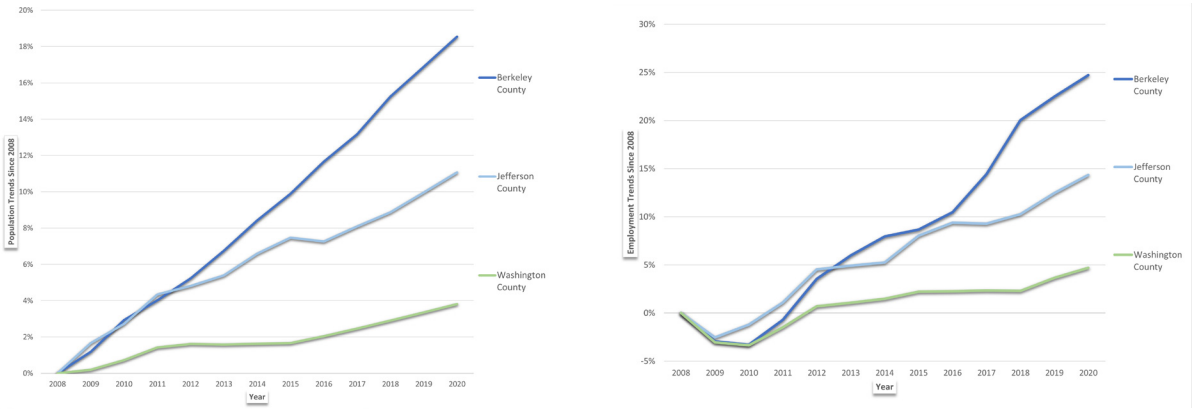
Figure 7: *Transportation Needs & Issue Topic Areas*

LAND USE REGIONAL NEEDS AND ISSUES SUMMARY:

- Over the last decade, all three counties have experienced population and employment growth. Berkeley and Jefferson counties in West Virginia have experienced the highest growth, respectively.
- Historic employment growth has occurred primarily along the interstate corridors while housing and population growth has occurred outside of Hagerstown, Martinsburg, and Charles Town. Corridors, like WV 9, have seen a significant amount of new housing development that has had major impacts on travel demand along that corridor.
- Over the last decade the Transportation/Warehousing sector has experienced the largest employment growth, more than doubling over that time.
- Using the latest 2020 projections developed by Woods & Poole Economics, the region is expected to continue to grow through 2050 at rates consistent with that seen over the last decade.
- As illustrated in Figure 6, household growth is expected to occur outside each of the cities and towns. The growth areas were determined based on locations of recent and planned housing development. Employment growth is projected primarily along the interstate corridors but also along other key corridors like US 340.
- The forecasted growth areas and their projected impacts on travel demand have been incorporated into the prioritization process for highway expansion projects.
- Based on the land use growth forecasts, the following roads are estimated to have the large increases in traffic volumes:
    - ***Washington County***: US 40 from I-70 to Eastern Boulevard; MD 63 from I-70 to US 40; Halfway Blvd.; Crayton Blvd.; Portions of US 11 north of Hagerstown; Eastern Blvd.
    - ***Berkley County***: WV 9 from Martinsburg to Hedgesville; US 11 north of Martinsburg; WV 45 from I-81 to Queen Street Exit; WV 51 near Inwood; US 11 north of Inwood
    - ***Jefferson County***: US 340 from Charles Town to Harpers Ferry; WV 9 from US 340 to Virginia

LAND USE

The integration of transportation and land-use policies leads to better management growth, improves the efficiency of travel, and contains infrastructure costs. The HEPMPO continues to monitor ongoing changes in the region's population and employment. With each plan update, the HEPMPO prepares a regional forecast of housing and employment over the next 25 years as shown in **Figure 8**. The forecasts are allocated to different areas within the region by census tract based on recent development trends and other insights obtained from local planning and economic development staff, shown in **Figure 9**. These forecasts are an important input to regional travel models to estimate future travel demand and congestion.



Source: Woods and Poole's Economics

Figure 8: *Historic Population & Employment Growth in Region*

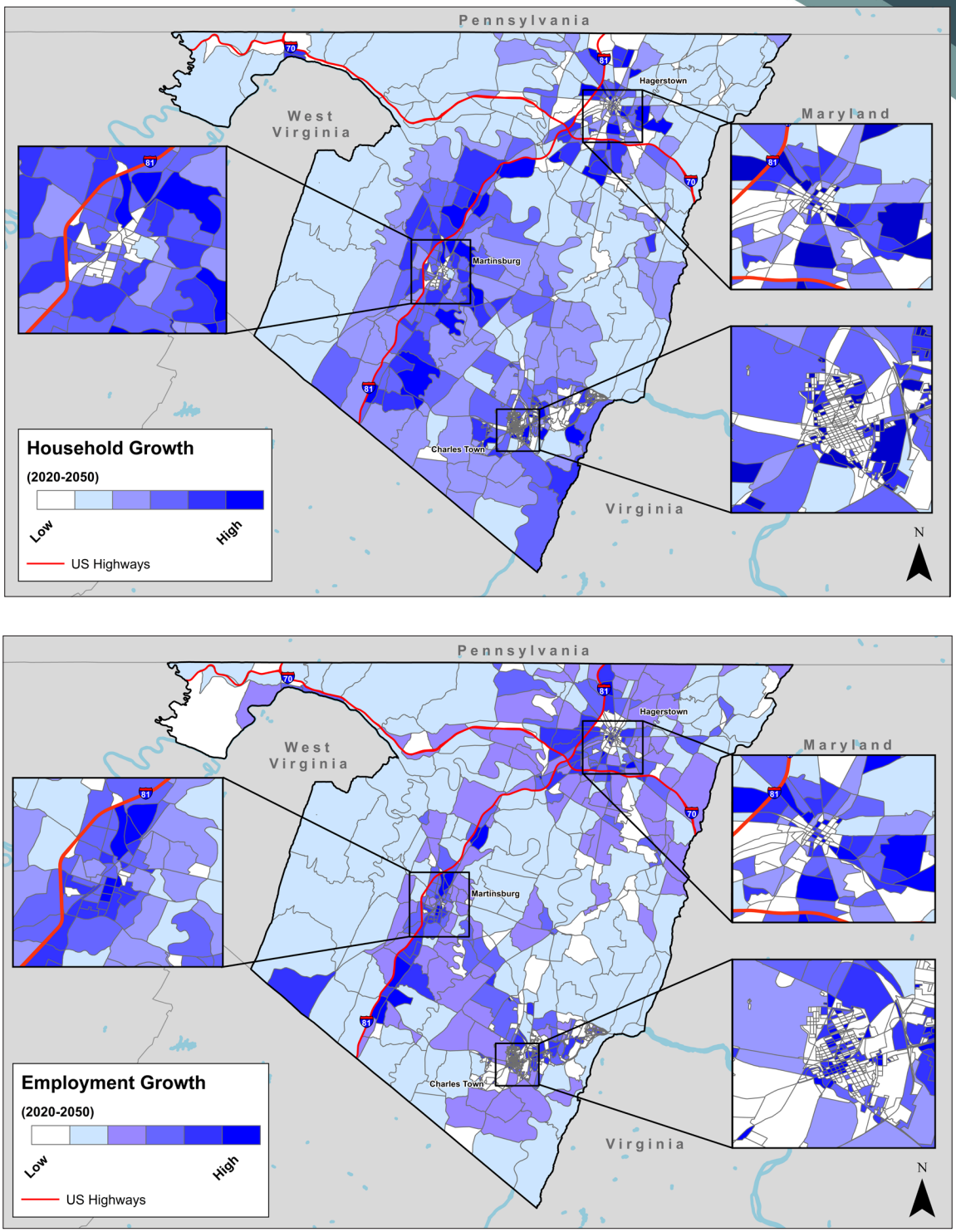
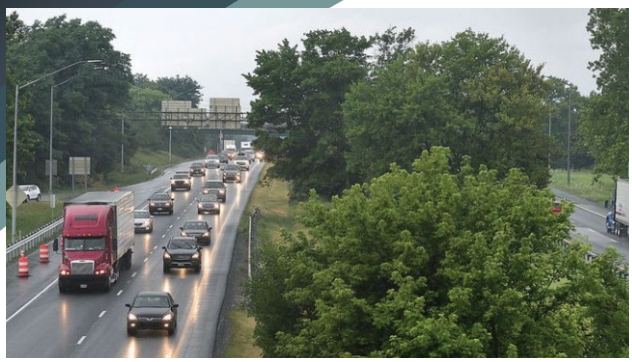


Figure 9: *Projected Population and Employment Growth in HEPMPO Region*

Additional land use data & maps are available in the Data Repository

- Population/Employment Density Maps
- Minority and Low-Income Mapping
- Top Regional Employers



TRAFFIC CONGESTION

Understanding the locations and extent of traffic congestion is a key step in selecting and prioritizing highway expansion projects within the region. The HEPMPO has purchased travel time data based on actual vehicle GPS data collected over a two-year period from 2019 to 2020. Travel times are compared between off-peak (e.g. nighttime) and peak travel periods that include the morning and evening commute hours. This assessment produces measures like the Travel Time Index (TTI) that provide insights into the location and extent of traffic congestion on roadway segments throughout the region, as shown in **Figure 10**.

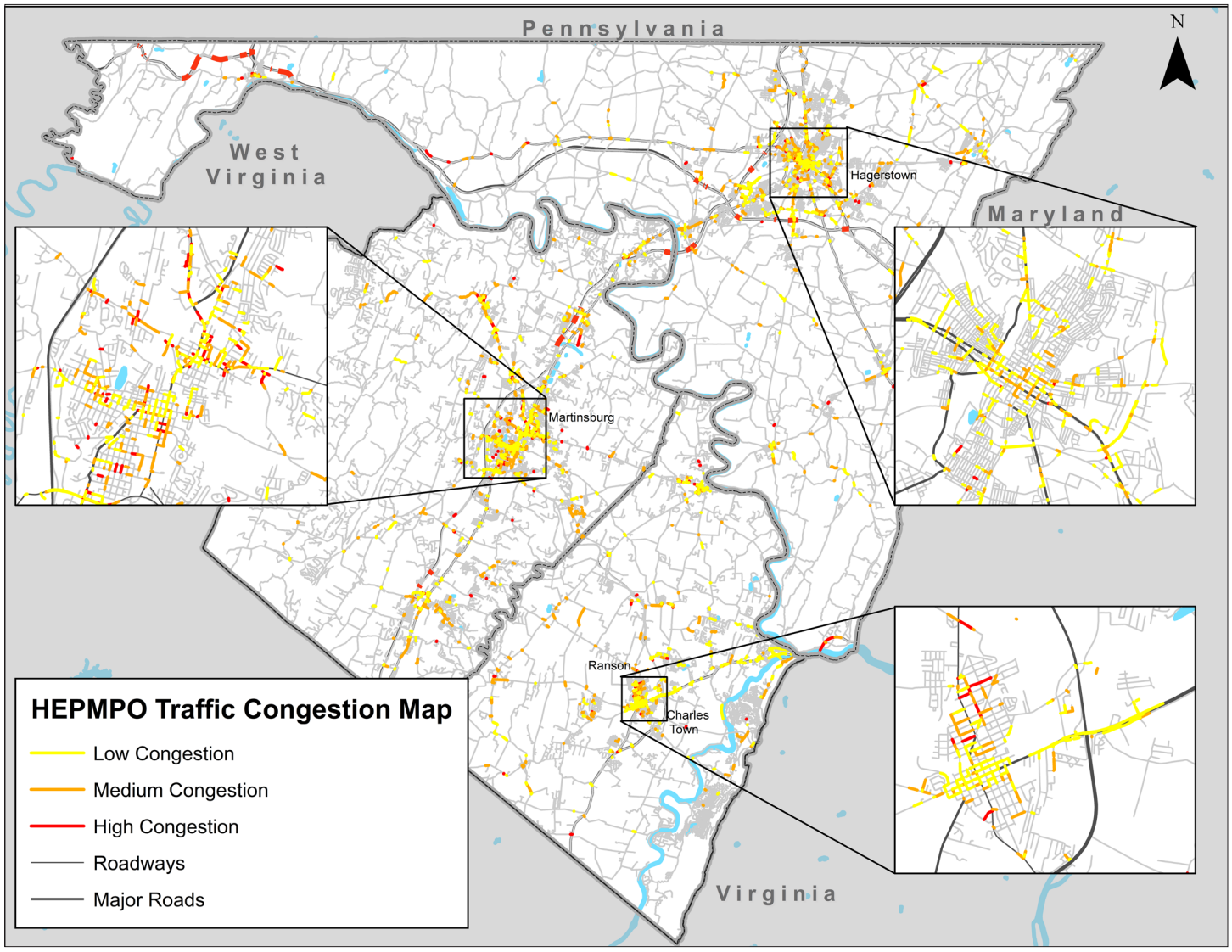


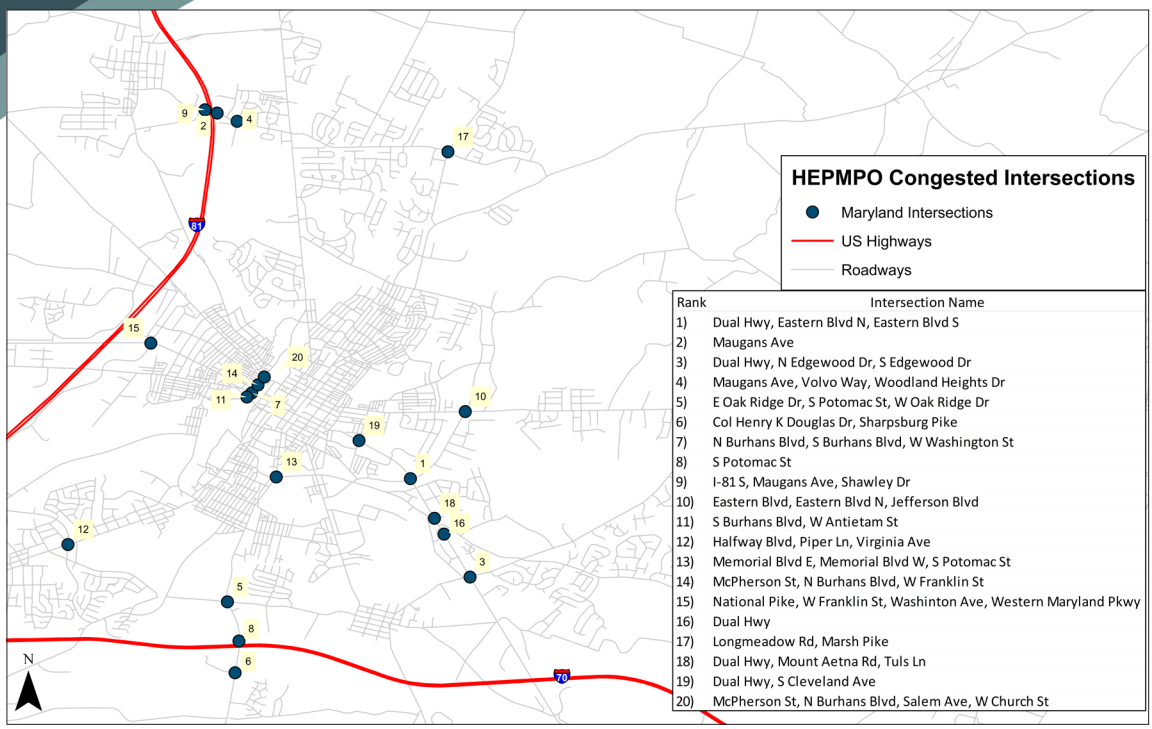
Figure 10: *HEPMPO Traffic Congestion Map Based 2019 GPS Data*

TRAFFIC CONGESTION REGIONAL NEEDS AND ISSUES SUMMARY:

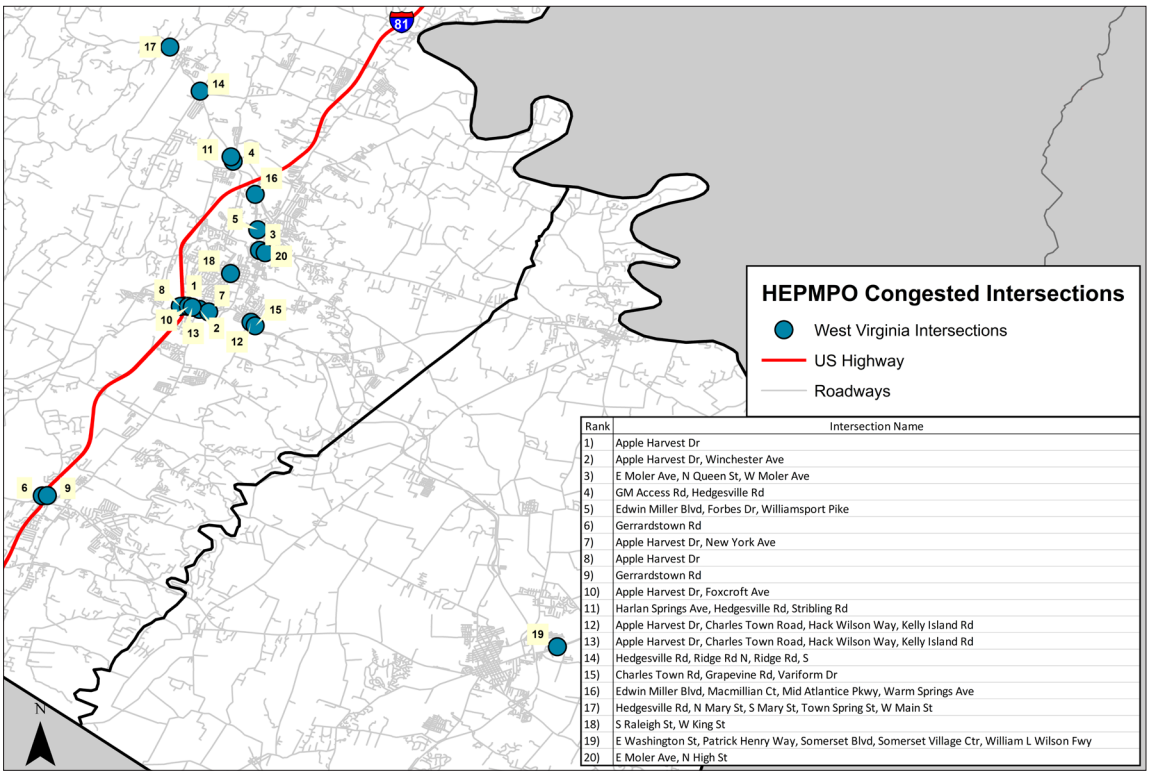
- Overall, regional traffic congestion was relatively stable from 2011 through 2019.
- Many corridors have seen significant reductions in traffic congestion since 2019 due to COVID impacts on commuting and travel. These impacts are starting to rebound in 2021 closer to 2019 levels. However, there are questions about whether more people will be working from home in the future and how this might impact the need for certain highway expansion projects.
- Based on 2019 GPS data, the region's top congested corridors have been identified in each county as shown in Table 5. This data is primarily based on pre-COVID impacts.
- In addition, the top-ranked congested signalized intersections have been identified in Figure 11. In WV, 19 of the top 20 are located in Berkeley County. This data is shared with each State Department of Transportation (DOT) to inform their selection of signal improvement strategies.
- Public comments also raised concerns over congestion on other roads including US11 (Meadow Lane), I-81 Exit 10 (Showalter Road), and the George St./Hillside intersection.
- In comparing data to past travel times obtained from the last plan iteration, several key corridors have significantly worsened in congestion between 2015 and 2019. These include:
    - WV 9 South of Hedgesville
    - Apple Harvest Drive (WV 45)
    - US 11 and WV 9 intersections in Martinsburg
- Interstate "reliability" remains a primary concern to freight businesses and the public. Congestion may not be consistently bad on I-81 and I-70, but events like accidents have significant impacts on travel.
- The HEPMPO continues to work with state agencies on identifying low-cost operational strategies. Studies have recently focused on the interstate corridors and new signal technology solutions continue to be evaluated at selection locations by each State DOT.

County	Facility	From	To
Washington	Eastern Boulevard	US 40	N. of MD 64
	I-70	Exit 32	W. of MD 63
	MD 65	N. of Oak Ridge Drive	Poffenberger Road
	US 40	US 11	MD 64
	US 40	Eastern Boulevard	Edgewood Drive
	I-68	I-70	Rt 144
	Maugans Avenue	I-81	US 11
Berkeley	Apple Harvest Drive	I-81 SB Offramp	US 11
	WV 9	N. of Hedgesville	WV 45
	I-81	Exit 20	Weaver Lane
	WV 9	State Circle	WV 45
	WV 51	West of I-81 SB Offramp	US 11
Jefferson	US 340	W. of Jefferson Avenue	E. of Patrick Henry Way
	WV 51	Co Route 13	Church Street
	WV45, CR230, CR17/1	W. of Potomac Farms Dr.	Mill Street

Table 5: *Region's Top Congested Corridors*



Rank	Intersection Name
1)	Dual Hwy, Eastern Blvd N, Eastern Blvd S
2)	Maugans Ave
3)	Dual Hwy, N Edgewood Dr, S Edgewood Dr
4)	Maugans Ave, Volvo Way, Woodland Heights Dr
5)	E Oak Ridge Dr, S Potomac St, W Oak Ridge Dr
6)	Col Henry K Douglas Dr, Sharpsburg Pike
7)	N Burhans Blvd, S Burhans Blvd, W Washington St
8)	S Potomac St
9)	I-81 S, Maugans Ave, Shawley Dr
10)	Eastern Blvd, Eastern Blvd N, Jefferson Blvd
11)	S Burhans Blvd, W Antietam St
12)	Halfway Blvd, Piper Ln, Virginia Ave
13)	Memorial Blvd E, Memorial Blvd W, S Potomac St
14)	McPherson St, N Burhans Blvd, W Franklin St
15)	National Pike, W Franklin St, Washinton Ave, Western Maryland Pkwy
16)	Dual Hwy
17)	Longmeadow Rd, Marsh Pike
18)	Dual Hwy, Mount Aetna Rd, Tuls Ln
19)	Dual Hwy, S Cleveland Ave
20)	McPherson St, N Burhans Blvd, Salem Ave, W Church St



Rank	Intersection Name
1)	Apple Harvest Dr
2)	Apple Harvest Dr, Winchester Ave
3)	E Moler Ave, N Queen St, W Moler Ave
4)	GM Access Rd, Hedgesville Rd
5)	Edwin Miller Blvd, Forbes Dr, Williamsport Pike
6)	Gerrardstown Rd
7)	Apple Harvest Dr, New York Ave
8)	Apple Harvest Dr
9)	Gerrardstown Rd
10)	Apple Harvest Dr, Foxcroft Ave
11)	Harlan Springs Ave, Hedgesville Rd, Stribling Rd
12)	Apple Harvest Dr, Charles Town Road, Hack Wilson Way, Kelly Island Rd
13)	Apple Harvest Dr, Charles Town Road, Hack Wilson Way, Kelly Island Rd
14)	Hedgesville Rd, Ridge Rd N, Ridge Rd, S
15)	Charles Town Rd, Grapevine Rd, Variform Dr
16)	Edwin Miller Blvd, Macmillian Ct, Mid Atlantice Pkwy, Warm Springs Ave
17)	Hedgesville Rd, N Mary St, S Mary St, Town Spring St, W Main St
18)	S Raleigh St, W King St
19)	E Washington St, Patrick Henry Way, Somerset Blvd, Somerset Village Ctr, William L Wilson Fwy
20)	E Moler Ave, N High St

Figure 11: *Region's Top Congested Intersections*

Additional traffic congestion maps are available in the Data Repository

- Weekday/Weekend Congestion Maps
- Top Congested Intersections Maps
- Public Comments & Traffic Congestion
- Delay Trends by Corridor and Year

TRAVEL CONNECTIONS

To gain a better understanding of how and why people travel within the region, the HEPMPO has acquired anonymized vehicle location data from Streetlight, Inc. along with other U.S. Census data. This information, shown in **Figure 12**, helps provide a better understanding of travel needs and can be used to help prioritize transportation investments in ***Direction2050*** and the regional TIP. The information can also be integrated into active transportation, transit, and freight planning to inform the selection of focus corridors for further study. Providing these baseline assessments will help us understand and monitor future land use changes and their impacts on the transportation system.

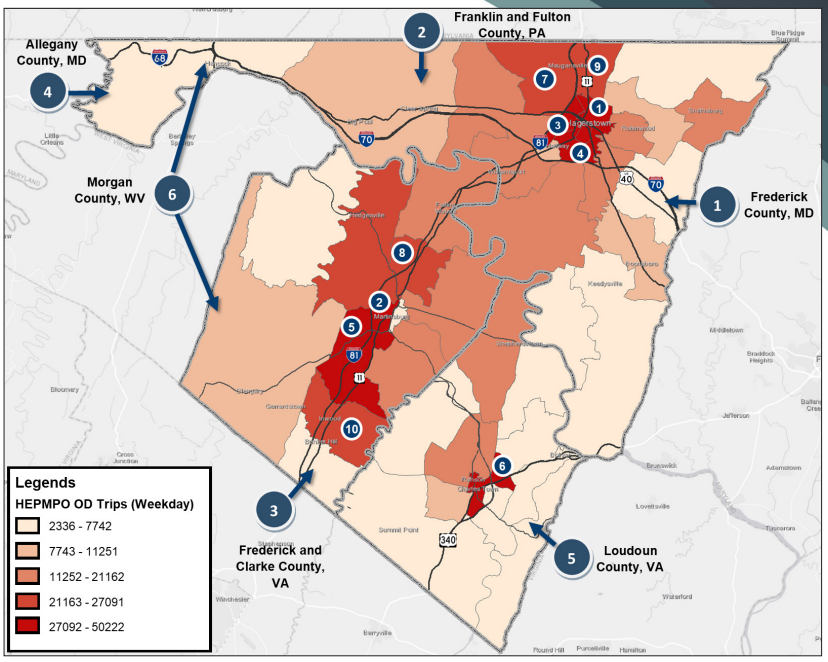


Figure 12: *Top Sources of Vehicle Trips in Region*

TRAVEL CONNECTION NEEDS AND ISSUES:

- The number of trips generated in the region is primarily concentrated around the region's interstate system (I-81 and I-70) and cities/towns as illustrated in Figure 13. In addition, the top destinations for trips that start in the HEPMPO region and leave the region include Frederick County, MD, and Franklin County, PA.
- The vehicle location data was also used to identify the top regional connections for trips that both start and end in the region. Figure 13 and Table 6 highlight these top trip connections.
- Nearly 40% of weekday vehicle trips made in the HEPMPO region are related to the work commute. This contributes to the nearly 50% of total daily trips being made during the AM (6-9am) and PM (4-6pm) peak periods. These values will serve as important baselines to evaluate against in future plan updates. With expected increases to teleworking in the HEPMPO region, will the percentage of work commute travel decline in the future? Could that shift more trips during the Midday? Those changes can affect the need for some transportation investments and even impact current signal timing and operational plans.
- The regional gateways (I-81, I-70, US340) need continued investment to support current and future demand for freight and passenger vehicles. Over 50% of the travel on I-81 is related to vehicles traveling through the region. In addition, a significant number of our residents work outside the region and rely on these gateway corridors for their commute. The percentage of residents that commute outside region:
    - Washington County – Over 45%
    - Berkeley County – Over 35%
    - Jefferson County – Over 55%

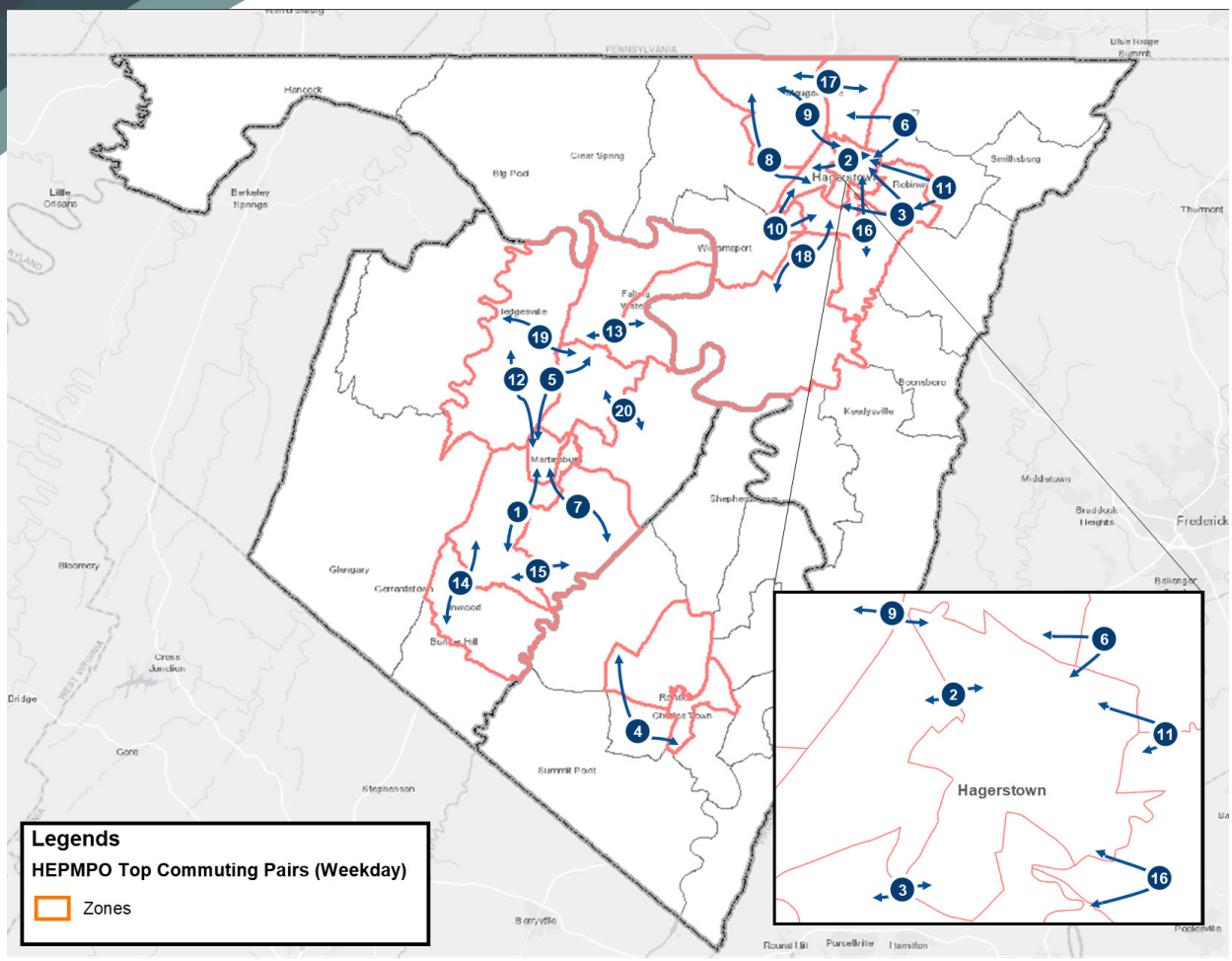


Figure 13: Top Vehicle Trip Connections in HEPMPO Region for Trips Staying in Region

Rank	Location Pair		Rank	Location Pair	
1	South of Martinsburg	Martinsburg	11	Hagerstown College	Hagerstown
2	West of Hagerstown	Hagerstown	12	Martinsburg	Hedgesville
3	South of Hagerstown	Hagerstown	13	West Falling Waters	East Falling Waters
4	Charles Town/Ranson	NW of Ranson	14	Inwood	South of Martinsburg
5	Martinsburg	North of Martinsburg	15	East of Martinsburg (Airport)	South of Martinsburg
6	East of Maugansville	Hagerstown	16	Funkstown	Hagerstown
7	East of Martinsburg (Airport)	Martinsburg	17	West of Maugansville	East of Maugansville
8	West of Maugansville	West of Hagerstown	18	Walmart Shopping Area	South of Hagerstown
9	West of Maugansville	Hagerstown	19	North of Martinsburg	Hedgesville
10	South of Hagerstown	West of Hagerstown	20	Northeast of Martinsburg	North of Martinsburg

Table 6: Approximate Descriptions of Travel Connection Pairs in Map

SAFETY

Safety remains an important focus and goal area for the transportation system. Each DOT maintains a Highway Safety Plan and tracks performance measures annually and funding sources, including the Highway Safety Improvement Program (HSIP), which are dedicated to safety projects. In addition, safety is integrated into the HEPMPO project prioritization process for highway expansion projects. In 2019, HEPMPO completed a regional traffic safety study that formalized their roles for evaluating safety and provided analyses to identify key corridors of safety concern. As part of those efforts, HEPMPO helped coordinate road safety audits on three key corridors within the region to identify possible strategies to address safety concerns. HEPMPO continues effort to evaluate locations for new safety audits and track our regional safety performance.

VISIT EACH STATE'S PLAN:

- Maryland Strategic Highway Safety Plan
- West Virginia Strategic Highway Safety Plan

1. Monitor Public Insights on Safety Issues and Locations
2. Evaluate Crash Data at a Planning-Level
3. Identify Potential Road Safety Audit (RSA) Locations
4. Identify if the Region is Supporting State Goals
5. Monitor Regional and Corridor Crash Trends and Performance Measures
6. Prioritize Corridors of Safety Concern
7. Support RSA Implementation
8. Document Needs and Progress in the Long Range Transportation Plan

SAFETY NEEDS AND ISSUES:

- The HEPMPO safety study conducted in 2019 highlights the top locations of safety concerns in the region for a number of criteria including the total number of crashes, crash rate (per vehicle miles of travel), and the number of fatalities and injuries. For Direction2050, the analysis of top locations by number of crashes was updated using the latest available crash data through 2020. Figure 14 highlights these locations.
- Since the 2019 safety study, several new locations have become of safety concern. This includes MD 65 near I-70 and Garland Groh Blvd in Washington County and US 340 near the WV 9 interchange in Charles Town (Jefferson County).

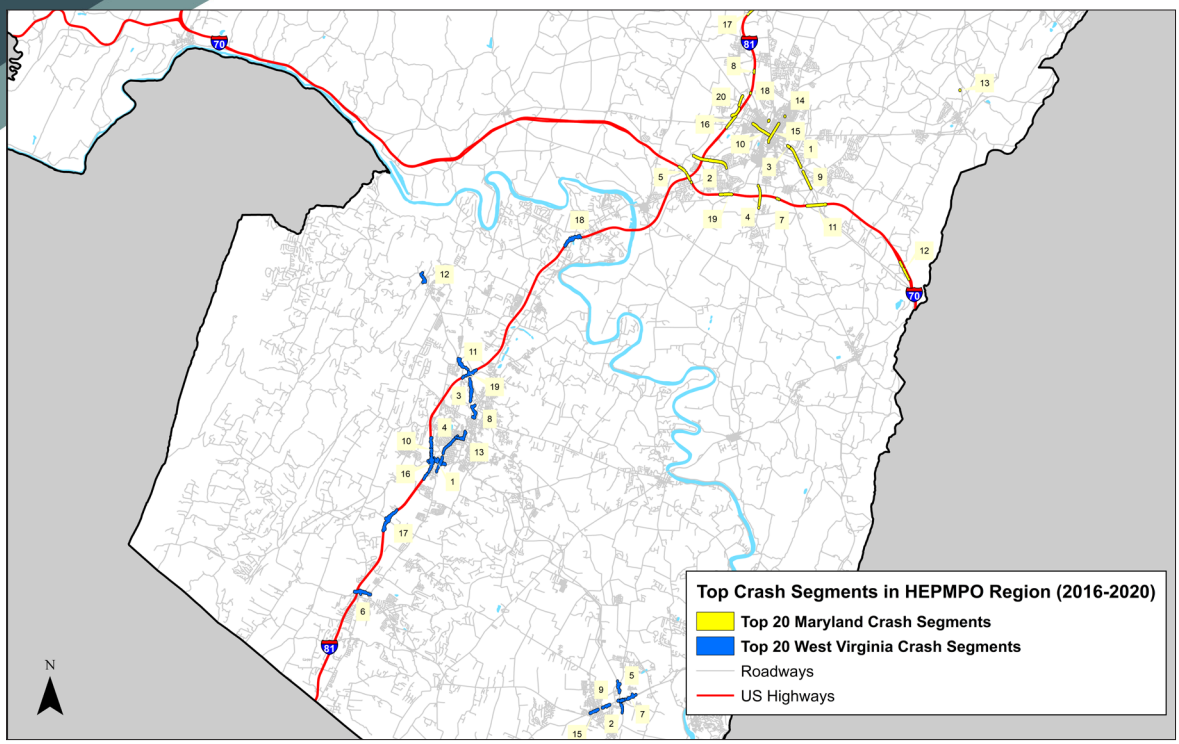


Figure 14: Top Crash Segments in the HEPMPO Region

Rank	Road Name	From	To	Location
Berkeley County, WV				
1	Apple Harvest Dr.	New York Ave.	I-81 (Exit 12)	Martinsburg
2	WV 9	I-81	Courthouse Dr.	Martinsburg
3	US 11	Raleigh St.	Wilson St.	Martinsburg
4	Gerrardstown Rd.	I-81	US 11	Inwood
5	WV 9	US 11	Dalley St.	Martinsburg
Jefferson County, WV				
1	WV 9	US 340	Cammack Spring	Charles Town
2	WV 9	US 340	Railroad Tracks	Charles Town
3	US 340	WV 9	Walmart	Charles Town
4	Route 51	Seminary St.	Euclid Ave.	Charles Town
5	Route 51	Church St.	Water St.	Charles Town
Washington County, MD				
1	US40	Manor Dr.	Mt. Aetna Rd.	Hagerstown
2	Halfway Blvd.	Hopewell Rd.	US 11	Hagerstown
3	US40	Cleveland Ave.	Manor Dr.	Hagerstown
4	MD 65 (Sharpsburg Pike)	Oak Ridge Dr.	Poffenberger Rd.	Hagerstown
5	I-70	W of Hopewell Rd.	US 11	Hagerstown

Table 7: Highlights of Top 5 Crash Locations in Each County

SAFETY NEEDS AND ISSUES:

- Both the Maryland and West Virginia DOTs have set aggressive long-term safety goals. Examples of these can be found in Figure 15 for MDOT and Table 8 for WVDOT. These include reducing fatalities by 50% by 2030 with the ultimate long-range goal of zero fatalities. Even larger reductions are targeted for serious injuries and bike/pedestrian injuries.
- Since 2012, the HEPMPO region has seen improvements in the number of crashes and injuries; however, in many cases, the region has not met the aggressive targets established by each DOT.
- The HEPMPO continues to work with each DOT to identify safety improvement projects focused on the key corridors of concern identified in the recent safety studies and Direction2050. These efforts may also include additional road and pedestrian safety audits to help evaluate strategies at specific locations.
- HEPMPO also encourages WVDOT to develop a regional HSIP Implementation Plan describing actions the State will take to meet or make significant progress toward the Eastern Panhandle's regional safety performance goals.

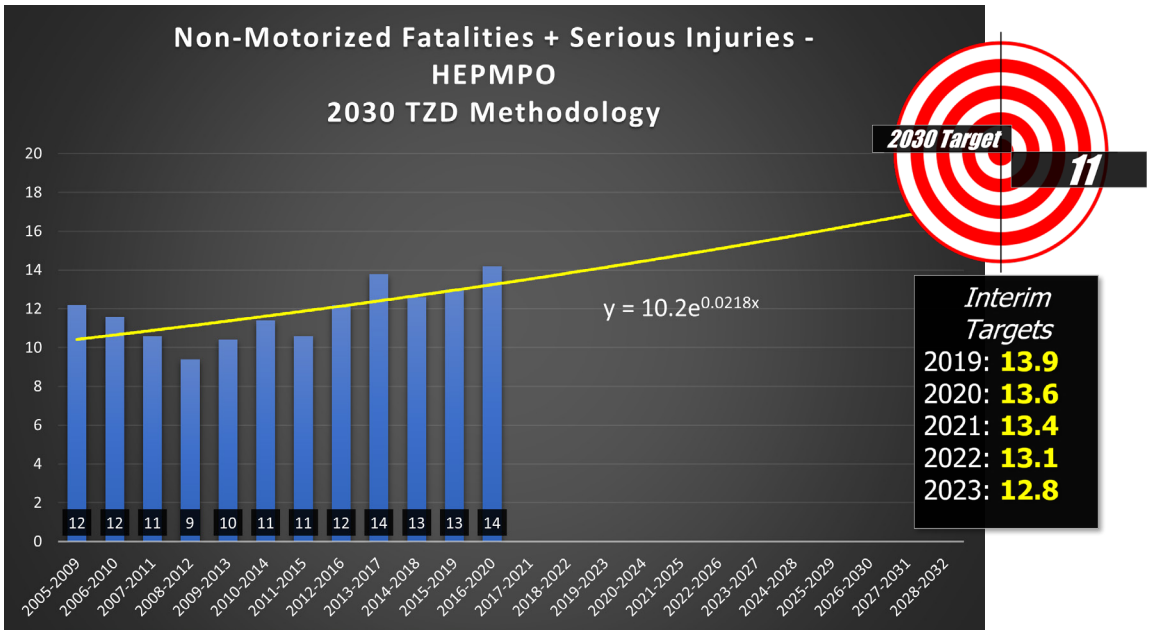


Figure 15: *Example of MDOT Safety Targets*

BIKE AND PEDESTRIAN FATALITY TARGETS FOR BERKELEY AND JEFFERSON COUNTIES, WV

Bike & Pedestrian Fatalities & Serious Injuries					GOAL: 66% Reduction By 2030				
Safety Performance Target Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Baseline for Safety Performance Target Year	2015	2016	2017	2018	2019	2020	2021	2022	2023
5 Year Time Period	2009-2013	2010-2014	2011-2015	2012-2016	2013-2017	2014-2018	2015-2019	2016-2020	2017-2021
Actual Annual Number	*10.6*	*10.8*	*10.8*	*10.6*	*8.6*	*8.6*	*8.8*		
Target to Reach Goal		*10.2*	*10.3*	*10.3*	*10.1*	*8.2*	*8.2*	*8.3*	*7.8*
Target Met/Not Met		*Not Met*	*Not Met*	*Not Met*	*Not Met*	*Not Met*	*Not Met*		
Better than Baseline?		*No*	*No*	*Yes*	*Yes*	*Yes*	*Yes*		
Met or Made Significant Progress		*No*	*No*	*Yes*	*Yes*	*Yes*	*Yes*		

Table 8: *Example WVDOT Safety Targets*

ASSET MANAGEMENT

Asset management is a strategic and systematic process of operating, maintaining, and improving the region's roads and bridges. It aims to identify and prioritize projects like roadway and bridge reconstruction, repaving, pothole repairs, and signage. Each State DOT is responsible for managing the state-owned roads and bridges and is required to implement risk-based asset management plans to guide their investments. Federal regulations have also established National Performance Measures for pavement and bridges. For these measures, each DOT establishes targets and monitors progress.

STATE ASSET MANAGEMENT PLANS

- Asset management plans describe how the State DOT plans for and selects asset improvement projects.
  - Link to: 2019 WVDOT Asset Management Plan
  - Link to: 2021 MDOT Asset Management Plan

ASSET CONDITION DATA

- Each State DOT maintains a bridge and pavement management system to monitor and report conditions. This data is provided to FHWA as part of the National Bridge Inventory (NBI) and Highway Performance Monitoring System (HPMS) and is an important component of the project prioritization process.
  - Link to: National Bridge Inventory (bridge conditions)
  - Link to: HPMS (pavement conditions)
- To complement the above resources, each DOT maintains mapping resources that can be used to visualize asset locations that are in poor or unacceptable condition on our National Highway System:
  - Link to: WVDOT Bridge Data Portal
    1. search "Bridges" and select the layer
    2. check the "STR_DEF_Unof" attribute field and select to only view those with "Y" (this shows structurally deficient bridges in WV counties)
    3. Select any bridge to identify the location and details
  - Link to: MDOT Bridge Data Portal
    1. Search "Bridge Condition" or "Pavement Condition" and select the most recent layer
    2. For bridges select the "ConditionRating" attribute field to only view those with "Poor" condition bridges
    3. For pavement select the "IRI Condition" attribute field to only view those with "Poor" condition pavement

CURRENT PROJECTS

- Each DOT also maintains an interactive map highlighting projects that are currently underway or about to get started:
  - Link to: WVDOT Projects Map
  - Link to: MDOT Project Portal
- Washington County, MD also provides a listing of current and planned projects for county-owned roads:
  - Link to: Washington County Maintenance Projects

PLANNED PROJECTS

- WVDOT, MDOT and Washington County, MD maintain listings of other projects planned for the future. These include asset management projects and maintenance activities:
  - Link to: WVDOT Drive Forward WV Projects
  - Link to: MDOT 6-year Consolidated Transportation Program
  - Link to: Washington County, MD CIP

ASSET MANAGEMENT NEEDS AND ISSUES:

- WVDOT and MDOT continue efforts to integrate their asset management plans, enhance condition monitoring, and further evaluate their processes for selecting projects. Project prioritization includes the integration of risk assessments that address asset conditions, the role of the facility, and social, environmental, financial, safety, and other factors.
- Each DOT continues to maintain funding commitments on the National Highway System to comply with the national performance measures and established targets. They continue to explore alternative tax structures and funding initiatives. The new Bipartisan Infrastructure Law (BIL) provides increased funding through 2026 that will be used to support asset management needs and address infrastructure needs.

- Table 9 shows the current HEPMPO baseline and targets related to the national performance measures for Interstates and non-Interstate roadways on the National Highway System (NHS). Targets and performance are being reviewed for the next 2- & 4-yr target window.
- Based on the 2021 National Bridge Inventory, 11 bridges in HEPMPO's West Virginia counties are considered structurally deficient or poor in condition. In Washington County, Maryland, 13 bridges are considered in poor condition.
- The HEPMPO continues to work with state and local agencies to further refine their role in asset management. These currently include:
  - Incorporate State DOT asset management goals, practices, and objectives into the MPO planning process.
  - Include condition monitoring reporting and data into the HEPMPO's long range transportation plan.
  - Coordinate with State DOTs on asset management needs and targets.
  - Identify long-range asset investment needs to meet asset condition targets.
  - Support project selection and investment policies that support asset management.
  - Educate the public and MPO board members on asset management and needs.

West Virginia Bridge and Pavement Condition Targets	Baseline (2017)	2019 (2-Year)	2021 (4-Year)
Pavements in Good Condition on Interstate (%)	73.4%	80.6%	75.0%
Pavements in Poor Condition on Interstate (%)	0.1%	0.0%	4.0%
Pavements in Good Condition on non-Interstate NHS (%)	40.9%	43.0%	45.0%
Pavements in Poor Condition on non-Interstate NHS (%)	1.2%	2.0%	5.0%
Bridges in Good Condition on NHS (%)	13.9%	11.6%	11.0%
Bridges in Poor Condition on NHS (%)	11.9%	13.5%	14.0%

Maryland Bridge and Pavement Condition Targets	Baseline (2018)	2020 (2-Year)	2022 (4-Year)
Pavements in Good Condition on Interstate (%)	60.4%	54.7%	50.0%
Pavements in Poor Condition on Interstate (%)	0.5%	0.7%	2.0%
Pavements in Good Condition on non-Interstate NHS (%)	33.0%	32.2%	30.0%
Pavements in Poor Condition on non-Interstate NHS (%)	7.0%	6.8%	8.0%
Bridges in Good Condition on NHS (%)	27.4%	23.6%	28.4%
Bridges in Poor Condition on NHS (%)	2.3%	2.7%	2.4%

Table 9: *HEPMPO Performance Measures and Targets for Bridges and Pavement (MD and WV)*

Additional asset management data and maps are available in the Data Repository

- Poor or structurally deficient bridges based on WVDOT and MDOT available data
- Metrics used for determining performance measures

FREIGHT

Freight plays a vital role in the HEPMPO region as it is an important contributor to the local economy and has a significant impact on the operations and safety of the interstate system. The freight system also includes important non-interstate corridors like US 340, US 11, and WV 9; the CSX and Norfolk Southern rail corridors that provide the HEPMPO region access to markets across the United States; and the regional airports near Hagerstown and Martinsburg. The BIL is expected to complement other freight funding programs and provide significant increases in funding for the nation's freight infrastructure. Through ***Direction2050***, the HEPMPO continues to monitor key freight issues and needs to support ongoing coordination with each State DOT as they prioritize funding for future freight initiatives and projects.

LOCAL FREIGHT ECONOMY:

- The HEPMPO region's economy has strong ties to neighboring east-coast states including in order of regional trade movement: Maryland, West Virginia, Virginia, Pennsylvania, and Kentucky.
- Not counting movement within the region, it is estimated that in 2017 the HEPMPO region was responsible for shipping and receiving 23 million tons of freight valued at over 20 billion dollars.
- Much of the trade taking place is between domestic partners, with a strong emphasis on raw materials such as aggregates, and non-metallic minerals and foodstuffs being shipped into the region. On the other hand, finished goods with a relatively greater value per ton such as machinery, mixed freight, and chemical products are shipped outbound from the region to regional trade partners.
- Most of the region's international trade activity is with Europe and Asia, for goods related to machinery, metals, and electronics. To source and ship these goods, the region relies on the Ports of Baltimore, Norfolk, and New York-New Jersey.
- Much of the freight generation is taking place along major corridors running through the region, particularly along I-81, shown in Figure 16. This freight generation reflects both industries that consume and produce goods within the region as well as supporting transportation sectors and wholesale/retail locations spread across the region.

THE REGION'S CRITICAL FREIGHT CORRIDORS

- I-81 and I-70 Interstates
- US 340 from Virginia State Line to Valley Road (MD)
- US 340 and WV 9 from Virginia to I-81 (WV)
- GM Access Road / Caperton Blvd, north of I-81/WV 9 Interchange
- Tabler Station Road, south of WV regional airport
- WV 45 from I-81 to WV 9
- Halfway Blvd from I-70 to MD 63
- MD 63 from I-70 to Elliott Parkway
- Oak Ridge Drive and MD 65

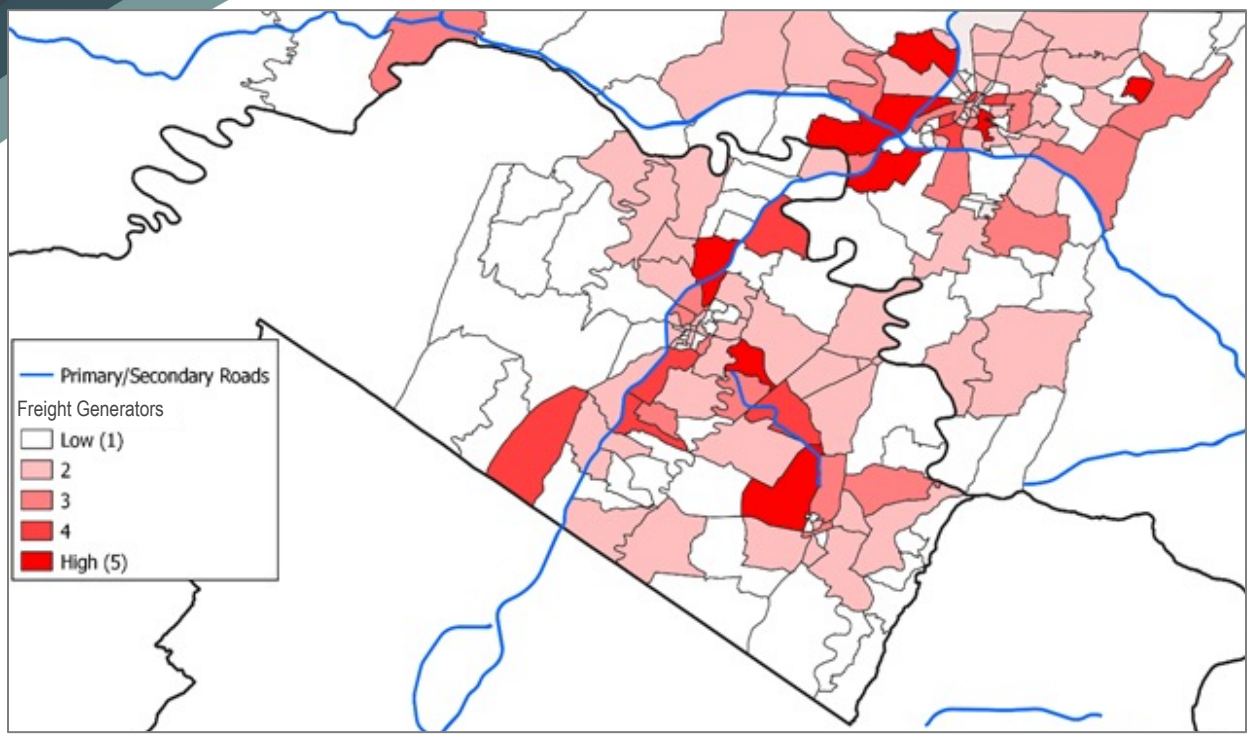


Figure 16: *Regional Freight Generators*

FREIGHT NEEDS AND ISSUES:

- It is expected that from 2017 – 2050, the volume of freight moving into, out of, and within the region will grow by nearly 29 million tons. This represents a little more than doubling in the volume of activity over the 33-year period, or 2.5 percent growth in volume per year.
- Future forecasts by mode show a continued heavy reliance on trucking, rail, and intermodal activity in the region, though the percentage of goods moving via rail stays in line with the overall growth in tonnage. Future economic growth will mean more demands from freight movement on both the road and rail networks.

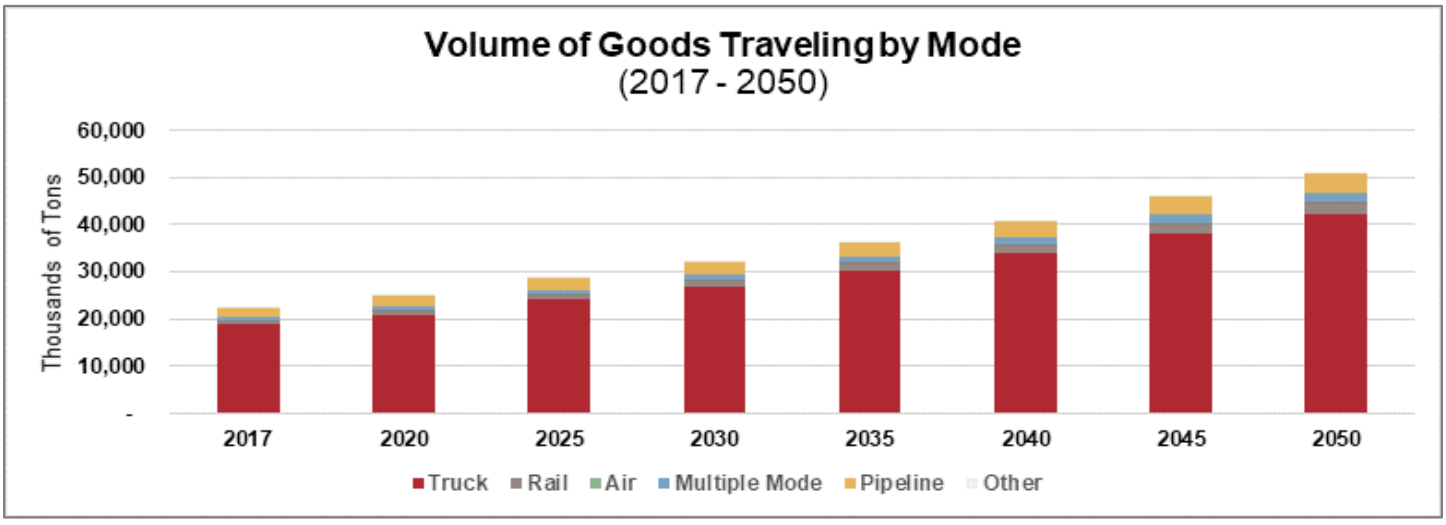


Figure 17: *Volume of Goods Traveling by Mode*

TRUCK FREIGHT NEEDS AND ISSUES:

- Ecommerce is a major behavioral shift that is changing how households obtain goods. Although Ecommerce will continue to reduce household trip making to commercial locations, it will require more trucks on roadways to deliver goods.
- Retail trade activity that is attributable to Ecommerce (as represented by non-store retailers) in the HEPMPO region is expected to increase from approximately 8.8% in 2017 to 14.7% by 2050, almost doubling.
- Daily truck traffic on two vital freight corridors is forecasted to grow as follows from 2018 to 2045:
    - I-81 would see an additional 13,800 daily trucks in the region north and west of Martinsburg, with an additional 8,600 daily trucks southwest of Hagerstown
    - An additional 7,400 daily trucks would appear by 2045 on the I-70 corridor in western Washington county
- A regional freight stakeholder survey provided to local businesses and industry representatives highlighted the importance of highway access as being critical to operations. Traffic congestion and reliability were identified as key concerns including the lack of bypass routes during major events.
- With forecast growth in truck volumes, current truck parking issues are also likely to worsen unless mitigating strategies are implemented. MDOT completed a 2020 Truck Parking Study that recommends additional parking at or near:
    - Exit 1 on I-81 in Williamsport
    - Exit 24 on I-70
    - I-70 Welcome Center just outside the HEPMPO region

New Amazon Facility in Hagerstown

RAIL FREIGHT NEEDS AND ISSUES:

- The HEPMPO region is serviced by two class 1 rail corridors (the Crescent Corridor and the National Gateway Initiative) and a short line railroad (Winchester and Western).
- The Crescent corridor is operated by Norfolk Southern and runs in a north-south direction through the MPO, parallel to I-81, connecting the south-central states to New York and New Jersey.
- The National Gateway Initiative and its corridor, operated by CSX, connect the Mid-Atlantic Ports to the Midwest. It has since finished its phase 2 investment in expanding its capacity to handle double-stack containers. Running on an east-west alignment, the corridor enters the HEPMPO region parallel to MD 64 near Smithsburg in Washington County, MD, continues through the City of Hagerstown, and then travels west parallel to I-70 past Hancock.
- Within the HEPMPO region, CSX operates the Hagerstown Yard, in downtown Hagerstown, as well as the Pearson Yard in Martinsburg, WV.
- The region itself does not contain any intermodal facilities, however, there are 3 intermodal facilities just across the border: two in Pennsylvania located on I-81 (Greencastle and Chambersburg), and one in Virginia off I-66 (Front Royal).
- There are currently no major rail investments planned within the region. Elsewhere within Maryland, significant progress to improve the Howard Street Tunnel in Baltimore to allow for double-stack containers is moving toward implementation in a bid to compete with other ports for container traffic. While the development takes place outside the region, it could spur added demand for through traffic involving the port.

AVIATION FREIGHT NEEDS AND ISSUES:

- The HEPMPO region contains two airports that provide local commercial and general aviation services to the region. These include the Hagerstown Regional Airport (HGR) off I-81 and the Eastern West Virginia Regional Airport (MRB) located near Martinsburg.
- Each airport has developable land that can support freight-related development. The MRB airport is located in a foreign trade zone that encourages activity and trade.
- The HEPMPO continues to coordinate with the airports on key transportation needs and issues.

TRANSIT

Transit is an important component of the region's transportation system. The services support long-distance commutes to nearby counties and provide transportation alternatives to senior citizens, youth, low-income, and disabled populations including those who do not own a vehicle. The region's transit service consists of the following agencies and modes:

- Eastern Panhandle Transit Authority (EPTA) fixed-route and demand response
- Washington County Transit (WCT) fixed-route and demand-response
- Maryland Transit Administration (MTA) commuter buses and regional commuter rail (MARC)
- Amtrak Capital Limited Line.

Source: The Herald-Mail

Direction2050 included an in-depth review of transit needs within the region based on recent studies, stakeholder and public engagment, and analytical assessments and mapping of the location of transit-dependent populations.

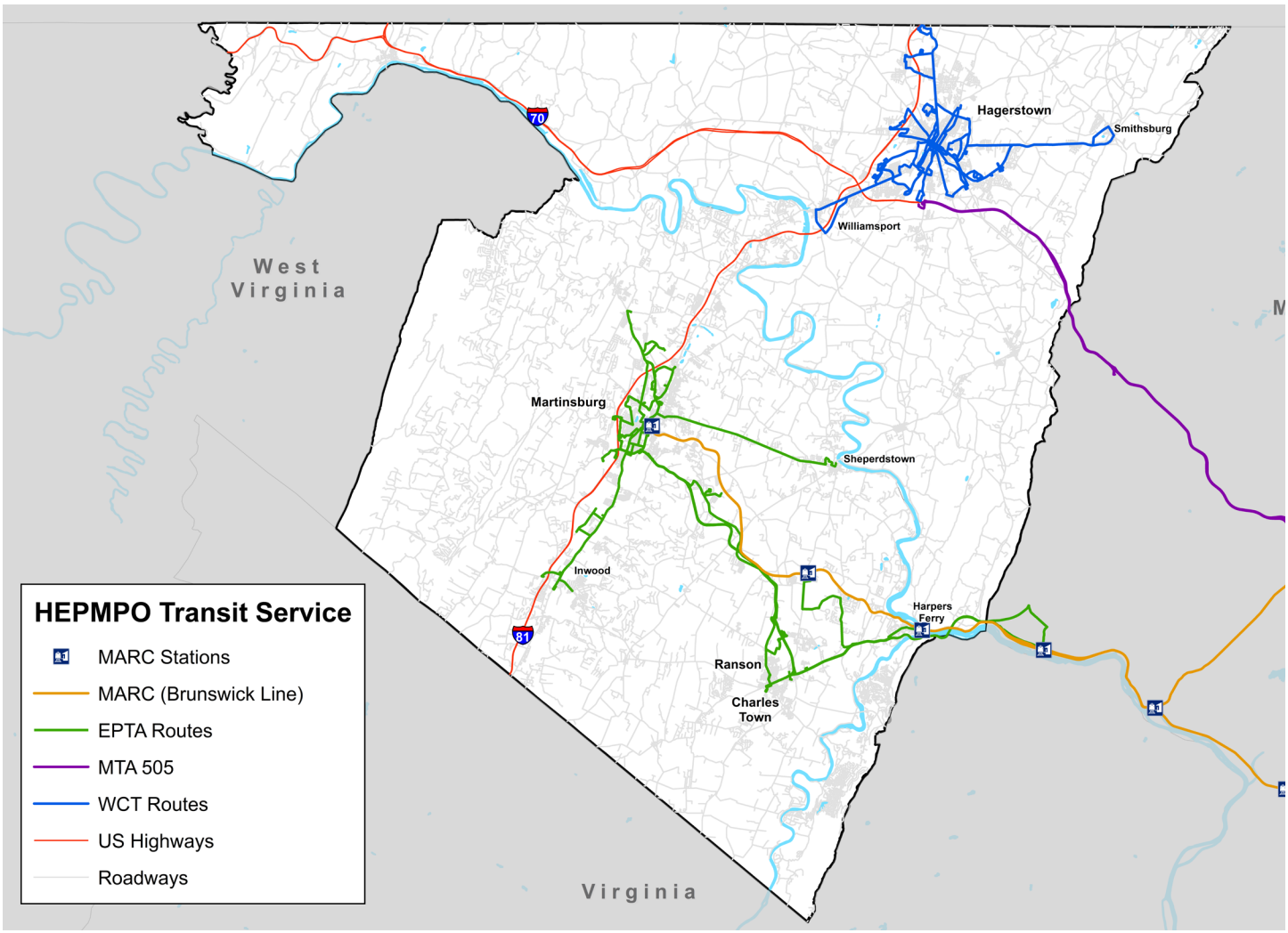


Figure 18: *Transit Service in the HEPMPO Region*

TRANSIT RIDERSHIP TRENDS:

- EPTA experienced a 50% increase in ridership between 2014 and 2019. The COVID-19 pandemic has had a strong negative effect on ridership in 2020 and 2021.
- WCT ridership has been relatively stable between 2014 and 2019, with small increases experienced between 2017-2019.
- Ridership on the Brunswick Line's three West Virginia stations fluctuated considerably before 2020 with a pre-COVID average monthly ridership of 259. Ridership declined significantly at the start of the COVID-19 pandemic, but since April 2020 has steadily increased to a post-COVID high of 55 monthly riders in December 2021.
- MTA Route 505 saw pre-COVID average monthly ridership of 7,775, with significant change month to month but no clear trend. The pandemic caused a large decrease in ridership, with an average monthly ridership since April 2020 of 1,197

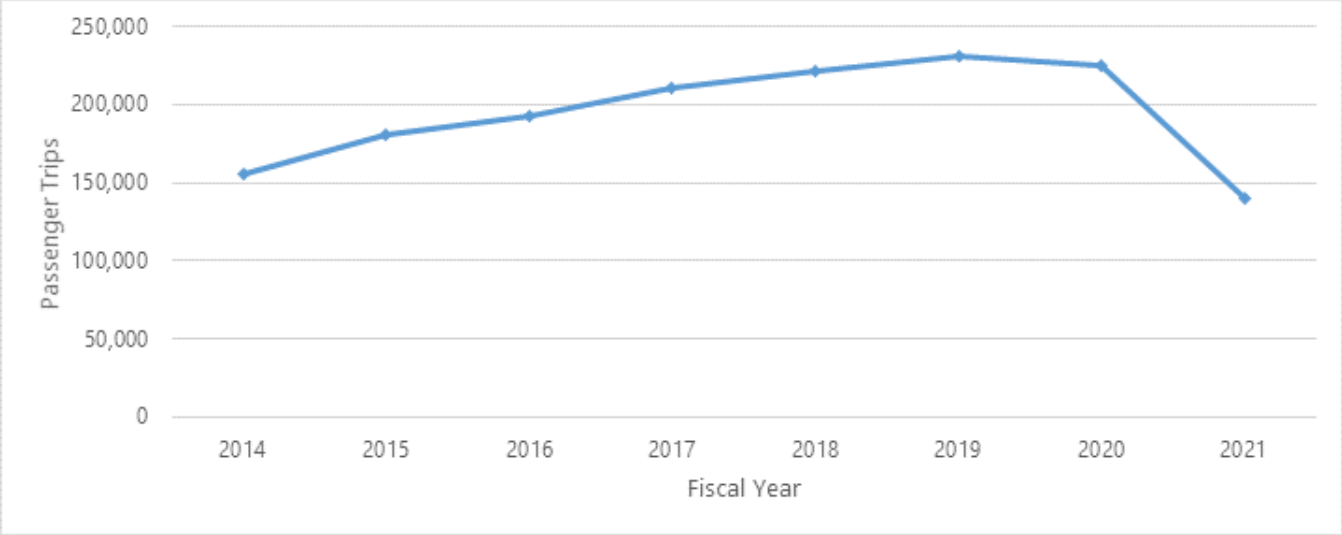


Figure 19: *EPTA Annual Ridership Trends*

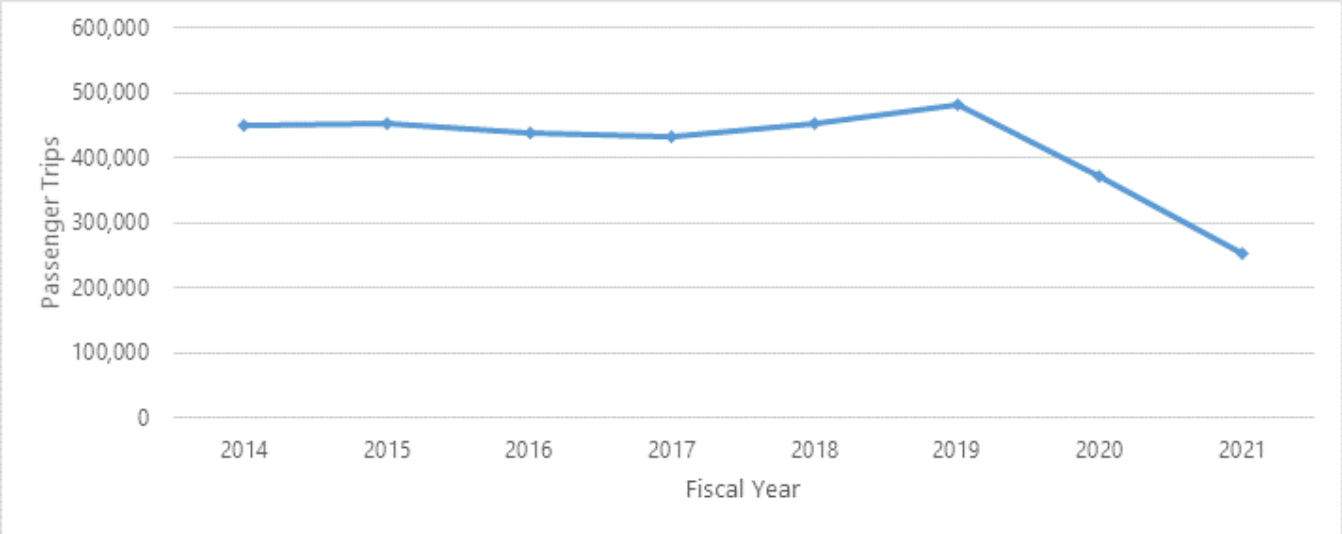


Figure 20: *Washington County Annual Ridership Trends*

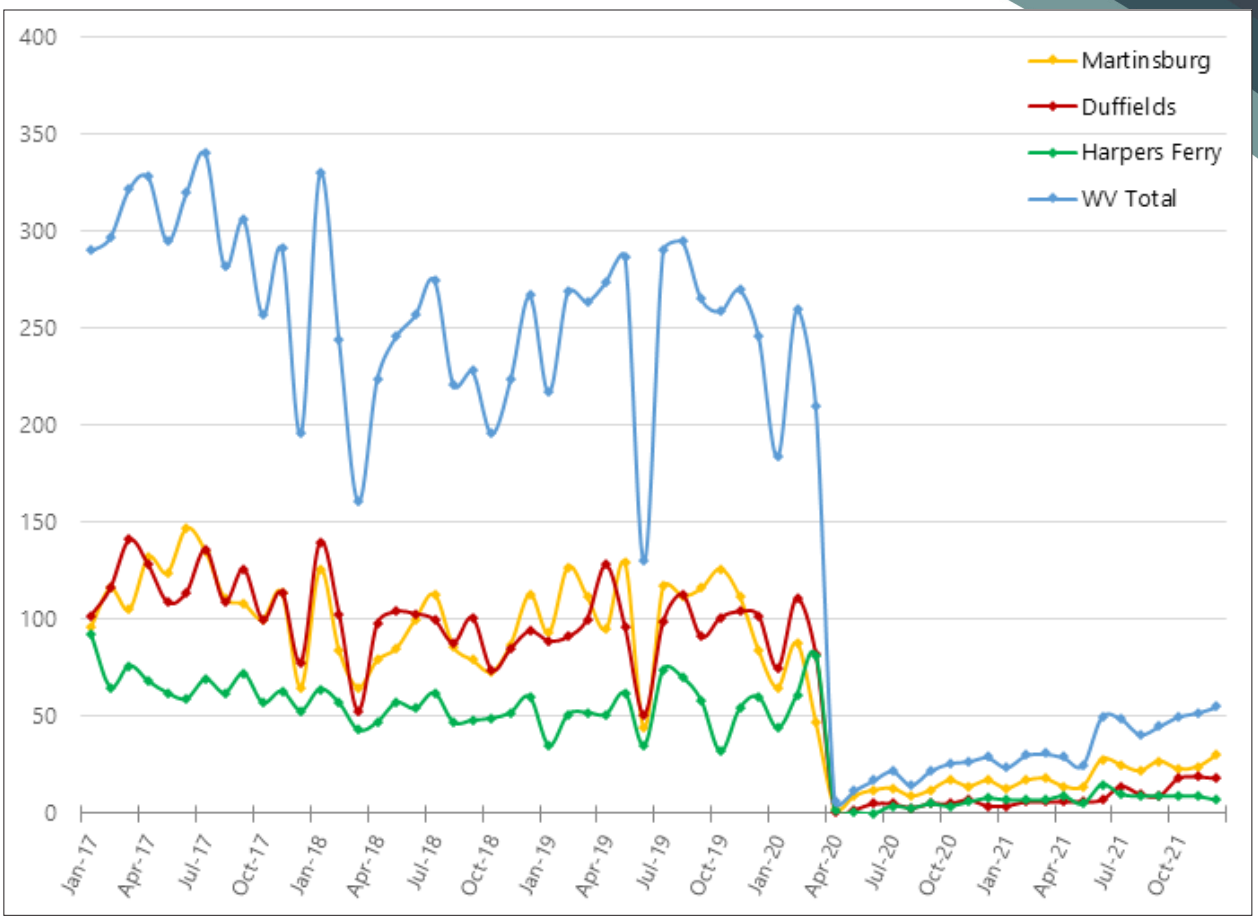


Figure 21: *MARC Brunswick Line West Virginia Monthly Ridership Trends*

TRANSIT GAP AND NEEDS ASSESSMENT:

- Based on assessments of transit usage, future population and employment projections, public input, and existing route performance, gaps were identified for the following:
  - **Geographic:** areas with demonstrated transit need but no transit service
  - **Connection:** connection with a demonstrated transit need but no direct transit service
  - **Service Level:** existing route with inadequate transit service levels (headways or span of service)
- Over the years, plans and studies have been published to identify transportation improvements within the HEPMPO region. ***Direction2050*** included a review of these reports to identify transit recommendations that are proposed to increase coverage, access, and connections.
- A number of improvements to the transit network in the HEPMPO region are needed in order to fill gaps that have been identified and also improve the transit experience for existing and future riders. The recommendations include:
  - New or improved services to fill gaps in the transit network
  - Capital improvements, including new passenger amenities and new infrastructure
  - Coordination strategies; and
  - Staffing.

Gap Type	Location	Improvement	Priority*
Coverage	Southeast Charles Town along Charles Town Rd.	All-day service on weekdays	Mid
Connection	Martinsburg to Spring Mills Walmart	All-day service on weekdays	Mid
	Martinsburg to Hagerstown	Peak period service on weekdays	Mid
	Clear Spring to Hagerstown	Peak period service on weekdays	Near
	Boonsboro to Hagerstown	Peak period service on weekdays	Near
	Charles Town to Shepherdstown	Peak period service on weekdays	Mid
Level of Service	WCT Robinwood Route	Increase weekday span of service	Mid
	WCT Funkstown Route	Improve weekday headway	Long
	WCT Robinwood Route	Improve weekday headway	Near
	WCT Premium Outlets	Add Sunday service	Mid
	WCT Valley Mall	Add Sunday service	Mid
	EPTA Yellow Route	Improve weekday headway	Mid
	EPTA Yellow Route	Add Sunday service	Mid
	EPTA Shepherdstown Route	Peak period service on weekdays	Near

* *Near-term implementation would be prior to 2030, mid-term implementation would be between 2030 and 2040, and long-term implementation would be between 2040 and 2050. These implementation years are based on the overall expected need and priority level of the service.*

Table 10: *New or Improved Services to Fill Gaps in Transit Network*

TRANSIT CAPITAL NEEDS:

- Twenty new vehicles will be required to address the service expansion needs, shown in Table 11.
- In Fall 2019, the EPTA acquired 412 W. Race Street in Martinsburg as the anticipated site for a new transfer facility. The planned expansion is expected to include a 5,400 square foot facility for administration/training, a six-bay transfer station, administration parking, and a "kiss-and-ride" area.
- An additional 26 EPTA stops are being considered for future bus shelters, seven of which are in Jefferson County and 19 in Berkeley County.
- WCT's Plan calls for long-term coordination between WCT and local jurisdictions to improve bus stop amenities. The new amenities should be placed based on stops with high average daily ridership, or at unique locations that warrant them.
- WCT currently has a single transit center in downtown Hagerstown where all WCT routes begin and end. Several other locations throughout the area also function as transfer points and would benefit from additional passenger amenities. These locations include:
  - Valley Mall - Valley Mall Route and Williamsport Route
  - Hagerstown Park and Ride/Sharpsburg Pike Walmart - Premium Outlets Route and MTA Route 505

Priority/Implementation	EPTA	WCT	Vehicle
Near Term	2	3	5
Mid-Term	4	8	12
Long Term	3	0	3
TOTAL	**9**	**11**	**20**

Table 11: *Transit Vehicles Needed Through 2050*

OTHER TRANSIT NEEDS AND CONSTRAINTS:

- There are several general coordination strategies that can ultimately improve transit services in the area. These strategies are discussed in more detail in Appendix E.
- Due to COVID-19, the EPTA and WCT are experiencing a bus operator shortage. In response, EPTA is currently developing a service reduction plan that will help the agency manage the operator shortage. WCT has been able to maintain its current service. An operator wage increase is set to begin soon to attract more operators. Service reductions may be considered should the issue persist.
- Based on the total funding available for each agency versus the projected cost of the recommended services through 2050, EPTA will have a deficit of about $49.85 million, and WCT will have a deficit of about $32.09 million.
- Based on the projections, both agencies will fall short of funding to finance the service recommendations. While there is currently a funding deficit, the agencies can apply for federal and state grants to fill the shortfall, as monies become available.

ACTIVE TRANSPORTATION

"Active transportation" is a means of getting around that is powered by human energy, primarily walking and bicycling. Often called "non-motorized transportation," many prefer the term "active transportation" since it is a more positive statement that expresses the key connection between healthy, active living and our transportation choices.

HEPMPO continues to play an active role in supporting bike and pedestrian improvements within the region. This includes sponsoring a number of recent studies aimed to improve active transportation safety and convenience. ***Direction2050*** builds off these studies and the recommendations provided in each. The studies include:

- 2015 Dual Highway Pedestrian Road Safety Study
- 2016 HEPMPO Regional Bicycle Plan
- 2016 City of Hagerstown Bicycle Master Plan
- 2019 Weverton Railroad Crossing Feasibility Study
- 2020 Foxcroft Avenue Pedestrian Road Safety Assessment
- 2020 Hagerstown Bicycle and Pedestrian Priority Area Plan
- 2020 United States Bicycle Route 11 Designation Study
- 2021 WV45/Martinsburg Pike Corridor Vision Plan

PUBLIC INPUT ON BIKE AND PEDESTRIAN NEEDS:

- Surveys conducted for ***Direction2050*** generated a significant number of comments regarding bike and pedestrian issues and needs.
- Public requests for infrastructure improvements generally align with high-demand areas. Improving the connectivity and consistency of infrastructure in these areas should be a focal point of future studies.
- Survey participants are primarily highlighting the need for sidewalks, bicycle paths or shared-use paths, bike lanes, and crosswalks.
- Specific corridors repeatedly mentioned by public comments include:
    - Washington St. in Charles Town
    - Route 11 in various areas of the region
    - Edwin Miller Blvd. in Martinsburg
    - Dual Highway in Hagerstown
    - Route 480 in Shepherdstown

Area	Corridor	Extents	Type
Charles Town	Washington St.	Patrick Henry Highway to Martin Luther King, Jr. Blvd.	Sidewalk
Hagerstown, Williamsport	Route 11	Williamsport to Hagerstown	Sidewalk or shared-use path and bridge
Martinsburg	Edwin Miller	Mid-Atlantic Parkway to N. Raleigh St.	Sidewalk or shared-use path
Shepherdstown	Route 480	Potomac Farms Rd. to Martinsburg Pike	Sidewalk
Hagerstown	Dual Highway	Tracys Lane to Cannon Ave.	Sidewalk shared-use path, bike lanes
Hagerstown	Robinwood	Jefferson Blvd. to Dual Highway	Sidewalk or shared-use path
Shepherdstown	Shepherd Grade Rd.	Scrabble Rd. to Duke St.	Shared-use path
Charles Town	Route 9	Currie Rd. to E. Washington St.	Shared-use path extension

Table 12: *Top Corridors Identified by Public Comments for Bike and Pedestrian Needs*

BIKE AND PEDESTRIAN SAFETY ISSUES AND NEEDS:

- Consistent with expectations, crashes are generally aligned with high-demand areas, but fatalities are disproportionately along rural high-speed roads. Future studies should explore whether targeted infrastructure improvement in rural areas might improve safety outcomes.
- Most of the HEPMPO region crashes involving a person walking or biking occurred within Washington County (74%). Berkley County had 20% and Jefferson had 6% of total crashes from 2016-2020.
- The majority of bicycle and pedestrian crashes occur outside of bicycle facilities and trails. A noticeable amount of bicycle and pedestrian crashes occur along designated bike routes or marked shared lanes. The combination of signage encouraging cycling on these facilities without separation or protection from traffic may be contributing to this condition.
- While most injury-related crashes occur in more urban areas, fatal crashes more often occur along rural roadways where speeds are much higher and undesignated facilities such as shoulders can be non-existent or less wide.
- Crashes near Martinsburg and Hagerstown highlight areas that contain high numbers of low-income population and workers.

Victims	Fatalities	Injuries	Total
Bicyclist	3	104	107
Pedestrian	26	380	406
TOTAL	**29**	**484**	**513**

Table 13: *Crashes by Mode and Injury within HEPMPO 2016-2020*

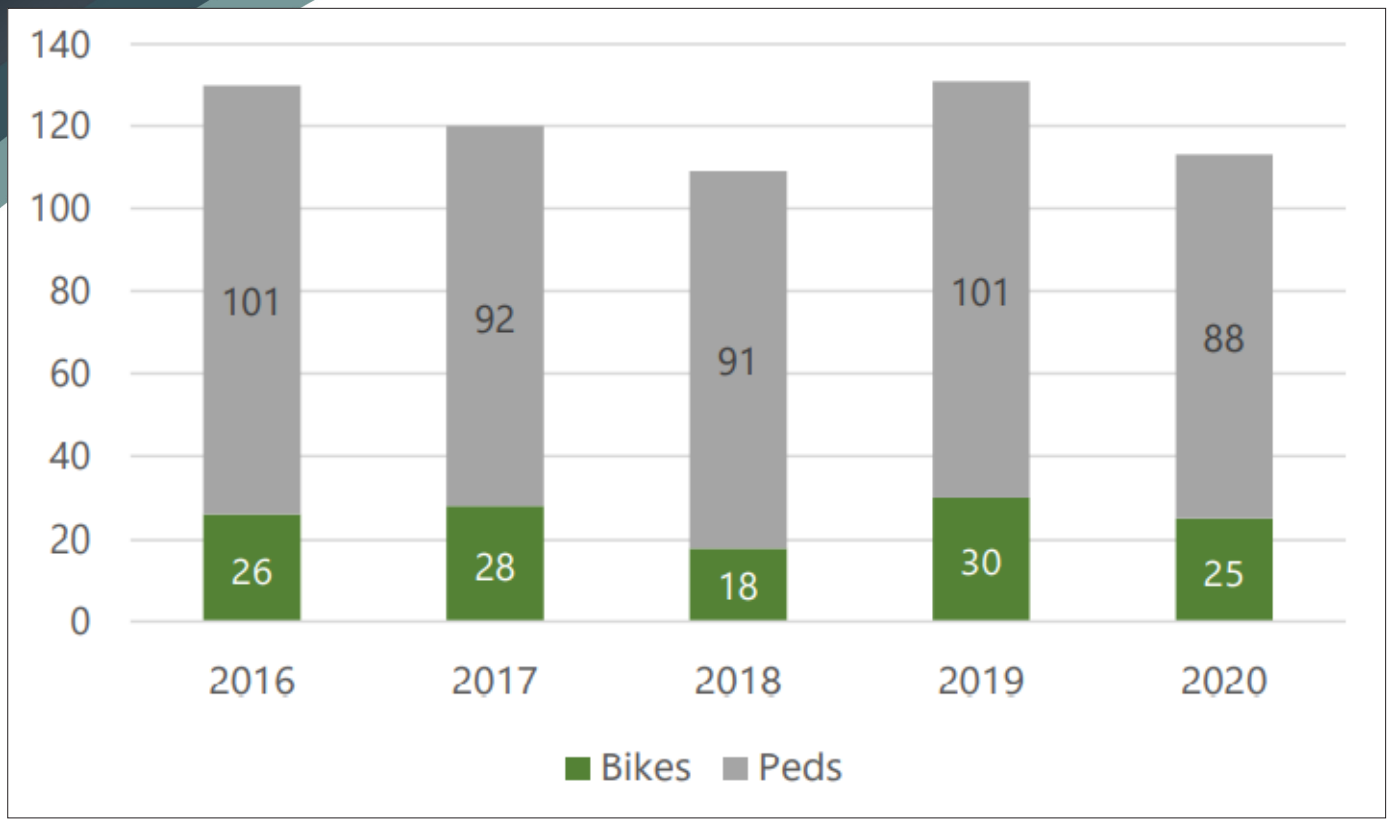


Figure 22: *Crashes by Mode within HEPMPO 2016-2020*

Corridor	Extents	Area
Williamsport Pike/Route 11	Marlowe to Martinsburg	Martinsburg, Marlowe
Edwin Miller Blvd./Route 9	I-81 to N. Raleigh St.	Martinsburg
Queen St.	Eagle School Rd. to E. Stephen St.	Martinsburg
E. Raleigh St.	Race St. to Silver Ln.	Martinsburg
W. King St.	Kentucky Ave. to Water St.	Martinsburg
Winchester Ave./Route 11	Martinsburg to Inwood	Martinsburg, Inwood
Middleway Pike	Tarico Heights to Inwood	Tarico Heights, Inwood
William L. Wilson	Blair Rd. to Route 9	Blair, Charles Town
Washington St.	Route 9 to Martin Luther King, Jr. Blvd.	Charles Town
Main Street/40	Chase Six Blvd. to High St.	Boonsboro
Dual Highway	Edgewood Drive to Cannon Ave.	Hagerstown
Fairground Ave.	Potomac Ave. to Gross St.	Hagerstown
Potomac St.	Franklin St. to Locust St.	Hagerstown
Church St./East Ave.	Mulberry St. to Winter St.	Hagerstown
Salem Ave.	Central Ave. to Burhans Blvd.	Hagerstown
Burhans Blvd./Route 11	Church St. to Antietam St.	Hagerstown
Eastern Blvd./Northern Ave.	The Terrace to Chartridge Dr.	Hagerstown

Table 14: *Corridors with High Numbers of Bike and Pedestrian Crashes*

Additional bike/pedestrian data and maps are available in the Data Repository

- Bike and pedestrian infrastructure
- Public comment locations
- Bike and pedestrian crashes

TRAVEL AND TOURISM

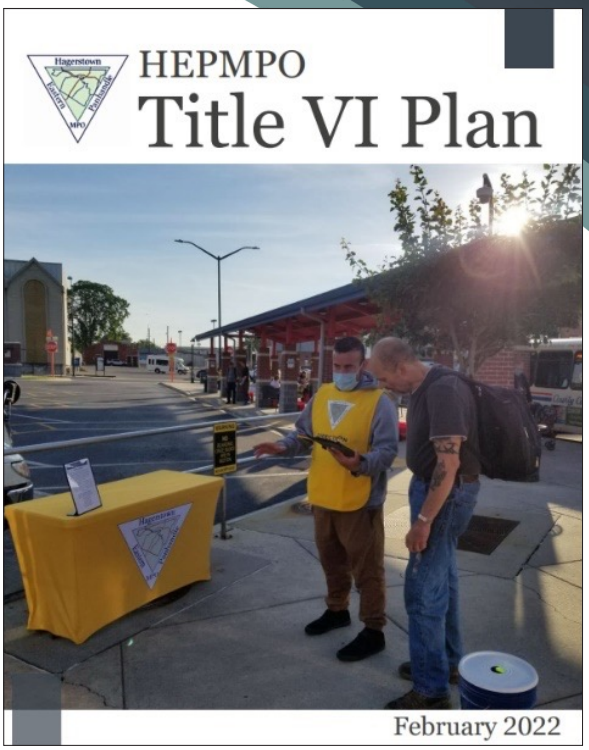
The 3-county region is home to national battlefields, parks, trails, performing arts centers, stadiums, casinos, and other venues that attract visitors year-round. The HEPMPO continues to work to identify ways to enhance transportation connectivity to key destinations. This started in **Direction2045** when HEPMPO conducted a focus group survey that was provided to local, state, and federal agencies; congestion & visitors bureaus; regional airports; and prominent tourism venues. The HEPMPO has continued to coordinate with these key partners in identifying needs and potential transportation initiatives.

TRAVEL TOURISM NEEDS AND ISSUES:

- To make local destinations more attractive, the HEPMPO continues to work with local agencies and businesses to beautify and enhance the road system. Recent projects in Ranson and Shepherdstown have aimed to create green infrastructure and opportunities for biking/walking that help support tourism. This will continue to be an area of emphasis for the transportation system.
- Local stakeholders continue to stress the need for improved wayfinding signage. This includes signs to help motorists find tourist destinations and for bicyclists and hikers using the region's trails and biking corridors, including the C&O Canal Towpath. Efforts to date have included the development of a signage plan for the Hagerstown downtown by the Maryland State Highway Administration, in coordination with the City of Hagerstown and Washington County.
- Biking remains an important area of emphasis for attracting visitors to the region. The HEPMPO continues to work with local stakeholders to identify new opportunities to improve the system of trails. Where possible, it may include preserving rail corridors for future trails. See this plan's active transportation section for more description of the needs and plans for the region.

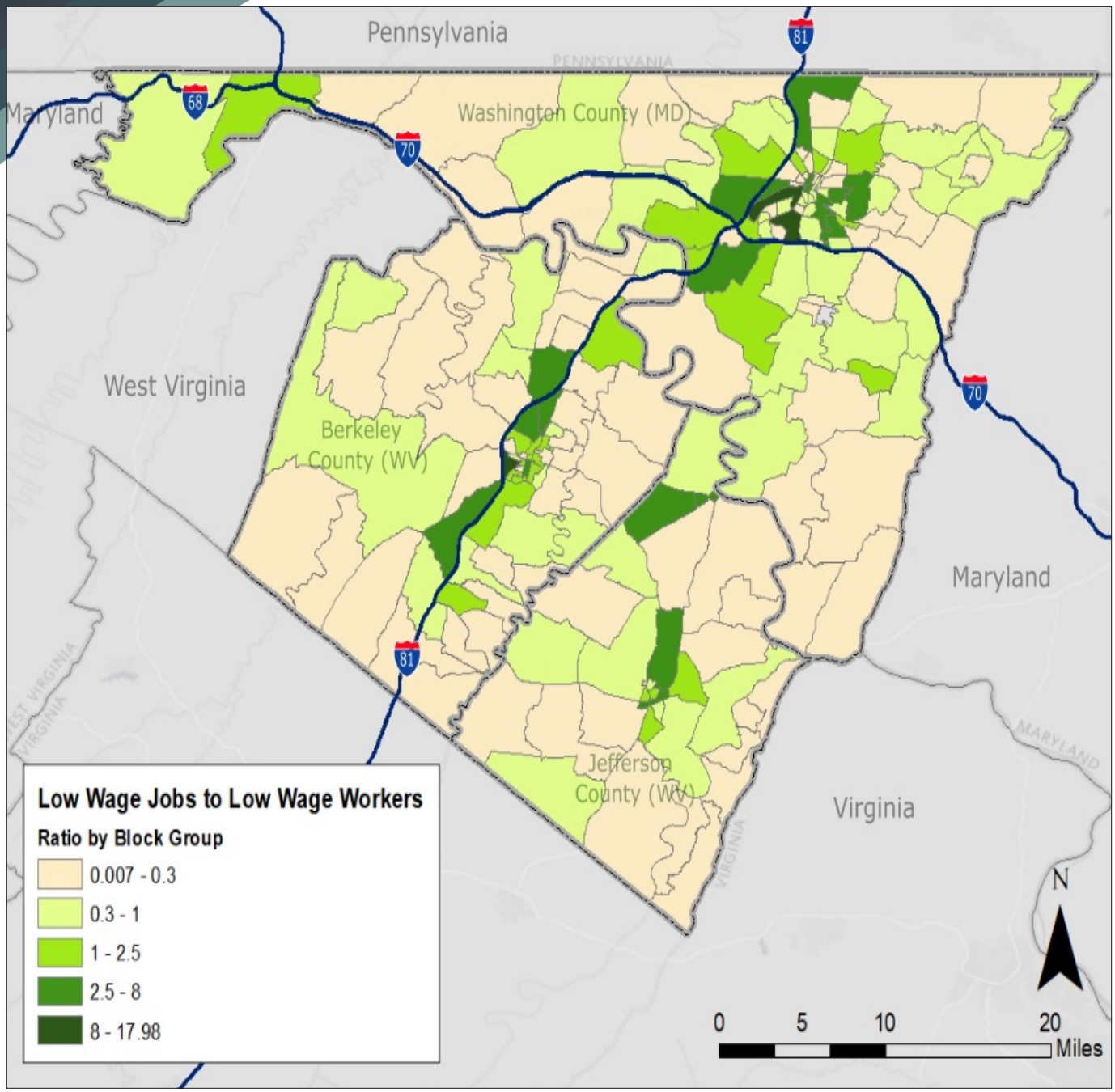
EQUITY

Transportation decisions must consider the needs of the region's low-income and minority population. The HEPMPO has established Title VI and Public Outreach programs to guide outreach and coordination with underserved communities. Through the development of ***Direction2050***, the HEPMPO obtained input through a series of intercept surveys as highlighted in the public involvement section. Data analyses have been conducted to evaluate potential needs; and, equity criteria have been integrated into the project prioritization process. The HEPMPO will continue to ensure that potentially disadvantaged populations do not experience disproportionately high and/or adverse impacts from the regions' transportation projects. Likewise, the programs aim to ensure these populations have the opportunity to share equally in the benefits stemming from the projects.



EQUITY NEEDS AND ISSUES:

- Through the intercept surveys, the region's low-income and minority population share many of the same concerns and issues addressed by most of the population. This includes concerns regarding interstate traffic, road conditions, and traffic safety.
- However, the underserved communities also place greater reliance on other modes of travel including walking, biking, and transit. As such, needs have been identified related to lighting and the desire for more sidewalks and trails to ensure safe pedestrian and bike travel, especially along the busiest routes.
- Increased transit service including shuttles between towns have been highlighted as strategies that would also benefit these communities.
- The HEPMPO continues to monitor and map the locations of the region's low-income and minority populations. Using CENSUS and employment data records, new maps have been created to highlight areas where there are high numbers of low-wage jobs but a limited low-wage population nearby. It is anticipated these areas, shown in Figure 23, may be important destinations for low-income populations and can help in prioritizing new multi-modal strategies to provide better access. This includes the following locations as illustrated in:
    - Valley Mall/Park Commons near Hagerstown
    - Hagerstown Premium Outlets
    - Hagerstown Regional Airport
    - Warehouses including FedEx near Halfway Boulevard
    - Warehouses off GM Access Road/WV 9 north of Martinsburg
    - Businesses along Foxcroft Avenue
    - Businesses in Ranson and Charles Town including the Casino



(Darker green indicates areas where there are more low-wage jobs than workers)

Figure 23: *Important Areas of Connection for Low-Wage Workers*

Additional equity maps are available in the Data Repository

- Map of low-wage jobs to low-wage workers
- Map of low-income workers by CENSUS block group
- Map of minority population by CENSUS block

ENVIRONMENT AND RESILIENCY

Early identification of environmental features within proposed project corridors can support screening of alternatives prior to the project reaching a more advanced point in the Preliminary Design and National Environmental Policy Act (NEPA) process, where detailed analysis and changes can become more time consuming and costly. The HEPMPO has aimed to evaluate environmental features including parks, historic sites, and water resources within the project prioritization process.

Additional Planning and Environmental Linkage (PEL) studies will be conducted for larger-scale projects to provide more detailed assessments. A PEL study can be used to identify and prioritize future projects, develop the purpose and need for a project, determine project size or length, and/or develop and refine a range of alternatives. The HEPMPO has worked with each State DOT to conduct PEL studies in the region and will continue to emphasize such efforts in the future to further address impacts on the region's natural resources.

ENVIRONMENTAL AND RESILIENCY NEEDS AND ISSUES:

- The HEPMPO continues to coordinate with state and local stakeholders to minimize the impacts of the transportation network on the environment and increase resiliency of the transportation assets.
- This plan integrates criteria to address parks, historic sites, and water features within the project prioritization process. The layers are overlayed with project locations using mapping software.
- WVDOT in coordination with HEPMPO recently completed a PEL study for WV 9 from Berkley Springs to Martinsburg. The study addresses a range of environmental criteria that was evaluated for each project alternative and included important insights and concerns from the public. This study will be carried over to more detailed environmental assessments of the corridor to be completed in the future under NEPA.
- Climate change and associated changes to extreme weather are important issues that State DOTs and MPOs are addressing in project planning and design. Flooding, high temperatures, winds, and landslides are just some examples of extreme events that can impact the transportation system either through road closures and/or costly infrastructure repairs.
- Figure 24 and Table15 highlight the impacts flooding has had on the region's road system over the last decade. This has included road closures in all three counties.
- Both the WVDOT and MDOT are taking measures to make the system more resilient. This includes understanding risk and vulnerabilities, implementing processes to respond to extreme weather events, and evaluating ways climate change can be integrated into the project design process to improve resiliency of the infrastructure.
- The BIL has dedicated funding under the PROTECT funding program. The HEPMPO will continue to work with each DOT to identify how that funding can be used within the region.

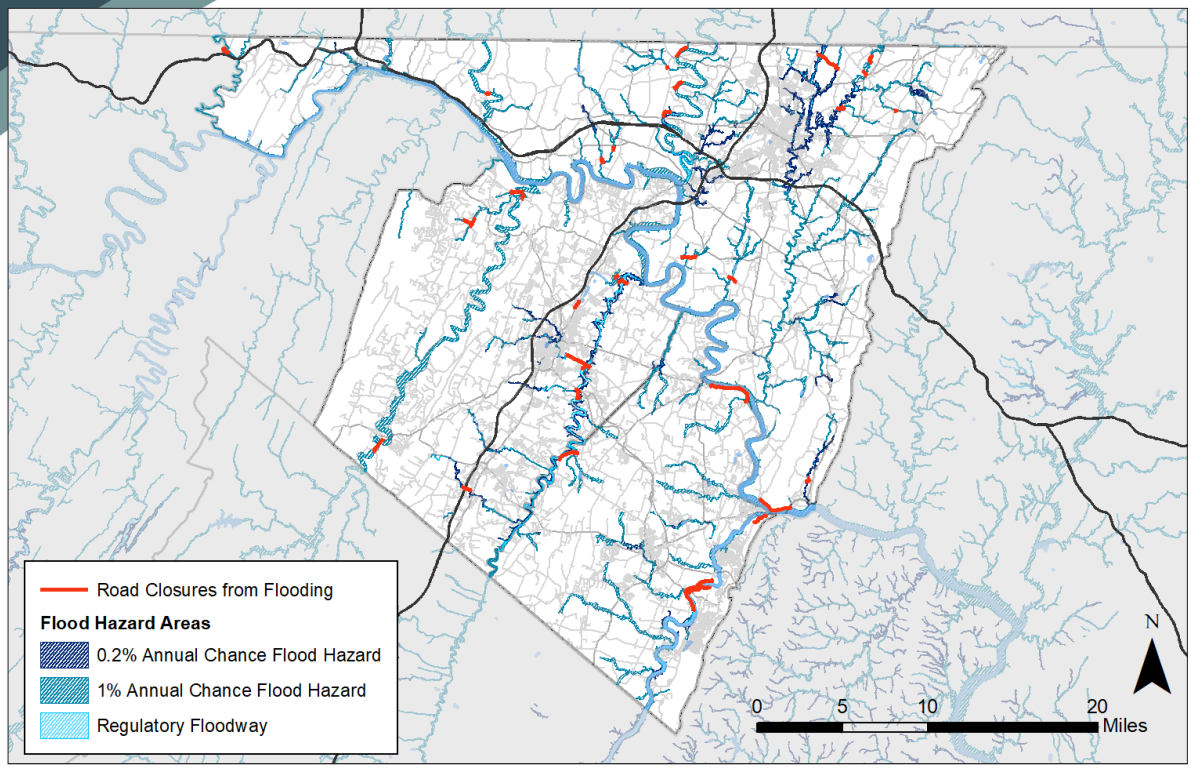


Figure 24: *Map of Road Closures in HEPMPO Region Over Last Decade*

Washington County, MD			
Ashton Road	Dellinger Road	Lehmans Mill Road	Rowe Road
Bakersville Road	Garretts Mill Road (Bridge)	Leiters Mill Road	Sandy Hook
Battletown Road	Gruber Road	Old Forge Road	Shank Road
Clopper Road	High Germany Road	Pectonville Road	Valley Road
Cresspond Road	Independence Road	Rockdale Road	Wishard Road
Jefferson County, WV			
Bloomery Road	Bowers Road	Chestnut Road	John Risler Road
River Road	Wilt Road		
Berkeley County, WV			
Allensville Road	Baxster Road	Douglas Grove Road	Golf Course Road
Grapevine Road	Henshaw Road	McCubbins Hollow Road	Scrabble Road
US 11	Mouth of Opequon	Ted Kesecker Road	

Table 15: *Listings of Road Closures*

Additional environmental data & maps are available in the Data Repository

- Flood Plain Maps
- Regional Parks
- Historic Sites

CHAPTER 4 REGIONAL PLAN FOR FISCAL CONSTRAINT PROJECTS

TRANSPORTATION FUNDING

This section of the plan identifies the anticipated transportation funding revenues expected from Maryland and West Virginia through 2050 for highway system expansion needs. The highway needs assessment is an inventory of transportation projects requiring capital expansion and operational improvement funding for ***Direction2050***.

There are many funding streams that support multimodal systems, bridge replacements, preservation, safety, and operating and maintenance of the current transportation system, however, the LRTP only requires the fiscal constraint evaluation for highway system expansion. The forecast of highway expansion funds is provided by the State DOTs and represents the expected revenues based on historical funding trends and the reasonable funding expectations over the duration of the LRTP.

Many uncertainties like the COVID-19 pandemic, economic downturns, and changes to commuting and freight patterns can strain future funding estimates as well as shift priorities. Most recently, the new infrastructure law (BIL) has shifted federal policy towards the following transportation investment priorities:

- Asset Management – system preservation investments of bridge and pavement assets
- Safety Needs – measures that help reduce accidents, improve bicycle and pedestrian safety
- Economic Growth in the Freight Industry – improve access to trucking facilities that support economic development and truck safety

The Maryland Transportation Trust Fund and West Virginia State Road Fund are the sources of the transportation funding. These transportation funds consist of federal and state revenues and are used for implementing the state's transportation priorities and needs that include system preservation, operations, safety, multimodal facilities, highway capacity improvements, and other transportation-related functions. For the HEPMPO region, the state funding is maintained within the state and formula-based allocations distribute the funding to the region. Of the total funding for the region, the percentage of funding dedicated to highway expansion is the following:

- Berkeley and Jefferson Counties, West Virginia – 10%
- Washington County, Maryland – 16%

ANTICIPATED FUNDING

The financial forecast plays a critical role in the transportation investment plan that has a reasonable expectation of sufficient revenues to support highway projects advancing toward implementation. This financial assurance, known as "fiscal constraint", is required by federal regulations. WVDOT and MDOT provide financial projections based on a historical analysis of surface transportation funding levels.

For ***Direction2050***, funding is expressed as Year-of-Expenditure (YOE) dollars or 2021 dollars (2021 $). The YOE funding estimates include projected funding adjusted for inflation. The YOE funding available starting in 2027 through 2050 is provided in **Table 16**. The region's funding is expected to increase compared to the funding forecast in the previous LRTP (**Direction2045**). Project funding already programmed in the HEPMPO TIP, is not included in the forecast.

Area	Direction2045	Direction2050
Berkeley and Jefferson Counties	$429.8M	$593.1M +38%
Washington County*	$503.4M	$806.1M +60%

**Includes Funds from MDOT, Washington County and the City of Hagerstown*

Table 16: *2050 Year of Expenditure (YOE) Funding Forecast*

PROJECT IDENTIFICATION PROCESS

Direction2050 relied on local input as well as a robust prioritization process to identify the most important projects that will maximize benefits and are within fiscal constraint.

EXISTING AND COMMITTED PROJECTS

Prior to the evaluation of projects, Existing and Committed (E+C) projects were identified to understand the existing roadway network and the committed projects that already have dedicated funding. E+C projects are those projects that have been programmed for funding and are included in the HEPMPO TIP. The TIP projects are not included in the fiscal constraint process. Identified E+C projects can be viewed at HEPMPO TIP Projects.

VISION PROJECTS

Direction2050 includes a wide-ranging list of "vision" projects, consisting of both unfunded and fiscal constraint projects. These vision projects, ranging from minor intersection improvements to significant widening of the interstates, represent a regional "needs list" of projects. Project selection involved a collaborative engagement effort of state, city, county, and HEPMPO representatives. The projects were nominated based on the input from the following:

- Projects included in the previous LRTP (Direction2045) planning efforts
- Projects identified from local Capital Improvement Programs (CIP), comprehensive plans, local planning efforts, and special studies
- Statewide priorities and needs from Statewide Multimodal Transportation Plans
- Evaluation of safety concerns
- Potential solutions to known issues
- Deficiencies identified from travel demand modeling and congestion analysis
- Input from public engagement and outreach
- Discussions with stakeholders and the TAC

The vision project lists were identified as part of the needs analysis. These projects along with the project description, limits, local priority, and planning-level cost estimates in 2021 $ can be found in **Appendix B**, and can be viewed on the interactive HEPMPO LRTP Projects Map.

PROJECT COSTS

The project costs were identified through various sources shown in **Figure 25** and have been adjusted to 2021 $. For projects that do not have a funding source, a planning-level cost estimate was performed based on the project description and potential improvements for similar types of projects. The project costs are used in the project prioritization process and in the identification of the projects that meet fiscal constraint.

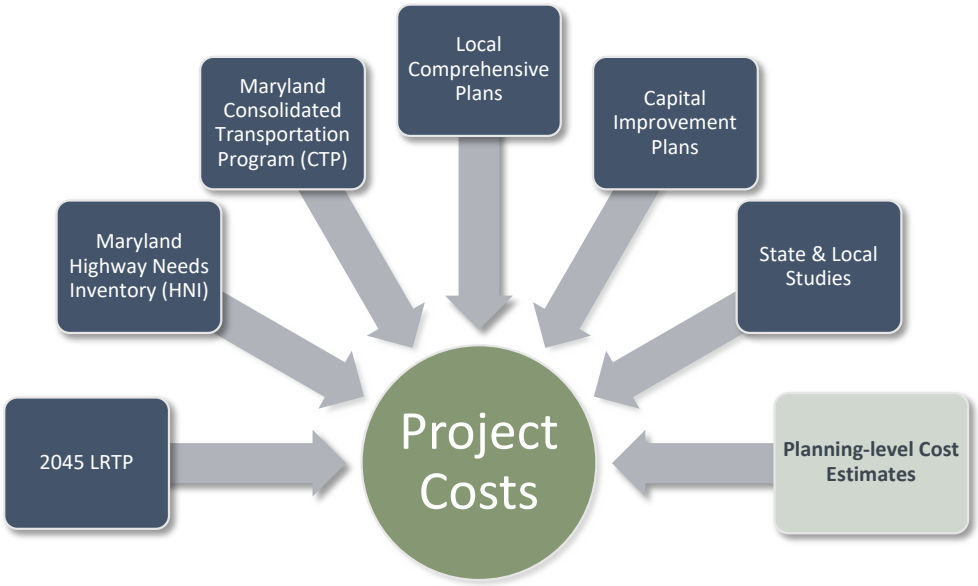


Figure 25: *Sources of Project Costs Estimates*

Based on the total project needs costs and the anticipated funding, there will be a substantial funding gap, as shown in **Figure 26**. With $3.9 billion in project needs but only $806.1 million in anticipated funding, Washington County will have a 79% shortfall. Berkeley and Jefferson Counties will have a 69% shortfall with $1.3 billion in project needs but only $593.1 million in anticipated funding. Other potential funding sources, such as the Federal Infrastructure for Rebuilding America (INFRA) Grants Program and state bonds, may become available for project funding. However, these alternative funding sources cannot be used for the LRTP fiscal constraint analysis.

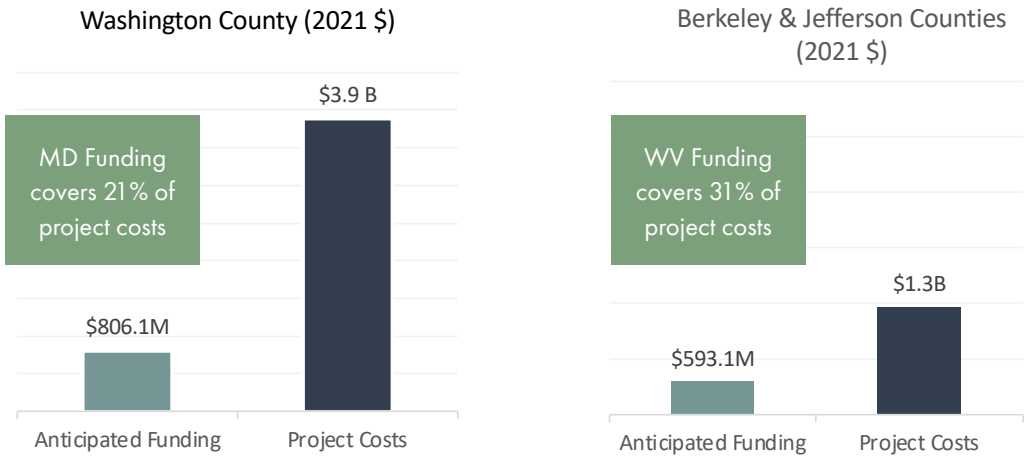
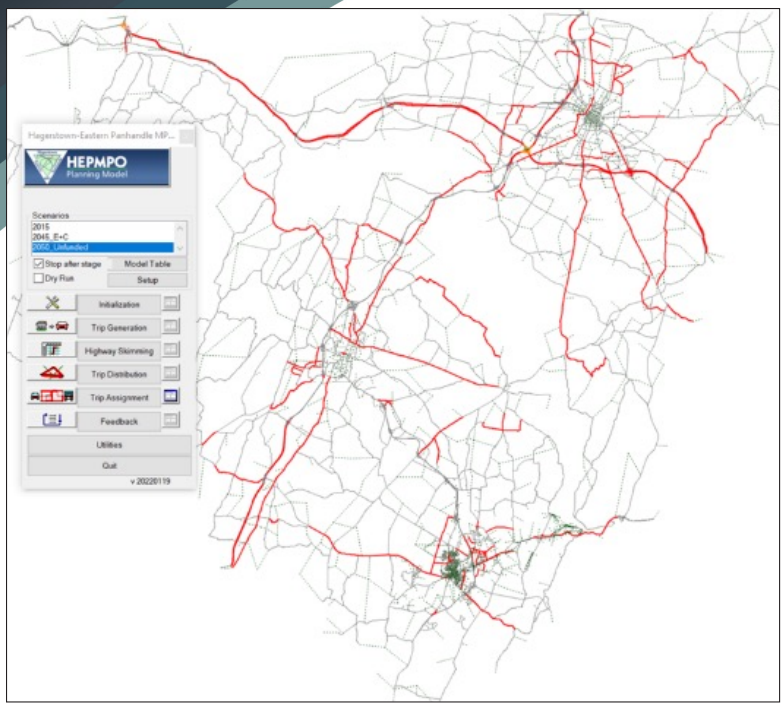


Figure 26: *Project Needs Costs versus Available Funding*



Travel Demand Modeling provides critical impacts of projects to the transportation system.

PROJECT PRIORITIZATION PROCESS

Direction2050 prioritization process utilized a set of evaluation criteria and planning tools to evaluate and score each transportation improvement project within the region to identify the most beneficial projects. The process, summarized in **Figure 27**, relied on jurisdiction and stakeholder input to identify local and high-priority projects. The evaluation tools included the HEPMPO travel demand model to measure the traffic volume and congestion impacts as well as GIS analysis techniques utilizing a data-driven approach to estimate potential benefits.

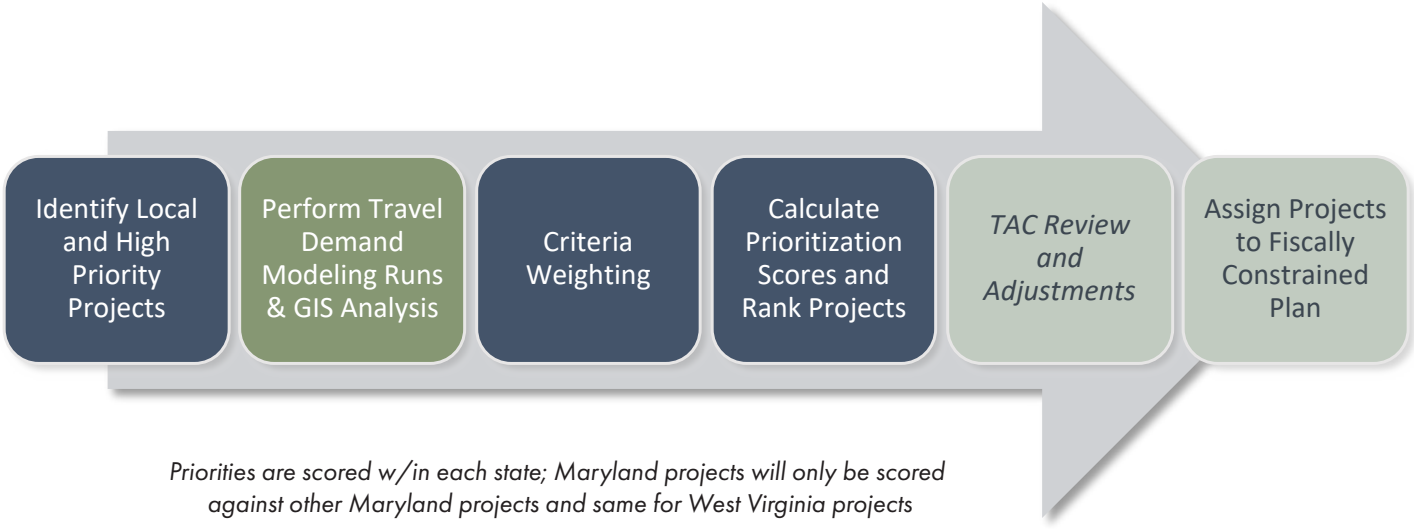


Figure 27: *Project Evaluation Process*

Projects were scored individually on a scale of 0-1 for each category based on the evaluation criteria, shown in **Table 17**, with several criteria, highlighted in the table, receiving additional weight or influence based on feedback from the public survey. The categories represented a variety of measures, including traffic, safety related to high crash areas, growth management that support economic centers and serve under privileged areas, resiliency, multimodal service routes, and freight corridors. The project scores were then aggregated to calculate total scores for each project with a higher total score indicating a higher prioritization ranking.

Category		Criteria	Weight
Priority	Priority Direction2050	High/Medium/Low and Is the project included in Washington County or Hagerstown Priority Letters	2
	Local Priority (MD Letter)		2
Traffic	AADT 2050	Regional travel growth on roadway	1
	Delta Trips		1
Safety	Crash	Project located in high crash areas	2
	Public Concern Comments	Public identified as area of concern	2
Congestion	Travel Time Reliability	Existing congestion level on roadway	2
	Vehicle Miles Traveled	Regional impact on VMT	1
	Vehicle Hours Traveled	Regional impact on congestion (VHT)	1
Growth Management	Employment	Number of employee locations in vicinity of project	2
	Environmental Justice	Located near unserved community	2
Resiliency	WFPH	Near wetlands, flood plains, historic area or parks	1
Other Modes	Bike Routes	Bike path or lane near project location	1
	Transit Routes	Transit route/ top near project location	1
Freight	Freight Corridors	Project aligns with Critical Freight Corridors	1

Table 17: *Project Prioritization Categories, Criteria, and Weighting*

Table 18 shows prioritization results for the top 20 projects in Washington County. Widening of Interstate 81 (I-81) Phases 2 and 3 received the highest rankings with Phase 4 also ranking fourth. I-81 has been identified as the highest local priority for Washington County and federal INFRA Grants have been pursued for funding. Other high-ranking projects include MD65, I-70, US11, US 40, and the I-70 Interchange with MD65 (Exit 29).

Table 19 provides the prioritization results for Berkeley and Jefferson Counties. WV9, west of I-81 received the highest ranking followed by safety improvements for Edwin Miller Blvd, which was identified through the public outreach survey. Other high-ranking projects include US11, I-81, US340, and WV45.

Project ID	Facility	Recommendation	2021 Cost	Local Priority	Ranking
W101.2	I-81 - Phase 2	Widen to six lanes	$ 136,389,000	HIGH	1
W101.3	I-81 - Phase 3	Widen to six lanes	$ 133,067,000	HIGH	2
W101.4A	I-81 – Phase 4A Maugans Avenue Interchange Improvements	Interchange Improvements	$ 4,000,000	HIGH	3
W101.4B	I-81 – Phase 4B Showalter Road – Interchange Improvements	Interchange Improvements	$ 8,000,000	HIGH	3
W101.4	I-81 - Phase 4	Widen to six lanes	$ 117,744,000	HIGH	5
W102.0	I-70	Widen to six lanes	$ 835,900,000	MEDIUM	6
W120.0	US 40	Widen to six lanes (divided)	$ 242,700,000	LOW	7
W108.0	MD 65	Widen to five lanes	$ 97,800,000	LOW	8
W117.0	US 11 (South)	Widen to four lanes	$ 69,400,000	MEDIUM	9
W104.0	I-70	Widen to six lanes	$ 1,271,300,000	MEDIUM	10
W112.0	MD 65 / I-70	Interchange Reconstruction	$ 57,052,960	HIGH	11
W116.0	US 11 (North)	Widen to four lanes	$ 68,400,000	MEDIUM	12
W309.0	Burhans Blvd.	Corridor Improvements, signal coordination	$ 2,807,242	LOW	13
W110.0	MD 65	Widen to four lanes (divided)	$ 46,400,000	HIGH	14
W106.0	MD 63	Widen to four lane (divided)	$ 68,200,000	LOW	15
W303.0	MD 60	Multi-lane urban reconstruct (4 lanes)	$ 19,600,000	LOW	16
W119.0	US 40	Widen to four lane	$ 18,400,000	LOW	17
W208.2	Longmeadow Rd. - Phase 2	Widen to five lanes	$ 10,387,776	LOW	18
W118.0	US 340 - Potomac River Bridge	Widen to four lanes (inlcudes Potomac River Bridge)	$ 61,900,000	HIGH	19
W208.1	Longmeadow Rd. - Phase 1	Widen to five lanes	$ 2,105,000	LOW	20

Table 18: *Washington County Prioritization Results, Top 20*

Project ID	Facility	Recommendation	2021 Cost	Local Priority	Ranking
B105.0	WV 9	New four lane alignment	$ 308,468,000	HIGH	1
B120.0	Edwin Miller Blvd.	Intersection/safety improvements	$ 14,731,907	MEDIUM	2
B102.1	US 11 - Phase 1 (North)	Intersection improvements	$ 12,916,182	HIGH	3
B101.2	I-81 - Phase 2	Widen to six lanes	$ 166,428,732	HIGH	4
B104.0	US 11	Widen to four lanes	$ 45,033,423	LOW	5
B103.1	US 11 - Phase 1 (South)	Intersection improvements	$ 9,150,130	HIGH	6
J102.2	US 340 North - Phase 2	Widen to four Lanes	$ 258,935,182	LOW	7
B102.3	US 11 - Phase 3 (North)	Intersection improvements	$ 5,566,471	HIGH	8
J110.0	Martinsburg Pike Corridor Vision Plan	Streetscape/Turn Lanes	$ 10,772,000	MEDIUM	9
B109.0	WV 45	Widen to four lanes (divided)	$ 155,298,847	LOW	10
B101.3	I-81 - Phase 3	Widen to six lanes	$ 155,826,352	MEDIUM	11
J301.0	5th Ave. / Route 9 / Flowing Springs Rd.	Intersection Improvements (2)	$ 3,184,203	HIGH	12
B311.0	Tavern Rd. / W. Moler Ave.	Intersection improvements	$ 11,043,929	LOW	13
B103.2	US 11 - Phase 2 (South)	Intersection improvements	$ 5,491,368	HIGH	14
J104.2	US 340 / Country Club Rd. - Phase 2	Grade Separate Interchange	$ 39,078,662	LOW	15
B102.2	US 11 - Phase 2 (North)	Intersection improvements	$ 7,470,911	HIGH	16
J309.0	Mildred St.	Complete Street Corridor	$ 3,618,315	HIGH	17
B114.0	I-81 Exit 12 Interchange Modifications	Realign NB exit ramp add new lane to Foxcroft Ave	$ 5,892,638	HIGH	18
J109.0	WV 45	Widen to four lanes (divided)	$ 155,298,847	LOW	19
B308.0	Raleigh St. / Race St.	Intersection Improvements	$ 437,343	HIGH	20
B108.0	WV 45	Intersection improvements	$ 14,665,001	LOW	20

Table 19: *Berkeley and Jefferson Counties Prioritization Results – Top 20*

FISCAL CONSTRAINT PLAN

Fiscal constraint is an essential federal requirement for HEPMPO's metropolitan planning program. Fiscal constraint requires the identification of projects that are reasonably expected to receive funding during the timeframe of the LRTP (***Direction2050***). Not all of the region's project needs can be included in the Fiscal Constraint Plan as a result of the funding gap between project costs and anticipated funding. Therefore, the prioritization results and YOE project cost estimates are critical in determining the constraint portion of the plan.

This Fiscal Constraint Plan includes different state funding streams from Maryland and West Virginia, meaning Washington County projects do not compete with Berkeley and Jefferson Counties projects for project funding and vice versa. To demonstrate compliance, the 2021 project costs are adjusted to YOE based on the expected timeframe the project would be implemented. The short-term phase is between 2027 (after the HEPMPO TIP years) and 2035, and the long-term is between 2036 and 2050, the last year of the plan.

The results of the fiscal constraint plan are shown in a map in **Figure 28**, and can also be viewed online at HEPMPO LRTP Projects Map. Washington County Fiscal Constraint Projects are provided in **Table 20**, and Berkeley and Jefferson Counties Fiscal Constraint Projects are provided in **Table 21**.

WHAT CAN THE REGION AFFORD WITHIN FISCAL CONSTRAINT?

Washington County

- 28 of the 56 total projects, 11 in the short-term and 17 in the long-term
- 13 of the 17 local **HIGH** priority projects
- 6 of the 9 local **MEDIUM** priority projects
- 12 of the **Top 20** highest ranking projects

Berkeley and Jefferson Counties

- 24 of the 64 total projects, 14 in the short-term and 12 in the long-term
- 15 of the 16 local **HIGH** priority projects
- 4 of the 12 local **MEDIUM** priority projects
- 14 of the **Top 20** highest ranking projects

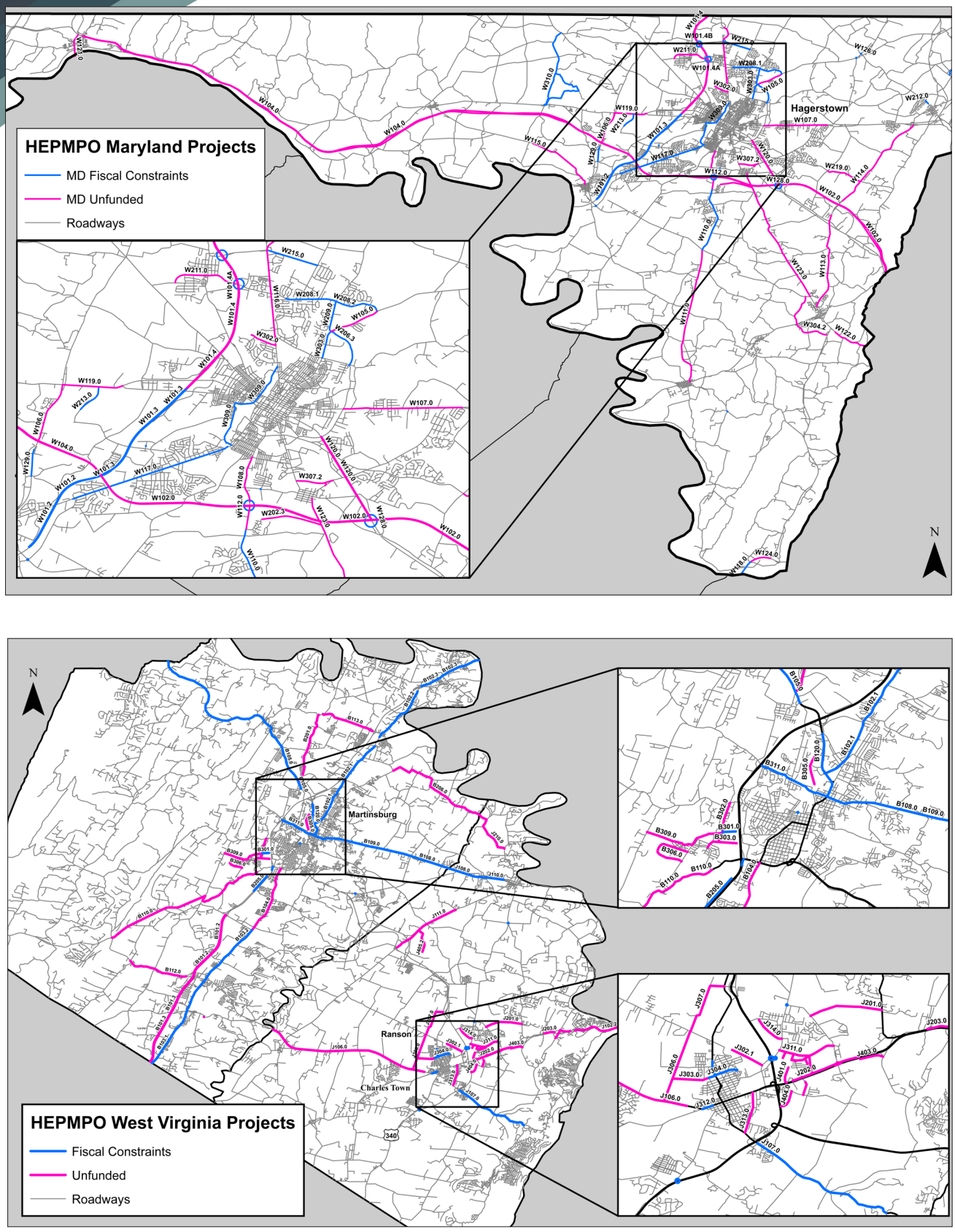


Figure 28: HEPMPO Regional Map of Fiscal Constraint and Unfunded Projects

Time Frame	Project ID	Facility	Recommendation	2021 Cost	Local Priority	Ranking
Phase 1 Short Term 2027 - 2035	W101.2	I-81 - Phase 2	Widen to six lanes	$ 136,389,000	HIGH	1
	W101.3	I-81 - Phase 3	Widen to six lanes	$ 133,067,000	HIGH	2
	W216.0	Underpass Way / Halfway Blvd.	Intersection Improvements	$ 1,500,000	HIGH	17
	W209.0	Marsh Pike	Widen to four lanes	$ 3,399,088	HIGH	24
	W128.0	I-70 / Exit 32 Dual HIghway Interchange	Interchange improvements, collector / distributor lanes	$ 8,250,000	HIGH	26
	W206.3	Eastern Blvd. Extended - Phase 3	Two lane highway w/ center turn lane and signal	$ 7,850,000	HIGH	27
	W205.0	Eastern Blvd. / Antietam Dr.	Intersection improvements	$ 2,699,463	HIGH	30
	W204.0	E. Oak Ridge Dr. / South Pointe Dr.	Intersection Improvement - traffic signal	$ 461,000	HIGH	37
	W217.0	Burnside Bridge Rd.	Intersection Improvements	$ 544,000	MEDIUM	51
	W101.4A	I-81 – Phase 4A Maugans Avenue Interchange Improvements	Interchange Improvements	$ 4,000,000	HIGH	19
	W101.4B	I-81 – Phase 4B Showalter Road – Interchange Improvements	Interchange Improvements	$ 8,000,000	HIGH	6
Phase 2 Long Term 2036-2050	W208.2	Longmeadow Rd. - Phase 2	Widen to five lanes	$ 10,387,776	HIGH	8
	W117.0	US 11 (South)	Widen to four lanes	$ 69,400,000	LOW	11
	W112.0	MD 65 / I-70	Interchange Reconstruction	$ 57,052,960	LOW	12
	W309.0	Burhans Blvd.	Corridor Improvements, signal coordination	$ 2,807,242	HIGH	14
	W303.0	MD 60	Multi-lane urban reconstruct (4 lanes)	$ 19,600,000	LOW	17
	W110.0	MD 65	Widen to four lanes (divided)	$ 46,400,000	HIGH	21
	W125.0	MD 63/MD 68 Intersection	Intersection improvements, turn lanes	$ 1,596,320	LOW	22
	W118.0	US 340 - Potomac River Bridge	Widen to four lanes (inlcudes Potomac River Bridge)	$ 61,900,000	MEDIUM	32
	W208.1	Longmeadow Rd. - Phase 1	Widen to five lanes	$ 2,105,000	LOW	35
	W213.0	Newgate Blvd.	New two lane road	$ 3,500,000	LOW	39
	W129.0	MD 63 Greencastle Pike	Widen to three lanes (add TWLTL)	$ 2,047,760	LOW	41
	W126.0	MD 60 (Leitersburg Pike)/MD 62 Intersection	Intersection improvements, traffic signal, turn lanes	$ 1,979,120	HIGH	44
	W127.0	MD 60 (Leitersburg Pike) / Leiters Mill Road	Intersection improvements	$ 886,688	LOW	46
	W212.0	N. Main St.	Widen road	$ 829,488	MEDIUM	48
	W215.0	Showalter Rd. East	New road construction	$ 2,251,000	MEDIUM	50
	W310.0	Rockdale and Independent Road	Road Adequacy Improvements	$ 1,025,000	MEDIUM	51
	W311.0	Sandstone Dr.	Roadway Realignment	$ 500,000	MEDIUM	51
			Total Project Costs (2021$)	**$ 590,427,905**		
			Total Project Costs (YOE$)	**$ 804,062,761**		
			Total Anticipated Revenue (YOE$)	**$ 806,144,093**		
			Remaining Funds (YOE$)	**$ 2,081,332**		
			Fiscal Constraint Demonstration	**YES**		

Table 20: Washington County Fiscal Constraint Projects

Time Frame	Project ID	Facility	Recommendation	2021 Cost	Local Priority	Ranking
Phase 1 Short Term 2027 - 2035	B105.0	WV 9	New four lane alignment	$ 308,468,000	HIGH	1
	B102.1	US 11 - Phase 1 (North)	Intersection improvements	$ 12,916,182	HIGH	3
	B103.1	US 11 - Phase 1 (South)	Intersection improvements	$ 9,150,130	HIGH	6
	B102.3	US 11 - Phase 3 (North)	Intersection improvements	$ 5,566,471	HIGH	8
	J301.0	5th Ave. / Route 9 / Flowing Springs Rd.	Intersection Improvements (2)	$ 3,184,203	HIGH	12
	B103.2	US 11 - Phase 2 (South)	Intersection improvements	$ 5,491,368	HIGH	14
	B102.2	US 11 - Phase 2 (North)	Intersection improvements	$ 7,470,911	HIGH	16
	J309.0	Mildred St.	Complete Street Corridor	$ 3,618,315	HIGH	17
	B114.0	I-81 Exit 12 Interchange Modifications	Realign NB exit ramp add new lane to Foxcroft Ave	$ 5,892,638	HIGH	18
	B308.0	Raleigh St. / Race St.	Intersection Improvements	$ 437,343	HIGH	20
	J312.0	Washington St.	Intersection and Ped. Mobility Improvements	$ 5,816,000	HIGH	23
	J308.0	US340/Huyett Rd./Augustine Ave.	Intersection improvements	$ 434,112	HIGH	25
	J107.0	WV 115	Access management improvements	$ 1,013,645	HIGH	27
	J304.0	Beltline Ave.	Streetscape	$ 8,104,853	HIGH	28
Phase 2 Long Term 2036-2050	B120.0	Edwin Miller Blvd.	Intersection/safety improvements	$ 14,731,907	MEDIUM	2
	J110.0	Martinsburg Pike Corridor Vision Plan	Streetscape/Turn Lanes	$ 10,772,000	MEDIUM	9
	B311.0	Tavern Rd. / W. Moler Ave.	Intersection improvements	$ 11,043,929	LOW	13
	B108.0	WV 45	Intersection improvements	$ 14,665,001	LOW	20
	J108.0	WV 45	Intersection improvements	$ 14,665,001	LOW	22
	B205.0	Harold Drive Extension	New two lane roadway	$ 12,672,237	HIGH	32
	J207.0	Flowing Springs Rd. / WV 230	Intersection Improvements	$ 3,116,340	MEDIUM	33
	B204.0	WV 115 / Charles Town Rd. / Baker Heights Rd.	Intersection Improvements	$ 702,334	LOW	36
	J208.0	Flowing Springs Rd. / Country Club Rd.	Intersection Improvements	$ 2,136,088	LOW	40
	B301.0	Commercial Road Connector	Construct new roadway	$ 2,164,095	MEDIUM	43
			Total Project Costs (2021$)	**$ 464,233,102**		
			Total Project Costs (YOE$)	**$ 591,609,799**		
			Total Anticipated Revenue (YOE$)	**$ 593,148,640**		
			Remaining Funds (YOE$)	**$ 1,538,841**		
			Fiscal Constraint Demonstration	**YES**		

Table 21: Berkeley and Jefferson Counties Fiscal Constraint Projects

UNFUNDED PRIORITIES

The remaining projects identified as region needs, but unconstrained due to insufficient funding are included in **Table 22** for Washington County and **Table 23** for Berkeley and Jefferson Counties. The project costs for the larger capital improvements like widening projects on the Interstates I-81 and I-70 along with US Routes 40, 11, and 340 exceed our available funding forecast and will need supplemental funding sources for implementation.

The highest unfunded priority for the region is the widening of the interstates as many of the segments of I-81 and I-70 identify as critical for safety concerns, freight movements, and economic development. Segments of I-81 in Hagerstown have been proposed for federal INFRA grants but have not been awarded. For I-70, which has a total cost that exceeds two billion dollars, segmenting improvements into phases like the I-81 Phases in Maryland and West Virginia are needed to prioritize the critical areas. Currently, I-70 improvements include the two sections across Washington County. The segmenting should focus on high traffic and crash areas from Exit 32, US40 to Exit 24, MD63 in Hagerstown that desperately need safety improvements.

Project ID	Facility	Recommendation	2021 Cost	Local Priority	Ranking
W108.0	MD 65	Widen to five lanes	$ 97,800,000	LOW	3
W101.4	I-81 - Phase 4	Widen to six lanes	$ 129,744,000	HIGH	4
W102.0	I-70	Widen to six lanes	$ 835,900,000	MEDIUM	5
W120.0	US 40	Widen to six lanes (divided)	$ 242,700,000	LOW	7
W116.0	US 11 (North)	Widen to four lanes	$ 68,400,000	MEDIUM	9
W104.0	I-70	Widen to six lanes	$ 1,271,300,000	MEDIUM	10
W119.0	US 40	Widen to four lane	$ 18,400,000	LOW	13
W107.0	MD 64	Multi-lane reconstruction	$ 71,400,000	LOW	14
W106.0	MD 63	Widen to four lane (divided)	$ 68,200,000	LOW	16
W307.2	Southern Boulevard - Phase 2	New collector - four lanes	$ 14,035,912	HIGH	20
W123.0	US Alt. 40	Two lane reconstruction	$ 43,029,000	LOW	23
W105.0	MD 60	Widen to four lanes	$ 16,000,000	LOW	24
W302.0	Haven Rd.	Two Lane Reconstruction	$ 6,421,184	LOW	28
W124.0	US 340	Widen to four lanes and interchange improvements at MD 67	$ 85,500,000	HIGH	29
W114.0	MD 66	Two lane reconstruction	$ 51,900,000	LOW	31
W115.0	MD 68	Two lane reconstruction	$ 39,900,000	LOW	32
W210.0	Maugans Ave.	Widen to three lanes	$ 7,919,000	LOW	34
W121.0	US 522	Widen to four lane (includes Potomac River Bridge)	$ 100,000,000	LOW	36
W113.0	MD 66	Two lane reconstruction	$ 58,700,000	LOW	38
W111.0	MD 65	Intersection improvements	$ 6,020,000	LOW	40
W122.0	US Alt. 40	Two lane reconstruction	$ 31,500,000	LOW	42
W211.0	Maugans Ave.	New two lane road	$ 10,724,000	LOW	43
W202.4	Colonel Henry K. Douglas Dr. Extended - Phase 4	New two lane road	$ 5,925,656	LOW	45
W202.3	Colonel Henry K. Douglas Dr. Extended - Phase 3	New two lane road	$ 6,295,168	LOW	47
W219.0	Mt. Aetna Road	Spot Improvements	$ 2,400,000	LOW	49
W202.2	Colonel Henry K. Douglas Dr. Extended - Phase 2	Bridge	$ 3,068,736	LOW	50
W304.1	Monroe Blvd. / Warrior Blvd. Extension (North)	New two lane road	$ 13,052,195	HIGH	46
W304.2	Monroe Blvd. / Warrior Blvd. Extension (South)	New two lane road	$ 9,464,535	LOW	52

Table 22: *Washington County Unconstrained Projects*

Project ID	Facility	Recommendation	2021 Cost	Local Priority	Ranking
B101.2	I-81 - Phase 2	Widen to six lanes	$ 166,428,732	HIGH	4
B104.0	US 11	Widen to four lanes	$ 45,033,423	LOW	5
J102.2	US 340 North - Phase 2	Widen to four Lanes	$ 258,935,182	LOW	7
B109.0	WV 45	Widen to four lanes (divided)	$ 155,298,847	LOW	10
B101.3	I-81 - Phase 3	Widen to six lanes	$ 155,826,352	MEDIUM	11
J104.2	US 340 / Country Club Rd. - Phase 2	Grade Separate Interchange	$ 39,078,662	LOW	15
J109.0	WV 45	Widen to four lanes (divided)	$ 155,298,847	LOW	19
B113.0	WV 901	Widen to four lanes	$ 41,905,234	MEDIUM	24
B201.0	CR 1	Widen to four lanes	$ 93,819,811	LOW	25
J313.0	Jefferson Ave.	Intersection/Safety Improvements	$ 3,774,284	LOW	29
J111.0	WV 480 Leetown Rd. / Duke St.	Safety Improvements	$ 5,512,826	LOW	30
J314.0	Presidents Pointe Ave. Ext	New 2-lane connector road	$ 3,057,648	LOW	31
J210.0	Scrabble Road (Jefferson County)	Safety Improvements	$ 2,116,269	LOW	33
J311.0	New Roadways	Improved road connections	$ 18,677,912	LOW	33
B110.0	WV 45	Recon. of roadway - safety improvements	$ 94,078,339	LOW	37
J202.0	New Frontage Road	US 340 frontage road	$ 12,472,899	LOW	38
B302.0	Delmar Orchard Rd.	reconstruction (two lanes)	$ 24,414,738	MEDIUM	38
J201.0	New East-West Roadway	New two lane roadway	$ 6,332,859	LOW	41
J206.0	New North-South Roadway	New two lane roadway	$ 2,233,036	LOW	42
J106.0	WV 51	Intersection Improvements	$ 11,889,056	LOW	43
B307.0	North-South Connector	Construct new roadway	$ 2,164,095	MEDIUM	43
B305.0	Lutz Ave. Extension	New two lane road	$ 4,413,288	LOW	46
B112.0	WV 51	Intersection improvements	$ 8,203,955	LOW	47
J302.2	16th Street Extension	New two lane roadway	$ 19,249,564	LOW	47
B309.0	Residential through Road	Construct new roadway	$ 10,800,007	MEDIUM	47
J404.0	New Roadway	New two lane roadway	$ 2,014,364	LOW	50
B303.0	East-West Connector	Construct new roadway	$ 5,254,582	MEDIUM	51
J205.0	New North-South Roadway	New two lane roadway	$ 5,096,233	LOW	52
J307.0	Currie Rd. / Old Leetown Pike	Saftey improvements	$ 6,252,069	LOW	53
J405.2	Rockwool Blvd. - Phase 2	New two lane roadway	$ 5,055,300	MEDIUM	54
B306.0	Main Residential Road	Construct new roadway	$ 14,617,604	MEDIUM	55
J302.1	16th Street Extension	New two lane roadway	$ 19,249,564	LOW	56
J303.0	Beltline Ave.	New two lane roadway	$ 28,986,375	LOW	56
B202.0	Giles Mill Rd. Bridge	Widen to 2 Lanes	$ 1,401,437	LOW	58
J403.0	New Frontage Road	US 340 frontage road	$ 1,543,628	LOW	59
B206.0	Scrabble Road (Berkeley County)	Safety Improvements	$ 3,070,024	LOW	60
J401.0	Jefferson Terrace Ext.	New north-south roadway	$ 4,173,073	LOW	61
J203.0	New Frontage Road	US 340 frontage road	$ 4,051,349	LOW	62
J204.0	New Frontage Road	US 340 frontage road	$ 4,489,770	LOW	63
J306.0	Currie Rd.	New two-lane roadway	$ 24,171,291	LOW	64

Table 23: *Berkeley and Jefferson Counties Unconstrained Projects*

CHAPTER 5 PLANNING FOR THE FUTURE

INTRODUCTION

The issues, priorities, and opportunities related to the transportation system continue to evolve, in some cases very quickly. As such, the HEPMPO will need to consider the impacts of a variety of changing factors in future updates to the region's TIP and LRTP. This section highlights some of those changes and how they might ultimately impact planned investments and strategies moving forward.

NEW FUNDING

In November 2021, the BIL was signed providing the largest long-term investment in transportation infrastructure in the nation's history. It provides $550 billion nationally through 2026 for new federal investment in infrastructure including roads, bridges, mass transit, water infrastructure, resilience, alternative fuel infrastructure, and broadband. Although the longer-term funding impacts are unknown at this time, the short-term investments provided by BIL will provide the region opportunities to address many of the needs provided in this plan.

FUNDING IMPACTS ON FUTURE PLANNING IN REGION:

- The HEPMPO will become more active in assessing public electric vehicle (EV) charging infrastructure and broadband needs/opportunities within the region.
- More investments will be targeted to infrastructure impacted by extreme weather.
- The HEPMPO will be working with each State DOT to evaluate ways to reduce the carbon footprint of the transportation system. This may include new regional goals or initiatives.

EMERGING TECHNOLOGIES

New vehicle and roadway infrastructure technology will have a significant impact on the future transportation system. These developments could reduce crashes and injuries while increasing existing roadway capacity and reducing traffic congestion. These technologies are rapidly evolving, so it is impossible to predict their specific impact over the 25-year plan period, but in some cases, this technology is already being implemented within the region.

ELECTRIC VEHICLES

- EVs will provide benefits to the environment by reducing fossil fuel consumption.
- More affordable and accessible charging infrastructure is needed for communities and travelers.
- A major barrier for EV sales is overcoming range anxiety. An initial priority is to ensure that interstates have places where EVs can charge quickly (DC fast chargers).
- Learn more of what is happening in Maryland regarding EVs: https://marylandev.org/

AUTONOMOUS VEHICLES

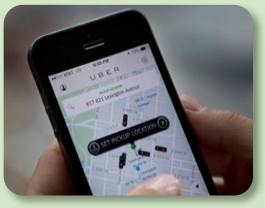
- This technology relates to driverless vehicles and will likely play a significant role by 2040 after more testing is completed.
- It could affect roadway safety and traffic congestion as some travel like trucks could be moved to off-peak times or travel in "platoons".
- Transit system vehicles could be operated without drivers providing more flexibility in service and addressing staffing shortfalls.

CONNECTED VEHICLES

- A nearer-term technology that allows vehicles to communicate with each other and roadway infrastructure. Many of today's cars include the capabilities for this communication.
- Connected vehicles may provide significant benefits to safety by reducing rear end and other intersection collisions.
- Cars could be warned when crossing pavement boundaries or signals could better understand oncoming traffic.

SIGNAL AND INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

- Signal technology including "adaptive" signal timing can adjust the amount of green and red time based on traffic conditions seen from cameras.
- Other traffic monitoring systems allow signals to be connected and controlled by a traffic monitoring system that can be used to help divert traffic efficiently during incidents or events.
- In Maryland, a network of virtual weigh stations is being developed to monitor truck weights and provide information on speed, size, height, and other unsafe driving practices.



MOBILITY ON DEMAND

- The growth of on-demand transportation (e.g. Uber/Lyft) will change how people get around.
- Such options may reduce the need for car ownership and affect how much parking is needed in urban areas.
- How might this impact transit ridership in the future as options become more affordable or if combined with autonomous technology?

TELEWORKING

The COVID-19 pandemic led to many changes in how people led their lives in 2020 and 2021. Moving forward, these changes may have lasting impacts on the transportation industry. Teleworking inspired by the pandemic remains widespread and has reduced travel demand including the number of commute trips in peak hours and altered trip making patterns at other times of the day. The HEPMPO will continue to monitor data on the vehicle miles of travel (VMT) and other traffic congestion measures. If telework remains prevalent, the planned investments may need to be re-evaluated or re-prioritized based on the impacts of these measures.

TELEWORKING IMPACTS ON OUR REGION:

- In the first quarter of 2022, data from Google Mobility Analytics indicate that work and shopping trips in the HEPMPO region remain lower than a pre-COVID baseline (e.g. 2019 to early 2020).
- In Berkeley and Jefferson counties, both work and shopping trips in 2022 are 15-20% lower than pre-COVID conditions. However, in Washington County work and shopping trips have rebounded and are just slightly lower (<5%) different than the pre-COVID conditions.

E-COMMERCE

The recent trend of E-commerce has been highlighted in ***Direction2050*** and is expected to be an important issue in transportation planning moving forward. The purchase of goods online has had dramatic impacts on shopping stores and created a greater emphasis on freight and trucking movement. The HEPMPO region is seeing these impacts as freight development and facilities expand across the interstate system and truck volumes continue to grow.

PLANNING FOR E-COMMERCE IN OUR REGION:

- The HEPMPO will continue to work with local governments in tracking the rapid change in the retail industry. These changes will create shorter shipping timelines and may continue to increase the role of express delivery services over traditional shopping trips.
- The increases in the number of delivery trucks may have impacts on the transportation system, including the local road system. The impacts could include safety issues, traffic congestion, and the demand for short-term parking and drop-off zones.
- E-commerce centers will also attract commuting trips from larger numbers of employees working multiple shifts, often outside traditional transit service areas. The transportation system will need to support this commuting access.
- In addition, land-use planning will become even more critical to ensure that locations of centers are acceptable to communities in relation to residential and other sensitive areas.

CHANGING CLIMATE

Climate change remains an important area of emphasis across the globe; however, the challenge is determining how each of us can contribute to finding solutions. At the regional level, the HEPMPO works with MDOT and WVDOT to address climate change by trying to minimize the impacts the system has on greenhouse gas emissions (GHGs) and by making the system more resilient to climate impacts like extreme weather. EVs are an important emerging technology that is one of the key strategies for reducing the carbon footprint of the system. Both MDOT and WVDOT also aim to improve the system's resiliency through their asset management programs for roads and bridges. Incorporating extreme weather risks into the design and project prioritization processes remain important areas under review and improvement.

PLANNING FOR CLIMATE CHANGE IN OUR REGION:

- HEPMPO continues to coordinate with the MDOT on their comprehensive climate change efforts. See MDOT's Climate Change efforts.
- In ***Direction2050***, the HEPMPO has taken steps in understanding some of the regional flooding vulnerabilities and including this information in the project prioritization process. Future efforts will focus on tracking these vulnerabilities and risks and coordinating with each DOT on their asset management programs.
- HEPMPO plans to take a more active role in planning for EV infrastructure.

LAND USE AND MULTI-MODAL INITIATIVES

The HEPMPO has stressed the importance of coordinating land use changes with the transportation system. As new development is planned, efforts must be made to identify how those changes might impact roads and how to best accommodate connectivity, mobility, safety, and multi-modal opportunities. In the last LRTP, ***Direction2045***, HEPMPO illustrated how land use changes can have greater impacts on regional VMT than all of the programmed transportation projects. As a result, continued coordination among regional and local planners is paramount to ensuring that the transportation system can support future growth in the region.

PLANNING FOR FUTURE LAND USE IN OUR REGION:

- Working with each DOT, the HEPMPO stresses the importance of the proactive management of vehicle access points from land parcels to the roadways. Minimizing the number of access points can provide significant benefits to safety and congestion on key roads within the region. See more information on access management: Benefits of Access Management Brochure - FHWA
- The HEPMPO will continue to maintain its regional travel model. The model helps planners identify how future land use may impact roadways traffic volumes and congestion.
- As new freight development continues to expand along the interstate corridors, efforts need to be concentrated on maintaining and improving the "first and last mile connections". This refers to the need to ensure adequate access to the interstates. Identifying potential developments and planning for improvements as early as possible is key to successfully supporting new businesses.
- As the transportation system is enhanced for future growth, we also want to make sure that all modes of travel are addressed, especially where there are opportunities for increasing bike, pedestrian, or transit usage. The HEPMPO has worked with local communities to identify opportunities for "Complete Streets" like on WV45 in Shepherdstown. These principles will continue to play an important role in planning for the future. To see more on Complete Streets: Smart Growth America

CHAPTER 6 WORKING TOGETHER TO ADDRESS OUR REGION'S NEEDS

In addition to providing regional priorities for highway expansion projects, ***Direction2050*** also highlights HEPMPO's future activities to address the needs and issues provided in the plan. These activities are linked to the regional goals, objectives, and strategies (identified below) that help inform HEPMPO's Unified Planning Work Program (UPWP), a federally required document that guides the agency's work tasks and priorities. Many of these actions require coordination with state and local partners and may include additional studies with continued public involvement. Moving forward, HEPMPO will continue to share performance on each of these activities on their website (https://www.hepmpo.net).

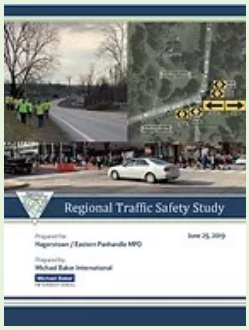
System Preservation Strategies	HEPMPO Activities
• Monitor WVDOT and MDOT infrastructure improvement priorities and **asset management practices** and procedures. Integrate available information in the LRTP for sharing with the public. • Share information annually on WVDOT and MDOT asset management **funding allocations**. • Coordinate annually with local stakeholders and the public on **asset management priorities**. If priorities are received, the HEPMPO will submit locations for DOT consideration. • **Monitor asset conditions and deficiencies** (e.g. pavement and bridge ratings) in coordination with each State DOT for inclusion in the LRTP. Asset conditions or related information may be shared on HEPMPO's website.	• Manages investment priorities by programming projects and strategies for HEPMPO TIP • Incorporates asset management conditions and considerations into planning studies • System maintenance routines and performance tracking • Utilizes social media for construction/maintenance activities within the region • Coordinates with DOT to identify priorities for maintenance needs

Roadway Safety Strategies

- Identify and coordinate with regional hazard mitigation, emergency management, and evacuation planning.
- Coordinate with local agencies and State DOTs to monitor and report crash and accident rates within the region including the top safety intersections of concern.
- Provide emphasis on transportation projects that address and improve the safety of the transportation system.
- **Conduct local safety studies** including pedestrian safety audits on high accident corridors to identify potential improvement strategies.
- Identify multimodal conflicts, such as unsignalized, at-grade railroad crossings.

HEPMPO Activities

- Completed HEPMPO Special Studies:
  - HEPMPO Regional Traffic Safety Study
  - Foxcroft Avenue Pedestrian Road Safety Assessment
  - US40 Dual Highway Pedestrian Road Safety Study and Audit
- Coordinates w/ local agencies to identify candidate safety locations to study
- Reviews safety performance data from MDOT and WVDOT
- Stays involved with State DOT safety planning efforts
- Attends regular bike/ped emphasis area team meetings (PBEAT) with MDOT



- Attends Safety Management Task Force with WVDOT
- Provides technical support for I-81 INFRA Grant Applications

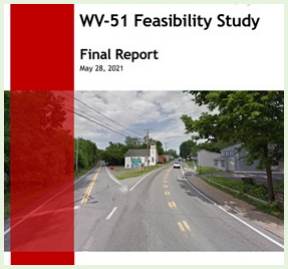
Traffic Congestion Strategies

- Monitor traffic congestion **performance measures** across the region using available GPS travel time data and travel demand model forecasts. Report and map performance measures for integration into planning documents.
- Evaluate public comments on traffic congestion priorities and needs.
- Provide each State **DOT priority congested intersections for consideration of low-cost or other signal technology strategies**.
- Monitor regional freight reliability, needs, and trends within the region. These efforts will require coordination with State DOTs and other regional planning efforts (e.g. I-81 Corridor Coalition).
- Coordinate with local transit agencies to identify reliability issues and potential strategies.
- Conduct bike and pedestrian studies to identify performance issues and potential strategies.

HEPMPO Activities

- Member of the MDOT State Freight Advisory Committee (SFAC)
- Stakeholder in the development of the WV State Freight Plan
- Member of the I-81 Corridor Coalition Steering Committee
- Completed HEPMPO Sponsored Studies:
  - I-81 & I-70 TSMO Plan
  - WV51 Feasibility Study
  - WV45 Traffic Operations and Safety Study

- Organizes local coordination efforts for transit reliability with EPTA and WCT
- Stakeholder in the development of the MD Statewide Transit Plan
- MPO representative on the WV State Transportation Innovation Council
- Provided technical assistance to the City of Hagerstown for bicycle awards from the MD Bikeway Grants and TAP Grants Programs

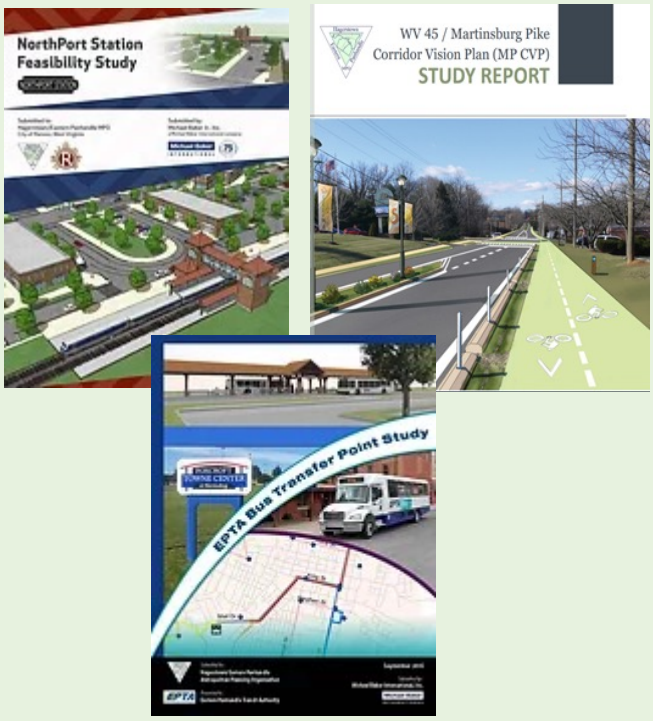


Land Use Strategies

- Using the travel demand model, coordinate transportation projects with land use plans to maximize connectivity of the transportation network to key destinations, such as employment centers, residential areas, and downtown business districts.
- Support local cities and towns in the development of **complete streets** policies to accommodate all users of the transportation system.
- Conduct studies in support of the linkages of Transit-Oriented Development (TOD) to the region's transportation system.
- Encourage **coordination, cooperation, and collaboration** between municipalities.
- Review and comment on development site plans as is consistent with the MPO's vision.

HEPMPO Activities

- Completed HEPMPO Sponsored Studies:
  - WV45/Martinsburg Pike Corridor Vision Plan
  - NorthPort Station Feasibility Study
- Maintains HEPMPO travel demand modeling for project and study support:
  - WV9 PEL Feasibility Study
  - Novak Drive PEL
  - MDOT Halfway Blvd.
  - Washington County Professional Boulevard
- Monitors large developments and their impacts on the region to include Procter and Gamble (P&G), and new Hitachi Rail manufacturing plant
- Assisted EPTA with the identification of the transfer center location, grant applications, and development plans

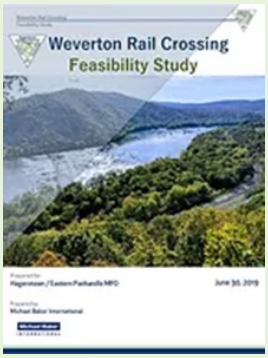


Economic Prosperity

- Work with county and municipal staff to identify key services in need of **improved infrastructure connections**.
- Conduct **outreach** to local businesses and freight generators, such as Norfolk Southern and CSX, to identify transportation issues and needs including improvements to first and last mile connections.
- Coordinate with stakeholders, local municipalities, and transit agencies to identify workforce transportation needs.
- Work with local stakeholders to identify transportation projects that provide economic benefits to the region.
- Provide emphasis to those projects within the LRTP project prioritization process.
- Conduct **outreach to low-income and minority populations** to identify opportunities and transportation investments that serve such populations.

HEPMPO Activities

- Regularly invites local businesses to participate as stakeholders for planning studies
- Coordinates activities with CSX for regional rail-crossing issues including the Weverton Railroad Crossing Feasibility Study for crossing improvements
- Stakeholder in development of the Maryland and West Virginia State Rail Plans with emphasis on at-grade and signalized crossings



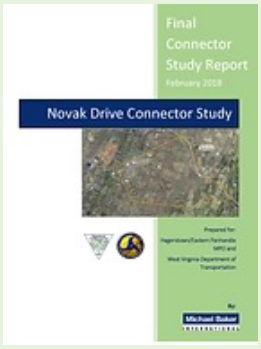
- Included workforce impacts on project prioritization analysis
- Funded EPTA Transit Development Plan (TDP) and participated on study committees for EPTA and WCT TDPs.
- Updated HEPMPO Title VI Plan and Public Participation Plan
- Conducted EJ Intercept surveys for the LRTP development to include bi-lingual surveys and outreach.

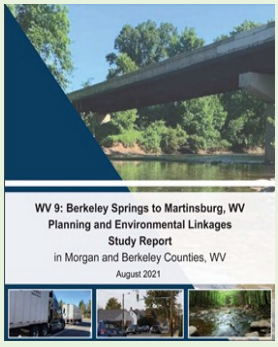
Environment

- Monitor greenhouse gas emission trends from the transportation sectors for existing and LRTP horizon years.
- Support states with efforts to maintain attainment of air quality standards.
- Support **planning and environmental linkage studies (PEL)** within the region to identify environmental constraints and issues early in the project development phase.
- Identify transportation **infrastructure vulnerable** to extreme weather (e.g. flooding).
- Incorporate **environmental justice** and other environmental mapping within the region and project prioritization process.
- Promote context-sensitive design of transportation facilities within the region.
- Support stormwater requirements for transportation facilities to reduce pollution and restore the Chesapeake Bay.

HEPMPO Activities

- Supported and managed 2 PEL studies within the region
- Participates on the MDOT ZEEVIC committee meetings
- Tracks landslide susceptibility assessments for Eastern Panhandle developed by WVU and coordinated with MDOT for Washington County assessment
- Staff monitored the EPA's communications and discussion regarding new proposed National Ambient Air Quality Standards (NAAQS) for all critical pollutants and their relation to transportation conformity.
- Included EJ mapping as part of LRTP Project Prioritization Process



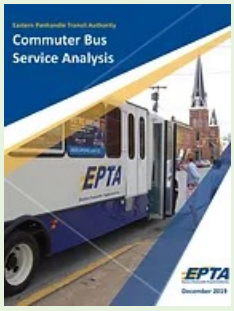


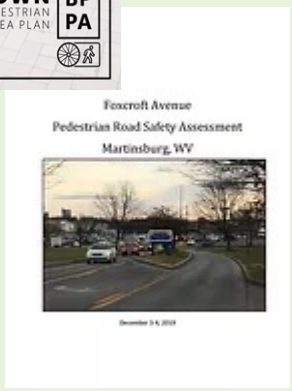
Multimodal Transportation

- Support transit agencies with efforts to evaluate transit routes and demand including the agency Transit Development Plan.
- Monitor transit ridership trends for key transportation corridors.
- Identify alternative transportation project needs.
- **Conduct additional studies** to support the operations and improvements of the transit system.
- Conduct **bicycle and pedestrian studies** to identify needs and strategies with special consideration for traditionally underserved populations and first and last mile connections to transit.

HEPMPO Activities

- Supports MPO emphasis for complete street activities under BIL
- Identifies stakeholder and task force members for study guidance and input
- Completes HEPMPO sponsored studies for transit improvements and bicycle and pedestrian studies





HEPMPO APPROACH TO PLANNING STUDIES

HEPMPO planning studies exemplify HEPMPO's collaboration efforts through interagency coordination with their planning partners. By providing financial and technical planning support to meet the needs of the region, the HEPMPO Special Studies have been extremely successful in implementing needed improvements across the region. Below are a few highlights of previous studies and the full reports can be viewed at the following link: HEPMPO Special Studies.

HEPMPO SPECIAL STUDY HIGHLIGHTS

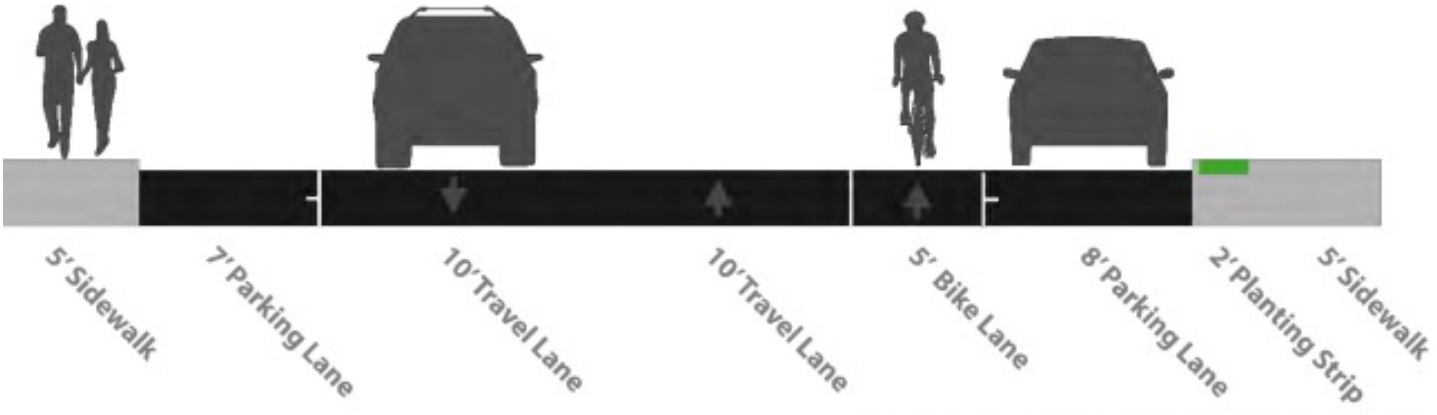
- **Area and Regional Bicycle Plans** helped the City of Hagerstown secure multiple grant awards for bicycle improvements and network expansion
- **Pedestrian Safety Audits** led to intersection improvements and additional sidewalks along Dual Highway in Hagerstown and Foxcroft Avenue in Martinsburg
- **Transit Assistance** to help EPTA receive federal grants for their new transfer center and administration facility in downtown Martinsburg
- Supported **Transit Feasibility Study** for implementing commuter bus service to access the new Metro Silver Line Station in Ashburn, VA
- Provided low-cost alternatives to improve highway safety and operations with the **Interstate TSMO Plan**
- **Traffic, Bicycle, and Pedestrian Safety Projects** identified critical improvements needed to reduce potential hazards and accidents

As part of the ***Direction2050*** project needs assessment, the following initiatives and planning studies were identified for the region to support county local level planning initiatives. The studies are not necessarily part of the project development process, but rather support safety improvements, corridor-level and innovative transportation solutions to foster collaboration between public agencies and other regional stakeholders. They serve as potential solutions to address mobility and safety needs and provide a basis for funding opportunities through state and federal grants. The following are the recommended studies for the region:

HEPMPO Regional Freight Plan. The regional freight plan and economic impact analysis (EIA) for the HEPMPO region will build upon the Maryland Strategic Goods Movement Plan and the West Virginia State Freight Plan. In an economy as varied and interconnected as the HEPMPO region, an EIA can provide an understanding of how transportation improvements and policies affect the specific productivity and competitiveness of the industry. The interstates, especially I-81, are among the highest freight corridors in the nation by truck percentage and are key access points to the local freight industry. However, high truck volumes do have significant impacts on safety and traffic congestion in the region. A regional freight study will focus on the identification of freight trends and issues, high freight growth areas, regional commodity flows, and performance measures. The study will also aim to gain further insights and collaboration from national, state, and regional freight experts and local freight companies.

High truck volumes have significant impacts on safety and traffic congestion in the region

HEPMPO Regional Bicycle and Pedestrian Plan. The regional bicycle and pedestrian plan will build upon the success of the HEPMPO Regional Bicycle Plan developed in 2016 with updates and evaluation of the bike and pedestrian network in the region. The plan will identify area improvements, analyze safety issues, and evaluate bicycle demand and comfort. The plan would identify gaps in the system and recommend innovative active transportation approaches that work for the local communities. Recommendations may include sidewalk locations, buffered bicycle lanes, road diet approaches, bike/walk streets, and intersection treatments for a viable, healthy, and safe active transportation network.

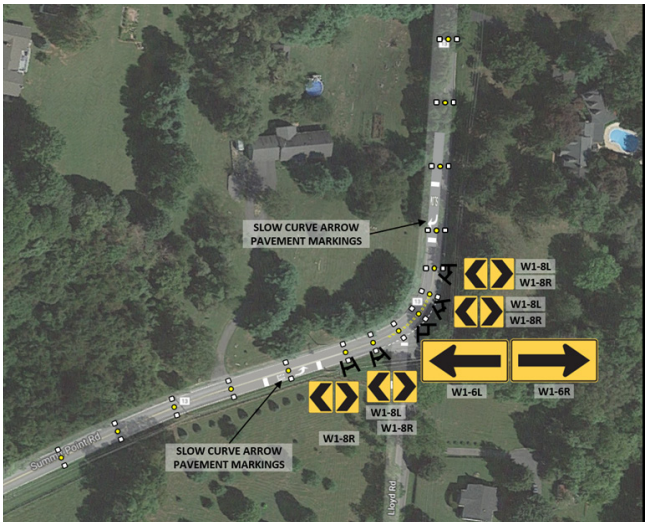


Cross-section showing proposed improvements

Transportation Systems Management and Operations (TSMO) for I-81 in West Virginia. TSMO strategies identify traffic flow improvements with a focus on innovative technologies and low-cost strategies to benefit traffic operations and safety. The I-81 corridor has experienced on-going construction activities and has a history of weather-related travel impacts and severe accidents. This plan will identify implementation strategies to effectively manage and operate existing facilities to their full potential. With capital funding limitations that prohibit capacity expansion of the interstates, TSMO strategies will also focus on Intelligent Transportation System (ITS) technologies, communications, and other support systems to provide a more cost-effective approach to optimizing the flow of traffic during periods of recurring and non-recurring congestion.

Congestion Management Process (CMP). If designated as a TMA, HEPMPO will be required to develop a CMP for the region. The CMP evaluates regional congestion trends using selected travel time performance measures, defining priority corridors, monitoring other modes of travel, assessing potential corridor strategies, and evaluating the impacts of recently completed projects.

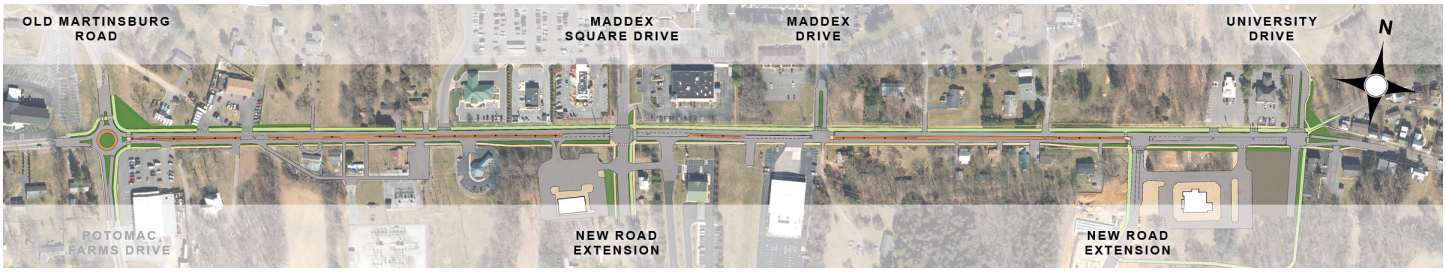
Road/Pedestrian Safety Audits. Building upon the success of the HEPMPO Regional Traffic Safety and Improvement Study and US40 Dual Highway Pedestrian Safety Study, corridors that experience high traffic incidents, pedestrian and bicycle accidents, or unsafe conditions can be evaluated for potential safety improvements. The study would focus on developing an assessment of current road configuration, pedestrian accommodations and crossing patterns, forming safety audit teams to evaluate and identify potential solutions, evaluation of priorities, education and enforcement strategies and recommendations for continued monitoring of the corridor performance measures.



Recommendations developed for the Summit Point Road Safety Audit

Corridor Studies. Planning activities to increase safety and accessibility options for multimodal improvements are part of the BIL 2.5 percent set-aside. The corridor-level planning and traffic studies can visualize "complete street" concepts like the Martinsburg Pike Corridor Vision Plan to integrate active transportation and safety into a conceptual plan. These studies can utilize visualization software along with GIS-based and other traffic operation and simulation tools. The study objectives can include traffic signalization coordination, improved accessibility with active transportation safety measures, and enhanced economic development opportunities.

For signal coordination, the study would focus on identifying viable locations for transportation system management (TSM) improvements, intersection and corridor-level signal coordination systems, and other signalization alternatives including adaptive traffic control systems (ATCS). ATCS is a traffic management strategy in which traffic signal timing changes, or adapts, based on actual traffic demand.



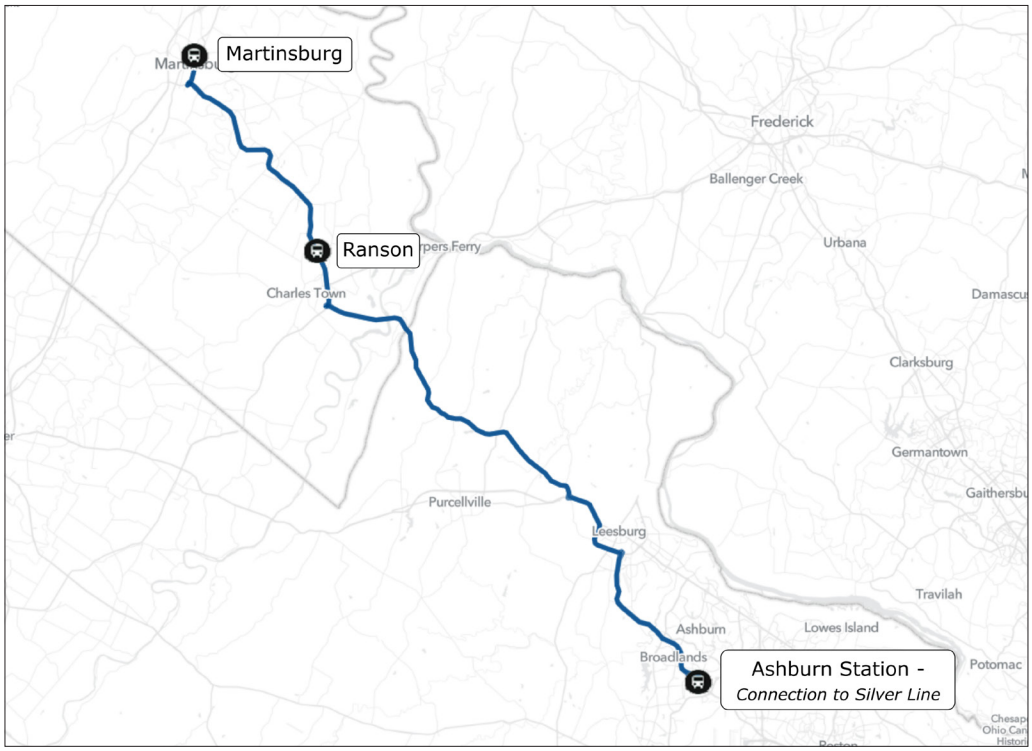
Martinsburg Pike Corridor Vision Plan in Shepherdstown, WV. Completed in 2021

Electric Vehicle Infrastructure Plan. As part of the BIL, additional funding support for Electric Vehicles (EV) infrastructure through the National Electric Vehicle Infrastructure (NEVI) Program. EVs provide significant environmental benefits by reducing air pollution, greenhouse gases, and fuel consumption. As the EVs become more affordable, their growth and popularity in the region and throughout the country have created a need for plug-in EV infrastructure to support this rising demand. A regional infrastructure plan will establish the framework for prioritizing public charging station locations to support concentrations of employment, retail, and recreation. The plan will provide best-suited charging equipment options, incorporate state planning efforts, review and update of local land management code to support or streamline permitting, private partnership opportunities, financial incentives, and an implementation plan.

EV Charging Station at Martinsburg Airport

Planning and Environmental Linkage (PEL) Studies. PEL studies like the Route 9 PEL in Berkeley County, identify planning considerations and environmental features in the project study area prior to the project entering the Preliminary Design and National Environmental Policy Act (NEPA) phase of the project development process. Early identification of significant social and environmental features within proposed alternative corridors can assist the project development team in the identification and early screening of alternatives prior to the project reaching a more advanced point in the NEPA process where detailed analysis and changes can become more time consuming and costly. These decisions and analyses can be used to identify and prioritize future projects, develop the purpose and need for a project, determine project size or length, and/or develop and refine a range of alternatives.

Intercity Transit Service Improvements. Based on the high level of support for EPTA's Commuter Bus Service to Ashburn, VA, this study would evaluate the feasibility of expanding EPTA/WCT service areas by providing connections to meet the intercity travel needs of residents in the region. The study would include identifying potential funding opportunities for intercity bus service improvements from state and federal sources. Our HEPMPO public outreach survey received several responses for the need for intercity transit to include Intercity transit between Hagerstown and nearby communities in West Virginia and Pennsylvania (i.e. Chambersburg, PA and Martinsburg, WV), and additional intercity connections between Western Maryland and Baltimore and/or DC to improve accessibility to create links to essential services and generate economic development and tourism.



Map of EPTA's Proposed Commuter Bus Service to the Ashburn Station

Regional Resiliency Improvement Plan. A study to utilize historical weather impacts to address vulnerabilities and risks within the HEPMPO region's asset management system by conducting more extensive stakeholder outreach, assessing historic and future climate impacts, identifying vulnerabilities and risks with a focus on flooding, and identifying general strategies and implementation issues. The primary focus would be to identify public-owned highway, bridge, and culvert assets that would be at risk to extreme flooding conditions and documenting these efforts to set the framework for future efforts and implementing adaptation strategies tailored to specific assets and local conditions. The study could include a wide variety of vulnerability analyses that contain advanced modeling for estimating potential losses from all hazards. Geospatial technology is used to estimate impacts and evaluate how risk and vulnerability can be expected to change in the future. This crucial information equips the region for future planning and bridges the gap between comprehensive land planning and emergency management. Appropriate mitigation actions and supportive strategies is as important as understanding the hazards.

Regional Comprehensive Safety Action Plan. A study aimed at preventing transportation-related fatalities and serious injuries in the region that is eligible under the BIL/IIJA Safe Streets and Roads for All Grant Program. The study will establish a goal and timeline for eliminating fatalities and serious injuries based on a comprehensive crash analysis and extensive public outreach and education efforts. The study will involve a data-driven approach to identify safety-related projects and strategies that could include education and outreach, effective methods to enforce traffic laws and regulations, vehicle and transportation-related technologies and roadway planning and design concepts. The plan will include mechanisms for reporting and evaluating the outcomes and effectiveness of the Regional Comprehensive Safety Action Plan.

CHAPTER 7 MEASURING OUR PERFORMANCE

The BIL continues the requirements established in Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act for performance management. These requirements aim to promote the most efficient investment of federal transportation funds. Performance-based planning ensures that MDOT, WVDOT, and the MPOs collectively invest federal transportation funds efficiently towards achieving national goals. For HEPMPO, addressing national performance in the LRTP must:

- Describe the performance measures and targets used in assessing the performance of the transportation system,
- Include a System Performance Report that evaluated the condition and performance of the transportation system and document the progress achieved, and
- Integrate the goals, objectives, performance measures, and targets in all plans.

Transportation Performance Management (TPM) is a strategic approach that uses data to make investment and policy decisions to achieve national performance goals. The FHWA requires specific performance measures for the system that address these national goal areas. **Table 24** provides the national goal areas and **Figure 29** provides the TPM performance measures.

National Goal Areas	
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
Infrastructure Condition	To maintain the highway infrastructure asset system in a state of good repair.
Congestion Reduction	To achieve a significant reduction in congestion on the National Highway System.
System Reliability	To improve the efficiency of the surface transportation system.
Freight Movement and Economic Vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
Environmental Sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment.
Reduced Project Delivery Delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Table 24: *Federal National Goal Areas*

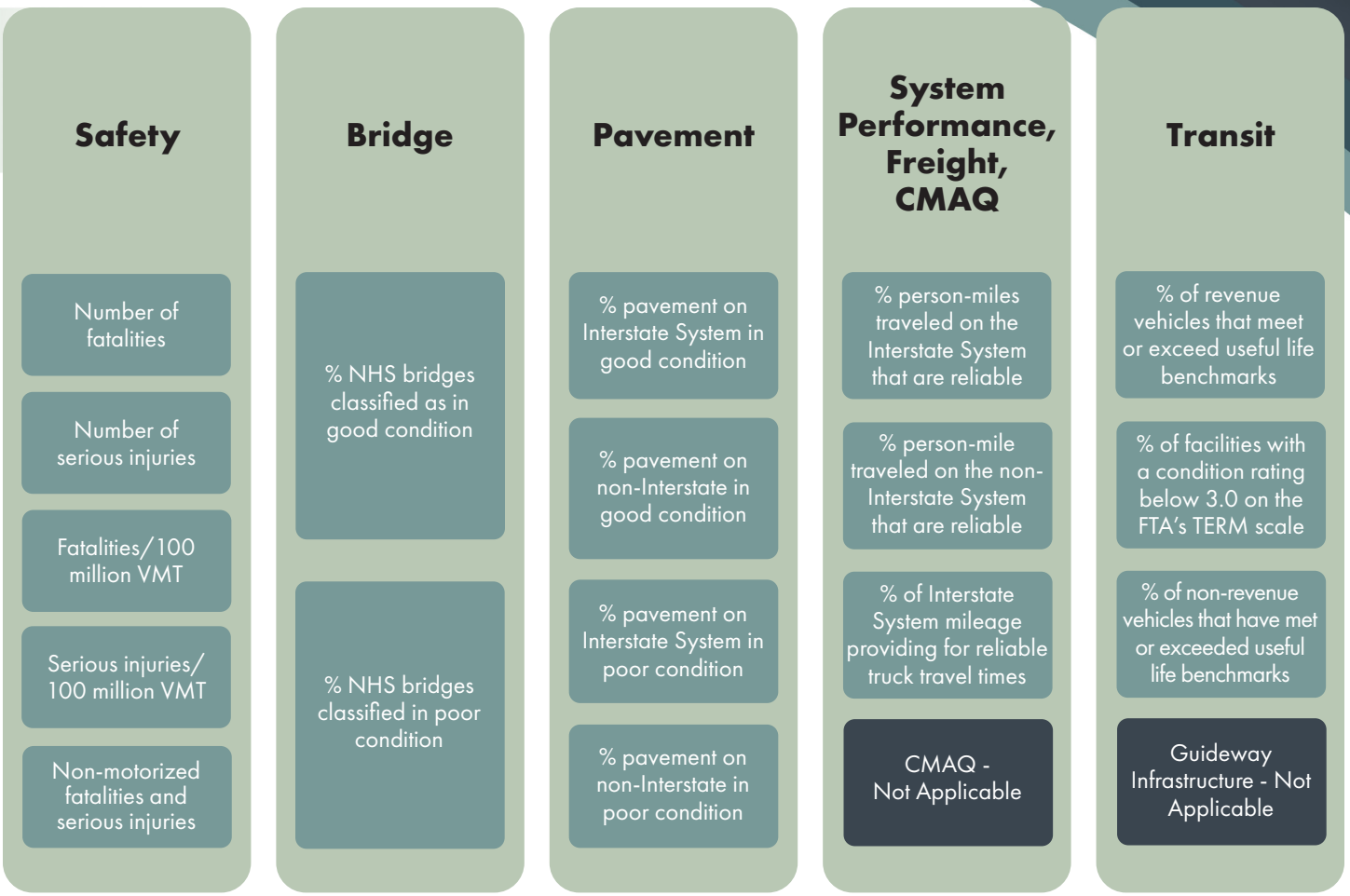


Figure 29: *Federal TPM Performance Measures*

The HEPMPO, in coordination with local, regional, and state partners, implements transportation projects that address regional goals and needs that will meet the defined measures and targets established by MDOT and WVDOT. These statewide performance targets and measures can be found here on HEPMPO's website and are highlighted in **Tables 25 - 29**. An evaluation of individual project performance across a variety of measures that directly relate to the performance of ***Direction2050*** was completed as part of the project prioritization process.

	Maryland					West Virginia				
Safety Measure	**2018**	**2019**	**2020**	**2021**	**2022**	**2018**	**2019**	**2020**	**2021**	**2022**
Fatalities	416	435	426	421	467	282	274	271	270	262
Serious Injuries	3,171	3,211	3,029	2,906	2,264	1,211	1,123	1,040	959	926
Fatality Rate	0.680	0.771	0.750	0.742	0.774	1.456	1.470	1.465	1.568	1.558
Serious Injury Rate	5.640	5.702	5.372	5.075	3.815	6.036	5.629	5.326	5.943	5.634
Non-Motorized Fatalities and Serious Injuries	459	440	466	468	555	89	92	92	86	81

Table 25: *MDOT and WVDOT Statewide Safety Targets*

Safety Measure	Maryland						West Virginia					
	2030 Target	2019	2020	2021	2022	2023	2030 Target	2019	2020	2021	2022	2023
Fatalities	17	17.9	17.8	17.7	17.7	17.6	14	23.2	21.6	20.6	19.4	20.2
Serious Injuries	32	62.0	58.4	55.1	51.9	48.9	42	117.6	110.0	97.8	89.6	86.6
Fatality Rate	0.84	0.890	0.885	0.881	0.877	0.872	0.996	1.605	1.417	1.312	1.243	1.289
Serious Injury Rate	1.57	3.045	2.867	2.700	2.543	2.395	3.013	8.144	8.303	6.249	5.757	5.530
Non-Motorized Fatalities and Serious Injuries	11	13.9	13.6	13.4	13.1	12.8	3.540	10.8	10.8	10.6	8.6	8.8

(Established by each DOT but not submitted to FHWA)

Table 26: *HEPMPO Regional Safety Measures*

Bridge and Pavement Measure	Maryland			West Virginia		
	Baseline 2017	2019 (2-Year)	2021 (4-Year)	Baseline 2017	2019 (2-Year)	2021 (4-Year)
Pavements in Good Condition on Interstate (%)	73.4%	80.6%	75.0%	60.4%	54.7%	50.0%
Pavements in Poor Condition on Interstate (%)	0.1%	0.0%	4.0%	0.5%	0.7%	2.0%
Pavements in Good Condition on Non-Interstate NHS (%)	40.9%	43.0%	45.0%	33.0%	32.2%	30.0%
Pavements in Poor Condition on Non-Interstate NHS (%)	1.2%	2.0%	5.0%	7.0%	6.8%	8.0%
Bridges in Good Condition on NHS (%)	13.9%	11.6%	11.0%	27.4%	23.6%	28.4%
Bridges in Poor Condition on NHS (%)	11.9%	13.5%	14.0%	2.3%	2.7%	2.4%

Table 27: *MDOT and WVDOT Statewide Bridge and Pavement Condition Targets*

Bridge and Pavement Measure	Maryland			West Virginia		
	Baseline 2017	2019 (2-Year)	2021 (4-Year)	Baseline 2017	2019 (2-Year)	2021 (4-Year)
Person Miles Traveled on the Interstate that are Reliable (%)	99.8%	99.1%	96.0%	71.4%	69.0%	72.1%
Person Miles Traveled on the Non-Interstate NHS that are Reliable (%)	91.9%	93.7%	87.0%	82.0%	82.8%	82.0%
Truck Travel Time Reliability Index	1.21	1.28	1.40	1.88	1.86	1.88

Table 28: Maryland and West Virginia System and Freight Targets

System and Freight	HEPMPO Region			
	2018	2019	2020	2021
Person Miles Traveled on the Interstate that are Reliable (%)	100%	100%	100%	100%
Person Miles Traveled on the Non-Interstate NHS that are Reliable (%)	94.3%	95.6%	97.6%	98.6%
Truck Travel Time Reliability Index	1.21	1.21	1.12	1.18

Table 29: HEPMPO Region System and Freight Measures

OVERALL PERFORMANCE OF *DIRECTION2050* PROJECTS

Transportation investments indicate improvements in travel efficiency and reductions in congestion delay. The HEPMPO regional travel demand model was used to perform an evaluation of the fiscally constrained plan as well as the unfunded projects. Both VMT and vehicle hours of delay were used as measures for the plan's transportation performance. The delay is a measure of the amount of time that is spent traveling at speeds below "free-flow" speeds throughout the roadway network.

The modeled results for the region's fiscally constrained highway network, as shown in **Figure 30**, indicate that there would not be a significant effect on regional VMT. Although these projects are not focused on VMT reduction, other factors, such as a household's decision on where to work or the impact of COVID-19, may have a significant impact on future VMT growth.

Many of the projects in this plan are focused on capacity increases along congested roadways. As a result, the projects have a larger impact on vehicle delay as compared to VMT. **Figure 31** illustrates the travel model results for the fiscally constrained plan. The projects are forecasted to reduce regional delay by over 4%, suggesting that the fiscally constrained projects will result in an increase in mobility in the region.

The identified projects in *Direction2050* could reduce regional delay by over 60%. However, financial limitations prevent implementation of all the region's projects.

The minor delay improvements indicate that the Maryland and West Virginia highway funding streams are not sufficient to address many of the congestion problems in the region. This is further illustrated in **Figure 32**, which shows the delay impacts of the complete unconstrained project list. The inclusion of all identified projects in the travel model results in a much higher regional delay impact (e.g. 61.0% reduction), with the largest benefit in Washington County. The unconstrained projects include significant interstate projects in Washington (I-81, I-70) and Berkeley (I-81) Counties. These projects would provide significant reductions to delay in the region and provide some relief to parallel arterial roadways.

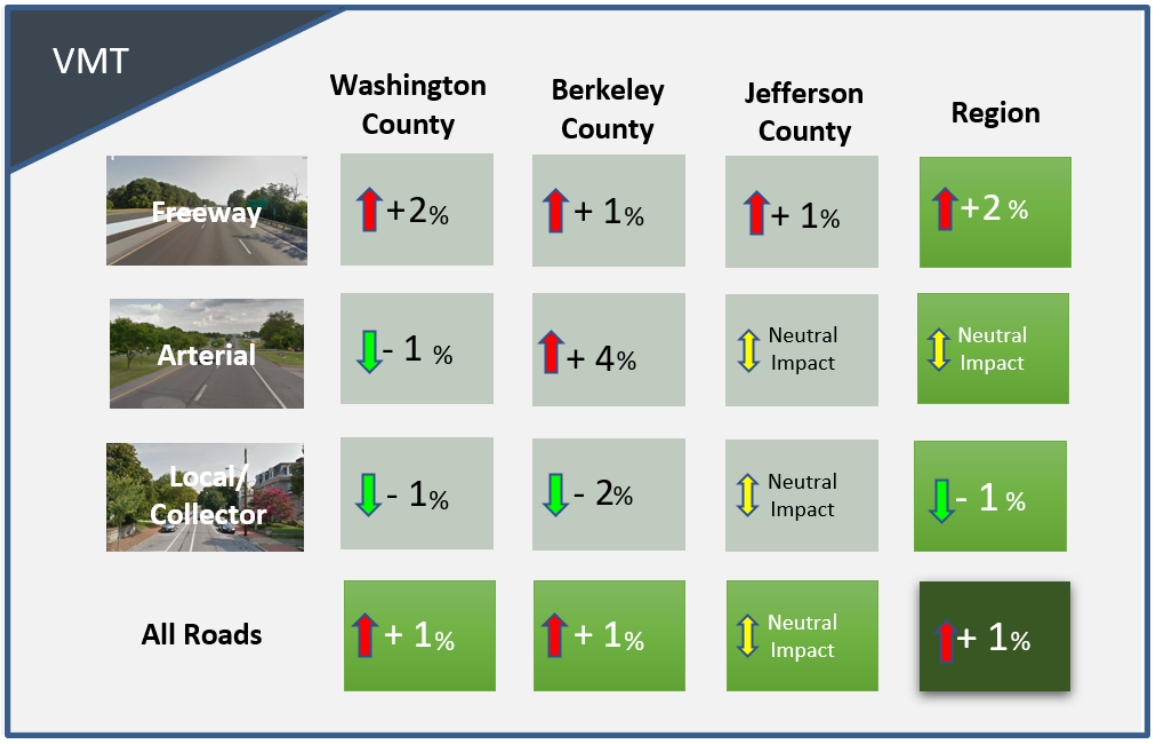


Figure 30: *Vehicle Miles Traveled (VMT): 2050 Fiscally Constrained vs. 2050 E+C Network*

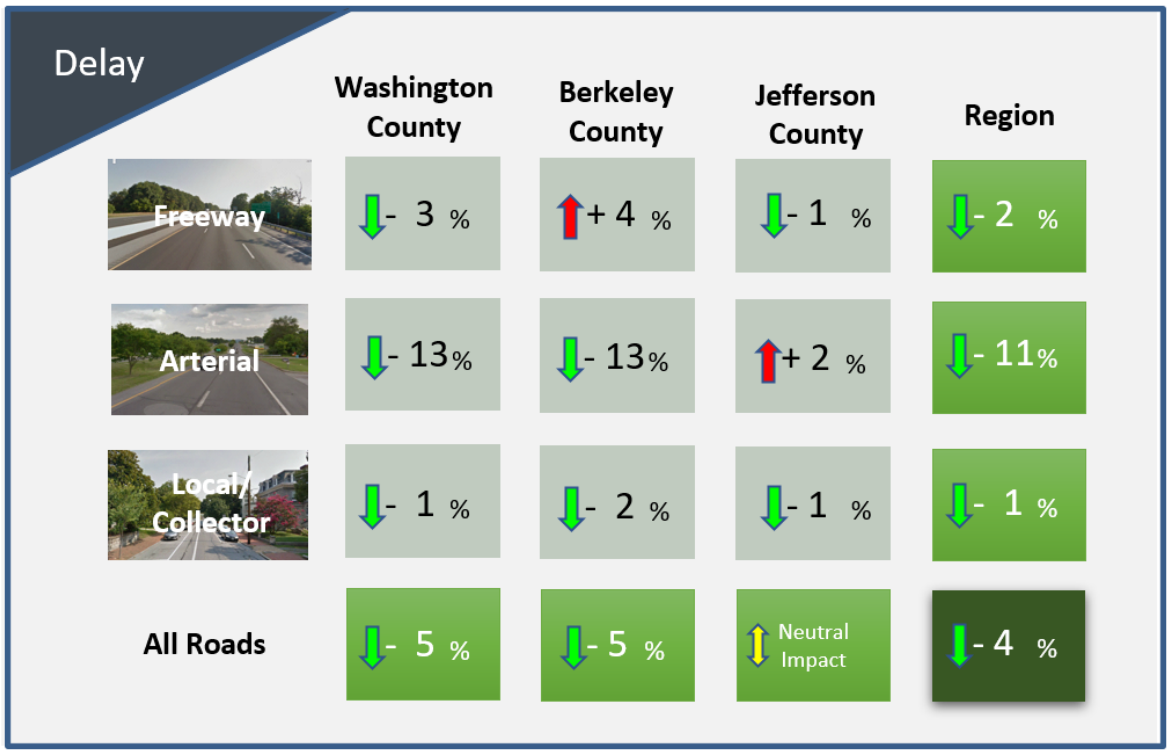


Figure 31: Vehicle Hours of Delay: 2050 Fiscally Constrained vs. 2050 E+C Network

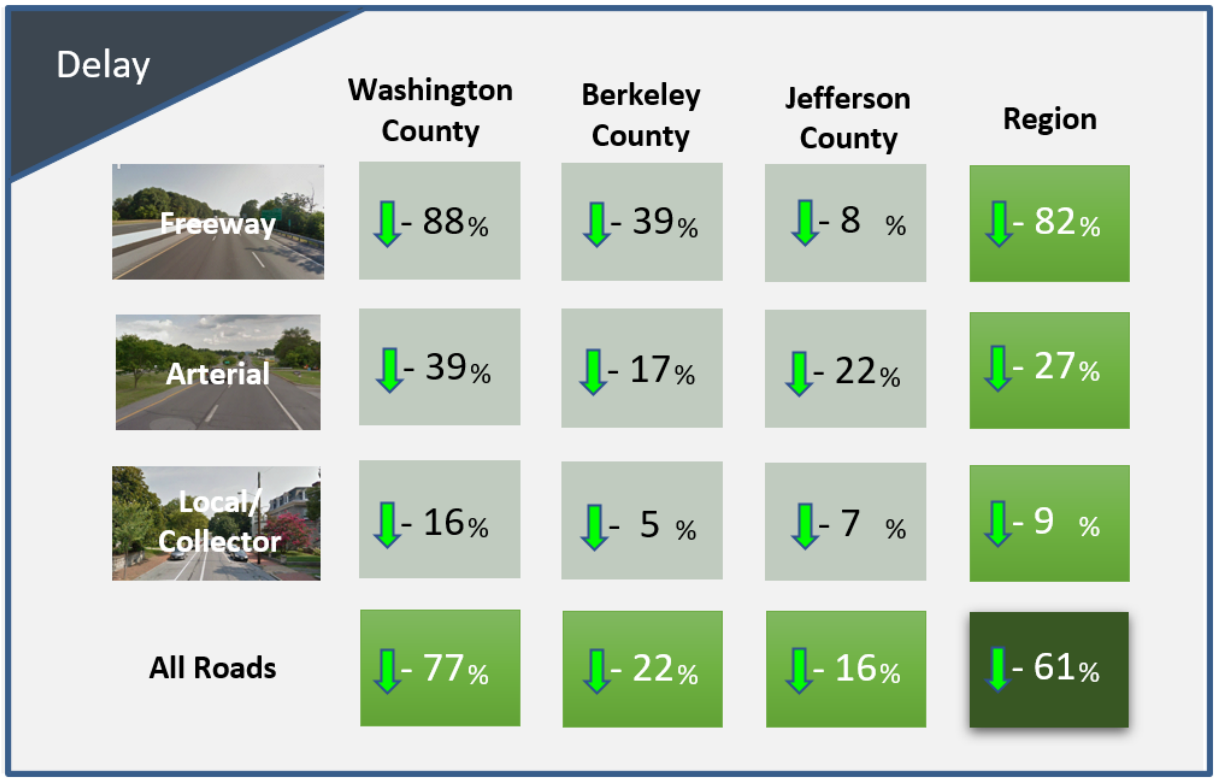


Figure 32: Vehicle Hours of Delay: 2050 All Identified Projects vs. 2050 E+C Network

TRANSIT PERFORMANCE

In the HEPMPO region, both the Washington County Transit (WCT) and the Eastern Pandhandle Transit Authority (EPTA) are classified as Tier II operators, as each operates less than 101 vehicles in revenue service at their peak of regular service. Federal regulations require Tier II agencies to set annual performance measures for rolling stock (revenue vehicles), equipment (non-revenue vehicles), infrastructure (guideway), and facilities. These performance targets are based on current asset performance as well as anticipated investments to meet targets and include considerations for assets expected to be retired or brought into service during the applicable fiscal year.

In Maryland, the Maryland Transit Authority (MTA) coordinated and developed a single set of unified Transit Asset Management (TAM) performance targets for all Tier II Locally Operated Transit Services (LOTS) to create consistency among agencies throughout Maryland. WCT adopted these targets, which are shown in Table 30. Similarly in West Virginia, the West Virginia Division of Public Transit (WVDPT) coordinated with its Tier II LOTS to develop unified TAM performance targets across the State. These targets were adopted by EPTA and are shown in Table 31. In addition, HEPMPO coordinated with both MTA and WVDPT to establish these performance measures and targets, which are included in HEPMPO's FY 2021-2024 TIP. Both WCT and EPTA met all performance targets.

NTD Vehicle Type	Baseline (Percentage Past Useful Life)	FY 2022 Target
Revenue Vehicles		
Cutaway Bus	24%	28%
Van	5%	11%
Equipment (Non-Revenue Vehicles)		
Trucks/Other Rubber Tire Vehicles	53%	57%
Facilities		
Administrative/Maintenance*	0%	0%
Passenger/Parking	0%	0%

Table 30: *WCT Baseline and FY 2022 Targets*

NTD Vehicle Type	FY 2021 Actual	FY 2022 Target
Revenue Vehicles		
12 Year/500,000 Miles	95%	96%
10 Year/350,000 Miles	78%	80%
7 Year/200,000 Miles	82%	84%
5 Year/150,000 Miles	83%	84%
4 Year/100,000 Miles	78%	81%
Equipment		
Support Vehicles	76%	78%
Maintenance Equipment	82%	83%
Facilities		
Administrative/Maintenance*	100%	100%

Table 31: *EPTA FY Actual and FY 2021 Targets*

DIRECTION 2050

LONG RANGE TRANSPORTATION PLAN