# CHAPTER 9 – PROJECTS AND STRATEGIES

## 9.1 Introduction

The following projects and strategies update the *Greater Morgantown Regional Transportation Plan* (March 2007) to reflect changing regional needs, growth projections, and forecasted funding levels for transportation projects. This chapter is the culmination of a year-long planning process. This chapter of the Long Range Transportation Plan (LRTP) is presented in two parts:

- **Planning Strategies** – Guide the planning efforts of the Morgantown Monongalia Metropolitan Planning Organization (MMMPO) over the next five years.

- **Projects** – A list of priority fundable projects (Tier 1) based on state forecasts of available transportation funding over the 28-year term of the plan. Other valuable projects are identified (Tiers 2-5) that should be pursued if local and/or other revenue sources become available.

The projects and strategies are rooted in the community's vision for the region captured through a comprehensive regional visioning process called "Crossroads — It's time to chart our future," which engaged a diverse group of stakeholders, citizens, and community leaders to identify the needs, aspirations, and the preferred direction of future growth for Monongalia County (see Chapter 2).


The development of these strategies and projects was guided by a Transportation Advisory Group (TAG), which is made up of the MPO's Policy Board and standing committees including representatives of state and local governments, West Virginia University (WVU), Mountain Line Transit Authority, local business leaders, and concerned citizens (see Chapter 1).

These projects and strategies will be used as a tool to address the region's needs as the area continues to grow and develop. The LRTP projects will provide the basis for the region's Transportation Improvement Program (TIP), a short-range capital improvement program for implementing highway, transit, and bikeway projects.

## 9.2 Planning Strategies

These strategies are intended to guide the MPO's planning efforts during the five-year period until the next LRTP update. These activities are important to reaching the goals and objectives of the 2013-2040 LRTP. Some of these activities are stand-alone planning efforts, but many are precursors or support activities to projects identified in the "LRTP Projects List" (see Table 9-1).

This list of LRTP strategies and timeframes is aggressive! The identified timeframes are provided as a recommendation, but many factors will impact the timeframes of these strategies. The actual implementation of these strategies is at the discretion of the MPO Policy Board through the development of the Unified Planning Work Program (UPWP).

To successfully accomplish these planning strategies, MPO staffing levels must be considered. It may be necessary to expand staff to include a multimodal/complete street coordinator to assist the various ad hoc committees that are suggested. Additionally, an MPO transportation studies coordinator may be needed to scope and monitor the suggested studies, and depending on the qualifications of the coordinator, to performing some of the studies identified. An additional strategy to accomplish these planning efforts is to retain the services of qualified professional firms specializing in these services to guide and perform some of the planning efforts.

### Priority 1 Strategies

**Leadership:** Committee Chair and MPO Executive Director

**Timeframe:** Begin 2013

**First Action:** Establish committee membership and roles and schedule regular meetings.

*Related to all LRTP capital projects (see Section 9.3).*

1. **Local Transportation Funding/Legislative Committee** – Establish a group of concerned citizens, elected officials, local transportation funding and legislative experts to meet regularly and develop an action plan to increase local agency (non-state/federal) transportation funding sources, and to maximize state/federal transportation funding expenditures in the region. A key component of this strategy is for this committee to engage state legislature for changes to state laws. This would allow greater flexibility for local agencies to raise local funds for projects to implement the MPO's LRTP and Policies. Initial efforts have already taken place to establish this group.

2. **Regional Sidewalk Connectivity Plan** – Expand the Connecting Network Sidewalks (CNS) from the Morgantown Pedestrian Safety Plan to include all urban portions of the region and select rural/suburban portions of the region where pedestrian traffic is anticipated to develop. This should include a 10-year action plan to implement improvements necessary to complete the CNS. Implementation of the plan will rely heavily on the identification of additional funding. Thus, this strategy should be closely coordinated with the Local Transportation Funding/Legislative Committee's (see Planning Strategy #1) efforts to identify local funding opportunities to advance the Regional Pedestrian Safety and Sidewalk Connectivity Program (Project #39).

   An ad hoc committee should be formed to lead this effort. The committee could be an extension of the Morgantown Pedestrian Board. The committee should establish priorities and initial projects should be identified that can be completed under the Americans with Disability Act (ADA) Connectivity Initiative (Project #2), Safe Routes to School (SRTS) Initiative (Project #43), or part of other transportation projects in the region.

   **Leadership:** Committee Chair and MPO Staff

   **Timeframe:** Begin 2013

   **First Actions:** Form committee and identify high-priority projects.

   *Related to LRTP capital projects 2, 39, and 43 (see Section 9.3).*

3. **Safe Routes to School (SRTS) Initiative** – Develop a working group to help interested local schools develop SRTS Travel Plans and to apply for state and federal funding assistance for school route improvements. The working group will need to work closely with the Local Transportation Funding /Legislative Committee to identify funding sources for local matching contributions which are anticipated to be 20 percent of project costs under WVDOH policies related to MAP-21. This working group could be an extension of the Regional Sidewalk Connectivity Plan committee. However, members should include those who can adequately represent the needs of local schools.

   **Leadership:** Working Group Leader and MPO Staff

   **Timeframe:** Begin 2013

   **First Action:** Form working group to research best practices and begin outreach efforts to local schools.

   *Related to LRTP capital projects 2, 39, and 43 (see Section 9.3).*

4. **Regional Bike Plan** – Building on the Morgantown Bicycle Plan, develop a "Regional Connecting Bike Route Network" (same concept as the CNS) and a 10-year implementation plan that identifies specific signage, markings, spot roadway improvements, trail improvements, etc., that meet the current state of the practice. Funding options to implement the plan should be explored. The plan should also include an education program and campaign to promote cycling, and enhance awareness of traffic laws and appropriate operational practices to improve safety. A local law enforcement plan and officer education program to help curb bicyclist, pedestrian, and automobile driver behavior that is dangerous for cycling should also be part of the plan.

   **Leadership:** Committee Chair and MPO Staff

   **Timeframe:** Begin 2013

   **First Action:** Form ad hoc committee and determine scope and approach to plan development.

   *Related to LRTP Project #40 (see Section 9.3).*

An ad hoc committee of local bicycling advocates, technical experts, and public safety experts should be formed to lead this effort. The committee could be an extension of the Morgantown Bicycle Board. It may be highly beneficial to retain the services of a qualified consultant with experience in the development of bikeway plans, to assist in the plan preparation. A registered Professional Engineer should be engaged in the development of facility type and traffic control elements of the plan to ensure the plan will be implementable in terms of meeting current laws and design standards.

**Leadership:** WVDOH

**Timeframe:** Ongoing

**First Action:** Identify next priority corridor.

*Related to LRTP capital project 38 (see Section 9.3).*

5. **Region-wide Traffic Signal Upgrades** – Complete the study of all signalized intersections in the region. Develop an aggressive short-term plan to upgrade all signals to utilize state-of-the-art vehicle detection and vehicle responsiveness systems, corridor and system timing optimization, and a central system control. Integrate priority timings for the bus system, where feasible.

**Leadership:** MPO and WVDOH Staff

**Timeframe:** In place beginning 2013

**First Action:** Develop or obtain software tools to analyze crash data.

*Related to most LRTP capital projects (see Section 9.3).*

6. **Regional Crash Data and Analysis Program** – Develop a program to improve crash data collection and analysis procedures, and to develop an annual regional high-crash and priority improvement list. The system developed would be capable of: locating crashes, summarizing crash types and severity, calculating crash rates, and prioritizing high crash locations. This planning strategy, in combination with Planning Strategy #7, should form the basis for Project #38 – Intersection Capacity and Safety Improvement Program.

**Leadership:** MPO and WVDOH

**Timeframe:** Begin 2013 with Annual Update

**First Action:** Complete initial priority list and choose 3 to 5 priority locations and perform studies.

*Related to most LRTP capital projects (see Section 9.3).*

7. **Regional Transportation Systems Management Plan** – Develop a region-wide plan to minimize delay, vehicle emissions, and congestion; and maximize the capacity of the transportation system, through a series of intersection and other spot improvements. The intent of this plan is to identify localized high-benefit projects with relatively low negative impacts that can be implemented expeditiously. This approach can help avoid needed improvement being delayed by larger corridor needs and issues.

   The operational analysis could initially be based on peak hour traffic forecasts developed using intersection turning movement traffic counts and the regional travel demand model assignments. The

analysis should eventually evolve to a regional micro-simulation model (like *TransModeler*) to better automate the process and integrate it with the regional *TransCAD* model. The pursuit of improvement projects should not be delayed by model development. The best available methods should be used to start this process immediately and update the analysis annually.

Based on prioritization from the operational analysis (and crash analysis from Planning Strategy #6), three to five priority locations should be identified each year for detailed and site-specific alternative feasibility studies (primarily intersections). The locations where solutions can be identified that have significantly greater benefits than costs should be immediately programmed for improvements. There may be a need to include a public and stakeholder involvement process to vet the identified priority locations and proposed improvements. The prioritization list should be updated each year based on updated data and analysis.

8. **Monongahela River Crossing Study –** Perform a comprehensive study to select a preferred location for a new bridge crossing of the Monongahela River to provide additional capacity and travel options from the downtown and West Virginia University (WVU) campus areas to I-79 (see LRTP Project #6). The study should include an extensive stakeholder and public involvement process and should be conducted in accordance with National Environmental Policy Act (NEPA) requirements. Retaining a qualified consultant to perform the study and facilitate the process should be considered.

**Leadership:** WVDOH

**Timeframe:** Begin 2014

**First Action:** Prepare scope for study.

*Related to LRTP capital project 6 (see Section 9.3).*

9. **Regional Transit Plan** – Conduct a comprehensive study that objectively evaluates transit needs in the region, services provided by the Mountain Line Transit Authority (MLTA) and WVU transit systems, and other transit services in the region. The plan should develop short-term and long-term strategies to increase regional ridership and provide effective overall transit service in the region. It will be critical to work collaboratively with the Local Transportation Funding Legislative Committee, WVU, and WVDOT to develop funding strategies for system expansion, since it is expected that significant federal and/or state funding sources will not be available to improve or expand the region's transit system.

**Leadership:** MPO

**Timeframe:** Begin 2014

**First Action:** Work jointly with MLTA, WVU, and MPO TTAC to develop the scope for the study.

*Related to LRTP capital projects 26, 31, 32, 35, 41, and 42 (see Section 9.3).*

The potential value of bus system improvement is highlighted by analysis that was performed as part of this LRTP process, which considered the potential impact of the transit improvements included in LRTP Project #42 (discussed in Section 9.3). See Section 9.5 for a summary of this analysis and Appendix D for analysis details.

## Priority 2 Strategies

**Leadership:** MPO Subcommittee

**Timeframe:** Begin 2014

**First Action:** MPO assemble Subcommittee. Subcommittee establish procedures.

*Related to most LRTP capital projects (see Section 9.3).*

10. **Complete the Streets Initiative** – Develop an action plan to increase and leverage local funding sources, and coordination and implementation processes, for local agencies to partner on projects with WVDOH to share costs related to complete street enhancements. This initiative will establish a process and framework to ensure bicycle, pedestrian, and transit needs are considered as part of every highway/street project.
A subcommittee should be formed of local bicycle, pedestrian, and transit advocates. The subcommittee should include the chairpersons of the Morgantown Bicycle Board and the Pedestrian Safety Board, and a representative from the MLTA board to lead this initiative.

    This committee will initiate projects and review all transportation projects with respect to adherence to the Regional Sidewalk Connectivity Plan (Planning Strategy #2), SRTS Initiative (Planning Strategy #3), the Regional Bike Plan (Planning Strategy #4), and MPO's Complete Streets Policy. It will recommend how to best fund projects to accomplish complete streets goals. A liaison to the Local Transportation Funding/Legislative Committee (Planning Strategy #1) should be identified to help coordinate funding opportunities.

**Leadership:** MPO

**Timeframe:** Begin 2015

**First Action:** MPO to begin collaboration process.

*Related to LRTP capital project 46 (see Section 9.3).*

11. **Regional Parking Management Plan** – Develop a "Park Once" policy for the urban area. Develop a plan to manage parking and to incentivize rideshare/carpooling/walking/biking/transit to minimize parking (which encourages auto traffic) in congested areas. Collaboration between and commitments by local municipalities and WVU will be critical to success. The MPO can facilitate the discussion and policy development through its Transportation Demand Management (TDM) program, but implementation will likely rest on local agencies and WVU.

12. **Regional Bicycle and Pedestrian Data Collection Program** – Modify the current traffic data collection program to also include bicycle and pedestrian data. Such data is important to make good decisions related to the bicycle and pedestrian transportation network.

    This planning strategy will take significant effort. Bicycling and pedestrian volume and crash data is not as easily collected as automobile data since bicycles and pedestrians are harder to detect with count equipment and do not follow as clearly defined paths as automobiles do (except on multiuse trails). Thus, bicycle and pedestrian data most often must be collected either manually in the field or by reviewing video.

    The MPO and WVDOH should investigate the best techniques available. Any manual traffic counts performed as part of any other studies should include bicycle and pedestrian volumes. Also bicycle and pedestrian data collection should be considered as part of Planning Strategies #2, #3, and #4.

**Leadership:** MPO and WVDOH

**Timeframe:** Begin 2014

**First Action:** MPO to work with WVDOH to establish a data collection plan.

*Related to most LRTP capital projects (see Section 9.3).*

## Priority 3 Strategies

13. **Regional Multimodal Travel Forecasting Model Development** – Expand current TransCAD regional travel forecasting model to include transit, bike, and pedestrian trip generation and assignments to better reflect the nature of travel in the greater Morgantown area. Given the relatively high level of non-auto trips in the region, a multimodal model (*TransCad* and/or *TransModeler*) could lead to better transportation decision-making in the region. It may be necessary to retain the services of a qualified consultant to assist in the development of the model and may require the addition of a full-time MPO staff member to run and maintain the model.

**Leadership:** MPO

**Timeframe:** Begin 2015

**First Action:** MPO develop modeling goals, objectives and a development scope.

*Related to all LRTP capital projects (see Section 9.3).*

14. **Access Management Plan** – Complete a study of key corridors in the region to identify current access management deficiencies using national guidance such as the Transportation Research Board's *Access Management Manual*. Include data-driven prioritization based on related crashes and congestion. Explore options and develop recommendations for local policy for access control, planning, design, and retrofits.

    Identify priority locations and a 10-year implementation plan. This effort would focus primarily outside of the Tier 1 project corridors (described later in this chapter). The plan should include the

**Leadership:** WVDOH & MPO

**Timeframe:** Begin 2015

**First Action:** WVDOH prepare study of key corridors. MPO explore policy options

*Related to LRTP capital project 44 (see Section 9.3).*

identification of priority locations for improvements based on benefit, cost, and impact analysis.

**Leadership:** MPO

**Timeframe:** Begin 2016

**First Action:** Identify key stakeholders and potential partners (see Section 9.3).

15. **Regional Vehicle Recharging Station Strategy –** Investigate regional needs related to electric vehicle recharging infrastructure. Develop a strategy to work with private and public entities to provide charging stations in the region.

## 9.3 Projects

### Project List

The LRTP Project List (Table 9-1) includes the recommended projects to be pursued in the future with project prioritization by tier. Each LRTP project is listed with an estimated project cost and the results of the scoring under the four criteria described in Chapter 7. The project locations are illustrated in Figure 9-1 and detailed project descriptions for each project begin on Page 9-13 of this chapter. Project tiers are defined as follows:

***Tier 1 - Recommended for Funding with Forecasted Available State and Federal Funds***

The first tier contains projects that could be funded with the currently forecasted state and federal funding for the region between now and the 2040 plan horizon. This tier consists of the projects that are of the highest priority to the region and that should be advanced as soon as practicable. This tier represents the Fiscally Constrained Plan (see sidebar).

***Tiers 2 through 4***

These projects are of high value to the region but could not be funded within the plan funding constraints. The highest priority unfunded projects are identified as Tier 2, the next highest priority are in Tier 3 and the lowest priority are in Tier 4.

***Alternative Funding Dependent***

These projects are considered of high value to the region but cannot realistically be funded from traditional state and federal funding resources. Other funding avenues such as local taxes and fees, private funding, tax increment financing (TIF) districts, federal grant programs, and other potential funding sources must be explored for these projects.

### Project Map

Figure 9-1 illustrates the locations of each of the projects.

#### *Fiscally Constrained Plan*

To be included in any tier shown in Table 9-1, a project must have been deemed potentially feasible and supportive of the established transportation goals and objectives of the region. However, there is not enough forecasted transportation funding to implement all of these valuable projects.

Transportation funding forecasts prepared by the State of West Virginia (see Chapter 8) currently project approximately $136 million in funds available for improvement projects (exclusive of operations and maintenance expenditures) over the next 28 years.

Because of declining gas tax revenues, no federal funding increases in MAP-21, and no identified stream of local transportation funding in this region, funding for this plan period is significantly less than the *2007 RTP*, which was $233 million.

Additionally, the rising cost of construction results in even fewer fundable projects for the dollar now versus 2007.

The projects listed in Tier 1 are considered the "fiscally constrained" LRTP projects.

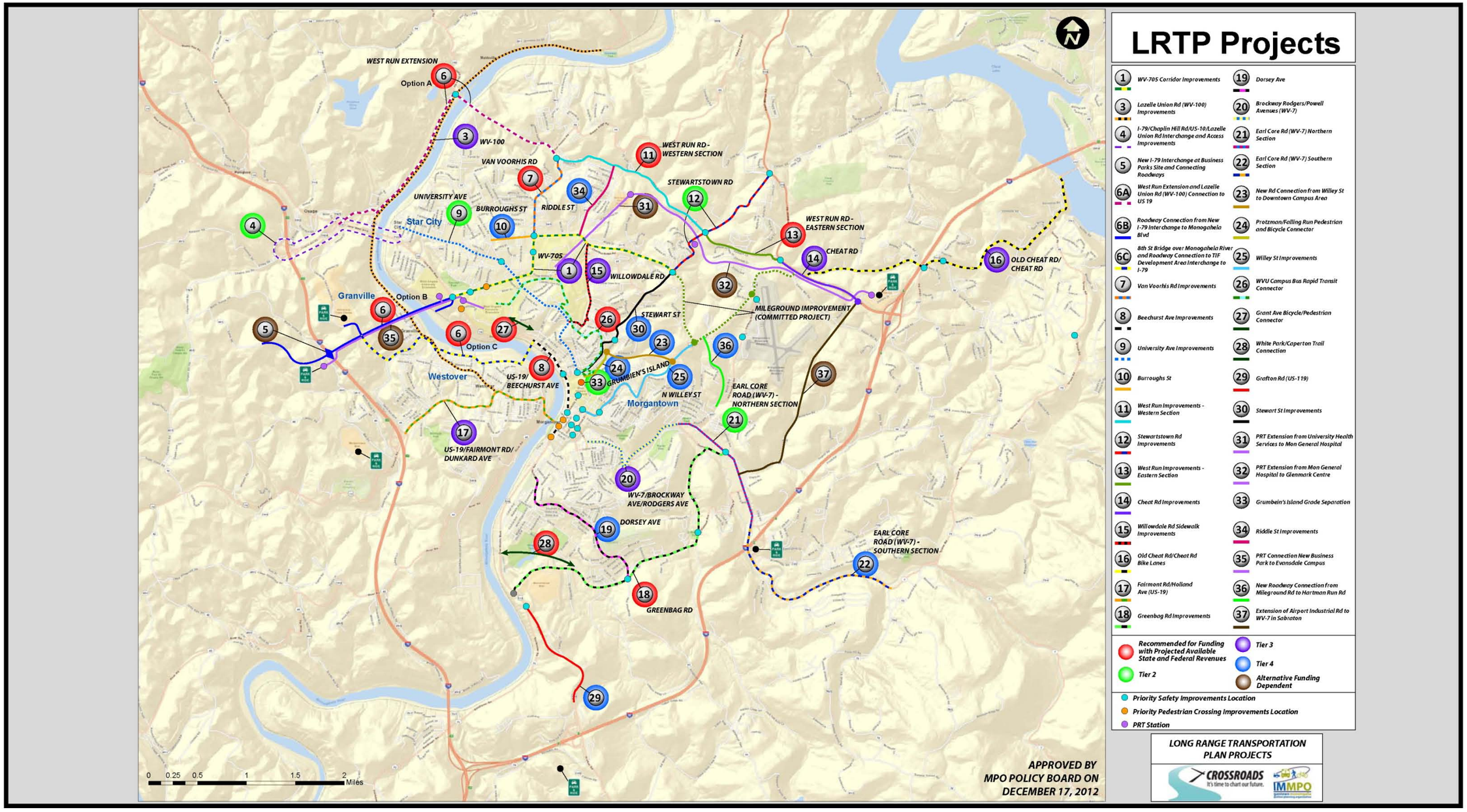
**Table 9-1. LRTP Projects List**

| Tier | Project # | Project / Corridor | Planning Level Cost Estimate | | Project Evaluation | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Goals Score | Regional Mobility Score | Feasibility Score | TAG** Preference Score |
| Recommended for Funding with Forecasted Available State and Federal Funds - Tier 1 | 2 | ADA Connectivity Initiative | $2,000,000 | | ★★★ | ★★★★ | ★★★★ | NS*** |
| | 6 | New Bridge over Monongahela River and Roadway Connection to I-79 | $45,000,000 | | ★★★½ | ★★★★ | ★★ | ★★★★ |
| | 7 | Van Voorhis Road Improvements | $10,000,000 | | ★★★ | ★★★★ | ★★ | ★★★★ |
| | 8 | Beechurst Avenue Improvements | $7,000,000 | | ★★★ | ★★★★ | ★★★ | ★★★★ |
| | 11 | West Run Improvements - Western Section | $12,000,000 | | ★★★ | ★★★ | ★★★★ | ★★★★ |
| | 13 | West Run Road Improvements - Eastern Section | $3,000,000 | | ★★★ | ★★★ | ★★★★ | ★★★★ |
| | 18 | Greenbag Road Improvements | $15,000,000 | | ★★★½ | ★★ | ★★★ | ★★★★ |
| | 26 | North-side Connector Bus Rapid Transit | $1,000,000 | | ★★★ | ★★★★ | ★★★★ | ★★★ |
| | 27 | Grant Avenue Bicycle / Pedestrian Connector | $900,000 | | ★★★ | ★★★ | ★★★ | ★★★★ |
| | 28 | White Park / Caperton Trail Connection | $50,000 | | ★★★ | ★★★ | ★★★ | ★★ |
| | 38 | Intersection Capacity and Safety Improvement Program | $31,000,000 | | ★★★ | ★★★★ | ★★★★ | ★★★★ |
| | 40 | Regional Bikeway Plan Implementation Program | $5,000,000 | | ★★★ | ★★★ | ★★★★ | ★★★★ |
| | 43 | School Route Improvements (K-8) | $2,000,000 | | ★★★ | ★★★★ | ★★★★ | ★★★ |
| | 45 | Downtown Morgantown Signalization and Street Changes | $2,000,000 | | ★★★½ | ★★★ | ★★★★ | ★★★★ |
| | | **Tier 1 LRTP Fundable Total** | **$135,950,000** | | | | | |
| Tier 2 | 4 | I-79 / Chaplin Hill Road / US-19 / Lazelle-Union Road Interchange Access | $22,000,000 | | ★★★ | ★★★★ | ★★★ | ★★ |
| | 9 | University Avenue Improvements | $20,000,000 | | ★★★ | ★★★★ | ★★ | ★★★★ |
| | 12 | Stewartstown Road Improvements | $12,000,000 | | ★★★ | ★★★ | ★★★★ | ★★★ |
| | 21 | Earl Core Road (WV-7) North of I-68 | $9,000,000 | | ★★★½ | ★★★★ | ★★★ | ★★ |
| | 33 | Grumbein's Island Grade Separation | $10,000,000 | | ★★★ | ★★★★ | ★★★ | ★★★ |
| | 41 | New Park and Ride Lots | $1,000,000 | | ★★★ | ★★★ | ★★★ | ★★★★ |
| | 46 | Transportation Demand Management Program Expansion | $10,000,000 | $350K/yr | ★★★ | ★★★★ | ★★★★ | ★ |
| | | **Tier 2 Total** | **$84,000,000** | | | | | |
| Tier 3 | 1 | WV 705 Improvements | $55,000,000 | | ★★★ | ★★★★ | ★★ | ★★★ |
| | 3 | Lazzelle-Union Road (WV-100) | $22,000,000 | | ★★½ | ★★★ | ★★★★ | ★★★ |
| | 14 | Cheat Road Improvements | $6,000,000 | | ★★★ | ★★★ | ★★★★ | ★★ |
| | 15 | Willowdale Road Sidewalk Improvement | $4,000,000 | | ★★★ | ★★★ | ★★★★ | ★★ |
| | 16 | Old Cheat Road / Cheat Road Bike Lanes | $7,000,000 | | ★★★ | ★★ | ★★★★ | ★★ |
| | 17 | Fairmont Road / Holland Avenue (US-19) | $11,000,000 | | ★★★½ | ★★★★ | ★★ | ★★ |
| | 20 | Brockway Rogers / Powell Avenues (WV-7) | $6,000,000 | | ★★★ | ★★★★ | ★★★ | ★ |
| | | **Tier 3 Total** | **$111,000,000** | | | | | |
| Tier 4 | 10 | Burroughs Street | $4,000,000 | | ★★½ | ★★★ | ★★★ | ★ |
| | 19 | Dorsey Avenue Sidewalk Improvements | $4,000,000 | | ★★★ | ★★ | ★★ | ★★ |
| | 22 | Earl Core Road (WV-7) South of I-68 | $9,000,000 | | ★★★ | ★★★★ | ★★ | ★ |
| | 23 | New Road Connection from Willey Street to Downtown Campus Area | $6,000,000 | | ★★½ | ★★★ | ★★ | ★★ |
| | 24 | Protzman / Falling Run Pedestrian and Bicycle Connector | $1,000,000 | | ★★★ | ★★★ | ★★★★ | ★ |
| | 25 | Willey Street Improvements | $13,000,000 | | ★★★ | ★★★★ | ★ | ★ |
| | 29 | Grafton Road (US-119) | $5,000,000 | | ★★½ | ★★ | ★★★ | ★ |
| | 30 | Stewart Street Improvements | $11,000,000 | | ★★★ | ★★★ | ★★ | ★ |
| | 34 | Riddle Street Improvements | $4,000,000 | | ★★★ | ★★★ | ★★ | ★ |
| | 36 | Mileground Road / WV-705 Connector to Hartman Run Road | $17,000,000 | | ★★★ | ★★★ | ★★ | ★★ |
| | 44 | Access Management Improvement Program | $10,000,000 | | ★★½ | ★★★ | ★★★ | ★★ |
| | | **Tier 4 Total** | **$84,000,000** | | | | | |
| Alternative Funding Dependent | 5 | New I-79 Interchange at Business Park Site and Connecting Roadways | $43,000,000 | TIF | ★★★ | ★★★ | ★★★ | ★★★ |
| | 31 | PRT Extension from University Health Sciences to Monongalia General | $57,000,000 | Grant | ★★★ | ★★★★ | ★ | ★★ |
| | 32 | PRT Extension from Monongalia General Hospital to Glenmark Centre | $103,000,000 | Grant | ★★★ | ★★★ | ★ | ★★ |
| | 35 | PRT Connection New Business Park to Evansdale Campus | $80,000,000 | Grant | ★★★ | ★★★★ | ★ | ★★★ |
| | 37 | Airport Industrial Road extension to WV-7 | $12,000,000 | Private | ★★ | ★ | ★★ | ★ |
| | 39 | Regional Pedestrian Safety and Sidewalk Connectivity Program | $33,000,000 | Local | ★★★ | ★★★★ | ★★★★ | ★★★ |
| | 42 | Enhanced Bus Service | $88,000,000 | Local | ★★★ | ★★★★ | ★★★★ | ★★★ |
| | | **Alternative Funding Dependent Total** | **$416,000,000** | | | | | |

* Assumes 100% State/Federal funding sources and is based on current funding projections for the LRTP horizon (through 2040) of approximately $136,000,0000.

** Transportation Advisory Group (members of the MPO standing committees).
*** Not Scored - Proposed from input gathered at the Transportation Advisory Group 11/15/12 Meeting.

**Figure 9-1. LRTP Project Map**



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## Project Descriptions

**MAPPED PROJECTS**

| Project/Corridor | Description | |
|---|---|---|
| 1<br><br>**WV-705 Corridor (Patteson/ Van Voorhis/ Chestnut Ridge) Improvements** | **Location:** WV-705 from Monongalia Boulevard to Stewartstown Road<br><br>**Purpose:** Improve traffic/people carrying capacity in the region's most heavily traveled corridor.<br><br>**Improvements:**<br>■ Add one lane of through capacity in each direction – The additional lane could be a High Occupancy Vehicle (HOV) lane that only buses and automobiles with 3 or more occupants could legally use (2 occupants or less would have to use other 2 general purpose lanes). The purpose of the HOV lane is to add vehicular capacity in this over-capacity corridor in a way that also gives a distinct travel time advantage to transit and vanpooling/carpooling. This would maximize total person trips that can be handled in the corridor.<br>■ Upgrade existing sidewalks where needed to provide continuous attractive facilities for pedestrian traffic and to create an enhanced environment for transit users.<br>■ Improved pedestrian crossings.<br>■ Provide improved bike facilities either in the form of bike lanes or shared HOV lanes.<br>■ Improve access management in areas where currently deficient.<br>■ Increase automobile capacity at key intersections with priority given to buses/HOV. This could involve improvement to side streets.<br>■ Provide bus stops and shelters at key locations.<br><br>**First implementation action:** A preliminary engineering study of the corridor to comprehensively evaluate the benefits, feasibility and cost of these improvements – crash data, peak hour traffic forecasts, bike and pedestrian facility needs and options, right-of-way and access impacts, pedestrian crossing locations, and other factors should be evaluated. The study process should engage key stakeholders, property owners, and users (the public) to obtain input and to build local buy-in and support of the recommendations of the study. The study could identify a phased approach where intersection capacity improvements, widening in key areas, key access improvements, signalization improvements, and bus queue jumps could be prioritized and constructed over several years.<br><br>**Key implementation factors:** Local acceptance, acceptable property impacts, acceptable impacts to access, pedestrian crossings, and construction feasibility. Careful planning of pedestrian crossings with the widened roadway is a critical consideration. Grade separated options should be considered. | Estimated Cost<br>$55,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,7<br><br>FHWA Planning Factors Supported<br>1,2,3,4,5,6,7,8 |

| | | |
|---|---|---|
| 2<br><br>**ADA Compliance Projects** | **Location:** Region-wide<br><br>Purpose: To complete accessible walkway connections to provide safer and more convenient routes for pedestrian travel, particularly for those with disabilities.<br><br>**Improvements:**<br>■ Repair and replace existing deficient sidewalks.<br>■ Construct sidewalk connections in key locations.<br>■ Improve curb ramps.<br>■ Improve key pedestrian crossings.<br><br>**First implementation action:** Determine priority locations and apply for funding.<br><br>**Key implementation factors:** Local agreement on priority locations. | Estimated Cost<br>$2,000,000<br><br>Primary Travel Modes Improved<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |
| 3<br><br>**Lazzelle Union Road (WV-100) Improvements** | **Location:** US-19 to PA state line.<br><br>**Purpose:** To provide a bike commuter and recreational route west of the Monongahela River. To improve roadway for freight movement/truck traffic.<br><br>**Improvements:**<br>■ Repair truck damage to pavement.<br>■ Widen roadway to provide bike lanes or other bike accommodations.<br><br>**First implementation action:** Detailed engineering review and cost estimates.<br><br>**Key implementation factors:** Addition of bike lanes should be achieved as an enhancement to a maintenance project when repairing the roadway pavement. | Estimated Cost<br>$22,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br><br>LRTP Goals Directly Supported<br>1,2,3,4,6<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,8 |
| 4<br><br>**I-79/Chaplin Hill Road/US-19/Lazzelle Union Road Interchange and Access Improvements** | **Location:** The system includes:<br>■ The interchange of I-79 and Chaplin Hill Road.<br>■ The intersection of Chaplin Hill Road and University Town Center Boulevard.<br>■ The intersection of Monongahela Boulevard (WV-7/US-19) and Chaplin Hill Road.<br>■ The intersection of Monongahela Boulevard and Boyers Avenue.<br><br>**Purpose:** To improve traffic capacity and safety.<br><br>**Improvements:**<br>■ Reconfiguration of the interchange | Estimated Cost<br>$22,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br><br>LRTP Goals Directly |

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| | ■ Grade separation of Chaplin Hill Road from University Town Center Road<br>■ Lane additions to increase capacity<br>■ Upgrade of Monongahela Boulevard and Chaplin Hill Road intersection<br>■ Upgrade of US-19 and Boyers Avenue intersection<br>■ Signal system coordination and optimization<br>■ Integrate bicycle/pedestrian improvements<br><br>**First implementation action:** Perform comprehensive preliminary engineering study to evaluate alternatives to improve this interchange and access system. New and innovative options for the interchange and connectivity should be explored to minimize construction costs and negative impacts in the study area.<br><br>**Key implementation factors:** Optimal solution could vary significantly based on other factors such as potential land use and interchange changes (TIF district improvements) and the potential connection from the interchange to Patteson Boulevard. | Supported<br>1,3,4,7,8<br><br>FHWA Planning Factors<br>Supported<br>1,2,3,4,5,6,7,8 |
| 5<br><br>**New I-79 Interchange at Business Park Site and Connecting Roadways** | **Location:** Approximately halfway between the existing I-79 interchanges at Chaplin Hill Road and Fairmont Road (US-19)<br><br>**Purpose:** To support economic development and to provide an additional point of access to I-79 (reduce demand at current interchanges).<br><br>**Improvements:**<br>■ New interchange in conjunction with the proposed business park development<br>■ Access roadways including a connection to University Town Center<br>■ New access roadway located west of I-79 through new business park connecting to Chapel Hill Road<br>■ Park and ride lot<br><br>**First implementation action:** Interchange Justification Study to evaluate design needs of new interchange and internal roadways.<br><br>**Key implementation factors:** Legislative approval of TIF and coordination with local agencies for roadway connections. | Estimated Cost<br>$43,000,000<br>TIF District<br><br>Primary Travel Modes<br>Improved<br>Auto<br>Transit<br><br>LRTP Goals Directly<br>Supported<br>1,2,3,4,5,8<br><br>FHWA Planning Factors<br>Supported<br>1,2,3,4,5,6 |

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| **6**<br>***Option A***<br><br>**New Bridge over Monongahela River and Roadway Connection to I-79**<br><br>*West Run Extension and Lazelle Union Road (WV-100) Connection to US 19* | **Location:** Extension of West Run Road along a new alignment west from Van Voorhis Road to Lazelle Union Road (WV-100), including a new bridge over the Monongahela River.<br><br>**Purpose:** To provide an additional traffic capacity from/to I-79 from/to the heavy employment areas north of WV-705.<br><br>**Improvements:**<br>■ New 4-lane roadway with access limited to 4 locations: at its termini with Van Voorhis Road and Lazelle Union Road, and at two access points spaced approximately 2,000 feet apart between the termini.<br>■ Widen Lazelle Union Road to 4-lanes plus turn lanes at key locations between new bridge and US-19. Access limited to 3 full-movement access points approximately 2,000 feet apart between US-19 and the proposed West Run Road extension.<br>■ Include parallel bike/pedestrian facilities (Potential: multiuse path on one side and sidewalk on the other side).<br><br>**First implementation action:** A preliminary engineering study to verify the number of lanes needed, to determine the optimal alignment to minimize negative impacts, and to determine optimal intersection types and configurations for peak hour traffic operations. The study could identify a phased approach where only two lanes and interim intersection types are built initially, with right-of-way obtained for the ultimate needs in the corridor.<br><br>**Key implementation factors:** Local acceptance, acceptable environmental impacts, ability to obtain needed right-of-way, design of intersection with Lazelle Union Road. | Estimated Cost<br>$71,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,8<br><br>FHWA Planning Factors Supported<br>1,2,3,4,5,6 |
| **6**<br>***Option B***<br><br>**New Bridge over Monongahela River and Roadway Connection to I-79**<br><br>*Direct Roadway Connection from New I-79 Interchange to Monongahela Boulevard* | **Location:** From proposed business park access roadway (that connects directly to new interchange) to Monongahela Boulevard at Patteson Boulevard.<br><br>**Purpose:** To provide an additional portal into the urban core area to relieve traffic from current portals from I-79. To reduce traffic on the Monongahela Boulevard and Beechurst Corridors. To provide a multimodal connection to the park and ride at new interchange to reduce vehicular demand into the core.<br><br>**Improvements:**<br>■ New 4-lane roadway<br>■ New bridge over Monongahela River<br>■ Parallel bike lanes, sidewalks and/or multi use path<br>■ Aesthetic gateway design<br><br>**First implementation action:** Alignment study to evaluate traffic capacity design needs and to choose an alignment and bridge location that minimizes negative property impacts and environmental impacts. | Estimated Cost<br>$49,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,8<br><br>FHWA Planning Factors Supported |

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| | **Key implementation factors:** Local acceptance of impacts, cost, impacts to WVU property, and operations at Coliseum. | 1,2,3,4,6 |
| 6<br>***Option C***<br>**New Bridge over Monongahela River and Roadway Connection to I-79**<br><br>*8th Street Bridge over Monongahela River and Roadway Connection to TIF Development Area Interchange to I-79* | **Location:** From Beechurst Avenue at 8th Street to new interchange at I-79<br><br>**Purpose:** To provide additional connection between I-79 to Morgantown and WVU campus. To reduce traffic volumes on Beechurst Avenue south of 8th Street and on Westover Bridge, and on Monongahela Boulevard at Patteson Drive.<br><br>**Improvements:**<br>■ New bridge over Monongahela River<br>■ Reconstructed intersection at Beechurst Avenue and 8th Street<br>■ New intersection at extended 8th Street and Riverside Avenue<br>■ Improve roadways including improved intersections, sidewalks, and bike lanes<br>■ Riverside Avenue from new intersection with 8th Street to intersection with Dunkard Avenue<br>■ Dunkard Avenue from Riverside Drive to Dents Run Boulevard<br>■ Dents Run Boulevard to roadway connection to TIF development roadways<br>■ Bus stops and shelters at key locations<br>■ New roadway connection between Dents Run Boulevard to TIF development<br><br>**First implementation item:** Alignment and feasibility studies for the bridge and new roadway connection. Engineering study of needed turn lane additions and intersection upgrades, sidewalk locations, lane widening. Engineering study of geometric improvements to Riverside Avenue, Dunkard Avenue, and Dents Run Boulevard, including property impacts and costs.<br><br>**Key implementation factors:** Environmental feasibility, local acceptance of impacts, property acquisition. | Estimated Cost<br>$32,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,6,8<br><br>FHWA Planning Factors Supported<br>1,2,3,4,5,6,7,8 |
| 7<br>**Van Voorhis Road Improvements** | **Location:** From WV-705 to West Run Road<br><br>**Purpose:** To provide improved multimodal connectivity from the campus area to the residential areas to the north in a way that incentivizes transit usage and reduces automobile demand.<br><br>**Improvements:**<br>■ Improve traffic lanes (pavement, drainage, width)<br>■ Provide bicycle and pedestrian connectivity from WV-705 to White Oak Drive<br>■ Provide bus-only lane southbound with priority traffic signal phase for buses at WV-705 intersection<br>■ Provide bus stops at key locations | Estimated Cost<br>$10,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported |

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| | **First implementation action:** Preliminary engineering study of feasibility of bus lane and appropriate length, options for providing bicycle and pedestrian connectivity such as: 15 foot wide lane on northbound side, sidewalk on one or both sides, and/or a parallel multiuse trail. Logical limits of improvements based on walkable/bikeable slopes should also be verified.<br><br>**Key implementation factors:** Coordination with MLTA to ensure utilization of proposed bus lane. | 1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| 8<br><br>**Beechurst Avenue Improvements** | **Location:** From Foundry Street to 8th Street<br><br>**Purpose:** To improve automobile capacity and travel time and maintain pedestrian and bicycle traffic through corridor<br><br>**Improvements:**<br>■ Additional lanes/turn lanes to improve capacity<br>■ Access management<br>■ Replace sidewalks<br>■ Provide bus stops with shelters at key locations<br><br>**First implementation action:** Perform a planning and preliminary engineering study of corridor that will include an assessment of capacity and safety needs, a detailed review of existing right-of-way, and the use and value of adjacent properties. The study must evaluate a comprehensive set of potential alternatives that maximizes traffic capacity and maintains acceptable bicycle and pedestrian movement through the corridor. Access management options should be explored. The study should include an extensive public/stakeholder/property owner involvement process that identifies potential partnership opportunities in redeveloping properties along the corridor and providing needed right-of-way. To-scale mapping based on ground survey and right-of-way research must be included.<br><br>**Key implementation factors:** Identifying a cost feasible alternative that has acceptable impacts to adjacent properties, increases automobile capacity in the corridor, and maintains acceptable levels of service for bicycles and pedestrians. | Estimated Cost<br>$7,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| 9<br><br>**University Avenue Improvements** | **Location:** From Boyers Avenue to Fayette Street<br><br>**Purpose:** To provide a bicycle and pedestrian focused corridor and improve traffic capacity.<br><br>**Improvements:**<br>■ Provide completed sidewalks on both sides of street for entire length<br>■ Provide 15-foot lanes in uphill direction for bicycle climbing by widening and/or restriping:<br>■ Boyers Avenue to Congress Avenue<br>■ Mulberry Street to Laurel Street | Estimated Cost<br>$20,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian |

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| | ■ Koontz Ave to Patteson Boulevard<br>■ Include bicycle route signing and marking in corridor<br>■ Improve pedestrian crossings throughout corridor<br>■ Improve automobile capacity (turn lanes, improved intersections, etc.) and safety (pedestrian crossings, sight distance, etc.) at key intersections (i.e. law school, Patteson Blvd., Collins Ferry)<br>■ Provide identifiable bus stop locations and shelters at key locations<br><br>**First implementation action:** Perform preliminary engineering study to identify (through data and analysis) the optimal solution for the corridor including traffic forecasts and capacity analysis, pedestrian and bicycle safety and flow needs, right-of-way and cost impacts of solutions, etc.<br><br>**Key implementation factors:** Property impacts and costs related to widening of roadway/right-of-way. | LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| **10**<br><br>**Burroughs Street** | **Location:** From Collins Ferry Road to WV-705/Van Voorhis Road<br><br>**Purpose:** To increase capacity to address existing capacity deficiency.<br><br>**Improvements:**<br>■ Improve automobile capacity at intersections with Collins Ferry Road and WV-705<br>■ Provide left turn lanes at key intersection/driveways<br>■ Limit and/or combine access points<br>■ Maintain and widen sidewalk on south side of street<br>■ Add sidewalk to north side of street<br><br>**First implementation action:** Perform preliminary engineering analysis to determine most critical needs, potential solutions, and impacts in corridor.<br><br>**Key implementation factors:** Acceptance of improvements by residents along corridor. Potential property impacts of widening for turn lanes and/or sidewalks. | Estimated Cost<br>$4,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,3,4,5,6,7 |
| **11**<br><br>**West Run Improvements Western Section** | **Location:** From VanVoorhis Road to Stewartstown Road<br><br>**Purpose:** To increase traffic capacity and to improve pedestrian and bike traffic flow.<br><br>**Improvements:**<br>■ Add capacity through key turn lane additions and intersection improvements<br>■ Widen lanes to 15 feet on inclines for adequate bicycle overtaking width<br>■ Improve geometry (sight distance, curvature, lane widths, shoulders, etc.)<br>■ Explore potential for parallel multiuse path in corridor | Estimated Cost<br>$12,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly |

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| | **First implementation action:** Engineering study of needed turn lane additions and intersection upgrades, lane widening, and geometric improvements that includes property impacts and costs. Feasibility study for parallel multiuse path in corridor.<br><br>**Key implementation factors:** Impacts to adjacent properties and cost. | Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors<br>Supported<br>1,2,4,5,6,7,8 |
| 12<br><br>**Stewartstown Road Improvements** | **Location:** From WV-705 to Point Marion Road (US-119)<br><br>**Purpose:** To provide additional people moving capacity from I-68 to campus area and employment areas north of WV-705.<br><br>**Improvements:**<br>■ Add one through traffic lane in each direction, from WV-705 to West Run Road<br>■ Provide turn lanes where appropriate<br>■ Implement a defined access management corridor plan<br>■ Rightmost lane between West Run Road and WV-705 to be HOV lane and/or provide bus queue jump at WV-705<br>■ Limit access points to one full movement intersection between WV-705 and West Run Road<br>■ Limit access points to two full movement access points between West Run Road and Point Marion Road<br>■ Construct outside lanes 15 feet wide on inclines for adequate bicycle overtaking width<br>■ Construct sidewalk on west side of street<br><br>**First implementation action:** Preliminary engineering study to determine intersection and capacity needs, access management concepts, HOV feasibility and benefits, costs, right-of-way and environmental impacts.<br><br>**Key implementation factors:** Acceptance of any negative impacts versus benefits, HOV benefits and acceptability, maintaining adequate access. | Estimated Cost<br>$12,000,000<br><br>Primary Travel Modes<br>Improved<br>Auto<br>Transit<br>Pedestrian<br><br>LRTP Goals Directly<br>Supported<br>1,3,5<br><br>FHWA Planning Factors<br>Supported<br>1,2,4,5,6,7,8 |
| 13<br><br>**West Run Road Improvements - Eastern Section** | **Location:** From Stewartstown Road to Point Marion Road<br><br>**Purpose:** To increase traffic capacity and to improve transit, pedestrian, and bike traffic flow.<br><br>**Improvements:**<br>■ Add capacity through key turn lane additions and intersection improvements<br>■ Widen lanes to 15 feet on inclines for adequate bicycle overtaking width<br>■ Improve geometry (sight distance, curvature, lane widths, shoulders, etc.)<br>■ Explore potential for parallel multiuse path in corridor<br>■ Explore providing queue jump lanes at intersections for expedited | Estimated Cost<br>$3,000,000<br><br>Primary Travel Modes<br>Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly |

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| | bus service<br><br>**First implementation action:** Engineering study of needed turn lane additions and intersection upgrades, lane widening, and geometric improvements that includes property impacts and costs. Feasibility study for parallel multiuse path in corridor.<br><br>**Key implementation factors:** Impacts to adjacent properties and cost. | Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors<br>Supported<br>1,2,4,5,6,8 |
| 14<br><br>**Cheat Road Improvements** | **Location:** From I-68 (Cheat Lake) interchange to West Run Road<br><br>**Purpose:** Improve traffic/people carrying capacity in heavily traveled corridor. To encourage transit use, and van/carpooling from the proposed park and ride at Glenmark Centre.<br><br>**Improvements:**<br>■ Add one lane of through capacity in each direction – the additional lane would be a HOV lane that only buses and automobiles with 3 or more occupants could legally use (2 occupants or less would have to use other 2 general purpose lanes). The purpose of the HOV lane is to add vehicular capacity in this over-capacity corridor in a way that also gives a distinct travel time advantage to transit and vanpooling/carpooling to maximize total person trips that can be handled in the corridor.<br>■ Explore option of far right lane as an HOV lane<br>■ Improve signal with Glenmark Center to provide bus priority<br>■ Add bike lanes<br><br>**First implementation action:** Engineering study to determine required widening and potential use of existing shoulder for HOV/BRT use in lieu of widening.<br><br>**Key implementation factors:** HOV benefits and acceptability. | Estimated Cost<br>$6,000,000<br><br>Primary Travel Modes<br>Improved<br>Auto<br>Transit<br>Bicycle<br><br>LRTP Goals<br>Directly<br>Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors<br>Supported<br>1,2,4,5,6,7,8 |
| 15<br><br>**Willowdale Road/ Grove Street/North Avenue Sidewalk Improvements** | **Location:** From University Avenue to WV-705<br><br>**Purpose:** To provide a convenient/inviting corridor for pedestrians.<br><br>**Improvements:**<br>■ Complete sidewalk connections on both sides of street<br><br>**First implementation action:** Preliminary engineering investigation of the preferred locations for sidewalk additions, impacts, and costs.<br><br>**Key implementation factors:** Acceptability of property impacts and cost feasibility. | Estimated Cost<br>$4,000,000<br><br>Primary Travel Modes<br>Improved<br>Pedestrian<br><br>LRTP Goals<br>Directly<br>Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors |

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| 16<br><br>**Old Cheat Road / Cheat Road Bike Lanes** | **Location:** From Cheat Lake bridge to western intersection of Cheat Road and Old Cheat Road<br><br>**Purpose:** To provide a more inviting bike route for commuters from the Cheat Lake area.<br><br>**Improvements:**<br>■ Widen roadway to provide bike lanes<br><br>**First implementation action:** Engineering study to determine the required widening needs and costs.<br><br>**Key implementation factors:** Identification of funding. | Estimated Cost<br>$7,000,000<br><br>Primary Travel Modes Improved<br>Bicycle<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6 |
| 17<br><br>**Fairmont Road / Holland Avenue (US-19)** | **Location:** Through Westover from the I-79 (Westover) interchange to the Westover Bridge<br><br>**Purpose:** To improve automobile traffic capacity and safety and increase travel by pedestrians and bicyclists.<br><br>**Improvements:**<br>■ Improve access management by reducing and consolidating access points<br>■ Improve intersections and traffic signal timings and coordination<br>■ Provide additional turn lanes where beneficial<br>■ Provide 15-foot wide lanes or bike lanes on inclines and other difficult areas for adequate bicycle overtaking width<br>■ Provide complete sidewalks on both sides of the street<br>■ Provide bus stops and shelters at key locations<br><br>**First implementation action:** Perform preliminary engineering study to identify optimal solutions for the corridor that includes crash analysis, traffic forecasts and capacity analysis, pedestrian and bicycle safety and flow needs, identification of access management deficiencies, locations for bicycle climbing lanes, right-of-way and cost impacts of solutions, etc.<br><br>**Key implementation factors:** Property impacts and costs related to widening of roadway/right-of-way. | Estimated Cost<br>$11,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |
| 18 | **Location:** From Don Knotts Boulevard (US-119) to Sabraton Avenue (WV-7) | Estimated Cost<br>$15,000,000 |

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| **Greenbag Road Improvements** | **Purpose:** To enhance route as an attractive alternative for automobiles and especially trucks (in lieu of traveling downtown). To increase travel by pedestrians and bicyclists.<br><br>**Improvements:**<br>■ Improve intersection of Earl Core Road (WV-7) and Greenbag Road to better accommodate truck turns<br>■ Improve intersections in corridor<br>■ Widen roadway to a minimum of two 11-foot lanes with 4- to 5-foot paved shoulders including wider (15 feet wide) lanes on inclines for adequate bicycle overtaking width<br>■ Construct sidewalks in targeted locations (focused on key sidewalk network connections)<br>■ Consider bike and pedestrian safety improvements at intersection with Decker's Creek Trail<br>■ Provide bus stops with shelters at key locations<br>■ Strengthen pavement where needed<br>■ Include truck route signage<br><br>**First implementation action:** Perform preliminary engineering study to determine most appropriate intersection configurations, pedestrian and bicycle safety and connectivity needs, locations for bicycle climbing lanes, right-of-way and cost impacts of solutions, etc.<br><br>**Key implementation factors:** Property impacts and costs related to widening of roadway/right-of-way. | Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| 19<br>**Dorsey Avenue** | **Location:** High Street to Greenbag Road<br><br>**Improvements:**<br>■ Complete the sidewalks on at least one side of the street<br><br>**First implementation action:** Preliminary engineering investigation of the preferred locations for sidewalk additions, impacts, and costs.<br><br>**Key implementation factors:** Acceptability of property impacts and cost feasibility. | Estimated Cost<br>$4,000,000<br><br>Primary Travel Modes Improved<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,8 |
| 20 | **Location:** Walnut Street to Deckers Creek Road (Old Rte 7)<br><br>**Purpose:** To provide pedestrian and bike connectivity from Sabraton to downtown. | Estimated Cost<br>$6,000,000 |

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| **Brockway Rodgers/Powell Avenues (WV-7)** | **Improvements:**<br>■ Improve connections to Deckers Creek Trail<br>■ Improve and complete sidewalk connections<br>■ Provide bus stops with shelters at key locations<br><br>**First implementation action:** Preliminary engineering study to determine most appropriate locations to provide/improve trail connections, to improve sidewalk connectivity, and to determine right-of-way impacts and costs.<br><br>**Key implementation factors:** Acceptability of property impacts and cost feasibility. | Primary Travel Modes Improved<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| **21**<br><br>**Earl Core Road (WV-7) Northern Section** | **Location:** Deckers Creek Boulevard (Old Rte 7)to I-68<br><br>**Purpose:** To provide pedestrian and bike connectivity from Sabraton to downtown, to improve traffic flow and safety, and to provide attractive truck access to Greenbag Road.<br><br>**Improvements:**<br>■ Improve intersection with Greenbag Road to better accommodate trucks<br>■ Corridor signal optimization<br>■ Reduce access conflicts (consolidation of duplicate access points, redesign of driveways)<br>■ Add continuous sidewalks on both sides of Earl Core Road<br>■ Improve capacity and safety in corridor<br>■ Add turn lanes where appropriate<br>■ Improve connectivity to Deckers Creek Trail at key locations<br>■ Provide bus stops with shelters at key locations<br><br>**First implementation action:** Preliminary engineering study that includes needed intersection capacity and safety improvements based on crash data and traffic volumes, identification of existing access management deficiencies, coordination with local property owners to optimize access design and sidewalk locations, and identification of costs and property impacts.<br><br>**Key implementation factors:** Coordination with local property owners for access improvements and sidewalk installation, and potential property impacts for capacity improvements. | Estimated Cost<br>$9,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |
| **22** | **Location:** I-68 to Deckers Creek Boulevard<br><br>**Purpose:** | Estimated Cost<br>$9,000,000 |

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| **Earl Core Road (WV-7) Southern Section** | Improve traffic capacity and flow.<br><br>**Improvements:**<br>■ Consolidate and redesign driveways<br>■ Add turn lanes (potentially a center two-way left turn lane for entire length)<br>■ Add sidewalks on at least one side of roadway<br><br>**First implementation action:** Preliminary engineering study that includes needed intersection capacity and safety improvements based on crash data and traffic volumes, identification of existing access management deficiencies, coordination with local property owners to optimize access design and sidewalk locations, and identification of costs and property impacts.<br><br>**Key implementation factors:** Coordination with local property owners for access improvements and sidewalk installation, and potential property impacts for capacity improvements. | Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,8 |
| **23**<br><br>**New Road Connection from Willey Street to Downtown Campus Area** | **Location:** From Willey Street approximately ¼-mile south of WV-705 to Protzman Street or Falling Run Road.<br><br>**Purpose:** To provide a more efficient connection between Mileground area and downtown campus for autos, buses, bicyclists, and pedestrians. Reduce traffic volumes at WV-705/Stewartstown Road Intersection. Provide a direct route to campus that bypasses downtown.<br><br>**Improvements:**<br>■ New two-lane roadway with 11-foot wide traffic lanes<br>■ 10-foot wide multiuse trail on one side of roadway<br>■ Strict access management (no access points allowed)<br><br>**First implementation action:** Alignment study to determine best alignment and termination points and treatments, environmental impacts, and costs.<br><br>**Key implementation factors:** Providing the transportation connection without violating the communities desire to preserve the "Reserved Open Area" and "Limited Growth" through which the alignment would traverse (see land use concept map from Visioning process). Completing the pedestrian and bicycle connectivity to University Avenue will be important to make this project successful. | Estimated Cost<br>$6,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6<br><br>FHWA Planning Factors Supported<br>1,2,4,6 |
| **24**<br><br>**Protzman/Falling Run** | **Location:** From the western terminus of Project #23 to University Avenue.<br><br>**Purpose:** To connect multiuse trail of Project #23 to the downtown campus area. | Estimated Cost<br>$1,000,000<br><br>Primary Travel |

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| **Pedestrian and Bicycle Connector** | **Improvements:**<br>■ 10-to 12-foot wide multiuse trail/path parallel to existing streets<br>■ Sidewalks adjacent to street on one side<br><br>**First implementation action:** Engineering study of feasible locations for proposed improvements and impacts/costs.<br><br>**Key implementation factors:** Constructability/funding. | Modes Improved<br>Bicycle<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,8 |
| 25<br><br>**Willey Street Improvements** | **Location:** From High Street to WV-705<br><br>**Purpose:** To increase traffic capacity of Willey Street and to improve auto capacity and pedestrian and bike traffic flow from neighborhoods to downtown and the Mileground.<br><br>**Improvements:**<br>■ Add capacity through key turn lane additions and intersection improvements<br>■ Add key connections to complete the sidewalks<br>■ Widen lanes to 15 feet on inclines for adequate bicycle overtaking width<br>■ Improve geometry (sight distance, curvature, lane widths, shoulders, etc.)<br>■ Provide bus stops and shelters at key locations.<br><br>**First implementation actions:** Engineering study of needed turn lane additions and intersection upgrades, sidewalk locations, lane widening, and geometric improvements that includes property impacts and costs.<br><br>**Key implementation factors:** Impacts to adjacent properties and cost. | Estimated Cost<br>$13,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| 26<br><br>**North Side Connector Bus Rapid Transit** | **Location:** From Evansdale Campus to Downtown Campus<br><br>**Purpose:** To improve capacity of transit service.<br><br>**Improvements:**<br>■ Designation of combination of WVU and City streets<br>■ Construct missing roadway sections required for completing the route<br><br>**First implementation action:** Evaluate the potential ridership/need for the connector in coordination with WVU as part of the LRTP Planning Strategy – Regional Transit Plan, and an engineering study of the | Estimated Cost<br>$1,000,000<br><br>Primary Travel Modes Improved<br>Transit<br><br>LRTP Goals Directly Supported |

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| | feasibility and cost of the concept.<br><br>**Key implementation factors:** Coordination between MLTA, WVU, and the City. | 1,2,3,5,6,7<br><br>FHWA Planning Factors Supported 2,4,5,6,7,8 |
| 27<br><br>**Grant Avenue Bicycle/Pedestrian Connector** | **Location:** From end of Grant Avenue to Riverview Drive<br><br>**Purpose:** To provide bicycle and pedestrian connection between Downtown and the WVU Evansdale Campus.<br><br>**Improvements:**<br>■ Construct multiuse trail<br><br>**First implementation action:** Preliminary engineering study to determine the most appropriate alignment, impacts, right-of-way needs, and costs.<br><br>**Key implementation factors:** Right-of-way acquisition (if not already publicly owned). | Estimated Cost $900,000<br><br>Primary Travel Modes Improved Bicycle Pedestrian<br><br>LRTP Goals Directly Supported 1,2,3,5,6,7<br><br>FHWA Planning Factors Supported 2,3,4,5,6 |
| 28<br><br>**White Park / Caperton Trail Connection** | **Location:** From White Park to Caperton Trail<br><br>**Purpose:** To provide connectivity from White Park and adjacent neighborhoods to the regional trail system.<br><br>**Improvements:**<br>■ Construct multiuse trail<br><br>**First implementation action:** Preliminary engineering study to determine the preferred alignment, crossing treatment at Don Knotts Boulevard, impacts, right-of-way needs, and costs.<br><br>**Key implementation factors:** Crossing of Don Knotts Boulevard. | Estimated Cost $50,000<br><br>Primary Travel Modes Improved Bicycle Pedestrian<br><br>LRTP Goals Directly Supported 1,2,3,5,6,7<br><br>FHWA Planning Factors Supported 2,3,4,5,6 |

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| **29**<br><br>**Grafton Road (US-119)** | **Location:** From Scotts Avenue to Greenbag Road<br><br>**Purpose:** To increase automobile capacity to address existing capacity deficiency and to provide bike connectivity.<br><br>**Improvements:**<br>■ Complete 4-lane roadway<br>■ Provide turn lanes where appropriate<br>■ Limit any new full access points to no closer than 2,000 feet from an existing full access point<br>■ Bike lanes or climbing lanes<br><br>**First implementation action:** Preliminary engineering study to identify capacity and delay deficiencies in more detail, impacts, costs, and access point locations.<br><br>**Key implementation factors:** Identifying the true need for this improvement in more detailed studies. Establishing access management in short-term to avoid future access problems. | Estimated Cost<br>$5,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br><br>LRTP Goals Directly Supported<br>1,2,3,4,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,8 |
| **30**<br><br>**Stewart Street Improvements** | **Location:** From High Street to WV-705<br><br>**Purpose:** To increase traffic capacity and to improve pedestrian and bike traffic flow from neighborhoods to downtown and WV-705.<br><br>**Improvements:**<br>■ Add capacity through key turn lane additions and intersection improvements<br>■ Add key sidewalk connections to complete the sidewalks<br>■ Widen lanes to 15 feet on inclines for adequate bicycle overtaking width<br>■ Improve geometry (sight distance, curvature, lane widths, shoulders, etc.)<br>■ Provide bus stops and shelters at key locations<br><br>**First implementation action:** Engineering study of needed turn lane additions and intersection upgrades, sidewalk locations, lane widening, and geometric improvements that includes property impacts and costs.<br><br>**Key implementation factors:** Impacts to adjacent properties and cost. | Estimated Cost<br>$11,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| **31**<br><br>**PRT Extension from University Health Services to Mon** | **Location:** From University Health Sciences to Mon General Hospital<br><br>**Purpose:** To provide high-capacity person moving connection between these locations to reduce automobile traffic demand within the core campus and employment areas.<br><br>**Improvements:** | Estimated Cost<br>$57,000,000<br><br>Primary Travel Modes Improved |

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| **General Hospital** | ■ Extension of PRT system<br>■ Station at each location<br>■ Assumes a system that includes wireless communications and self-powered (battery) vehicles (expansion cost greatly reduced over current technology)<br><br>**First implementation action:** Alignment study to determine the most cost-effective route.<br><br>**Key implementation factors:** Feasibility of construction and cost. | Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |
| **32**<br><br>**PRT Extension from Mon General Hospital to Glenmark Centre** | **Location:** From Mon General Hospital to Glenmark Centre<br><br>**Purpose:** To provide high capacity person moving connection between these locations to reduce automobile traffic demand to and from the core campus and employment areas from I-68.<br><br>**Improvements:**<br>■ Extension of PRT system<br>■ Stations at each location<br>■ Assumes a system that includes wireless communications and self-powered (battery) vehicles<br><br>**First implementation action:** Alignment study to determine the most cost-effective route.<br><br>**Key implementation factors:** Feasibility of construction and cost. | Estimated Cost<br>$103,000,000<br><br>Primary Travel Modes Improved<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |
| **33**<br><br>**Grumbein's Island Grade Separation** | **Location:** Grumbein's Island on University Avenue<br><br>**Purpose:** To separate vehicular traffic from pedestrian crossing traffic on University Avenue to improve traffic flow and reduce pedestrian/auto conflicts.<br><br>**Improvements:**<br>■ Grade separation of roadway from pedestrian crossing<br><br>**First implementation action:** Completion of traffic operations study and prepare final plans based on preliminary engineering report.<br><br>**Key implementation factors:** Coordination between WVU, City, and State. | Estimated Cost<br>$10,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported |

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| | | 2,4,5,7,8 |
| 34<br><br>**Riddle Street/ Pineview Drive Improvements** | **Location:** From WV-705 to West Run Road<br><br>**Purpose:** To improve pedestrian and bike traffic flow from neighborhoods to WV-705.<br><br>**Improvements:**<br>■ Add sidewalk to at least one side of street<br>■ Widen lanes to 15 feet wide lanes on inclines for adequate bicycle overtaking width<br>■ Provide bus stops and shelters at key locations<br><br>**First implementation action:** Engineering study of most desirable sidewalk locations and lane widening that includes property impacts and costs.<br><br>**Key implementation factors:** Impacts to adjacent properties and cost. | Estimated Cost<br>$4,000,000<br><br>Primary Travel Modes<br>Improved<br>Pedestrian<br>Bicycle<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,8 |
| 35<br><br>**PRT Connection New Business Park to Evansdale Campus** | **Location:** From proposed park and ride lot in TIF district business park to Coliseum parking lot, to Evansdale Campus.<br><br>**Purpose:** To provide a transit connection to the park and ride at new interchange to reduce vehicular demand into the core.<br><br>**Improvements:**<br>■ New PRT track integrated with the construction of the new roadway and bridge connection<br>■ Station at business park - park and ride<br>■ Station at Coliseum parking lot<br>■ Station near Evansdale Campus Drive<br>■ Connection to Engineering PRT station<br><br>**First implementation action:** Preliminary engineering study of potential ridership and implementation cost and feasibility.<br><br>**Key implementation factors:** Likely not feasible with current PRT system infrastructure, but could become feasible if system moves to self-powered vehicles with wireless controls. Cost then would only include cost of guideway, vehicles, and station. This estimated cost included in this description. Alternative alignments could be explored depending on the selected location of a new river crossing (see Project #6). | Estimated Cost<br>$80,000,000<br><br>Primary Travel Modes<br>Improved<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7 |

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| **36**<br><br>**New Roadway Connection from Mileground Road to Hartman Run Road** | **Location:** From intersection of WV-705 and Mileground Road to Hartman Run Road near Fulmer Street<br><br>**Purpose:** To provide an efficient alternative route for traffic from the Mileground to Sabraton for all modes, including trucks.<br><br>**Improvements:**<br>■ New 2-lane roadway with turn lanes at appropriate locations<br>■ Sidewalk on one side<br>■ Multiuse trail on one side<br>■ Bus stops and shelters at key locations<br><br>**First implementation action:** Alignment and feasibility study for the roadway connection<br><br>**Key implementation factors:** Construction feasibility, property impacts, public acceptance, and cost. | Estimated Cost<br>$17,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,4,5,6<br><br>FHWA Planning Factors Supported<br>1,2,4 |
| **37**<br><br>**Extension of Airport Industrial Road to WV-7 in Sabraton** | **Location:** From terminus of planned industrial road east of airport to WV-7 in Sabraton<br><br>**Purpose:** To provide an efficient alternative route for traffic from Cheat Road to Sabraton<br><br>**Improvements:**<br>■ New 2-lane roadway with turn lanes at appropriate locations.<br><br>**First implementation action:** Alignment and feasibility study for the roadway connection.<br><br>**Key implementation factors:** Construction feasibility, property impacts, public acceptance, and cost. | Estimated Cost<br>$12,000,000<br><br>Primary Travel Modes Improved<br>Auto<br><br>LRTP Goals Directly Supported<br>1,3,4,5<br><br>FHWA Planning Factors Supported<br>1,2,4 |

**UNMAPPED PROJECTS**

| Project/Program | | Description | |
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| **38** | **Intersection Capacity and Safety Improvement Program** | **Location:** Numerous intersections throughout the region<br><br>**Purpose:** To systematically improve capacity and/or safety at key intersections in the region.<br><br>**Improvements:**<br>■ Short- to medium-term improvements to intersections to reduce crashes and to increase system capacity and automobile travel efficiency. The improvements could include:<br>- Traffic signal optimization through additional and improved detection, improved control equipment and software, optimized phasing, and timing<br>- Addition of turn lanes and/or through lanes.<br>- Correction of geometric deficiencies<br>- Change in traffic control (roundabout, traffic signal, stop sign, yield)<br>- Improved pedestrian crossings<br>- Improved bicycle accommodations<br><br>The preferred improvements could but would not necessarily have to be developed as part of a larger corridor study. The intent of this plan item is to develop feasible short to medium term improvements that can be implemented quickly to improve safety and capacity.<br><br>**First implementation action:**<br>■ Prioritization of intersections in the region based on a comprehensive study of:<br>- Crash data including rankings based on number of crashes, crash rates, and severity (injury/fatality) rates<br>- Existing congestion levels (delay per vehicle, backups)<br>- Detailed safety and congestion studies of the top 5 to 10 intersections each year. These studies should evaluate crash data and operational data in detail to identify contributing factors, potential countermeasures, intersection improvement alternatives, short- and long-term needs, etc. Preferred alternatives should then be programmed and implemented.<br>- Coordination with the findings of the Downtown Signalization Study (RTI/WVU), which is exploring options for some of the key intersections listed below.<br><br>**Key implementation factors:**<br>■ Prioritizing locations<br>■ Identifying short- to medium-term solutions that also fit within the long term needs of the corridor | Estimated Cost<br>$32,000,000<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,7,8 |

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| | | ■ Acceptable impacts to adjacent properties<br><br>Initial intersection list for safety and congestion studies:<br>■ Monongahela Boulevard / Patteson Drive<br>■ Patteson Drive / Laurel Street<br>■ University Avenue / Collins Ferry Road<br>■ University Avenue / Patteson Drive<br>■ Van Voorhis Road / Chestnut Ridge / Burroughs Street<br>■ Van Voorhis Road / Christy Street<br>■ Van Voorhis Road / West Run Road<br>■ Van Voorhis Road / Elmer Prince<br>■ WV-705 / Stewartstown Road<br>■ West Run Road / Stewartstown Road<br>■ Stewartstown Road / Point Marion Road<br>■ Point Marion Road / West Run Road<br>■ University Avenue / Campus Drive<br>■ University Avenue / Beechurst Avenue / Fayette Street<br>■ University Avenue / 8th Street<br>■ Beechurst Avenue / Campus Drive<br>■ Greenbag Road / Don Knotts Boulevard<br>■ Greenbag Road / Dorsey Avenue<br>■ Greenbag Road / Diamond Avenue<br>■ Greenbag Road / Earl Core Road<br>■ Tyrone Road / Tyrone Avery Road<br>■ Cheat Road / Tyrone Avery Road<br>■ Hartman Run Road / Hart Field Road (north intersection)<br>■ Hartman Run Road / Hart Field Road (south intersection)<br>■ Stewart Street / Hoffman Street / Van Guilder Street<br>■ Spruce Street / Walnut Street<br>■ Spruce Street / Pleasant Street<br>■ Fayette Street / High Street<br>■ High Street / Willey Street<br>■ High Street / Pleasant Street<br>■ Walnut Street / University Avenue | |
| **39** | **Regional Pedestrian Safety and Sidewalk Connectivity** | **Location:** Region-wide<br><br>**Purpose:** To complete sidewalk connectivity to provide safer and more convenient routes for pedestrian travel.<br><br>**Improvements:**<br>■ Repair and replace existing deficient sidewalks<br>■ Widen and improve key sidewalk sections<br>■ Construct new sidewalks in key locations<br>■ Improve safety at locations of high pedestrian crashes<br>■ Improve key pedestrian crossings<br><br>Initial intersections identified for pedestrian crossing and safety improvements: | Estimated Cost<br>$33,000,000<br><br>Primary Travel Modes<br>Improved<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,3,5,6,7 |

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| | | ■ Foundry Street / University Avenue (US-119)<br>■ Pleasant Street / University Avenue (US-119)<br>■ Walnut Street / University Avenue (US-119)<br>■ Spruce Street / Walnut Street<br>■ High Street / Willey Street<br>■ University Avenue / College Avenue<br>■ Willey Street / Prospect Street<br>■ Spruce Street / Pleasant Street<br>■ Beechurst Avenue / Campus Drive<br>■ Beechurst Avenue / 3rd Street<br>■ Beechurst Avenue / 6th Street<br>■ Chestnut Ridge Road / Van Voorhis Road<br>■ High Street / Walnut Street<br>■ High Street / Fayette Street<br>■ University Avenue / Prospect Street<br><br>**First implementation Action:** Extend the City of Morgantown Connecting Network Sidewalks (CNS) plan to include the rest of the region. Develop an action plan that includes identifying potential funding sources, sponsoring agencies, design responsibilities, etc.<br><br>**Key implementation factors:** Identifying local funding sources and defining implementation responsibilities. | FHWA Planning Factors Supported 1,2,4,5,6,7,8, |
| **40** | **Regional Bikeway Plan Implementation** | **Location:** Region-wide<br><br>**Purpose:** To implement a logical and interconnected bikeway system for the region.<br><br>**Improvements:**<br>■ Bike lanes<br>■ Multiuse trails<br>■ Bike route pavement markings<br>■ Bike route signage<br>■ Intersection of trails with roadways (i.e. crossings with Old Route 7, Green Bag Road, Summer School Road, etc.)<br>■ Trail lighting<br><br>**First implementation action:** Complete the Regional Bikeways Plan as described in the non-mapped strategies.<br><br>**Key implementation factors:** Identification of funding. | Estimated Cost $5,000,000<br><br>Primary Travel Modes Improved Bicycle<br><br>LRTP Goals Directly Supported 1,2,3,5,6,7<br><br>FHWA Planning Factors Supported 1,2,4,5,6,7,8 |
| **41** | **New Park and Ride Lots** | **Location:** As indicated on map<br><br>**Purpose:** To provide locations for commuters and visitors to park and carpool, use transit, or bike.<br><br>**Improvements:** | Estimated Cost $1,000,000<br><br>Primary Travel Modes |

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| | | ■ Sign existing parking areas (public-private partnership) that are underutilized on weekdays during work hours<br>■ New construction not expected<br><br>**First implementation action:** Approach private owners and discuss terms.<br><br>**Key implementation factors:** Reaching agreements with owners. Promote and increase awareness of the locations and advantages of utilizing them. | Improved<br>Auto<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,4,5,6,7,8 |
| **42** | **Enhanced Bus Service** | **Location:** Region-wide<br><br>**Improvements:**<br>■ Provide 10 to 15 minute headways for the following three identified transit routes (see Figure 9-2 for illustration of routes):<br>- East-West Corridor<br>- North-South Corridor<br>- West Run, Mountaineer Station Loop<br>■ Provide identifiable and attractive bus stop locations<br>■ Provide convenient connections to Mountaineer Station and Walnut Street PRT Station (requires some construction)<br><br>**First implementation action:** Identify funding sources beyond current federal sources.<br><br>**Key implementation factors:** Public support for additional local funding. Develop an appropriate implementation phasing plan.<br><br>See Section 9.5 for a summary of modeling analysis performed on the potential transportation system impacts of this project and Appendix D for details related to the traffic modeling related to the analysis. | Estimated Cost<br>$88,000,000<br>- $3M/yr for operations<br>- $4M capital cost for connections to PRT Stations and bus stop improvements<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |
| **43** | **School Route Improvements** | **Location:** All K-8 schools<br><br>**Purpose:** To enhance safety and personal health of school children. To reduce automobile trips due to a greater number of children walking and/or biking to school.<br><br>**Improvements:** Would primarily focus on elementary schools and | Estimated Cost<br>$2,000,000<br>80% State/Federal<br>20% Local |

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| | | improvements could include:<br>■ Sidewalk improvements<br>■ Traffic calming and speed reduction improvements<br>■ Pedestrian and bicycle crossing improvements<br>■ On-street bicycle facilities<br>■ Off-street bicycle and pedestrian facilities<br>■ Secure bicycle parking facilities<br>■ Traffic diversion improvements in the vicinity of schools<br><br>**First implementation action:** Establish SRTS plan by working with safe routes to school committee (see non-capital improvements strategy). The Pedestrian Safety Board's plan can be used as a significant resource since it addresses pedestrian needs in the vicinity of many schools. Apply for Transportation Alternatives (MAP-21) funding.<br><br>**Key implementation factors:** Prioritization and funding of improvements. Identification of local matching funds (potential 20% match required). | Primary Travel Modes Improved<br>Bike<br>Pedestrian<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>2,4,5,6,8 |
| **44** | **Access Management Improvements** | **Location:** Region-wide<br><br>**Purpose:** To improve multimodal safety, capacity, and to improve property values and attractiveness of development areas.<br><br>**Improvements:**<br>■ Removal and consolidation of excess access points<br>■ Improved driveway designs<br>■ Addition of turn lanes at key locations<br>■ Medians to restrict turning movements<br>■ U-turn locations<br><br>**First implementation action:** Complete Access Management Study (see non-mapped strategies).<br><br>**Key implementation factors:** Coordination with property owners and stakeholders during the study phase. | Estimated Cost<br>$10,000,000<br>80% State/Federal<br>20% Local<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6<br><br>FHWA Planning Factors Supported<br>2,4,5,6,7,8 |
| **45** | **Downtown Morgantown Signalization and Street Changes** | **Location:** Morgantown Central Business District (CBD)<br><br>**Purpose:** To improve multimodal safety, capacity, and the attractiveness of downtown area. | Estimated Cost<br>$2,000,000<br>80% State/Federal |

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| | | **Improvements:**<br>■ Improved signal system<br>■ Improved multimodal traffic flows and circulation<br>■ Improved multimodal safety<br>■ Improved streetscape<br><br>**First implementation action:** Complete ongoing traffic study and selection of preferred improvements.<br><br>**Key implementation factors:** Coordination with property owners and stakeholders during the study phase. | 20% Local<br><br>Primary Travel Modes Improved<br>Auto<br>Bicycle<br>Pedestrian<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,7,8 |
| **46** | **TDM Program Expansion** | **Location:** Region-wide<br><br>**Purpose:** Reduce the total number of automobile trips in the region (goal of 3% reduction in peak hours) through aggressive Transportation Demand Management (TDM) to reduce congestion and the need for costly infrastructure improvements.<br><br>**Improvements:**<br>■ Expand the Commuter Choices program as a formal transportation management association (TMA)<br>■ Form strategic partnership between WVU and Commuter Choices<br>■ Facilitate access to current transit service, both in terms of geographic proximity and with fare payment incentives, to allow MLTA services to play a greater role in meeting commuter transportation needs<br>■ Develop land use policies and zoning regulations that offer parking reductions, intensity bonuses, or other development incentives to applicants who commit to funding TDM, transit, or other alternative commuting strategies for a given period of time.<br>■ Develop educational programs targeted at the commuting population of the Morgantown region that illustrate benefits of TDM<br><br>**First implementation action:** Identify program funding. Explore taxes or surcharges on public and private parking infrastructure.<br>Levying transportation impact fees on new development to fund multimodal options and services. Explore private and public grants.<br><br>**Key implementation factors:** Public agency and private entity buy-in and support. | Estimated Cost<br>$10,000,000<br><br>10% State/Federal<br>90% Local<br><br>Primary Travel Modes Improved<br>Auto<br>Transit<br><br>LRTP Goals Directly Supported<br>1,2,3,5,6,7<br><br>FHWA Planning Factors Supported<br>1,2,4,5,6,7,8 |

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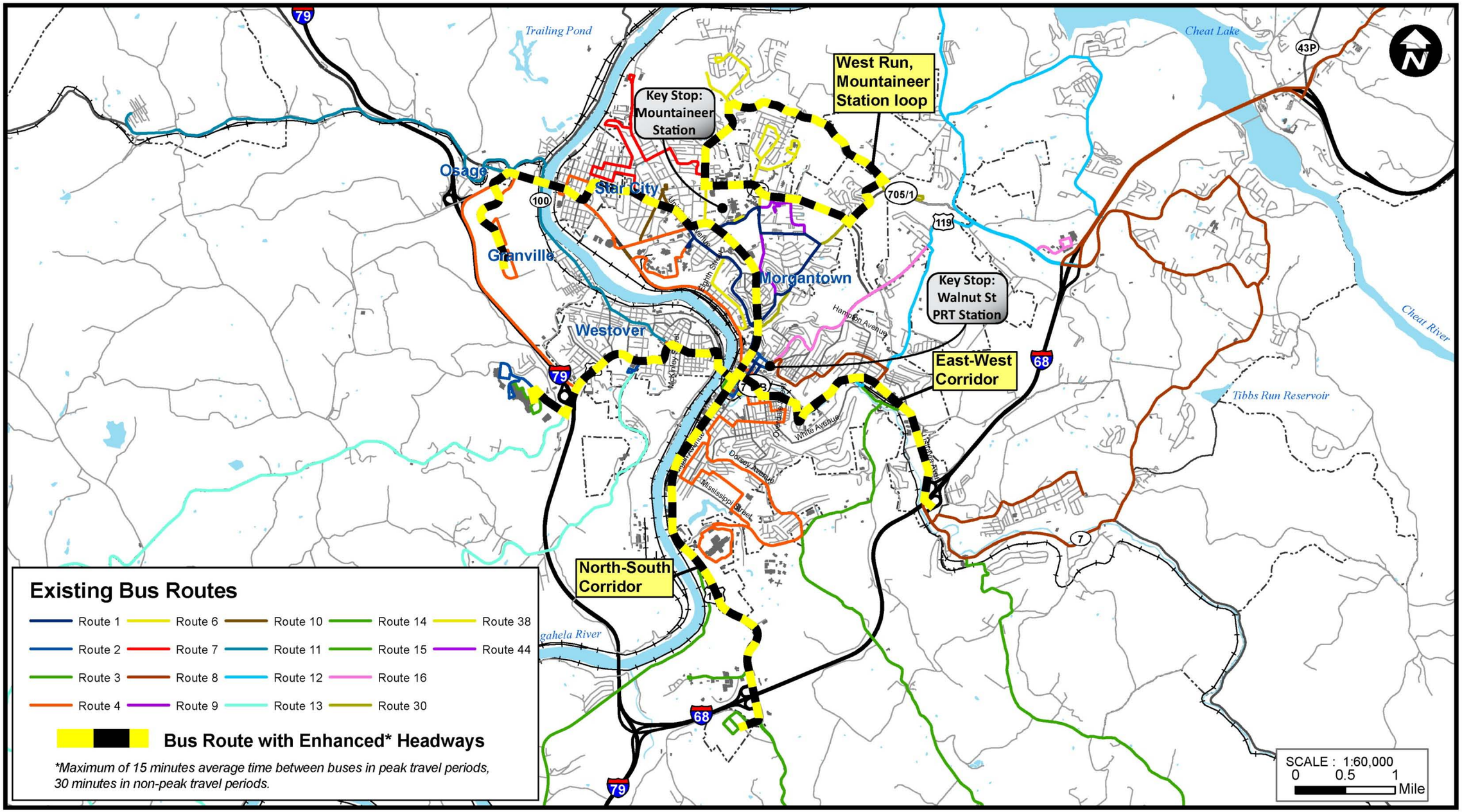
**Figure 9-2. Enhanced Bus Service**



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## 9.4 Roadway Network Performance of Fiscally Constrained Plan

The regional Transportation Demand Model (TDM), as described in *Chapter 6 – Transportation Demand Model Development* was used to evaluate the anticipated performance of the LRTP transportation system. Table 9-2 illustrates the forecasted (year 2040) performance of the region's proposed roadway network that includes the LRTP projects. The results show a positive impact due to the proposed Tier 1 projects. Figures 9-2 and 9-3 illustrate the resulting roadway levels of service as was defined in Chapter 4 for existing conditions.

**Table 9-2. 2040 Measures of Effectiveness from Transportation Demand Model Analysis**

| | E+C* Network | LRTP Network | % Reduction |
|---|---|---|---|
| Vehicle Miles Traveled in the Network | 4,444,000 | 4,355,000 | -2% |
| Vehicle Hours Traveled in the Network | 828,000 | 806,000 | -3% |

*Existing plus committed (see Chapter 6).

It should be noted that the sophistication and sensitivity of the current TDM does not allow for an analysis of the impact of strategies and projects not related to capacity for automobile improvements. For example, the reduction in vehicular traffic due to a more robust pedestrian and bicycle network is not technically included in the analysis.

Included in the model are the impacts of projects 6, 7, 8, 11, 13, 18, and 38. In an effort to approximate an average impact of LRTP Project #6, an additional one lane of capacity in each direction from the proposed new interchange at I-79 (LRTP Project #5) to Monongahela Boulevard at Patteson Boulevard was assumed in the model. The impact of Project #6 will obviously vary greatly depending on the final alignment and number of through lanes in the project.

## 9.5 Transit Improvement Impacts (Project #42)

Appendix D describes the modeling processes used to evaluate the potential impacts of improving the transit system for Project #42, which is described in Section 9.3 and illustrated in Figure 9-2. The analysis indicates that the implementation of the three proposed bus route enhancements could increase overall Mountain Line Transit Authority (MLTA) ridership by over 20%. Of the three proposed enhanced routes,

the West Run Circulator appears to be the most effective and alone could increase overall MLTA ridership by 10%. See table below for summary of ridership forecasts.

**Table 9-3. Ridership Forecasts for Transit Enhancements in Project #42 (Daily Trips)**

| Vehicle Trip Type | Transit Scenarios | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | No Build – No Additional Transit | East-West Route | Percent Change Compared to No Build | West Run Circulator | Percent Change Compared to No Build | North-South Route | Percent Change Compared to No Build | All Three Routes Combined | Percent Change Compared to No Build |
| Non-transit Trips | 476,518 | 476,449 | -0.01% | 476,212 | -0.06% | 476,285 | -0.05% | 475,851 | -0.14% |
| Transit Trips | 3,042 | 3,111 | 2.27% | 3,348 | 10.06% | 3,276 | 7.69% | 3,709 | 21.93% |
| All Trips | 479,560 | 479,560 | 0.00% | 479,560 | 0.00% | 479,561 | 0.00% | 479,560 | 0.00% |

The analysis also showed that in the 2040 horizon year of the plan, the implementation of the three enhanced bus routes (assuming no other improvements to the system) could reduce vehicle miles traveled (VMT) in the system by 1000 miles per day, and vehicle hours traveled (VHT) in the system by 10,000 hours per day. Using the Internal Revenue Service's (IRS's) current mileage reimbursement rate of $0.56 per mile and $12 per travel hour (lost personal time) as an estimate of user costs the following table illustrates the potential annual benefits of implementing Project #42.

**Table 9-4. Estimated User Benefits of Project #42 (in 2013 dollars for 2040 traffic forecasts)**

| | | | |
|---|---|---|---|
| Reduction in vehicle miles traveled per day<br>1000 miles | Cost per mile<br>$0.56 | Daily benefit<br>$560 | Annual benefit*<br>$140,000 |
| Reduction in vehicle hours of travel per day<br>10,000 hours | Cost per hour<br>$12 | Daily benefit<br>$12,000 | Annual benefit*<br>$3,000,000 |
| | | **Estimated Total Annual Benefit** | **$3,140,000** |

*Assumes proposed enhanced service operates approximately 250 days per year.

Table 9-4 does not include additional benefits of reduced vehicle emissions and improved accessibility/quality of life for non-automobile travelers.

**Figure 9-3. LRTP 2040 Roadway (Region-view) Levels of Service**

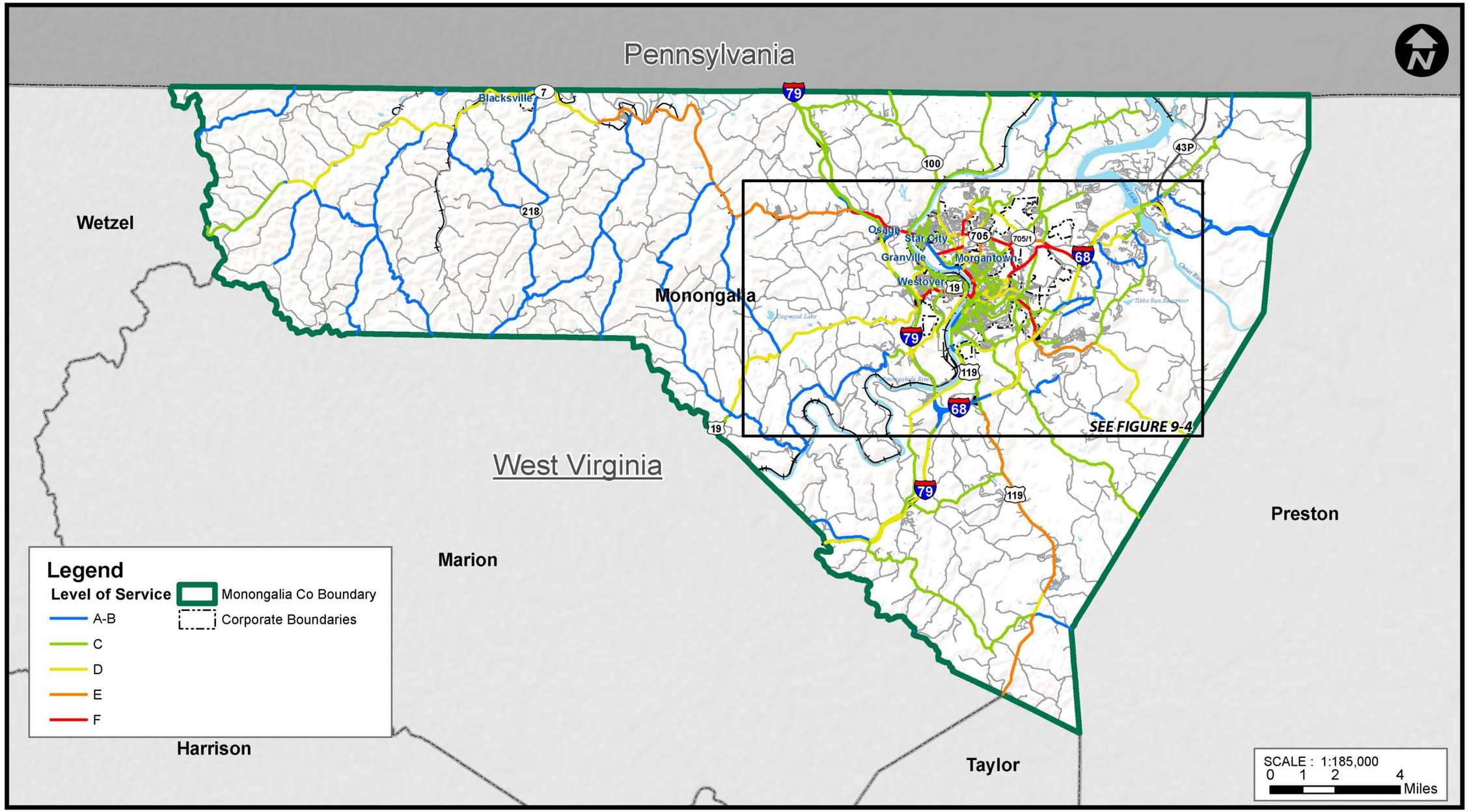

**Figure 9-4. LRTP 2040 Roadway (Urban Area Inset) Levels of Service**