



Morgantown Monongalia
Metropolitan Planning Organization

2017-2045 Metropolitan Transportation Plan Update



Final Report
March, 2017

Amended, October, 2018

ACKNOWLEDGEMENTS

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Appreciation to the members of the community who contributed to the development of this plan.

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TTAC = Transportation Technical Advisory Committee
CAC=Citizens Advisory Committee

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1. INTRODUCTION

1.1 HOW TO USE THIS UPDATE REPORT

The Morgantown Monongalia MPO 2017-2045 Metropolitan Transportation Plan Update (MTP Update) is an update of the MPO's 2013-2040 Long Range Transportation Plan (2013 LRTP), which was adopted in 2013. The following items in the 2013 LRTP were updated for this report:

The report of MTP Update documents the development process and results of the MTP Update. It is intended to be used in conjunction with MPO's 2013 LRTP.

The report can be used to

- **Understand community opinions on transportation system performance and improvements.**

Section 2.6 Community Concerns and Preference includes the results from the community survey. It shows the community's perspective on the transportation system and preferred locations for improvements. More detailed survey information can be found in Appendix C: Community Survey Report.

- **Determine the long term transportation investment priorities in the Morgantown Monongalia area.**

Chapter 5 Project Update and Recommendation includes a list of all the proposed projects and their prioritization. More detailed project information are included in Appendix E: 2017-2045 Metropolitan Transportation Plan Projects.

- **Identify the demographic information associated with proposed transportation improvements.**

Chapter 6 Environmental Justice Analysis includes a general description of demographic data for each funded and Tier 1 projects. It also has information on the relation of transportation projects and low income/minority population in the area.

- **Understand travel demand and future transportation network performance.**

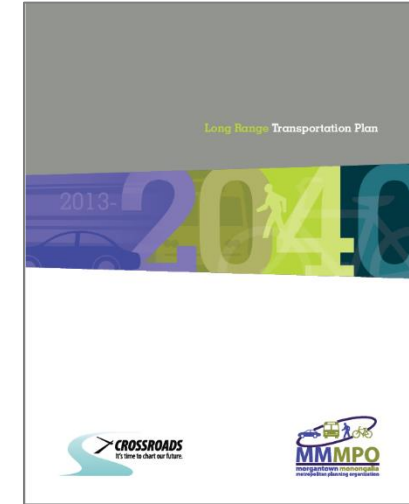
Chapter 4 Travel Demand Model Update includes an introduction to the travel demand model used in the Morgantown Monongalia area. More detailed information on travel demand are included in Appendix B: Travel Demand Model Update Documentation.

The following items in the 2013 LRTP were updated for this report

- Public Involvement
- Transportation goals and objectives
- Transportation demand model development
- Funding the Long Range Transportation
- Projects and Strategies
- Environmental Justice Analysis

1.2 PURPOSE

The Morgantown Monongalia MPO's Metropolitan Transportation Plan establishes a set of transportation infrastructure investment strategies in the Morgantown area for the next 25 years. This Update has been prepared as required by federal regulations, including 23 CFR 450.324 (d), which requires a MPO in attainment areas to review and update the Metropolitan Transportation Plan at least every 5 years. The purpose of the Update is to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions.



1.3 PLANNING PROCESS

The process of MTP Update started in June 2016 and was completed in March 2017. The update had three stages: 1) understanding the need; 2) evaluating projects; 3) updating the Plan. Extensive community outreach was used during the planning process to engage our community in conversation about appropriate transportation solutions and priorities. The following table summarized the development of the MTP Update process. The MTP Update was conducted in conjunction with I-79 Access Study.

Phases	Time	Community Input	Major Tasks
Understand the need	June -- November	<ul style="list-style-type: none"> • 1st Steering Committee Meeting (August) • Community Survey • 1st Public Meeting (October) • 2nd Steering Committee Meeting (November) 	<ul style="list-style-type: none"> • Travel demand model update • Environmental justice analysis • Traffic data collection • GIS data collection • Project status update (Tier 1) • MPO website renovation • Conduct Community Survey Report • Goals and Objective Review • Draft evaluation criteria
Evaluation Project	December -- January	<ul style="list-style-type: none"> • 3rd Steering Committee Meeting (January) • 2nd Public Meeting (January) • 1st Freight Advisory Meeting (January) 	<ul style="list-style-type: none"> • Assess projects status (Tier 2-4) • Update project scope of work • Update Goas and Objective • Report on Community Survey • Draft project prioritization • Long range revenue estimation
Update the Plan	February -- March	<ul style="list-style-type: none"> • 3rd Public Meeting (February) • 2nd Freight Advisory Meeting (February) • 4th Steering Committee Meeting (March) 	<ul style="list-style-type: none"> • Finalize Project recommendation and prioritization • Report on MTP Update

2. COMMUNITY PARTICIPATION

Community participation is essential to the MTP Update. The MPO conducted extensive public outreach to ensure that a wide range of stakeholders have opportunities to be involved in the planning process.

Public outreach entailed in two parts: committee review and general community input. The two parts are equally important and are complementary to each other.



2.1 MTP UPDATE STEERING COMMITTEE

A Steering Committee was established to guide the MTP Update process. The Committee includes all members of the MPO's Transportation Technical Advisory Committee (TTAC) and Citizens Advisory Committee (CAC). It also included representatives from the community. Specifically, the Steering Committee consisted of representatives from the following parties:

- State and federal transportation agencies
- Affected public agencies
- Public transportations agency
- Educational institutions
- Users of pedestrian walkways
- Users of bicycle facilities
- Advocacy for Minority/low income communities
- Advocacy for Environmental protection
- Advocacy for the disabled
- Advocacy for public health



Steering Committee meetings were held in conjunction with regular TTAC and CAC meetings. Members of the Committee were provided with relevant material for review in both electronic and paper format. There were four steering committee meetings. All meetings were held in the MMMPO Conference Room at 243 High St Room 110, Morgantown, WV. The detail of each meeting is provided in Appendix A.

1 st Steering Committee Meeting	Agenda Items
<p>TTAC Meeting on August 9, 2016 1:30 PM</p> <p>CAC Meeting on August 11, 2016 6:00 PM</p>	<ul style="list-style-type: none"> • Introduce the Metropolitan Transportation Plan Update Process • Review Goals, Objectives, and Ranking Criteria • Update on the Status of Tier 1 Projects in the Current Plan -- Environmental Justice Analysis on LRTP Tier 1 project • Review Community Outreach Material • Initial Comments on the Update
2 nd Steering Committee Meeting	Agenda Items
<p>TTAC Meeting on Nov 9, 2016 1:30 PM</p> <p>CAC Meeting on Nov 10, 2016 6:00 PM</p>	<ul style="list-style-type: none"> • Planning Process Update • I-79 Access Study Update • 1st Public Meeting Report • Public Survey Report • Suggested MTP Update Items • Goals, Objectives, Project Ranking Criteria Review
3 rd Steering Committing Meeting	Agenda Items
<p>TTAC Meeting on Jan 10, 2016 1:30 PM</p> <p>CAC Meeting on Jan 12, 2016 6:00 PM</p>	<ul style="list-style-type: none"> • Planning Process Update • Public Survey Report • Project Status and Recommended Updates • Project Prioritization • January and February Public Meetings
4 th Steering Committing Meeting	Agenda Items
<p>TTAC Meeting on March 7, 2016 1:30 PM</p> <p>CAC Meeting on March 9, 2016 6:00 PM</p>	<ul style="list-style-type: none"> • Planning Process Update • Projects Recommendation and Prioritization • Final draft report of 2016 MTP Update

2.2 FREIGHT COMMITTEE

The Freight Advisory Committee consists of five committee members representing the freight industry in the Morgantown Monongalia area. The Freight Committee provides inputs on traffic issues relating to freight transportation services in the area, as well as general concerns on the transportation network. Freight advisory committee is independent from Steering Committee.

There were two Freight Committee meetings. Both of them were held in the MMMPO Conference Room at 243 High St Room 110, Morgantown, WV

1st Freight Advisory Committee Meeting

January 11th, 2017 | 11:00 AM

- Planning process overview
- Review draft project recommendation and prioritization
- Review goals, objectives, and project evaluation criteria

2nd Freight Advisory Committee Meeting

February 28th, 2017

- Review draft recommendation of MTP Update
- Recommend tier one projects recommendation.

2.3 COMMUNITY MEETINGS

The MPO held three community meetings different locations with easy access to the general public. These meetings were informal open-house style meetings, to allow sufficient interactive communication between meeting participants and planning staff. The notice of community meetings were publicized through the following media platforms and agencies:

- MPO website
- MPO Facebook page
- Morgantown Pedestrian Safety Board Email List
- Morgantown Bicycle Board Email List
- Morgantown Green Team Facebook page
- Morgantown neighborhood newsletter
- Mountain Line Transit Authority
- WVU Transportation Department
- Dominion Post (advertisement)
- WAJR Radio (interview)
- Community bulletin boards at major grocery stores
- Public Libraries
- Neighborhood convenient stores/gas stations at low income neighborhoods



Public meetings are summarized as the following. The detail of each meeting is provided in Appendix A.

1st Public Meeting

Marilla Park Recreation Center
4-7 PM, Oct 26, 2016
of attendants: 25

Items Reviewed

- Goals and objectives from the 2013 LRTP
- Status of projects proposed in the 2013 LRTP
- September community survey results
- Project ranking criteria
- Environmental justice updates
- Planning process overview
- Paper copies of public questionnaire

2nd Public Meeting

Mountaineer Station
(in conjunction with I-79 Access Study)
4-7 PM, Jan 26, 2017
of attendants: 70

Items Reviewed

- Project recommendations
- Proposed project periodization
- Community survey report
- I-79 access Study alternative evaluation

3rd Public Meeting

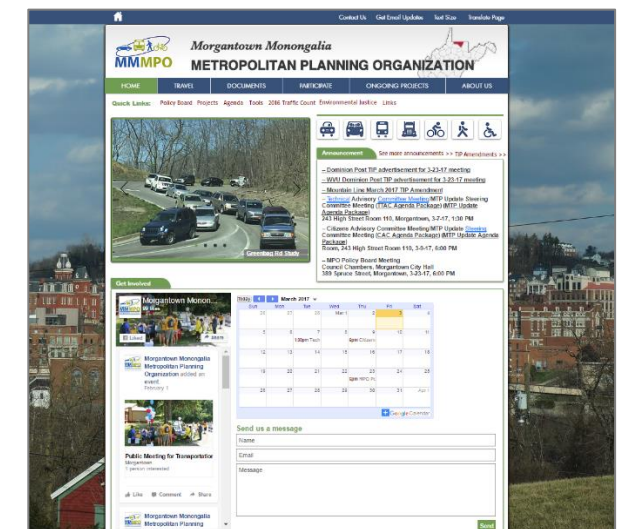
Mountain Line Transit Station in Westover
4-7 PM, Feb 9, 2017
of attendants: 36

Items Reviewed

- Planning process overview
- Project evaluation criteria
- Project recommendations
- Proposed project periodization
- Community survey report
- I-79 access Study alternative evaluation

The MPO renovated its website on September 1, 2016. The website features enhanced graphics, more transportation planning related information, and a more user-friendly platform. There have been nearly two thousand clicks on the website from September to November.

The MPO has also compiled an email list to distribute major meeting information. The email lists includes the contact information of interested citizens who previously contacted the MPO though emails or the MPO's website. The email list currently contains more than 150 email addresses.



2.4 COMMUNITY SURVEY

The MPO conducted a community survey from September to November. During this period, the MPO received 725 responses, including 705 online surveys and 20 paper surveys. The survey contained 20 questions covering demographics, transportation preference, existing transportation system evaluation, and transportation facility improvement preference. Details of the community survey are included in Appendix C: Community Survey Report. The results of the community survey are discussed in Chapter 3 Concerns and Opportunities.

Survey Distribution

The survey was developed by MPO staff and approved by the Metropolitan Transportation Plan Update Steering Committee. The survey was first released to the public on September 1st on the MPO's website (www.plantogether.org), and distributed in three forms: hard copy, electronic copies, and online survey link. The online survey was hosted by the Survey Monkey on (<https://www.surveymonkey.com/r/MTPUpdate>)

Paper copies and survey posters were distributed to the public libraries and major grocery stores. Survey posters were also posted at the neighborhood convenience stores in the minority/low income neighborhoods.

Survey Analysis Method

Two types of data were collected. One type consisted of multiple choice questions, including questions on demographics, evaluation of existing transportation system, and transportation patterns. The data from these questions was summarized automatically by SurveyMonkey and then combined with the data from completed paper-based surveys by MPO staff.

The survey was distributed through the following channels:

- MPO website and Facebook page
- Morgantown Pedestrian Safety Board and Bicycle Board
- City of Morgantown public media
- Mountain line transit public media
- WVU transportation
- Dominion Post Advertisements
- Hard Copy Distribution
- Morgantown Area Chamber of Commerce

The other type of data collected was text-based questions on the preferred location for improvements. The data from these questions was transferred into Excel spreadsheets by MPO staff who used a "Community Preference Score" to rank the locations identified for improvements.

The Community Preference Score was calculated through the following steps:

1. Identified locations were counted and categorized into three groups: Corridor/Area, Street/Street Segment, and Intersections.
2. Each record of street/street segment and intersection preference was assigned to the appropriate corridor/area.
3. The Community Preference Score was calculated by using the formula in the sidebar.

Community Preference Score Calculation Method

- Road and Intersection:
 - Priority one X 5 points
 - + Priority two X 4 points
 - + Priority three X 3 point
 - + Priority four X 2 point
 - + Priority five X 1 point
 - = Community Preference Score
- Pedestrian, Bicycle, and Transit:
 - Priority one X 3 points
 - + Priority two X 2 points
 - + Priority three X 1 point
 - = Community Preference Score

2.5 COMMUNITY CONCERNS AND PREFERENCE

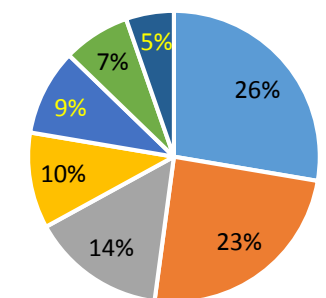
This section summarizes the results of the community survey and public meetings. It provides an overview of the public concerns about transportation issues and their preference for transportation investment. The information is used in project evaluation and prioritization.

General Concerns

The MPO staff has identified several general concerns from the planning process. Those concerns are overarching and are not limited to specific projects. Concerns are grouped into four categories. They are safety, traffic flow, accessibility, and equity. Each concern relates to one or more transportation modes.

¹ Survey respondents indicated their preference on transportation investment in the area. The table shows the preference based on percentage of available funding. Improvements are not necessarily exclusive to each other.

Preference on transportation Investment ¹



- Improving Traffic Flow
- Road Condition Improvements
- New Roads/Bridges
- Sidewalks/crosswalks
- Roadway widening
- Public Transit
- Bicycle Facility

Concerns		Cars	Transit	Pedestrian	Bicycle
Safety	Deficient road pavement and sight distance	X	X		X
	Pedestrian safety in the Morgantown Downtown area			X	
	Lack of safe routes to schools from adjacent neighborhood			X	X
	Lack of crosswalks at intersections near WVU campus			X	
Traffic flow	Traffic congestions during AM and PM peak hours on major corridors, including Mileground Rd, Mon Blvd, Beechurst Ave, WV 705, and University Ave.	X	X		
	Lack of alternative truck routes	X		X	X
	Lack of alternative routes between employment centers and I-79	X	X		
	Lack of alternative routes between employment centers and the Cheat Lake area	X	X		
Accessibility	Accessibility to trails from adjacent neighborhood			X	X
	Accessibility to University Towne Centre and Suncrest Towne Centre		X	X	X
	Accessibility to major grocery stores and parks		X	X	X
	Accessibility to University High School	X			
Equity	Deficient road conditions in the western part of the County	X			
	Lack of sufficient bus service to low income neighborhood		X		
	Lack of accessibility to homeless shelters (Bartlet House)		X	X	

Public Perspective on Existing Transportation System

Based on the community survey:

75% consider the trails system as **good or excellent**.

82% consider the transit service as **fair or good**.

93% consider **road condition** as **fair or poor**.

79% consider **speed of traffic** as **fair or poor**

72% consider **convenience to get around** as **fair or poor**

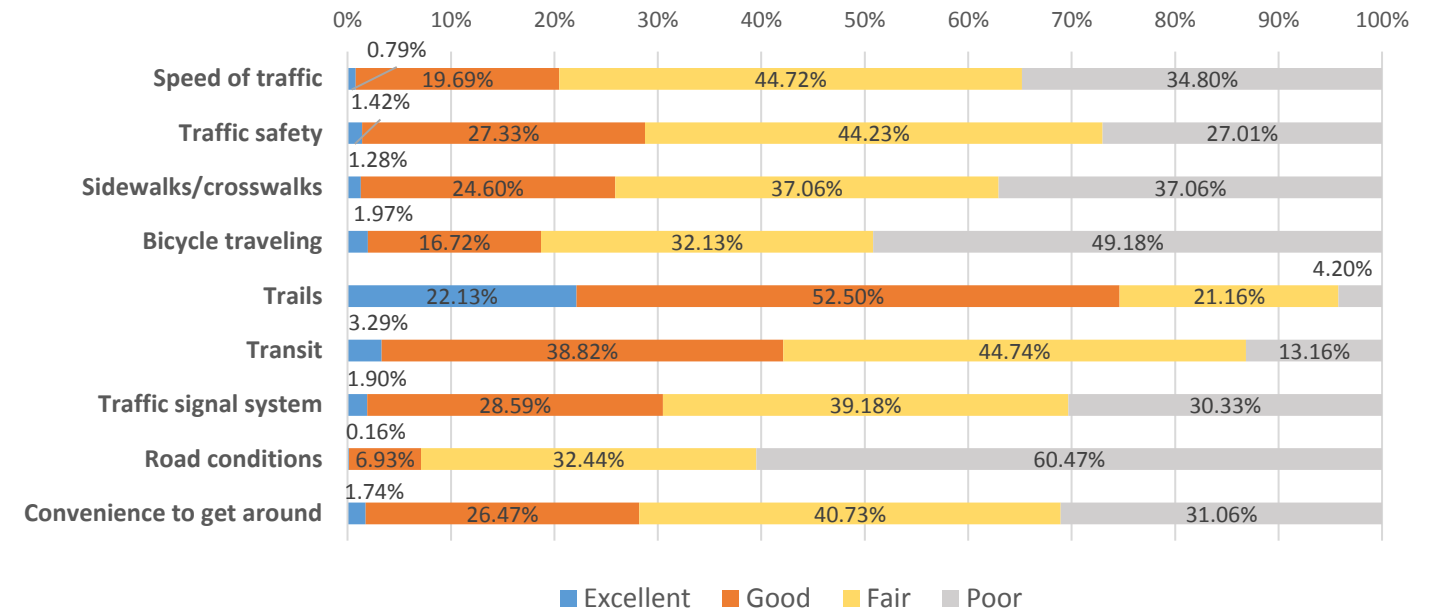
81% consider **bicycle traveling** as **fair or poor**

74% consider **pedestrian facilities** as **fair or poor**



Photo by Steve Shaluta, courtesy Mon River Trails Conservancy

The survey results of the evaluation on the existing transportation system area are shown in the the following table.



The following table shows the preference for each different transportation mode. It shows the percentage of respondents who consider it is somewhat likely or very likely for them to increase their use of alternative transportations if certain improvements were made.

Priority	Pedestrian Facility <i>Total Respondents: 619</i>	Bicycle Facility <i>Total Respondents: 582</i>	Transit Service <i>Total Respondents: 586</i>
1	Pedestrian friendly land use (71%)	Extended trail system (54%)	Extended PRT lines (54%)
2	More sidewalks (69%)	Bicycle friendly land use (51%)	Route information (47%)
3	Open public spaces (68%)	Paved shoulders (50%)	Frequent bus service (47%)
4	Safer pedestrian crossing (66%)	Bicycle lanes (48%)	Extended PRT time (45%)
5	Extended trail system (58%)	Bicycle parking (41%)	Extended bus lines (43%)
6	--	Bicycle route map (39%)	Bus shelters (30%)
7	--	Bicycle signage (39%)	Park-&-rides location (26%)
8	--	Share the road marking (35%)	Vanpool (16%)
9	--	Bicycle traffic skill course (26%)	--

Preferred Locations for Roadway Improvements

The following tables summarized the preferred locations for roadway improvements based on the Community Survey. The Community Preference Score was used to prioritize the identified location. The method used in calculating the scores are discussed in section 2.5 Community Survey. The detailed the community survey results are included in Appendix C: Community Survey Report

Overall Roadway Improvements (Preference Score)

Ranking	Major Corridor/Area	Percentage of Respondents	Key Intersections in the Corridor
1	Mileground Rd (1,143)	54%	Mileground Rd/Cheat Rd (204) Mileground Rd/Hartman Run Rd (129) Mileground roundabout (123)
2	WV 705 (1,107)	54%	WV 705/Burroughs St (292) WV 705/University Ave (121) WV 705/Elmer Prince Dr (33) WV 705/Willowdale Dr (32)
3	University Ave (840)	40%	University Ave/Collins Ferry Rd (164) University/Pleasant St/Westover Bridge (145) University Ave/Beechurst Ave (114) Grumbein’s Island (102) University Ave/Walnut St (33)
4	Beechurst Ave (583)	27%	Beechurst Ave/Campus Dr (53)
5	West Run Rd (400)	21%	West Run/Stewartstown Rd (19) West Run/Point Marion (17)
6	Van Voorhis Rd (323)	16%	WV 705/Burroughs St (292)
7	WV 7-Eastbound (387)	22%	WV 7/Greenbag Rd (144) WV 7/Hartman Run (13)
8	Stewartstown Rd (213)	12%	Stewartstown Rd/Pt. Marion (63) WV 705/Stewartstown (43) Stewartstown/West Run Rd (19)
9	Monongahela Blvd (152)	9%	Mon Blvd/Boyers Ave (40) Mon Blvd/Patteson Dr (37)
10	Greenbag Rd (130)	7%	Greenbag Rd/WV 119 (35) Greenbag Rd/Dorsey Ave (31)



Preferred Locations for Pedestrian Facility Improvements (Preference Score)

Ranking	Major Corridor/Area	Percentage of Respondents	Key Intersections in the Corridor
1	University Ave (471)	47%	Grumbein’s Island (169) University Ave/Patteson Dr (64) University Ave/Westover Bridge/Pleasant St (70) University Ave/Walnut St (22)
2	WV 705 (301)	31%	WV 705/Burroughs (67) WV 705/Don Nehlen Dr (24) WV 705/Pineview Dr (23) WV 705/Suncrest Towne Centre (21)
3	Downtown Area (225)	23%	Wiley St/High St (12) Spruce St/Walnut (19) Walnut St/Chestnut St (12)
4	Van Voorhis Rd (132)	12%	Van Voorhis Rd/West Run Rd (5)
5	Patteson Dr (131)	15%	WV 705/Laurel St (3) Patteson/Kroger (10) Mon Blvd/Patteson Dr (19)
6	Coliseum Area (95)	10%	Mon Blvd/Evansdale Dr/CAC (31)
7	Mileground Rd (72)	9%	No specific intersection identified
8	Stewartstown Rd (72)	7%	WV 705 and Stewartstown Rd (13) Stewartstown Rd/Bon Vista Apartment (1) University/Boyers (9) University Ave/Collins Ferry Rd (20)
9	Star City Suncrest Area (64)	7%	University/Junior St (3) Collins Ferry/Junior (2) Collins Ferry/the New Suncrest School (3)
10	Beechurst Ave (55)	6%	Campus/Beechurst (2) University/Beechurst (16)

Preferred Locations for Bicycle Facility Improvements (Preference Score)

Ranking	Major Corridor/Area	Percentage of Respondents	Intersection/Street Segment
1	University Ave (183)	30%	Chestnut Ridge Rd (32)
2	WV 705 (109)	20%	High St (27)
3	Downtown Area (91)	14%	Collins Ferry Rd (25)
4	Beechurst Ave (74)	14%	Dorsey Ave (12)
5	Van Voorhis Rd (66)	10%	Willowdale Rd (12)
6	Mileground Rd (55)	10%	University Ave/Beechurst Ave (11)
7	Patteson Dr (55)	12%	Brockway Ave (9)
8	Monongahela Blvd (42)	7%	WV 705 from Hospital to Mileground (9)
9	Greenbag Rd (21)	4%	Valley View Ave (9)
10	Stewartstown Rd (20)	4%	WV 705/Burroughs St (9)

Preferred Locations for Transit Improvements (Preference Score)

Ranking	Major Corridor/Area	Percentage of Respondents
1	Hospital Area (69)	13%
1	University Towncenter/I-79 New Interchange Area (69)	15%
3	Downtown Area (64)	13%
4	Suncrest Area (48)	10%
5	South Park/Greenmont Area (42)	9%
5	Suncrest Towncenter (42)	10%
7	Cheat Lake Area (30)	7%
8	Evansdale Campus Area (30)	6%
9	Van Voorhis Rd (29)	6%
10	Star City (28)	5%

3. GOALS AND OBJECTIVES REVIEW

The purpose of reviewing goals and objectives in the 2013 LRTP is to ensure that they are valid and updated under the current situation. The Update does not draft goals and objectives. Instead, the goals and objectives of the 2017 MTP are essentially consistent with the MPO’s 2013 LRTP. Several changes are made to reflect the requirements specified in current federal regulations.

The review of goals and objectives was first introduced to the Steering Committee at the beginning of the planning process in August, 2016. It was presented to the public in October for comments during the public meeting. The goals and objectives were reviewed by the Steering Committee again in November. Goals and objectives were also distributed electronically and posted on the MPO’s website for review from September to November, 2016. No negative comments were received from the public.

3.1 GOALS AND OBJECTIVES

GOAL #1: a multimodal transportation system that efficiently moves people and goods

- Objective 1 A: Eliminate/reduce current congestion and multimodal traffic flow restrictions on arterial and collector roadways
- Objective 1 B: Ensure that future development and related transportation improvements address capacity and connectivity needs proactively rather than reactively
- Objective 1 C: Improve ingress/egress to the most densely developed/highest activity areas of region
- Objective 1 D: Provide adequate transportation capacity and access to support current businesses
- Objective 1 E: Focus capacity improvements for all modes in areas of desired future growth and development that support the public’s vision for the region

GOAL #2: a transportation system in which all modes are highly integrated and connected

- Objective 2 A: Allow for convenient transfer from one mode to another in the region (i.e. biking to bus, vanpooling to bus, etc.) to maximize travel efficiency
- Objective 2 B: Encourage the use of the most efficient mode based on the distance and characteristics of a particular trip
- Objective 2 C: Increase the geographic area in which people have convenient access to non-automobile modes
- Objective 2 D: Reduce reliance on automobile for travel
- Objective 2 E: Better serve those who do not/cannot own and drive a personal automobile
- Objective 2 F: Allow for efficient transfers of goods between modes (air, pipeline, river, and rail)
- Objective 2 G: Improve and expand infrastructure for pedestrians, bicyclists and people with disabilities
- Objective 2 H: Increase use of existing rail-trails for transportation purposes

GOAL #3: a multimodal transportation system that safely moves people and goods

- Objective 3 A: To minimize crashes, especially injury/fatality crashes, by 50% through improvements to high crash locations, improvements to local enforcement of traffic laws, and education of transportation system users
- Objective 3 B: To ensure that future growth and related transportation improvements address transportation safety needs in planning and design

Goal #4: a transportation system that maximizes the efficiency of freight movement through and within the

- Objective 4 A: Reduce truck traffic in residential neighborhoods and on other streets where significant numbers of bicycles and pedestrians are present
- Objective 4 B: Improve truck access to key industrial areas
- Objective 4 C: Increase options for freight movement that minimizes truck traffic on non-interstate roadways

Goal #5: greater collaboration between local agencies, state officials, and private interests in the pursuit and funding of transportation improvements

- Objective 5 A: More effective and less costly transportation improvements by capitalizing on common goals and needs between communities and agencies in the region
- Objective 5 B: Higher quality transportation system improvements due to cost sharing and collaboration
- Objective 5 C: Transportation improvements that support the public’s long-term vision for the region

Goal #6: A transportation system that is attractive, sustainable, and livable

- Objective 6 A: Integrate the local context of the area into the planning, design, and construction of transportation improvements
- Objective 6 B: Include sustainability features in design of transportation improvements that minimize environmental impacts
- Objective 6 C: Address multimodal system needs in all planning, design, and construction of transportation improvements
- *Objective 6 D: Reduces or mitigate the storm water impacts of surface transportation
- *Objective 6 E: Enhance travel and tourism in the Morgantown Monongalia urban area

Goal #7: Reduce automobile trip demand, especially during peak travel hours

- Objective 7 A: Reduce the need to construct costly transportation and parking infrastructure improvements
- Objective 7 B: Invest in transportation improvements that encourage and support development/land use patterns that decrease need to travel
- Objective 7 C: Reduce automobile emissions and improve air quality
- Objective 7 D: 50% increase in trips made by walking
- Objective 7 E: 5% of all trips made by bicycle by 2025
- Objective 7 F: Increase number of trips made by public transit by 200%
- Objective 7 G: Increase work telecommuting and virtual lectures (WVU)
- Objective 7 H: Increase average vehicle occupancy by 50%

Goal #8: A multimodal transportation system that enhances the homeland security of the region

- Objective 8 A: Heighten awareness of homeland security needs related to transportation
- *Objective 8 B: Improve understanding of critical transportation system-related homeland security issues in the region, improves transportation system resiliency and reliability
- Objective 8 C: Incorporate homeland security needs in transportation project planning, design, and construction

*MPO STAFF SUGGEST TO ADD OR MODIFY THIS OBJECTIVE FOR THE UPDATE. THE FAST ACT ADOPTED IN 2015 EXPENDED PLANNING CONSIDERATION FACTORS TO INCLUDE THIS ISSUE.

3.2 CORRELATION WITH FEDERAL PLANNING FACTORS

23 U.S.C. 134 (h) (1) provides that the metropolitan planning process for a metropolitan planning area shall include ten areas (federal planning factors). The following table illustrate the relation between the MTP goals and objectives with the federal planning factors.

The FAST Act expands the consideration of the transportation planning process to include

- Improving transportation system resiliency and reliability-Morgantown Pedestrian Safety Board and Bicycle Board
- Reducing (or mitigating) the storm water impacts of surface transportation
- Enhancing travel and tourism

Federal Planning Factors	2016 MTP Goals							
	1	2	3	4	5	6	7	8
a. support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	X	X		X	X	X	X	
b. increase the safety of the transportation system for motorized and nonmotorized users;	X		X	X	X	X	X	
c. increase the security of the transportation system for motorized and nonmotorized users		X			X			X
d. increase the accessibility and mobility of people and for freight	X	X		X	X	X	X	
e. protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	X	X	X	X	X	X	X	
f. enhance the integration and connectivity of the transportation system, across and between modes, for people and freight		X		X	X	X	X	
g. promote efficient system management and operation	X	X		X	X	X	X	
h. emphasize the preservation of the existing transportation system	X	X	X		X	X	X	
i. improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation	X	X	X	X		X		X
j. enhance travel and tourism	X	X	X	X		X	X	

3.3 PERFORMANCE MEASURES

The MMMPO will establish performance measures in future long range transportation plans. The performance measurement areas listed below:

- Transportation safety (fatalities and serious injuries)
- Transportation system performance (congestion)
- Economic growth and competitiveness
- Freight movement major regional arterials
- Access to jobs and opportunity

The MPO will set performance targets in relation to the performance measures, in coordination with the WV DOH and the Mountain Line Transit Authority.

National policy in support of performance management

“Performance management will transform the Federal-aid highway program and provide a means to the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing the accountability and transparency of the Federal-aid highway program, and improving project decision-making through ”[§1203; 23 USC 150(a)]

3.4 PROJECT EVALUATION CRITERIA

Project evaluation criteria are used to assess the validity of project and to prioritize tiered projects (see section 5.3 Metropolitan Transportation Plan Projects). Those criteria were developed from FHWA Metropolitan Factors and are consistent with the goals and objectives of the Plan.

The criteria consists of eight categories, covering a wide range of factors in the transportation plan. The Steering Committee assigned a score to each category to reflect its relative importance based on FHWA policies, current transportation conditions, and community input.

The total possible score for a project is 100.

Project Ranking Criteria

Evaluation Criteria	Score
	100
SYSTEM PRESERVATION & ENHANCEMENT	20
Project improves existing route	5
Project improves traffic flow	5
Project reduces or mitigate the storm water impacts of surface transportation	5
Project has sustainable operations/ongoing maintenance support	5
QUALITY GROWTH & SUSTAINABLE DEVELOPMENT	10
Project improves access to encouraged/controlled growth area	2.5
Project supports infill/redevelopment	2.5
Project located near mixed-use, high density areas	2.5
Project contributes to roadway network connectivity	2.5
ECONOMIC PROSPERITY	10
Project located near existing jobs/high job growth areas	2.5
Project improves access to retails/activity center	2.5
Project enhances travel and tourism	2.5
Project endorsed by the Chamber of Commerce	2.5
MULTI-MODAL OPTIONS	15
Project is located within a planned/existing multi-modal corridor	2.5
Project reduced inter-modal conflict (e.g. traffic signals, intersection improvements)	2.5
Project includes transit accommodations (e.g. signal priority, pullouts, shelters)	2.5
Project includes pedestrian amenities	2.5
Project includes bicycle facility improvements	2.5
Project makes a connection to another modal facility	2.5
SAFETY & SECURITY	20
Project includes geometrical improvements for the safety of drivers, pedestrians, and cyclists.	4
Projects includes signage/wayfinding	4
Project includes appropriate traffic calming techniques	4
Projects address a high crash location (intersection/corridor)	4
Projects improves transportation system resiliency and reliability	4
Projects reduces the safety of drivers, pedestrians, or cyclists*	-4
FREIGHT & GOODS MOVEMENTS	10
Project improves route with significant existing/anticipated truck movements	4
Project improves access to major good/freight distribution centers	3
Project address existing/anticipated freight-passenger conflict	3
EQUITY, HEALTH & ENVIRONMENT	10
Project improves accessibility for low-income/minority communities	2
Project corrects ADA Non-compliance	2
Project includes transportation choices for the disable/aging population	2
Project promotes physical activity	2
Project improves access to healthy food and health facilities	2
Project has potential negative impact on natural or socio-cultural resources*	-2
COMMUNITY SUPPORT & CONSISTENCY	15
Project is considered as top local priority by public officials	3.75
Project has documented supports/needs from the community	3.75
Project has been considered in funding/grant applications	3.75
Project has been proposed in other plans/studies other than the LRTP	3.75

*criteria of negative impact

4. TRAVEL DEMAND MODEL UPDATE

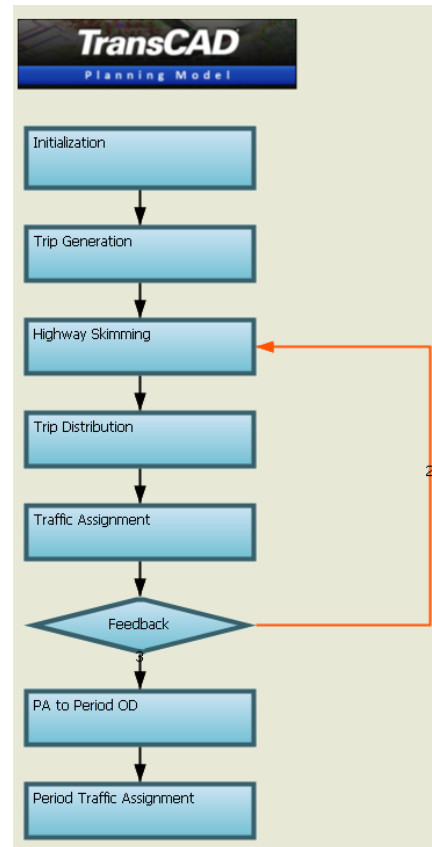
The Regional Travel Demand Model is a computer simulation of transportation system. The model is the primary tool used for assessing future conditions on the Morgantown area transportation network. The model estimates travel demand by evaluating the location and amount of population and employment by geographic location, and understanding the capacity, travel speed and connectivity offered by the street and roadway system.

The update and revalidation of MPO's travel demand model was conducted as part of I-79 Access Study. The model features that were added during this update include:

- **Model Script and User Interface:** this provides a streamlined model code and user-friendly application of the model, with the assurance of repeatable results.
- **Traffic Analysis Zone (TAZ) Additions:** TAZs are the basic unit of geography for the TDM. Three (3) new TAZs were added during this 2015 TDM update by MMMPO staff, along with socio-economic data reallocations to account for the new zone structure.
- **Time-of-Day Model Component:** The previous version of the TDM had a single, daily time period considered for traffic as assignment, which results in a single set of travel costs (congested travel times on the network) for the entire day. Adding the time-of-day (TOD) component to the model, allows the updated TDM to consider the varying travel time levels (congestion) that occur in Morgantown in peak- and off-peak periods. The model now has four different time periods: Morning (7:00 AM to 9:00 AM), Mid-Day (11:00 AM to 1:00 PM), Afternoon (3:00 PM to 6:00 PM) and Off Peak (the rest of the day).
- **West Virginia University Trip Distribution Application:** To better reflect the travel patterns to and from WVU campuses, a set of district-based trip distribution factors were developed. The adjustment factors that were applied were based on mobile-phone based data purchased for the Morgantown area, which provided origin-destination data based on an anonymous aggregation and tracking of wireless signals from a sample of mobile phone carriers in the region.

Other Model Adjustments: Additional model validation adjustments were made to better reflect conditions in the MMMPO area. Model performance was examined through an iterative process at each model step, with a particular focus on traffic assignment results and TOD factors. Those outlier locations where traffic volumes

MMMPO Travel Demand Model



deviated the most from observed counts were those locations that received the most attention for additional model adjustments.

At the end of the model updates, the model was validated against available traffic observations to provide confidence in model performance. With the updates to the model, it was determined that the added model functions had also improved overall model performance. A detailed technical documentation of the MMMPO travel demand model is included in I-79 Access Study Report-Appendix C

Model Application

The 2040 conditions used as the baseline for the future needs analysis in the I-79 Access Study reflect an “existing-plus-committed” (E+C) network scenario. The 2040 E+C scenario assumes no improvements to the base year roadway network beyond those major capacity projects built since 2010, or are currently included in the MPO's Transportation Improvement Program (TIP). The 2040 E+C scenario traffic forecasts assumed that in addition to the base year roadway network, two major roadway projects would be completed by 2040:

- **The Mon-Fayette Expressway / Highway 43:** This connection between I-68 at Cheat Lake and the Pennsylvania border was completed after 2010.
- **Beechurst Avenue, Campus Drive to Hough Street:** This segment of Beechurst Avenue was recently converted from a street with one northbound travel lane, one southbound travel lane, and one center two-way left-turn lane to a street with two southbound through lanes and one northbound travel lane.

The TDM was used to evaluate the relative performance of the range of study roadway alternatives, using this E+C network scenario as the baseline. The alternatives model runs involved coding in the relative characteristics of each corridor alternative, including:

- Geographic location / extent of each alternative corridor.
- Capacity / number of travel lanes.
- Assumed posted speed.
- Network connections to other corridors.

Key Existing + Committed Projects and Improvements

For the TDM evaluation, the following projects are some of the key E+C projects and improvements that are currently included in the TDM and programmed in MMMPO's TIP:

- **The Mon-Fayette Expressway/Highway 43:** This connection between I-68 at Cheat Lake and the Pennsylvania border was completed after 2010.
- **Beechurst Avenue, Campus Drive to Hough Street:** This segment of Beechurst Avenue was recently converted from a street with one northbound travel lane, one southbound travel lane, and one center two-way left-turn lane to a street with two southbound through lanes and one northbound travel lane.
- **Mileground Widening Airport Road – Easton Elementary:** Widen US 119 from Donna Avenue to Cheat Road.
- **Green Bag Road (CR 857):** Intersection improvement and widening.
- **Van Voorhis Road Widening.**
- **Beechurst Avenue (US 19):** Spot improvements beginning at 6th Street.
- **West Run Road (CR 67/1) widening.**

5. PROJECT UPDATE AND RECOMMENDATIONS

5.1 2013 LRTP PROJECT STATUS ASSESSMENT

This part of the report assesses the progress of projects recommended in the 2013-2040 Long Range Transportation Plan (LRTP). The status assessment, albeit not all inclusive, captures the transportation improvements made in the Morgantown Monongalia area from 2013 to 2016 and provides information for the project recommendations and prioritizations of this report.

The following are major progress update for 2013 LRTP Tier 1 projects since the last adoption of the plan.

Project 2. ADA Compliance Projects

- MPO planning studies identified systematic pedestrian infrastructure improvement opportunities in the region. Those planning studies include Greenbag Rd Corridor Study, University Ave Complete Street Study, and Westover/Granville Pedestrian Study.
- City of Morgantown repaired sidewalks and crosswalk in various location, including 233 ADA ramps.
- Beechurst Ave sidewalk/crosswalk improvements by WV DOH and City of Morgantown.

Project 6. New Bridge over Mon River and Roadway Connection to I-79

- I-79 Access Study developed and evaluated 12 alternatives for access improvement to I-79. One alternative was recommended. The study has provided necessary documentation for a future NEPA project development study for this project.

Project 7. Van Voorhis Rd Improvements

- Drainage improvements and resurfacing on Van Voorhis Rd by WV DOH and Morgantown Utility Board.
- The WV DOH programmed improvements toward Voorhis Rd as following: Engineering(2018), Right of Way(2019), Construction (2020)

Project 8. Beechurst Ave Improvements

- Resurfacing and restriping on Beechurst Ave from Campus Dr to Hough St, including converting the TWLTL to a southbound through lane, by WV DOH.
- The WV DOH programmed improvements on Beechurst Ave as following: Engineering (2019), Right of Way (2020), Construction (2021). The MPO will be preparing a preliminary plan for this improvement in 2017

Project 11. West Run Improvements-Western Section

- The WV DOH programmed improvements on Beechurst Ave as following: Engineering (2020), Right of Way(2020), Construction (2021)

Project 18. Greenbag Rd Improvement

- MPO Greenbag Rd Corridor Study developed alternative to comprehensively improve the travel on for all users on Greenbag Rd.
- The WV DOH programmed improvements on Greenbag Rd as following: Engineering (2020), Right of Way(2020), Construction (2021)

Project 26. North Side Connector Bus Rapid Transit

- Bus stops locations and Bus Rapid Transit routes were identified in the University Ave Complete Street Study

Project 27. Grant Ave Bicycle/Pedestrian Connector

- A potential trail alignment was identified in the University Ave Complete Street Study

Project 28. White Park/Caperton Trail Connection

- Project was included in a Transportation Alternative Program grant application submitted by the City of Morgantown.

Project 40. Regional Bikeway Plan Implementation

- MPO developed a regional bicycle plan, which identify networks for the region based on the bicycle commuter map developed by the Morgantown Bicycle Board.
- City of Morgantown received a TAP Grant to construct a Multi-use bridge connecting Greenmont neighborhood to Deckers Creek Trail
- City of Morgantown received a TAP Grant to install Bicycle May Use Full Lane signs and Sharrows on major city streets

Project 43. School Route Improvements

- Sidewalk and crosswalk improvements at various locations
- Bicycle facilities including sharrows, bicycle signs, and multiuse paths are to be installed at various locations near schools. (committed projects)

Project 45. Downtown Morgantown Signalization and Street Changes

- A study Identified alternative signal timing plan to improve downtown traffic flow. The project will be implemented in 2017.

Project 38. Intersection Capacity and Safety Improvement Program

- Major intersection improvements are summarized as the following:

Planning Phase	Engineering Phase	Construction (completed)
<ul style="list-style-type: none"> • University Ave & WV 705 • University Ave & 3rd St • University Ave & College Ave • University Ave & Falling Run Rd • University Ave & Stewart Rd • Greenbag Rd & US 119 • Greenbag Rd & Dorsey Ave • Holland Ave & Fairmont Rd • University Ave & Beechurst Ave • University Ave & Campus Dr 	<ul style="list-style-type: none"> • Greenbag Rd & WV 7 • Beechurst Ave & Campus Dr • Mileground Rd & Cheat Rd • Mileground Rd & Airport Blvd • Mon Blvd & Boyers Ave • WV 7 & Brookhaven Rd • Univ. Ave & Collins Ferry Rd • WV 705 & Van Voorhis Rd • US 119 & Smithtown Rd 	<ul style="list-style-type: none"> • Mon Blvd-Chaplin Hill • Rd Cheat Rd-N Pierpont Rd • Mon Blvd-Evansdale Dr • WV 705-Fine Art Dr • I-68 Exit 7 EB & Cheat Rd

Status update for tier 2 to tier 4 projects and alternative funding dependent projects are included in the Appendix D: 2013 LRTP Project Status Update.

From 2013 to 2016, major planning studies conducted by the MPO are:

- MPO Regional Bicycle Plan (FY 2013-2014)
- Greenbag Rd Corridor Planning Study (FY 2014-2015)
- Westover-Granville Pedestrian Study (FY 2015-2016)
- University Ave Complete Street Study (FY 2015-2016)
- I-79 Access Study (FY 2015-2017)

Details of the studies are available at the MPO's website at www.plantgether.org/plans-studies

5.2 LONG RANGE REVENUE ESTIMATION

Federal regulations requires metropolitan planning organizations to develop a fiscally constrained long range transportation plan covering at least 20 years that addresses future needs. This part of the report answers the question of how much revenue will likely be available to the Morgantown Monongalia MPO during the plan’s 30 years planning horizon.

The revenue estimates for the MTP Update are based on the Calendar Year 2015 Long Range Revenue Estimations for Use in MPO Long Range Transportation Plans prepared by the West Virginia Division of Highways (Revenue Plan). The Revenue Plan was prepared in 2015 and distributed to the MMMPO in 2016 for the purpose of updating existing metropolitan transportation plans. It is noted in the plan that methodology used for these projections will need to be revised in the near future due to the implementation of a new financial tracking program.

The DOH’s Revenue Plan projected \$177,355,000 funding for transportation improvements in the Morgantown Monongalia area from FY 2016 to FY 2040. MPO staff estimated the funding from FY 2017 to FY 2045 by using the average growth rate of the forecast from FY 2021 to 2045.

The total estimated funding for the transportation improvements in the Morgantown Monongalia area from FY 2017 to FY 2045 is **\$237,106,000**.

5.3 PROPOSED MTP PROJECTS

The 2017-2045 Metropolitan Transportation Plan Update includes 49 transportation projects/programs to be pursued in the future with project prioritization by tier. The prioritization of projects is based on:

- The status of projects in the 2013 LRTP
- Project ranking criteria
- Community survey results and public opinions
- Existing condition analysis (EJSCREEN and ACS Summary Report)
- Opinions of Steering Committee and MPO staff

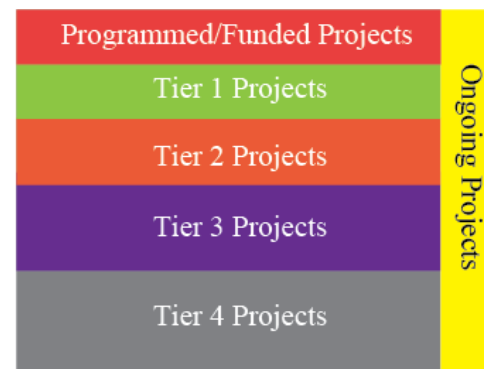
Projects are assigned in four categories. The description of each proposed project of the metropolitan transportation plan area included in Appendix E: 2017-2045 Metropolitan Transportation Plan Projects.

Estimated Revenue and Cost

WV DOH Projected Funding:
\$237,106,000

Estimated Cost of Programmed Projects and Proposed Tier 1 Projects
\$237,000,000

MMMPO Project Recommendation Structure



Programmed (funded) Projects and Tier One Projects

Programmed projects have been funded through MPO’s Transportation Improvement Program and/or local funding resources. They are expected to be constructed within the next six years. Programmed projects are not included in project prioritization.

Tiered projects are prioritized in four tiers. Tier 1 Projects are of the highest value to the region and should be advanced as soon as practicable. They could be funded with the currently forecasted state and federal funding for the region between now and the 2045 plan horizon. Tier 1 projects meet at least one of the following criteria:

- The project has undergone major updates since the adoption of 2013 Long Range Transportation Plan.
- The project should be implemented in coordination with I-79 Access Improvements due to their close connections.

The priority of the rest of tiered projects are decided by prioritization scores. Their implementation is largely contingent on the available funding beyond the forecasted state and federal funding for the region.

	Project ID	Project Name	Estimated Cost	Priority	2013 LRTP Priority	
Programmed Projects	7	Van Voorhis Rd Improvements	\$10 million	--	Tier 1	
	8	Beechurst Ave Improvements	\$7 million	--	Tier 1	
	11	West Run Improvements-Western Section	\$12 million	--	Tier 1	
	18	Greenbag Rd Improvements Phase I	\$15 million	--	Tier 1	
	45	Downtown Morgantown Signalization And Street Changes	\$2 million	--	Tier 1	
Tier 1 Projects	6	I-79 Access Improvements Phase I	\$110-120 m	1	Tier 1	
	33	Grumbein’s Island Grade Separation	\$3 million*	2	Tier 2	
	12	Stewartstown Rd Improvements	\$12 million	3	Tier 2	
	13	West Run Rd Improvements-Eastern Section	\$3 million	4	Tier 1	
	21	Earl Core Road (WV 7) -Northern Section	\$9 million	5	Tier 2	
	9	University Ave Complete Street Improvements Phase I	\$36 million	6	Tier 2	
	17	Fairmont Rd/Holland Ave Improvements Phase I	\$11 million	7	Tier 3	
	26	North Side Connector Bus Rapid Transit	\$1 million	8	Tier 1	
	27	Grant Ave Bicycle/Pedestrian Connector	\$0.9 million	9	Tier 1	
	Total			Range	\$232-\$242 million	
				Average	\$237 million	
2016-2045 Forecasted Revenue			237.1 million			
Balance (Revenue – Estimated Average Project Cost)			0.1 million			

*Estimated cost is based on Option #3: Pedestrian “Raised Intersection” Gateway

Tier one projects are prioritized based on on the opinions of the committees and the community. It does not necessarily determine the actual implementation order of improvements proposed in this plan. The ultimate sequence of performing those improvements is at the discretion of implementing agencies.

The following table shows the primary rationales in prioritizing tier 1 projects.

	Project ID/Name	Notes
Tier 1 Project Prioritization	1 #6. I-79 Access Improvements Phase I	The project has the most significant regional impact to reduce congestion in the northern part of the Morgantown area, including WV 705.
	2 #33. Grumbein's Island Grade Separation	The project is to improve traffic flow on University Ave in the downtown campus area. It has been identified as a top concern for pedestrian safety.
	3 #12. Stewartstown Rd Improvements	The project is to improve a key connection between WV 705 and northern part of the County.
	4 #13. West Run Rd Improvements-Eastern Section	The project is to improve the safety and traffic flow on West Run Rd by widening substandard lanes between Stewartstown Rd and Point Marion Rd.
	5 #21. Earl Core Road (WV 7) - Northern Section	The project is to improve the connection from Morgantown to I-68 and southern part of the county. It includes improvements for both vehicle traffic and pedestrians.
	6 #9. University Ave Complete Street Improvements	The project is to improve University Ave for all users, including pedestrian, bicyclists, transit users, as well as vehicle drivers.
	7 #17. Fairmont Rd/Holland Ave Improvements Phase I	The project is a complete street improvement on Fairmont to enhance travel safety and efficient between Westover and Morgantown.
	8 #26. North Side Connector Bus Rapid Transit	The project is to reduce vehicle travels between WVU Evansdale Campus and Downtown Campus by providing high quality transit service between the two campuses.
	9 #27. Grant Ave Bicycle/Pedestrian Connector	The project provides a multi-use path between the Sunny-side neighborhood and WVU Evansdale campus.

Ongoing Projects

Ongoing projects identify improvements at multiple, and in many case non-contiguous, locations and are best implemented through continuous effort. It could also be implemented as a component of another project. Ongoing projects primarily consist of pedestrians and bicycle facility improvements and Transportation Demand Management activities.



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Category	Project ID	Project Name	Estimated Cost	Recommended 2016 MTP Tier	2013 L RTP Tier
Ongoing Projects	2	ADA Compliance Projects	\$2 million	Ongoing	Tier 1
	38	Intersection Capacity and Safety Improvement Program	\$31 million	Ongoing	Tier 1
	40	Regional Bikeway Plan Implementation	\$5 million	Ongoing	Tier 1
	41	New Park and Ride Lots	\$1 million	Ongoing	Tier 2
	43	School Route Improvements	\$2 million	Ongoing	Tier 1
	44	Access Management Improvements	\$10 million	Ongoing	Tier 4
	46	TDM Program Expansion	\$10 million	Ongoing	Tier 2
	39	Regional Pedestrian Safety and Sidewalk Connectivity	\$33 million	Ongoing	AFD

Tier 2 to Tier 4 Projects

Category	Project ID	Project Name	Estimated Cost	Recommended 2016 MTP Tier	2013 L RTP Tier
Tier 2 ⁴	1	WV 705 Corridor (spot improvements)	\$55 million	Tier 2	Tier 3
	6	I-79 Access Improvements Phase II	\$25 million	Tier 2 ¹	Tier 1
	20	Brockway Rodgers/Powell Ave (WV -7)	\$6 million	Tier 2	Tier 3
	28	White Park/Caperton Trail Connection	\$0.5 million	Tier 2 ²	Tier 1
	30	Stewart Street Improvements	\$11 million	Tier 2	Tier 4
	9	University Ave Improvements Phase II	\$10 million	Tier 2	Tier 2
	18	Greenbag Rd Improvements Phase II	\$ 8 million	Tier 2 ¹	Tier 1
	47 ³	Smithtown Rd Improvements	\$12 million	Tier 2	New
	14	Cheat Rd Improvements	\$6 million	Tier 4	Tier 3
Tier 3	25	Willey St Improvements	\$13 million	Tier 3	Tier 4
	15	Willowdale Rd/Grove St/North Av Sidewalk Improvements	\$4 million	Tier 3	Tier 3
	34	Riddle Street/Pineview Dr Improvements	\$4 million	Tier 3	Tier 4
	17	Fairmont Rd/Holland Ave Improvements Phase II	\$17-25 million	Tier 3	Tier 3
	19	Dorsey Ave Sidewalk Improvements	\$4 million	Tier 3	Tier 4
	48 ³	I-79 Westover Section Improvements	\$4 million	Tier 3	New
Tier 4	49 ³	I-79 Granville Section Improvements	\$15 million	Tier 3	New
	10	Burroughs St Improvements	\$4 million	Tier 4	Tier 4
	4	I-79/Chaplin Hill Rd/US-19 Interchange Improvements	\$22 million	Tier 4	Tier 4
	3	Lasselle Union Rd (WV-100) Improvements	\$22 million	Tier 4	Tier 4
	24	Protzman/Falling Run Pedestrian and Bicycle Connector	\$1 million	Tier 4	Tier 4
	23	New Connection-Willey St to Downtown Campus Area	\$6 million	Tier 4	Tier 4
	36	New Connection-Mileground Rd to Hartman Run Rd	\$17 million	Tier 4	Tier 4
	29	Grafton Rd (US 119)	\$5 million	Tier 4	Tier 4
22	Earl Core Road (WV 7) –Southern Section	\$9 million	Tier 4	Tier 4	
16	Old Cheat Rd/Cheat Rd Bike Lanes	\$7 million	Tier 4	Tier 3	

¹ Tier 2 due to budgetary constraints.

² Recommended to a lower tier by updated evaluation criteria including community survey.

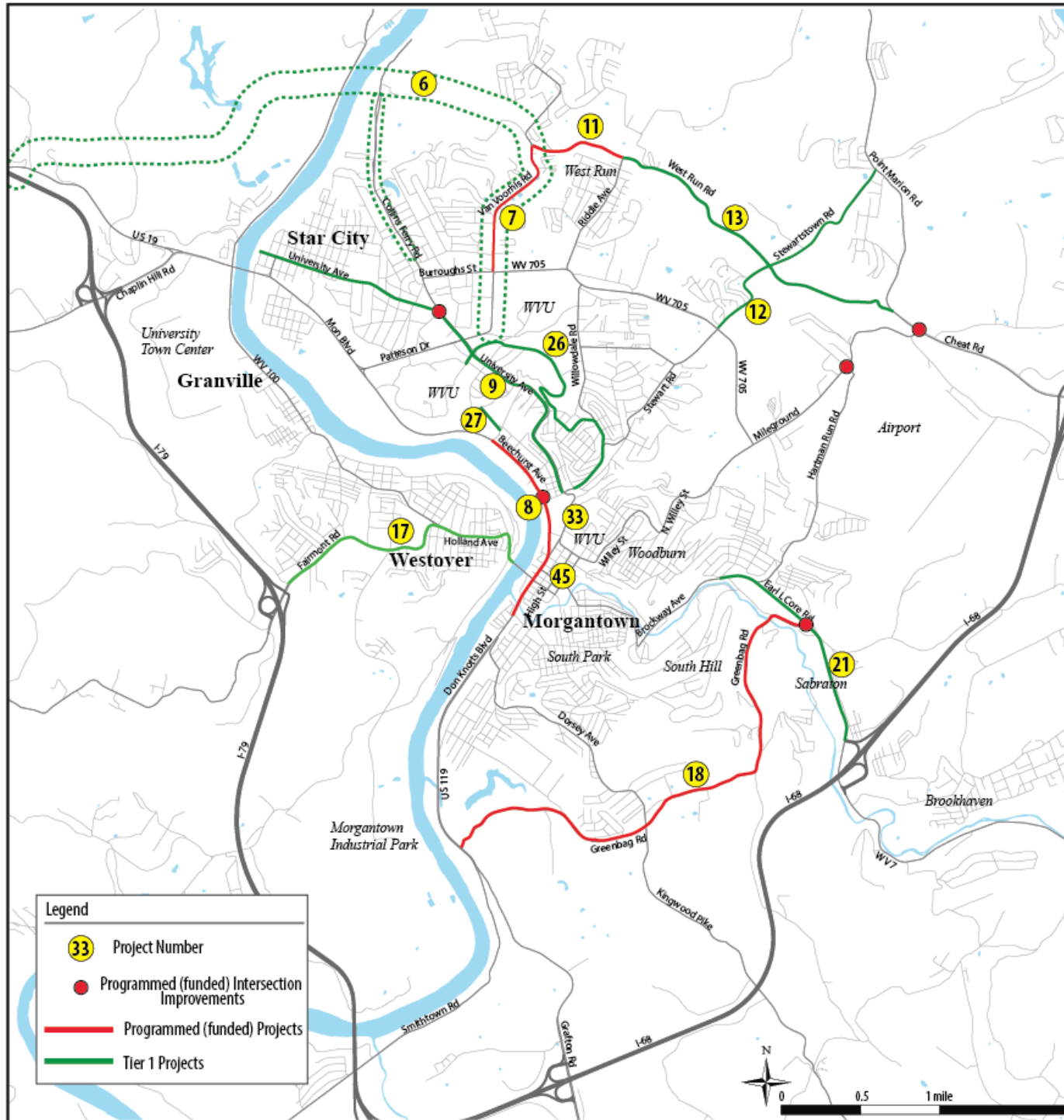
³ New project recommended in the Update.

⁴ The Morgantown Industrial Park Access Improvements was amended to the MTP as a Tier 2 Project on October, 2018. Estimated cost range from 15 million to 40 million, depending on design options. Project ID 50.

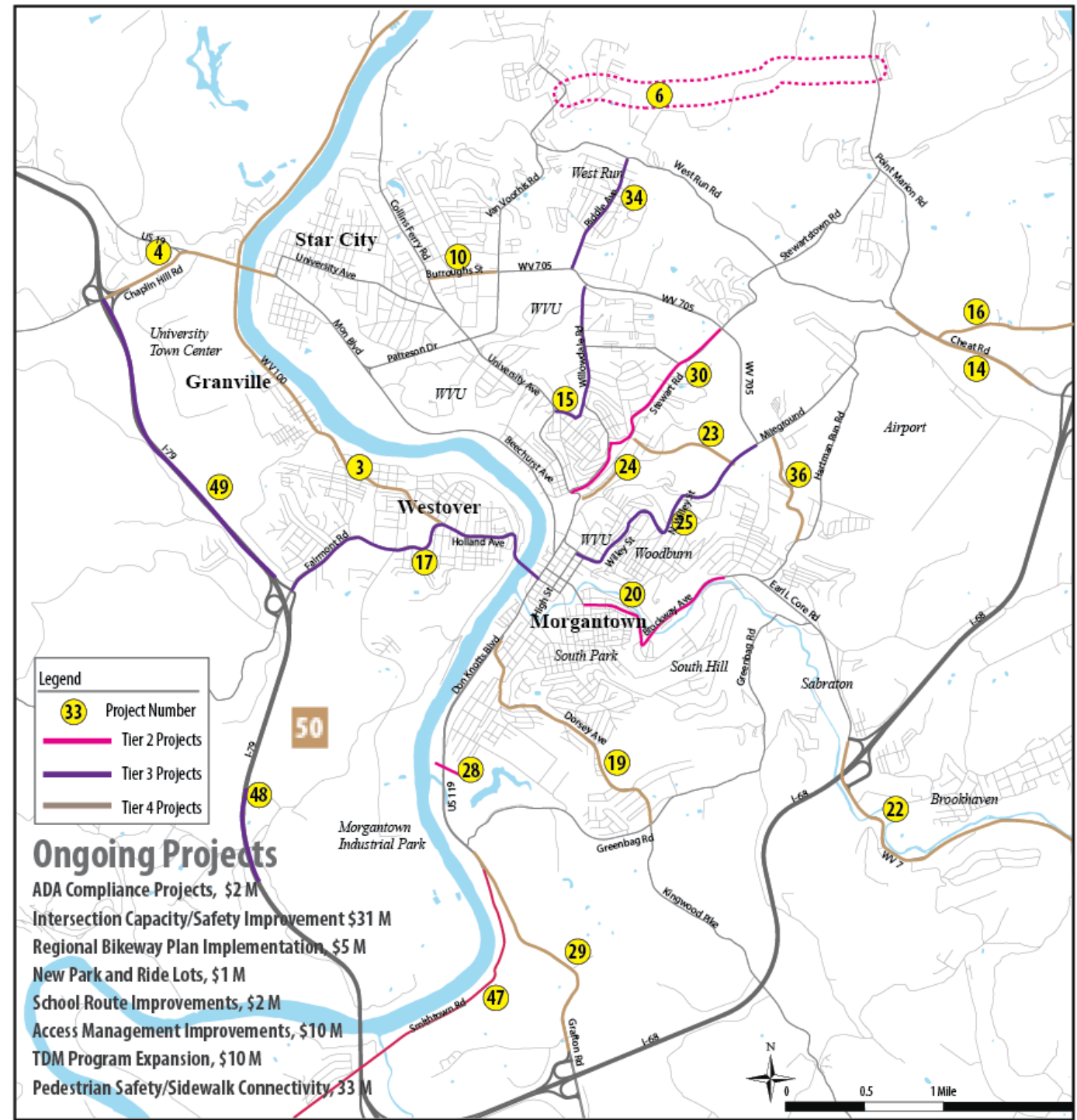
Alternative Funding Dependent (AFD) Projects

Category	Project ID	Project Name	Estimated Cost	Recommended 2016 MTP Priority	2013 L RTP Priority
Alternative Funding Dependent Projects	5	Business district connecting roadway-West of Granville	\$18 million	AFD	AFD
	31	PRT Extension-Univ. Health Center to Mon General Hospital	\$57 million	AFD	AFD
	32	PRT Extension-Mon General Hospital to Glenmark Centre	\$103 million	AFD	AFD
	35	PRT Connection New Business Park to Evansdale Campus	\$80 million	AFD	AFD
	37	Extension of Airport Industrial Rd to WV-7 in Sabraton	\$12 million	AFD	AFD
	42	Enhanced Bus Service	\$88 million	AFD	AFD

Programmed (funded) Projects and Tier One Projects



Tier 2 to Tier 4 Projects and Ongoing Projects (Ongoing projects are not mapped)



5.4 I-79 ACCESS STUDY AND RECOMMENDED ALTERNATIVES

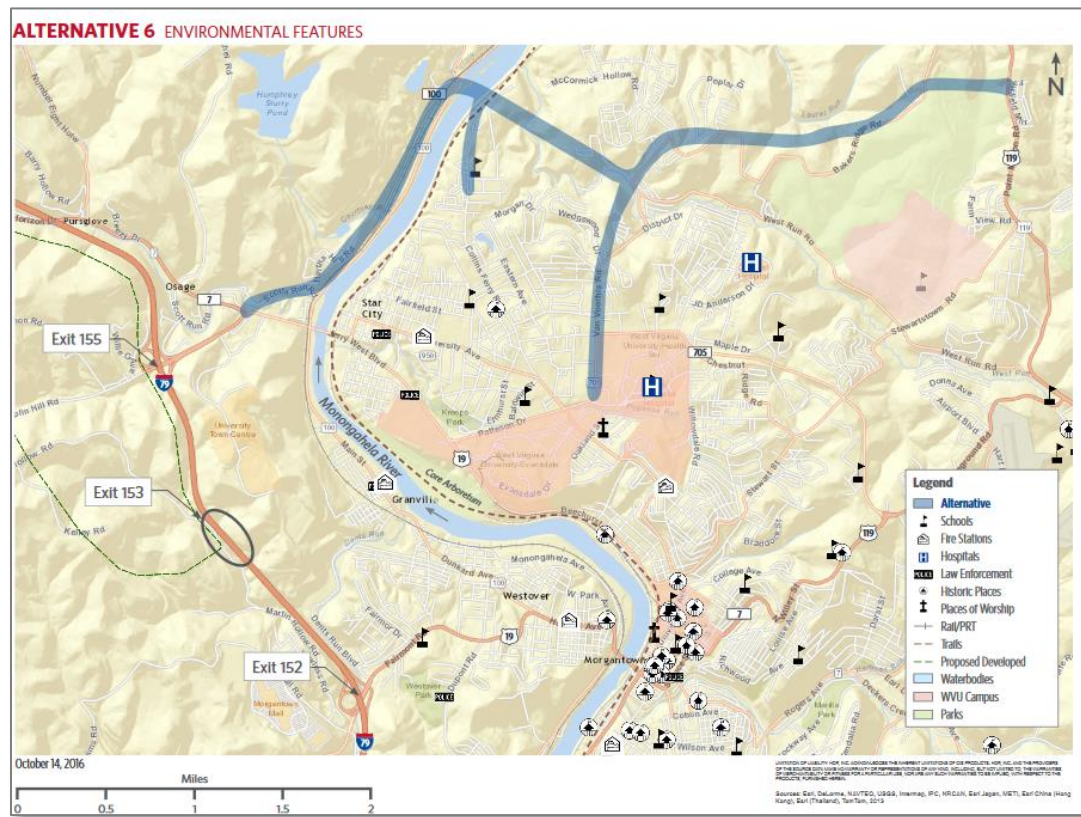
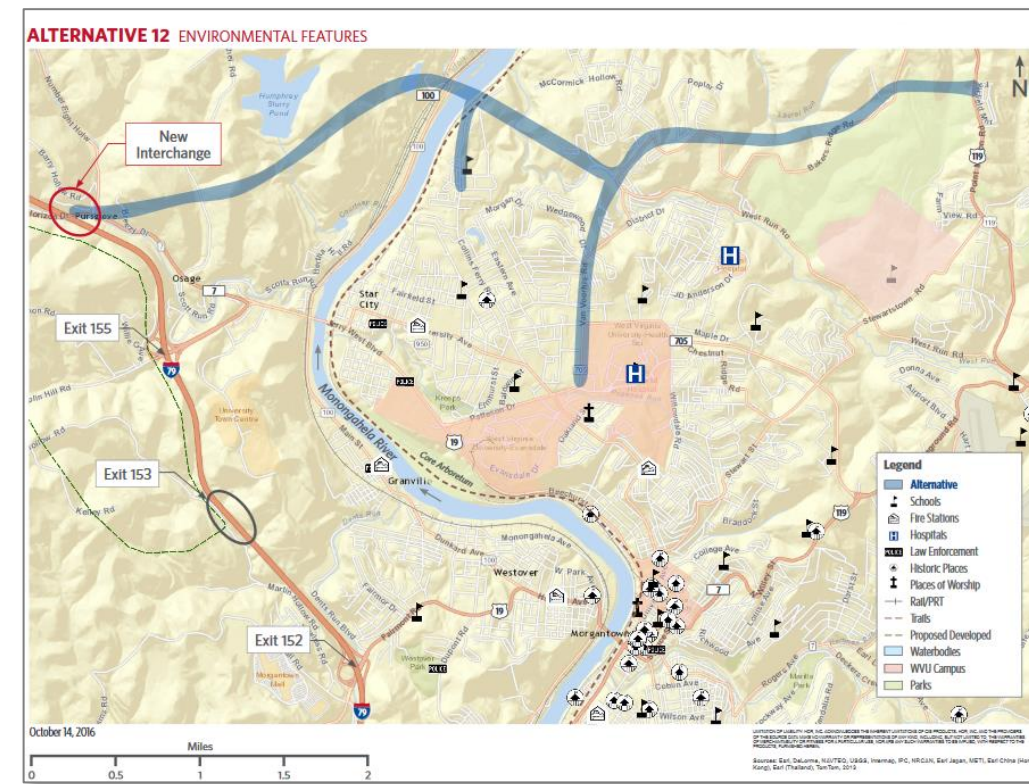
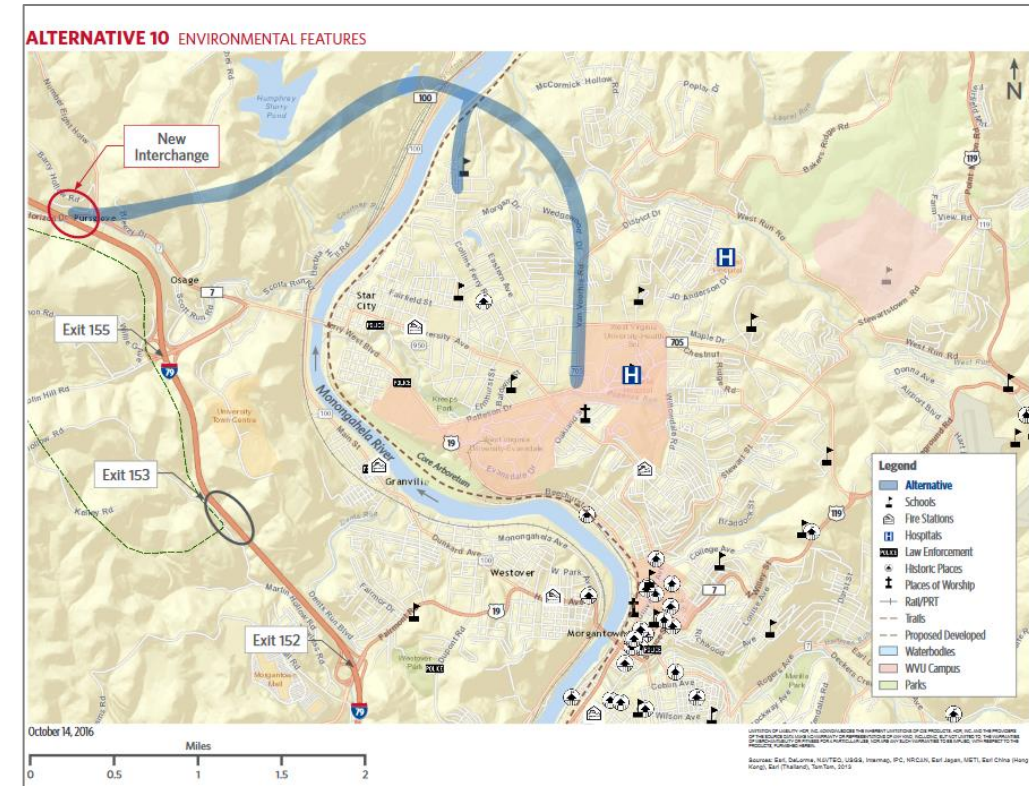
The MPO conducted I-79 Access Study concurrently with the MTP Update. The study is a major part of the MTP Update and its recommendations are included in the MTP Update report. The purpose of the I-79 Access Study is to comprehensively evaluate how the current transportation network in the MPO area is meeting the existing and future connectivity needs between northern Morgantown, major transportation facilities, key employment centers, and West Virginia University (WVU) campuses to Interstate 79 (I-79).

Integral aspects of this Access Study include:

- Defining the project's Purpose and Need statement.
- Identifying and evaluating the no-build, transportation system management (TSM) strategy, and multiple build Alternatives.
- Updating the MMMPO's Travel Demand Model (TDM) to support the evaluation of potential alternatives.
- Facilitating a strong public engagement program.

The study evaluated twelve (12) alternatives, a transportation system management (TSM) strategy, and no-build alternative to determine their operational performance, community and environmental impact, regulatory environmental impacts, and financial implications. Five (5) alternatives were dismissed from further evaluation beyond this study; however, they have been evaluated and included for documentation. Based on the findings of this study and specific evaluation criteria, Alternatives 6, 10, and 12 provide the greatest regional, corridor, and local operations and connectivity improvements. Ultimately, the Alternative 12 was the final recommendation of the study and the MTP Update.

The recommended alternatives are shown in the following maps:



6. ENVIRONMENTAL JUSTICE ANALYSIS

According to Federal Highway Administration (FHWA), environmental justice means identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens.

FHWA guidance directs Metropolitan Planning Organizations (MPOs) to produce analyses that ensure their Long Range Transportation Plan is compliant with Title VI and environmental justice. To address these concerns, this section of the report documents the allocation of improvement projects in regards to environmental justice populations in the MPO's study area.

The MPO recognizes the following environmental justice principles in the 2016 MTP Update process:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and meaningful involvement by all potentially affected communities in the transportation decision making process.

Meaningful involvement means people have an opportunity to participate in decisions about activities that may affect their environment and/or health. In the Update process, the MPO entails that

- The public's contribution can influence projects, programs, and policies proposed by the Update.
- Community concerns will be considered in the decision making process.
- The MPO will seek out and facilitate the involvement of those potentially adversely affected.

6.1 ANALYSIS METHODOLOGY AND PROCESS

The environmental justice assessment includes two analyses.

EJ Block Group Analysis

EJ Block Group Analysis is a system level evaluation on the relations between proposed projects and environmental justice populations. It documents the special relations of proposed projects and EJ Block Groups and the level of planned transportation investment in the area's EJ and non-EJ neighborhoods. Both positive and negative impact of an investment are considered.

EJ Block Group

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

EJ Block Group

A census block group with a population that has either:

1) A higher percentage of households in poverty than the county average of 24.0 percent.

Or 2) A higher percentage of minority residents than the county average of 9.2 percent.

Non-EJ Block Group

A census block group with a population that has both the same or a lower percentage of households in poverty than the county average of 24.0 percent, and the same or a lower percentage of minority residents than the county average of 9.2 percent

EJSCREEN Analysis

EJSCREEN is an environmental justice mapping and screening tool developed by the US Environmental Protection Agency. It provides a nationally consistent dataset and approach for combining environmental and demographic indicators. The use of EJSCREEN in metropolitan transportation plans is recommended by the Federal Highway Administration.

The EJSCREEN Analysis of this plan examines the demographic and environmental context at the project level. It covers 13 factors. They are:



Type	Factor	Source
Demographic Features	Population (0.25 mile radius), Population density (per sq. mile), Households, Per Capita Income, Minority	US Census
EJ Index	PM 2.5 percentile in WV and in EPA Region, NATA Diesel PM %ile in WV and in EPA Region, Traffic Proximity volume percentile in WV and in EPA Region	US EPA
Demographic Indicators	Minority population percentile in WV and in EPA Region Low income population percentile in WV and in EPA Region Linguistically isolated population percentile in WV and in EPA Region Population with less than high school education percentile in WV and EPA Region Population over 64 years of age percentile in WV and in EPA Region	US EPA

Analysis process

The environmental justice analysis of this plan consists of three stages. The process is designed in a way to ensure that environmental justice consideration is an integral part of the decision making process and has continuing influence on the initiation, evaluation, and prioritization of projects proposed in the plan.

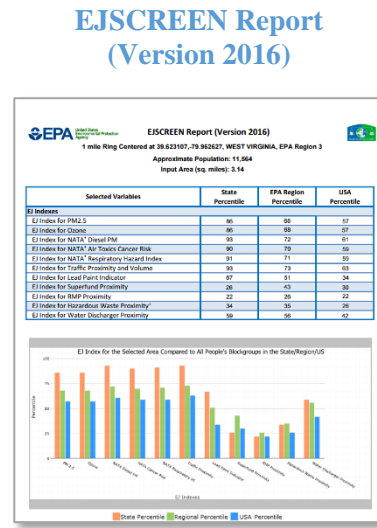
July—August	<ul style="list-style-type: none"> • Update and review the Environmental Justice Block Group map based on current demographic data. • Assess the relation of geographic locations between Tier 1 projects recommended in the 2013 LRTP and the updated EJ Block Group map
September—January	<ul style="list-style-type: none"> • Reach out to the community to identify potential environmental justice concerns. • Evaluate the positive and negative impact of any changes proposed during this time frame.
February—March	<ul style="list-style-type: none"> • Assess the positive and negative impact of programmed and Tier 1 projects recommended in the Update in terms of environmental justice.

6.2 ANALYSIS RESULTS

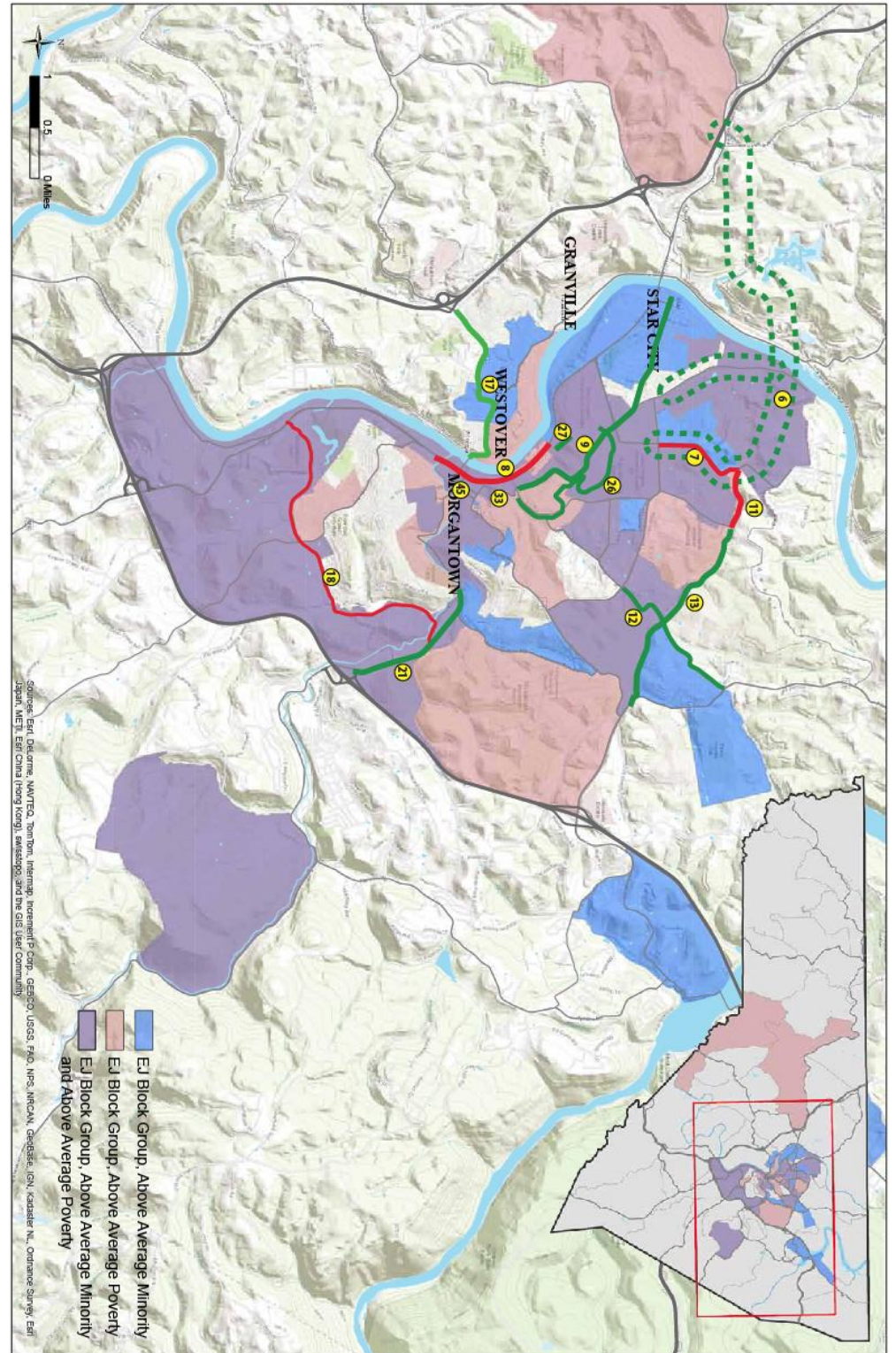
The following tables summarized the results from the Environmental Justice Block Group Analysis and EJSCREEN analysis. Detailed analysis reports are included in Appendix F: Environmental Justice Documentation.

Based on the analysis described above, it is concluded that:

- All programmed projects and Tier projects are located within or partially within environmental justice block groups as defined in this chapter.
- EJ communities are expected to have more direct benefit from recommended transportation improvements, as majority of the projects are operational improvements on existing roadway and aimed to improve community coherency and livability.
- Majority of projects are located in areas, which, when compared with the state average, share the following demographic characteristics:
 - Higher percentage of minority population
 - Higher percentage of low income population
 - Higher percentage of linguistically isolated population
 - Lower percentage of population with less than high school education



Category	Project ID	Project Name	Estimated Cost	Recommended Ranking	Relation with EJ Block Groups
Programmed Projects	7	Van Voorhis Rd Improvements	\$10 million	N/A	Within
	8	Beechurst Ave Improvements	\$7 million	N/A	Within
	11	West Run Improvements-Western Section	\$12 million	N/A	Within
	18	Greenbag Rd Improvements	\$15 million	N/A	Within
	45	Downtown Morgantown Signalization And Street Changes	\$2 million	N/A	Within
Tier 1 Projects	6	I-79 Access Improvements Phase I	\$110-120 m	1	Partially Within
	33	Grumbein's Island Grade Separation	\$3 million*	2	Within
	12	Stewartstown Rd Improvements	\$12 million	3	Within
	13	West Run Rd Improvements-Eastern Section	\$3 million	4	Within
	21	Earl Core Road (WV 7) -Northern Section	\$9 million	5	Within
	9	University Ave Complete Street Improvements	\$36 million	6	Within
	17	Fairmont Rd/Holland Ave Improvements Phase I	\$11 million	7	Partially Within
	26	North Side Connector Bus Rapid Transit	\$1 million	8	Within
	27	Grant Ave Bicycle/Pedestrian Connector	\$0.9 million	9	Within



Project #	Priority	Project Name	Demographic Characteristics					Demographic Index										Environmental Index					
			Population (0.25 mile radius)	Population Density (per sq. mile)	Households	Per Capita Income	Minority Percentage	Minority Population %ile in State	Minority Population %ile in EPA Region	Low Income Population %ile State	Low Income Population %ile in EPA Region	Linguistically Isolated Population %ile in State	Linguistically Isolated Population %ile in EPA Region	Population With Less Than High School Education %ile in State	Population With Less Than High School %ile in EPA Region	Population over 64 years of age %ile in State	Population over 64 years of age %ile in EPA Region	EJ Index for PM 2.5 %ile in State	EJ Index for PM 2.5 %ile EPA Region	EJ Index for NATA Diesel PM %ile in State	EJ Index for NATA Diesel PM %ile in EPA Region	EJ Index for Traffic Proximity and Volume %ile in State	EJ Index for Traffic Proximity and Volume %ile in EPA Region
7	P	Van Voorhis Rd Improvements	4,139	5,389	1512	\$24,854	24%	94	55	70	82	98	83	7	18	20	37	86	68	62	63	51	55
8	P	Beechurst Ave Improvements	4,420	7,662	1,421	\$14,996	17%	88	45	98	98	89	57	21	41	1	4	95	76	97	77	98	82
11	P	West Run Improvements-Western Section	2,503	3,865	996	\$30,462	21%	92	51	60	77	92	65	13	30	18	34	76	63	42	56	19	36
18	P	Greenbag Rd Improvements	3,355	2,137	809	\$25,421	18%	90	48	69	82	88	57	48	67	21	38	88	69	88	69	94	74
45	P	Downtown Morgantown Signalization and Street Design	4,686	8,601	1,338	\$15,923	16%	88	44	96	96	93	68	23	44	4	13	95	76	97	78	97	80
6	Tier 1	I-79 Access Improvements Phase I	5,311	2,424	2,121	\$25,668	27%	95	58	64	79	97	80	7	19	17	34	53	39	78	49	80	50
33	Tier 1	Grumbein's Island Grade Separation	2,571	12,335	238	\$10,871	15%	86	42	98	97	95	71	20	39	1	4	49	37	96	75	92	64
12	Tier 1	Stewartstown Rd Improvements	1,803	3,111	786	\$29,129	13%	84	40	67	80	87	55	10	25	4	11	52	39	75	49	86	57
13	Tier 1	West Run Improvements-Eastern Section	1,493	3,950	580	\$25,332	17%	89	46	68	81	87	55	5	15	4	14	72	60	42	56	17	34
21	Tier 1	Earl Core Road (WV 7) -Northern Section	1,142	1,430	434	\$22,069	18%	89	47	27	58	88	56	19	39	17	33	47	36	79	49	77	47
9	Tier 1	University Ave Complete Street Improvements	13,995	8,698	3,702	\$16,752	15%	85	42	93	94	94	70	16	34	3	10	50	38	94	65	92	64
17	Tier 1	Fairmont Rd/Holland Ave Improvements Phase I	2,639	3,042	1,205	\$22,909	10%	74	32	57	76	88	55	19	39	23	40	50	38	82	49	96	72
26	Tier 1	North-side Connector Bus Rapid Transit	9,527	7,465	2,341	\$15,384	13%	84	40	96	96	96	75	16	35	2	6	90	70	93	72	39	49
27	Tier 1	Grant Avenue Bicycle/Pedestrian Connector	3,057	10,155	523	\$17,336	17%	88	46	94	94	97	79	9	22	2	8	63	56	33	51	8	25



Resolution 2017-3-17-4

**Morgantown Monongalia Metropolitan Planning Organization
Amending the Adoption of the 2040 Long Range Transportation Plan**

WHEREAS, the Morgantown Monongalia Metropolitan Planning Organization is responsible for the development and updating of a long range transportation plan that fosters mobility for people and goods, efficient system performance and preservation and the quality of life of the residents of the metropolitan area for a planning horizon of twenty years or more, and;

WHEREAS, the MPO with the guidance of the public and the MPO's Advisory Committee's has updated the Urban Area's Long Range Transportation Plan dated May 2007 to the year 2040, as adopted by Resolution of the MPO Policy Board at the December 17, 2012 meeting and as amended at May 16, 2013 meeting and;

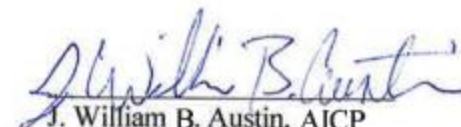
WHEREAS, the Urban Area's updated Long Range Transportation Plan has been updated with additional socio-economic data, analysis and public involvement as required in the MPO's Public Involvement Policy;

NOW THEREFORE BE IT RESOLVED THAT, the MPO adopts the documents, presented as the 2017-2045 Metropolitan Transportation Plan Update and amends the MPO's adopted 2040 Long Range Transportation Plan to include this document as the primary resource for the development of transportation infrastructure within the MPO's boundaries.

Adopted this 23rd day of March 2017 at a regularly scheduled and advertised meeting of the Morgantown Monongalia Metropolitan Planning Organization.

ATTEST:


Ronald Justice
Chairman


J. William B. Austin, AICP
Secretary



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