



# FAYETTE/RALEIGH METROPOLITAN PLANNING ORGANIZATION



# 2045 REGIONAL TRANSPORTATION PLAN UPDATE



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# Chapter 1:

## Introduction

The Fayette/Raleigh Metropolitan Planning Organization (FRMPO) was organized in 2012, pursuant to federal requirements, upon the release of 2010 U.S. Census data designating parts of Fayette and Raleigh counties combined as an urbanized area. Its responsibility is to provide a coordinated, cooperative, and comprehensive approach to transportation planning for an area that encompasses all of Fayette and Raleigh counties.

This document is an update of the Fayette/Raleigh MPO's first regional transportation plan. It provides a 25-year blueprint for transportation investments in the region to the year 2045. This plan is multimodal, meaning it addresses travel by all modes on the transportation system including streets and highways, bikeways and walkways, public transportation, rail and aviation.

Consideration is given to population and employment trends, land development patterns, travel characteristics, current and future transportation system performance, and other planning factors. The Plan has been developed in consultation with the federal, state and local agencies responsible for environmental protection, land use management, natural resources, and historic preservation. The recommended Plan is also based on a series of stated community goals, financial capability, environmental considerations, and public guidance.

The Plan is organized into seven sections:

<b>1 Introduction</b>	Legal basis of the plan and planning requirements
<b>2 Development Trends</b>	Current and future demographic and development conditions
<b>3 Goals, Objectives, and Performance</b>	Guiding goals and objectives of the 2045 Plan, and Performance Based Planning Process
<b>4 Analysis of the Transportation System</b>	Current conditions and future needs of the transportation system
<b>5 Recommended Plan and Funding</b>	Proposed transportation investments for the 25-year period, and projected funding for their implementation
<b>6 Potential Impacts</b>	Assessment of the planned improvements on the physical and social environment
<b>7 Public and Stakeholder Participation</b>	Outreach, involvement and consultation during the planning effort

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## METROPOLITAN PLANNING

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Federal law requires metropolitan areas (defined as urbanized areas with a population of greater than 50,000 people, based on the latest U.S. Census) undertake a continuing, comprehensive, and cooperative transportation planning process. The Fayette/Raleigh Metropolitan Planning Organization is the governing entity that is charged with carrying out this process for a planning area that covers all of Fayette and Raleigh counties.

The planning area of the FRMPO, shown in **Figure 1-1**, extends to the county boundaries of both Fayette and Raleigh counties. The 2010 U.S. Census designated urbanized area is comprised of the Cities of Oak Hill and Mt. Hope and the Town of Fayetteville in Fayette County, and the City of Beckley and the Towns of Mabscott and Sophia in Raleigh County. Along with representatives from the two respective County Commissions, representatives of the municipalities in the designated urbanized area comprise the voting members of the FRMPO. Municipalities that are within the county boundaries, but outside of the urbanized area, are also within the planning area of the FRMPO and participate as non-voting members.

### Organizational Structure

The MPO is led by a Policy Board that adopts formal plans, programs and budgets for the organization; a Technical Advisory Committee that provides recommendations to the Policy Board; and a professional staff drawn from the Region 1 and Region 4 Planning and Development Councils.

- **Policy Board**

The Policy Board of the MPO consists of representatives from each of the municipalities located within the planning area, representatives from each county commission, the Executive Directors of the Regional Planning and Development Councils for Regions 1 and 4, and the West Virginia Department of Transportation.

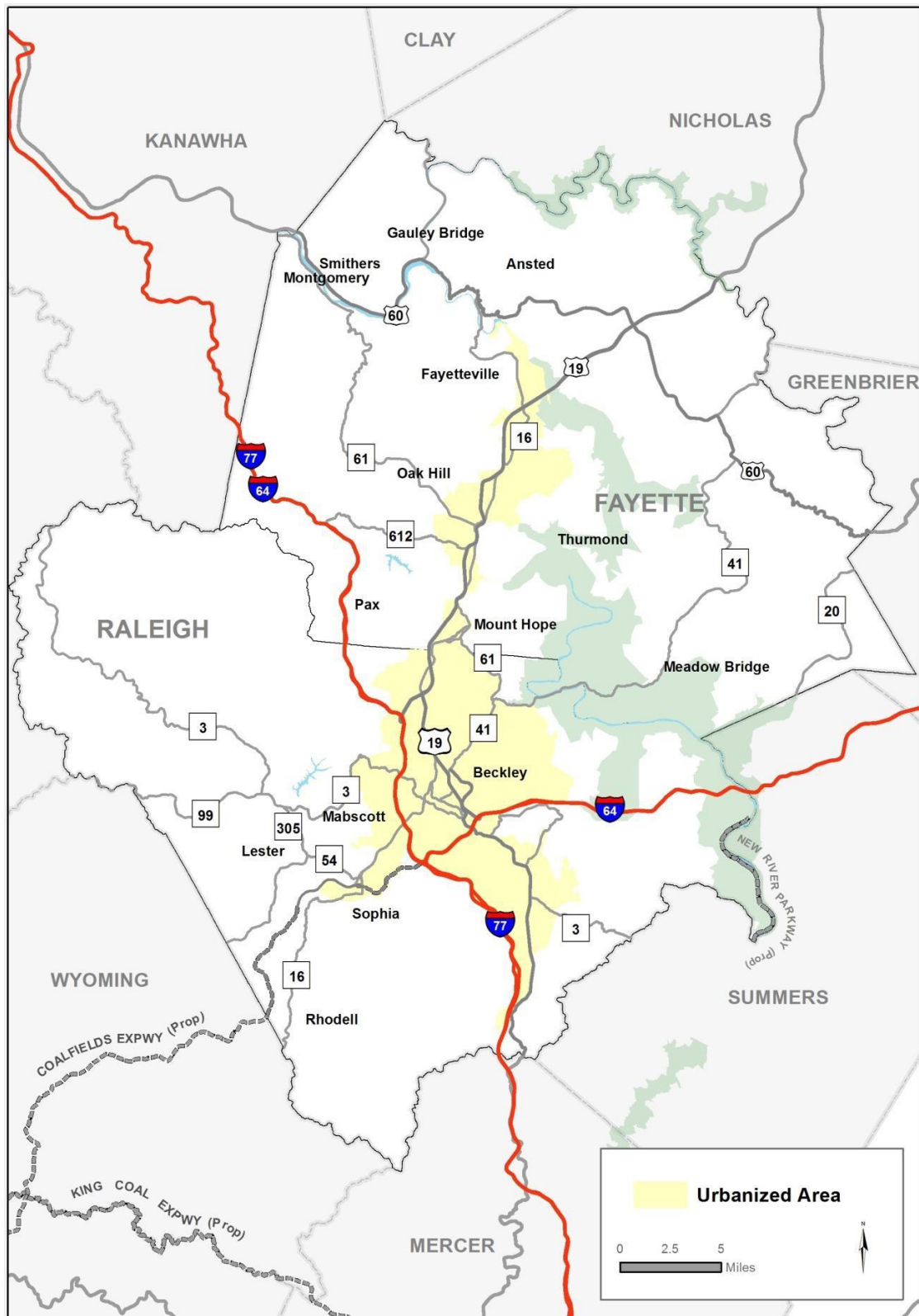
- **Technical Advisory Committee**

The MPO Technical Advisory Committee (TAC) is comprised of technical representatives (such as county engineers, city engineers/planners, etc.) from each of the counties, municipalities and transit organizations within the MPO region.

- **MPO Staff**

The MPO is staffed by several professionals at the Regional Planning and Development Councils who provide planning, GIS mapping and analysis, and administrative services for the agency. The MPO staff also functions as a liaison between the Policy Board, TAC, the West Virginia Department of Transportation, New River Transit Authority, Federal Highway Administration, Federal Transit Authority, local governments, and other groups and individuals interested in transportation issues within the MPO planning region.

**Figure 1-1: Fayette / Raleigh MPO Planning Area**



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## LEGAL REQUIREMENTS OF THE PLAN

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Federal legislation provides the guiding framework that governs the transportation planning process for all MPOs. The Fixing America's Surface Transportation (FAST) Act, the federal transportation legislation passed in 2016, requires that each MPO develop a transportation plan with at least a 20-year horizon that leads to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand. The plan must be updated every four years to keep consistent with existing conditions and re-evaluate proposed plans, programs and projects. The full set of metropolitan planning requirements are codified in U.S. law (23 U.S. Code § 134).

Other requirements of the MPO planning process include compliance with a number of existing laws and regulations which are described below.

- The Americans with Disabilities Act (ADA) of 1990, which mandates equal opportunity for, and prohibits discrimination against, individuals with disabilities. In particular, Title II of the ADA and Section 504 of the Rehabilitation Act of 1973 requires State, local and regional agencies to provide transportation programs, services and activities that are accessible to all individuals;
- Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color or national origin, and Section 324 of the Federal Aid Highway Act, the enabling legislation of the Federal Highway Administration, which prohibits discrimination based on sex;
- The Uniform Relocation Assistance and Real Property Acquisition Act of 1970, which prohibits unfair and inequitable treatment of persons as a result of projects that are undertaken with federal financial assistance;
- The Civil Rights Restoration Act of 1987, which clarified the intent of Title VI to include all programs and activities of federal aid recipients and contractors whether or not those programs and activities are federally-funded;
- Executive Order 12898, which reaffirms that each federal agency must make Environmental Justice part of its mission. Environmental Justice is a concept founded in the intent of the non-discrimination prohibitions of the federal legislation referenced above. Each agency (including the MPO, as a recipient of federal funds) must identify and address disproportionately high and/or adverse environmental or human health effects that any of its programs, policies and activities may have on minority and low-income populations. Further, each agency must work to prevent the denial, reduction or delay of benefits received by minority and low-income populations. Most importantly, each agency must develop policies and strategies to ensure full and fair participation by affected populations in transportation decisions.

The 2045 Plan reflects consideration of, and compliance with, the federal requirements of the FAST Act and all of the provisions described above.

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## PLAN IMPLEMENTATION

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Implementation of recommendations from the 2045 Plan occurs through the MPO Policy Board's action to program funds for regional transportation projects and services. The MPO, in consultation with the appropriate city, county, and state transportation agencies, determines which projects are to be advanced from the regional transportation plan into the MPO's short-term Transportation Improvement Program (TIP).

The TIP is a planning/programming document developed and adopted by the MPO in response to area transportation needs. The TIP updates and advances a minimum four-year implementation program for all modes of transportation. This document includes not only major transportation projects such as construction of a new bridge or road, but also smaller-scale transportation improvements such as intersection improvements and sidewalks. All projects that are included in the TIP for funding and implementation must be consistent with the Regional Transportation Plan.

Amendments to the Regional Transportation Plan can and do occur once a plan has been adopted. These amendments can occur for various reasons, including a change in project schedule, unknown development changes, or changes in priorities. While the intent is to avoid such mid-cycle changes, amendments do occur. Any such amendment to the Plan must follow the same public review process and procedures that were used to adopt the Plan, as outlined in the MPO's Public Participation Plan.



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# Chapter 2:

## Regional Trends

Growth and development are not interchangeable terms. *Growth* is simply an increase, whereas *development* can occur in a community regardless of whether it is growing; it is a process that involves enhancement of existing resources, sometimes by combining them or using them in a different way.

This is important to recognize when reflecting on the fact that Beckley and surrounding communities were designated as an urbanized area after the 2010 Census. Although this census category requires a minimum population of 50,000, it is not all about size. It also indicates the region has reached a certain stage of development – one which often generates new challenges and opportunities.

In fact, the population of the Fayette-Raleigh MPO region did not grow between the 2000 and 2010 censuses, as shown in **Table 2-1**. However, the region did maintain a more stable population base than many other parts of the state which saw significant losses over the period.

Working in the region's favor is a combination of good location and a growing understanding of how to capitalize on the pristine natural resources of the New River Gorge National River and associated federal lands. By attracting new residents, the region has been able to offset other population losses.



With a median age of 41, Raleigh County has one of the younger populations among the state's counties. (**Table 2-2**) The gradual aging of the nation's population is a common theme in today's news, but the trend is particularly notable in West Virginia and it could significantly influence the type of transportation needed over the next 20 to 25 years. The state already has an above-average number of persons who have left the workforce due to disability or other factors. As the baby boomer generation reaches retirement age, state demographic experts project the total number of people in the state's workforce will drop by as much as 90,000.

This may not necessarily lead to lower traffic volumes; instead, it is likely to change the nature of the trips that people make. Local travel may be spread more throughout the day if an older population is able to schedule shopping, medical services and participation in community activities at their discretion without adhering to a specific workplace schedule. On the other hand, a growing older population may also mean the region should begin to adapt its transportation network to better meet the needs of older drivers and people who do not drive at all. This could include larger, more legible road signs, better road lighting and pavement markings, as well as improvements and expansion of the public transit services available in Fayette and Raleigh counties.

**Table 2-1: Population Change in the MPO Region, 2000 to 2010**

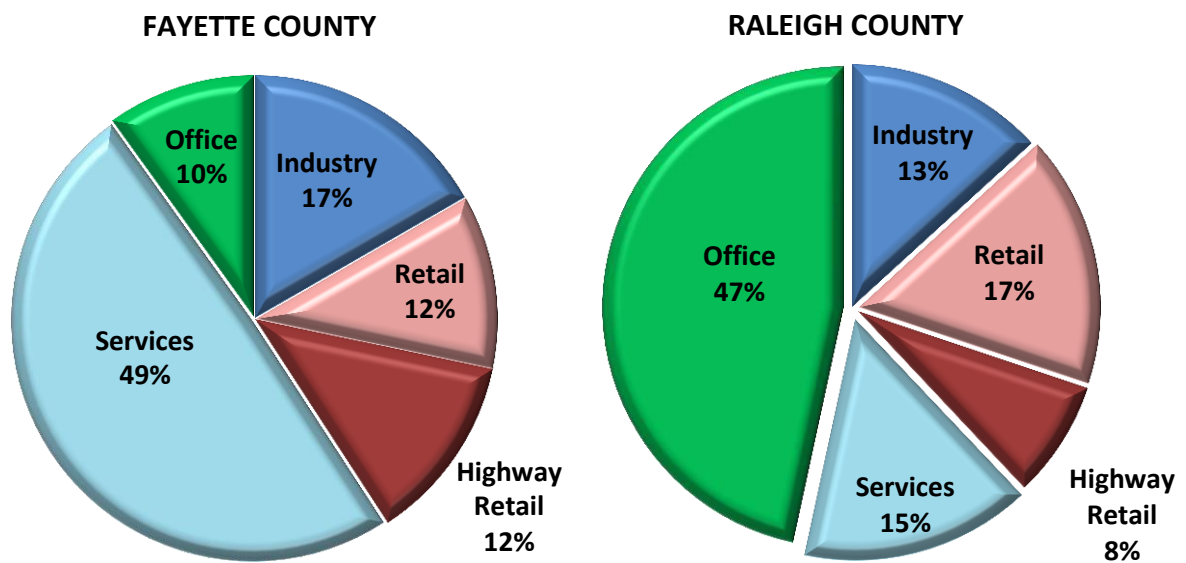
	2000 Census	2010 Census	Pct. Change, 2000-2010
<b>Fayette County</b>	47,579	46,039	(3.2%)
<b>Raleigh County</b>	79,220	78,859	(0.5%)
<b>MPO Total</b>	126,799	124,898	(1.5%)

**Table 2-2: Selected Population Characteristics of the MPO vs. State, 2010**

		Statewide Ranking (out of 55 counties)		
	Median Age	Median Age	Pop. Growth	Share of 65+
<b>Fayette County</b>	43.0	31	38	40
<b>Raleigh County</b>	41.1	11	26	30
<b>U.S. Average</b>	37.2	-	-	-

The nature of the region's workforce is also evolving. Industrial jobs, once the core of the economy, now make up less than a quarter of each county's total employment (**Figure 2-1**). Job growth now occurs primarily in the service sector, particularly in Fayette County where local economic development initiatives have specially targeted adventure tourism to capitalize on visitors to the New River Gorge area. Hospitality and leisure services are also a fast-growing component of the local job market in Raleigh County, along with health care. Raleigh County employment also includes a significant percentage of office workers due to Beckley's traditional role as a crossroads commercial center, where many state and federal agencies have regional headquarters and field offices.

**Figure 2-1: Composition of Regional Employment, 2010**



## PROJECTED CHANGE IN POPULATION AND EMPLOYMENT

Transportation demand is primarily influenced by the number of people, where they live, and where they work. Planning for future transportation needs thus requires some understanding of how and whether population and employment will change significantly in the future.

According to West Virginia University's Bureau of Business and Economic Research (BBER), which provides population and other data forecasts for the state, regional population will continue to decline over the next two decades. A trendline was used to extend the forecast to 2040, resulting in the regional population projections shown in **Table 2-3**. The projected change is also shown geographically in **Figure 2-3**.

**Table 2-3: MPO Regional Population, 2010 to 2040**

	2010	2020	2030	2040
Fayette County	46,039	44,611	42,795	41,311
Raleigh County	78,859	78,028	75,813	75,217
MPO Total	124,898	122,639	118,608	116,528

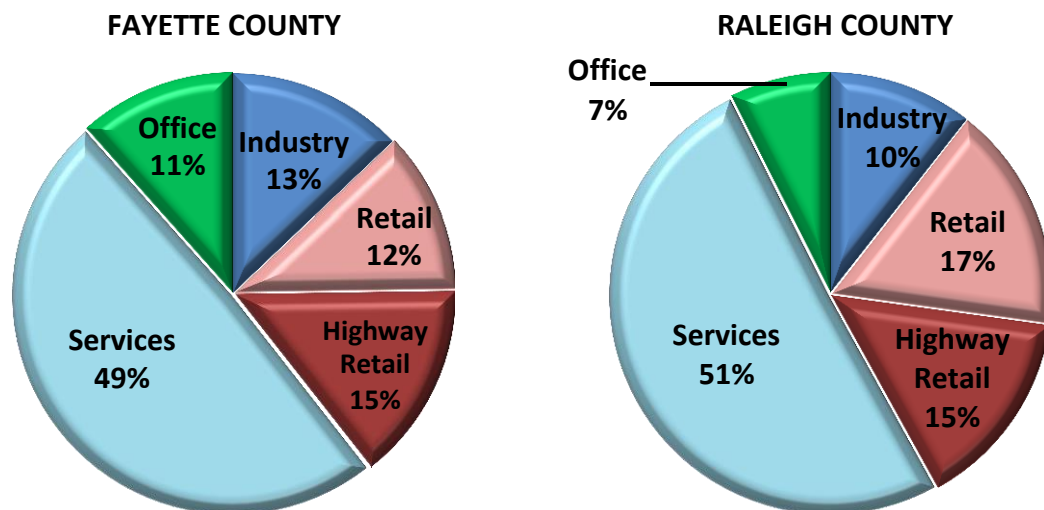
In contrast, regional employment is projected to increase by about 24 percent over the same period, as shown in **Figure 2-2**. As discussed earlier, a growing proportion of the region's jobs are in the service sector,

and this trend is expected to continue based on the area’s success in attracting visitors for outdoor recreation, as well as growth in retirement and second home communities.

**Table 2-4: MPO Regional Employment, 2010 to 2040**

	2010	2040	Percent Change
Fayette County	12,197	14,482	18.7%
Raleigh County	31,501	39,557	25.6%
MPO Total	43,698	54,039	23.7%

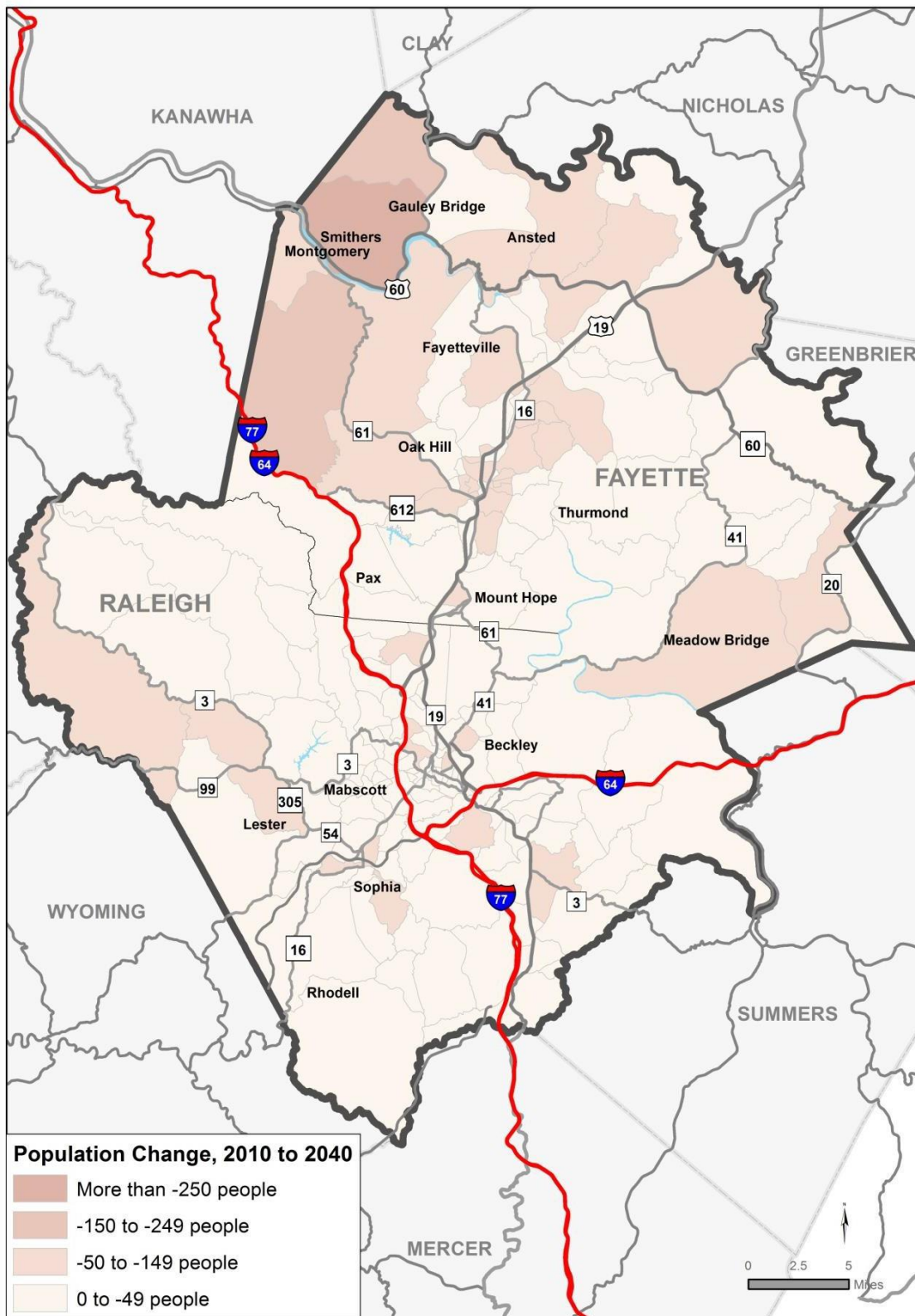
**Figure 2-2: Composition of MPO Regional Employment, 2040**



*Source: 2012 Woods & Poole projections, with adjustments.*

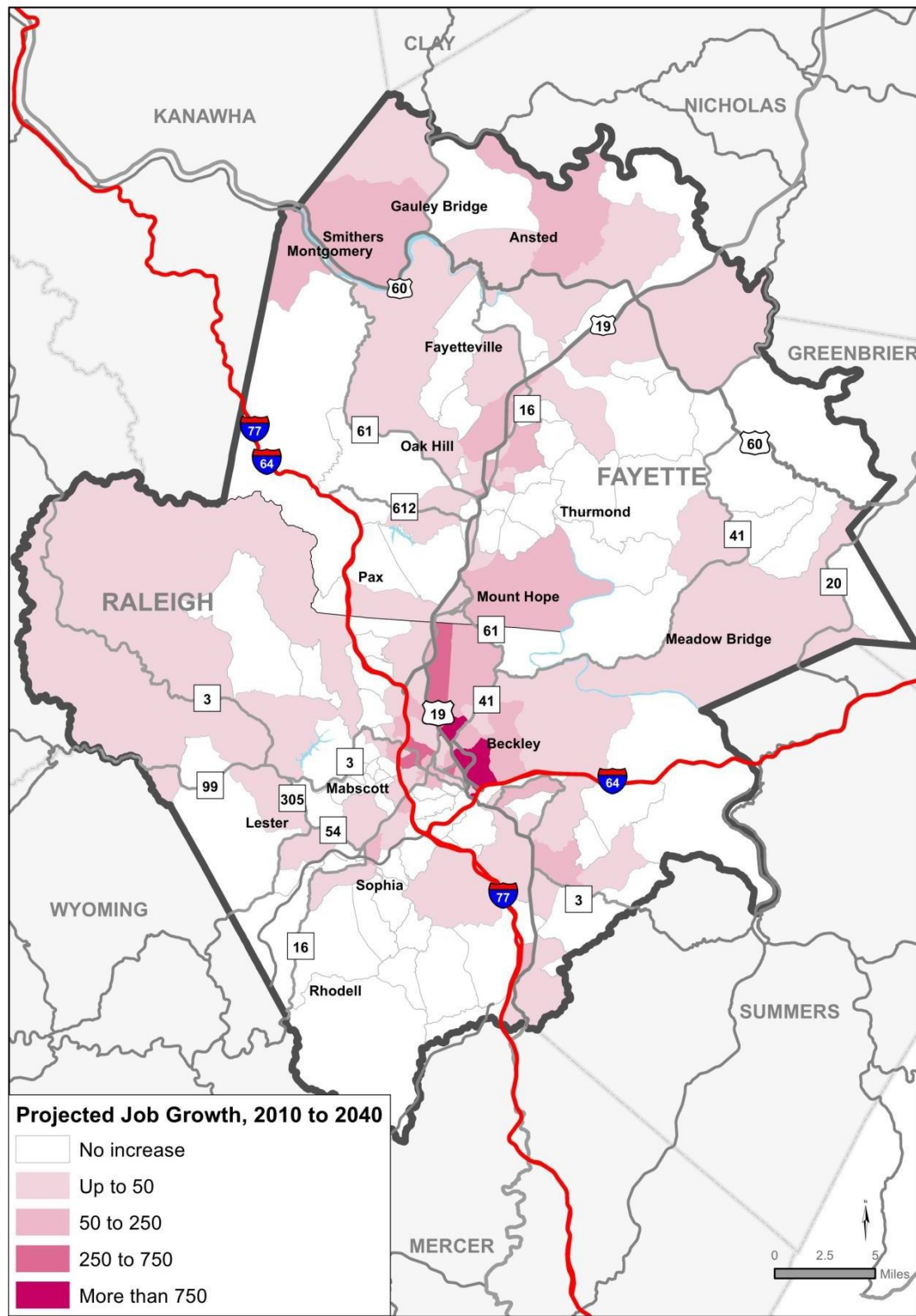
Employment growth projections are shown geographically in **Figure 2-4**.

**Figure 2-3: Projected Change in MPO Population, 2010 to 2040**





**Figure 2-4: Projected Change in MPO Employment, 2010 to 2040**



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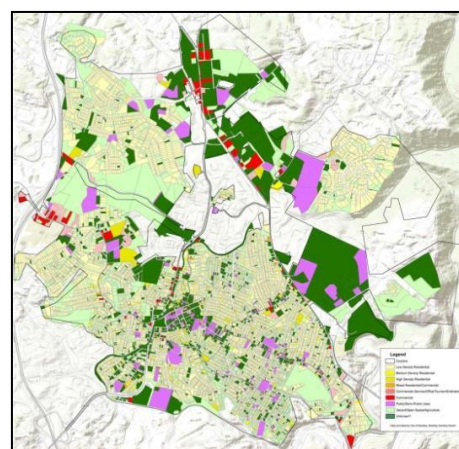
## LOCAL AND REGIONAL DEVELOPMENT PLANS

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Transportation is an essential ingredient for community and economic development because of the access it provides to local land and because it provides mobility to, from, and within a region. Transportation also constitutes the largest public investment that is made in many communities, other than utilities and major building projects such as schools. Road projects in particular are often the most dramatic changes that occur in a community, whereas most other development patterns are created gradually through a series of independent decisions by private property owners. For these reasons it is vital that the regional transportation plan be developed with an understanding of community goals and plans.

Local land use plans identify areas where new development and redevelopment are desired and where other supporting infrastructure (such as water and sewer) is planned. Thus these plans help to predict where population and employment changes will occur – and therefore where changes to the transportation system may be needed. Coordinating the MPO’s regional transportation plan with local land use plans helps ensure that federal transportation dollars are used to further public goals rather than working independently of them.

Comprehensive planning in West Virginia is authorized under Chapter 8A of the West Virginia Code. The Code identifies the process for developing and adopting a comprehensive plan as well as the purposes of planning, and provides guidance for study areas, mandatory components, supplementary components and other provisions. **Table 2-5** shows the elements that a comprehensive plan must address.



*Future land use plan for Beckley*

Comprehensive plans for several jurisdictions in the MPO region have been recently completed –several for the first time since the late 1960s – due to changes in state planning law that now require updates on a 10-year cycle. (Current practices in West Virginia have typically used a 20-year general planning cycle, with periodic updates every five years or as needed.)

**Table 2-5: Mandatory Elements of a Comprehensive Plan**

Land Use	Transportation
Housing	Community & Economic Development
Natural and Cultural Resources	Capital improvements
Implementation	

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Notwithstanding these mandatory elements, comprehensive plans for local governments within the MPO vary greatly in how they address critical community needs and issues. With the exception of Beckley, most jurisdictions have small populations and are not experiencing growth pressures; in fact, most jurisdictions are experiencing long term population declines. These conditions contribute to the low priority jurisdictions have placed on community planning.

Chapter 8 of the West Virginia Code also provides guidance on adoption and enforcement of zoning ordinances, subdivision regulations and building codes. At the present time, not all jurisdictions administer zoning ordinances or do so in an ad-hoc manner. Fayette County has historically been at the forefront of planning and zoning in the MPO area. Raleigh County has not developed a comprehensive plan.

Since some local plans are policy-based rather than data-based, it is not currently feasible to use them to compile consistent region-wide demographic data, projections, land use maps and zoning ordinances. Demographic data used for the Plan therefore reflects information from recent Census surveys, the State Data Center, public records on businesses and employment, and purchased datasets maintained by the private sector. (For more detail on sources and methodology, see the travel demand model documentation in Appendix A.)

Local comprehensive plans are still important, however, in providing guidance about where the community wishes to focus its investments and the particular economic goals that transportation decisions could help achieve. Each of the available local plans for the MPO area was therefore reviewed as part of developing the 2045 Plan. Below is a brief summary for each plan reviewed, including descriptions of key land use or transportation issues that should be considered in the regional transportation plan. As discussed below, many of the MPO's local jurisdictions are focused on improving linkages to the New River Gorge lands in order to maximize the benefits of tourism and amenities that attract retirees and other new residents to the area.

**Beckley, 2014 Comprehensive Plan Update.** As the largest jurisdiction in the MPO, Beckley's land use and transportation strategy represents a major factor in long range transportation planning. The 2014 comprehensive plan updates the 2001 plan, which was Beckley's first plan since 1969. Demographically, Beckley's population is anticipated to remain stable through the planning period. City population growth may occur in small amounts due to annexations which typically relate to infrastructure extensions.

The new comprehensive plan identifies four Preferred Development Areas for major investment, each with related transportation infrastructure issues.

- **East Beckley Bypass Area.** Access to the Woodlands Pinecrest Business and Technology Park, whose Phase 2 includes 700 development-ready acres, has been opened by the construction of the East Beckley Bypass. The southern portion of this new 5-lane route was completed in late 2013. Construction is now underway to extend the bypass northward, tying into Robert C. Byrd Drive at the Industrial Drive/Pinewood intersection.



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- **New River Drive Corridor.** Beckley's comprehensive plan identifies the land surrounding Pikeview Drive and New River Drive as the city's only remaining large area for development. Market study results indicate a demand for upscale housing for empty nesters and active retirees, according to the plan. Land along the New River Drive corridor is proposed for such planned community developments, incorporating large natural areas and a network of walking and biking trails.

Beckley's comprehensive plan also discusses New River Drive in the context of the city's continuing challenges with east-west connectivity, and suggests that more drivers might use it as an alternative to congested Harper Road if safety improvements were made to its intersection at Robert C. Byrd Drive.

- **Pikeview Drive.** Also based on market study results, the Beckley Comprehensive Plan identifies the opportunity to develop new arts, entertainment, and recreational venues to attract visitors driving along I-77 as well as local residents. Suggested attractions range from a wildlife habitat or zoo, a discovery/science center, resort hotel with indoor water park, and similar high traffic-generating developments. Given the existing level of traffic congestion at the I-77/Harper Road interchange, there is some discussion that Hylton Lane could be extended north to intersect New River Drive and provide additional connectivity for the area.

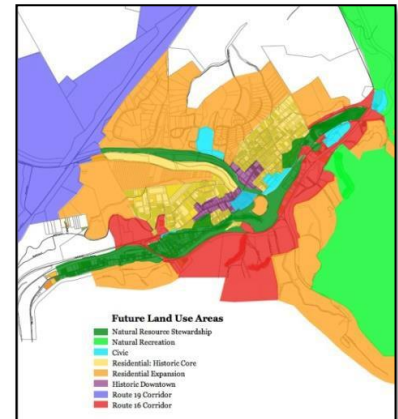


- **Downtown Beckley.** Much of the comprehensive plan's discussion of transportation in the downtown district is focused on improving walkability by managing traffic speeds. Converting one-way streets to two-way travel is mentioned as a strategy that has been found to slow down traffic in some communities.

**City of Oak Hill Comprehensive Plan (2012).** This document is an abbreviated update to the 1968 community plan. Land use and transportation issues are addressed by policy recommendations based upon goals and associated assets and opportunities. The White Oak Rail Trail is identified as a non-motorized transportation asset with good opportunities for linkage to other travel modes. As with Beckley and Mount Hope, several of Oak Hill's plan recommendations relate to leveraging the city's proximity to federal lands at the New River Gorge National River.

**Town of Fayetteville Comprehensive Plan Update (2013).** Fayetteville is strongly identified with outdoor recreation associated with the New River and enjoys a 'brand' unique to other area jurisdictions. Community population is projected to increase slightly over the 10-year comprehensive planning period. Fayetteville land use strategies focus on managing growth along portions of US 19 within the city. Improving access to New River federal lands is proposed at the Town Park Trailhead.

**City of Mount Hope, Reinventing the Future 2030 Plan (2013).** Prior to the 2013 update, Mount Hope's most recent planning study was completed in 1968. Typical of many jurisdictions in the region, changes in mining practices have led to employment loss which is projected to continue, albeit at a slower pace. Community economic vitality was negatively impacted with relocation of WV Route 16/19 which effectively bypassed downtown. Mount Hope is located immediately adjacent to the Boy Scouts of America Bechtel Summit Reserve and High Adventure Camp, which the community hopes to leverage for economic benefit.

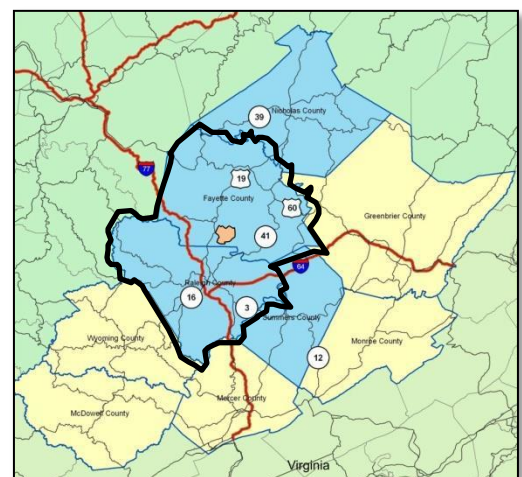


**Fayette County, 2011 Comprehensive Plan Amendment.** This document is an abbreviated update to the consolidated plan and zoning ordinance of 2001. As noted, Fayette County is a leader in West Virginia planning and zoning, having adopted its initial zoning ordinance in 1972. A major focus of the 2011 update was identifying community needs in the four districts that comprise Fayette County. Consistent with the 2001 plan, major challenges are stimulating development in along the New/Gauley River Corridor, delivering improved public services countywide, and the protection of natural resources. Fayette County prepared a corridor plan for US Highway 19 in approximately 2005 but it is considered out of date. Planning issues considered in the plan were congestion management, access control, land use and visual quality maintenance.

In addition to local comprehensive plans, the following other planning studies have been completed by public and non-public agencies:

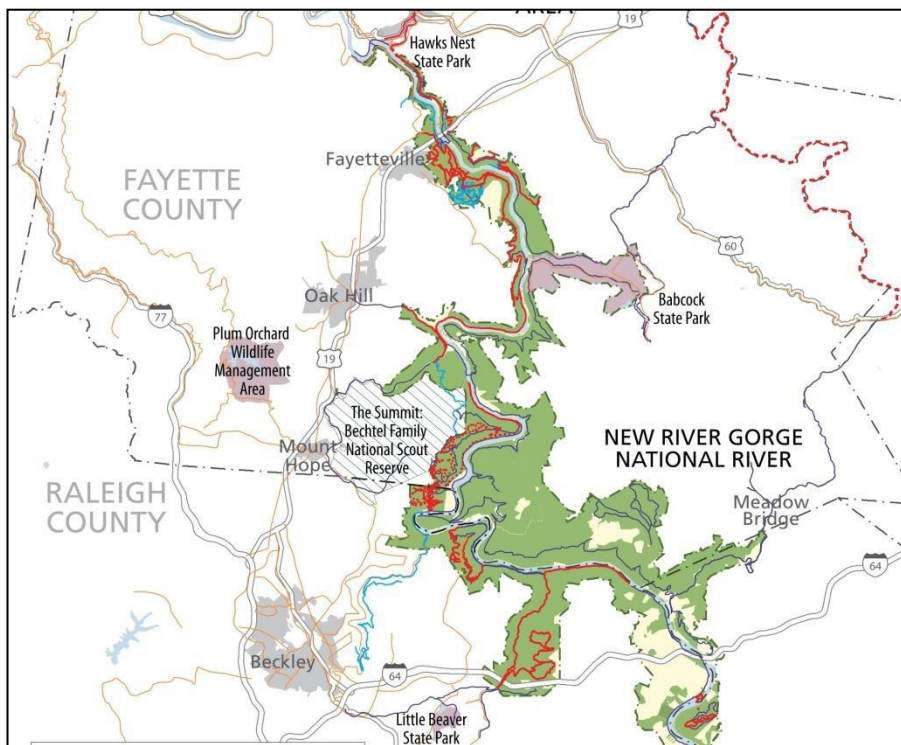
**New River Gorge Regional Development Authority Strategic Plan (2013).** In anticipation of the Boy Scout Bechtel Summit Reserve and High Adventure Center which opened in 2013, a private foundation underwrote preparation of a strategic plan to assist communities in preparing for opportunities and challenges presented by The Summit. The plan recommended specific projects and policies related to three themes: economic sustainability, environmental stewardship and thriving communities. Four strategies are described to implement major plan goals.

Priority recommendations include the development of a corridor management plan for the major gateway corridors of I-77 and US 19. Goals of the corridor plan include protection of scenic corridors and implementation of uniform development guidelines irrespective of political boundaries. The MPO was being established as the 2013 plan was being completed, and can play an important role in plan implementation.



*New River Gorge RDA study area  
(MPO boundary outlined in black)*

**New River Gorge National River General Management Plan (2011).** Federal lands associated with the New River Gorge total approximately 72,000 acres and encompass more than 53 miles of major waterways. Annual visitation is approximately one million visitors per year, including a high percentage of out-of-state visitors. The preferred alternative of the general management plan is a continued focus on resource conservation and visitor use, consistent with the federal enacting legislation.



Plan strategies recommend increased non-vehicle connections with gateway communities and investigating the feasibility of a north-south trail collector through the park.

The thru-trail is a major feature of the plan and would enable hikers to travel end to end through the park, along the river for most of the trail length. A few sections of the trail would overlap with scenic road segments, increasing accessibility to remote areas of the park.

Longer-term plan recommendations envision trails on both sides of the river to create a loop route to enable multi-day hikes in the park.

**National Coal Heritage Area Trail Plan for Greenways and Blueways (2010).** The National Coal Heritage Area Authority is a public corporation and governmental instrumentality established to aid in development and implementation of integrated cultural, historic and land resource management policies. The trail plan identifies more than 2,200 miles of single purpose and multi-use trails within the 13-county study area, which includes both Fayette and Raleigh counties. Fewer than 60 miles of identified trails are managed by local jurisdictions or private entities; the majority is managed and maintained by state and federal agencies.

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# Chapter 3:

## Plan Goals, Objectives, and Performance

One of the first steps in the Plan process is the establishment of a purpose. Establishing a clear and well-defined purpose for the Plan ensures that the overall goals, objectives and performance measures, as well as the resulting transportation investments, are the result of a comprehensive, cooperative, and continuing transportation planning program and process.

The purpose of the 2045 Regional Transportation Plan is:

- To establish a performance-based planning process that guides the selection of projects and advances progress toward the regional goals;
- To formally identify and coordinate the investments of the various public agencies that provide transportation facilities and services in the Fayette/Raleigh MPO region, including local governments, West Virginia Department of Transportation, New River Transit Authority, Regions 1 and 4 Planning & Development Councils, and the Raleigh County Airport Authority;
- To identify the projects and programs needed to provide an efficient, effective and functional transportation system to serve residents, businesses, and visitors to the region;
- To coordinate land use and transportation activities to ensure functional efficiency and a compatible relationship; and
- To support and encourage private enterprise participation in the development and maintenance of an efficient, effective regional transportation system, in part by providing a proposed schedule for transportation improvements with which private entities can coordinate their investments.

### GOALS AND OBJECTIVES

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The goals and objectives outlined here for the 2045 Plan are intended to facilitate the development, management, and operation of an integrated multimodal transportation system that enables the safe, efficient, and economical movement of people and goods.

#### National Emphasis

The FAST Act provides the guiding principles for transportation decision-making in metropolitan areas throughout the United States. One of the major requirements is for MPOs to consider projects and strategies that will:

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1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility options available to people and for freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

These factors provide the framework for FRMPO's goals and objectives and supporting performance measures and targets.

### **Regional/Local Emphasis**

The Fayette/Raleigh MPO has established its own goals and objectives, building from the FAST Act planning factors above, stakeholder engagement, analysis, and the local and regional plans (outlined in Chapter 2) .

Below are the goals adopted by the Fayette/Raleigh MPO to guide future transportation decisions and a corresponding set of objectives to help the region move closer to its goals.

#### **GOAL 1: Support the economic vitality of the region.**

##### **A. Provide improved access to commercial areas and tourist destinations.**

- Provide access to employment-generating locations.
- Construct regional links between gateway communities, The Bechtel Summit National Scout Reserve and the New River Gorge National River parklands.



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**B. Provide connections among residential areas, employment locations and community services.**

- Provide a multimodal transportation system that can be used by people of all ages to access opportunities to work, shop, learn and take part in civic life and area recreation.

**C. Make transportation decisions that capitalize on the resources of the regional airport.**

**GOAL 2: Improve safety/security for all users of the transportation system.**

**A. Enhance safety for pedestrians and bicyclists.**

- Construct safety improvements at locations where bicycle/pedestrian traffic and auto traffic frequently intersect. Use pavement markings, signs and other tools to alert motorists to these areas.
- In areas of heavy pedestrian traffic and in residential areas, choose street designs that encourage auto traffic to drive at slower speeds.

**B. Use access management and grade separations to improve safety on roads intended for higher speeds.**

- Encourage the construction of frontage roads along major highways at locations where significant development is underway or desired.

**C. Make targeted improvements to locations with a high number of accidents.**

- Work with the West Virginia Division of Highways to map crash data and identify locations where the crash rate is significantly above average. Work with WVDOH to perform Roadway Safety Audits to identify engineering improvements to address these locations.

**GOAL 3: Preserve and maintain the existing transportation system.**

**A. Set aside adequate funds for maintenance before expanding the system.**

- Give priority to projects that upgrade substandard infrastructure, since a quality transportation system is one of the tools for attracting new development and other investment.
- Expand efforts to regularly assess hillside stability along major routes, adding stabilization or using proactive blasting when necessary to prevent unexpected slips and slides.

**B. Extend road and sidewalk life through preventive measures.**

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- Improve stormwater management along roads through the addition (or more frequent maintenance) of ditches, culverts, storm drains, and curb and gutter in urban areas.
  - Keep vegetation cleared to ensure clear sight distance at intersections, maintain a clear path along sidewalks, and prevent broken surfaces.

#### **GOAL 4: Increase accessibility and mobility for both people and goods.**

##### **A. Improve access to and from the region.**

- Improve interstate linkages and access, including congestion relief at key interchanges.
- Support completion of regional transportation initiatives to expand the market area within one day's drive of the region.

##### **B. Improve access to commercial and industrial areas for freight movement.**

- Ensure roads that serve as heavy truck routes are adequately designed, constructed and maintained for the proper vehicle weight and dimensions.
- Make improvements needed to accommodate local delivery vehicles, particularly in downtown and higher-density residential areas.

##### **C. Improve mobility within and among communities.**

- Make public transit available to support the needs of residents of all ages, including transportation to work and educational institutions.
- Build links between major community trails and the surrounding neighborhoods, shopping and employment areas so that bicycling and walking are an option for traveling to more places.
- As streets and roadways are repaved or reconstructed, add sidewalks and other features needed to comply with ADA.

#### **GOAL 5: Manage an efficient transportation system.**

- Select and implement transportation projects based on need, cost effectiveness, and the MPO's established goals, objectives and performance measures.
- Work with WVDOT to improve traffic flow through operational improvements such as better signal timing, access management, and changes to key intersections.

- 
- Expand the use of Intelligent Transportation Systems (ITS) technology, such as the monitoring of traffic through video surveillance, provision of information on dynamic message signs, or use of automatic vehicle tracking for transit.
  - Address special transportation needs in areas where schools, colleges and other community facilities are located.
  - Study and implement the use of signage at gateways and key destinations, along with a system of wayfinding signs, to provide guidance and information to visitors.
  - Consider ways to improve the overall resiliency of the transportation system by providing redundancy necessary to meet essential travel needs.

**GOAL 6: Protect and enhance the environment and quality of life, and coordinate transportation decisions with the region's goals for land use and economic development, including travel and tourism.**

- Encourage transportation choices that are sustainable in terms of finances, community equity, and the environment.
- Improve management of the use, appearance, and safety of key routes, especially those that serve as visitor gateways or provide access to tourism destinations in the area.
- Promote transportation decisions that respect the integrity of historic areas and enhance tourism.
- Encourage clustered development to minimize the number of access points on major corridors while maximizing development potential.
- Promote roadway design, construction and maintenance practices that safeguard the area's natural resources, including water quality.

**GOAL 7. Enhance system connectivity, including connections between different modes of transportation.**

- Enhance access to the region's airport via roadway, public transit and non-motorized modes of transportation.
- Promote projects that lead to "Complete Streets" and ensure this policy is followed as part of new roadway construction or reconstruction.
- Provide public transit service, as well as a system of hiking/biking trails, between the region's passenger rail stations and local cities.



- Work with the Bechtel Summit National Scout Reserve to expand transportation modes to support Jamborees and other major events.

**Table 3-1** illustrates how the 2045 Plan goals address each of the planning factors set forth in the FAST ACT.

**Table 3-1: Relationship of National FAST Act Planning Factors to 2045 Plan Goals**

FAST Act Planning Factor	2045 Plan Goal
Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.	1, 3, 4, 5, 6, 7
Increase the safety of the transportation system for motorized and non-motorized users.	2, 3, 4
Increase the security of the transportation system for motorized and non-motorized users.	2, 4
Increase the accessibility and mobility options available to people and for freight.	1, 4, 7
Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	1, 4, 5, 6, 7
Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.	1, 4, 7
Promote efficient system management and operation.	1, 3, 5
Emphasize the preservation of the existing transportation system.	3, 5
Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.	5, 6
Enhance travel and tourism.	1, 5, 6, 7

## PERFORMANCE BASED PLANNING

The FAST Act transportation legislation requires MPOs to use a performance-based planning process (PBPP) to develop their long-range regional transportation plans (RTP). The purpose is to ensure resources are being invested in programs and projects to help planning agencies achieve national and regional transportation goals. FRMPO applies PBPP principles when making decisions for the RTP, Transportation Improvement Program (TIP), and Unified Planning Work Program (UPWP) development processes. The purpose and elements of the Federal PBPP framework, and how those are integrated in the FRM RTP are shown in **Table 3-2**.

**Table 3-2: Performance Based Planning Framework**

FHWA PBPP	PBPP Elements	FRM RTP
<i>Strategic Direction</i>	Goals	Chapter 3 – Goals and Objectives
	Performance Measures	
<i>Performance Based Analysis</i>	Trends and Targets	Chapter 2 – Develop Trends Chapter 4 – Analysis of the Transportation System
	Strategies/Objectives and Investment Priorities	
<i>Performance Based Programming</i>	Investment Plan	Chapter 5 – Recommended Plan and Funding
	Program of Projects	Chapter 6 – Potential Impacts
<i>Implementation and Evaluation</i>	Investment Plan	Chapter 5 – Recommended Plan and Funding
	Program of Projects	Chapter 6 – Potential Impacts
<i>Cross-Cutting Elements</i>	Engagement	Chapter 7 – Public and Stakeholder Participation
	Data Management and Analysis	

This remainder of this chapter describes the elements of the PBPP and how FRMPO is implementing those to meet Federal requirements, but more importantly, to ensure policies, programs and projects are on track to achieve transportation priorities.

### Strategic Direction

The goals in FRM’s RTP outline the transportation priorities over the next five years. To determine the level of progress to which FRM is achieving its goals, performance measures have also been established. The FAST Act identifies seven national goals for the nation’s highway system and accompanying performance measure to track results. These goals provide a national transportation framework and it’s up to agencies, like FRM, to determine how to support and meet these critical transportation outcomes in the region.

**Table 3-3** shows the national goals and performance measures and how FRM’s goals and performance measures align.

**Table 3-3: National and MPO Goals and Performance Measures**

National Goal	National /FRM Performance Measures	FRM Goal Alignment
<b>Safety</b> —To achieve a significant reduction in traffic fatalities and serious injuries on all public roads	Safety Performance Measures (PM1)	Goal 2 – Improve safety/security for all users
<b>Infrastructure condition</b> —To maintain the highway infrastructure asset system in a state of good repair	Pavement/Bridge Performance Measures (PM2)	Goal 3 – Preserve and maintain the existing transportation system
<b>System reliability</b> —To improve the efficiency of the surface transportation system	System Performance Measures (PM3)	Goal 4 – Increase accessibility and mobility  Goal 5 – Manage and efficient transportation system  Goal 7 – Enhance system connectivity
<b>Congestion reduction</b> —To achieve a significant reduction in congestion on the National Highway System	System Performance Measures (PM3)	Goal 4 – Increase accessibility and mobility  Goal 5 – Manage and efficient transportation system  Goal 7 – Enhance system connectivity
<b>Freight movement and economic vitality</b> —To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development	System Performance Measures (PM3)	Goal 1 – Support economic vitality of region  Goal 4 – Increase accessibility and mobility  Goal 5 – Manage and efficient transportation system  Goal 7 – Enhance system connectivity
<b>Environmental sustainability</b> —To enhance the performance of the transportation system while protecting and enhancing the natural environment	Not applicable	Goal 6 – Protect and enhance the environment and quality of life
<b>Reduced project delivery delays</b>	Not applicable	Not applicable

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## Performance Based Analysis

An important step in the PBPP is to analyze the system data and determine the best solutions (strategies/objectives) to achieve FRMPO's goals and develop targets to be able to evaluate progress toward those goals. Using inputs including trend analysis and forecasting/scenario planning, FRMPO developed objectives and targets.

In addition to the analysis, state and local plans were reviewed to identify goals, objectives, and performance measures, applicable to the region. Results from the West Virginia LRTP, West Virginia Strategic Highway Safety Plan, West Virginia Asset Management Plan, and West Virginia State Freight Plan were incorporated into this plan.

The final set of objectives can be found earlier in this chapter and are in place to further guide project selection. Projects that address these specific objectives rank well in FRM's resource allocation process.

To evaluate the success of FRMPO's regional goals, targets have been established to track and evaluate performance (see **Table 3-4**). FHWA requires targets to be set for 24 performance measures, 14 of which are applicable to FRM since the region is in air quality attainment and New River Transit establishes and monitors the transit asset and transit safety targets. FRM has submitted a letter for the past two years adopting the state targets for PM1, 2, and 3. Table 3-4 summarizes the targets. These will be updated in accordance with FHWA's timelines and in coordination with WVDOH and the WV FHWA Division Office and progress documented in an annual Performance Report.

**Table 3-4: FRM Supported Targets**

Goal: Safety (PM1)	2021 Target
Number of fatalities	263.7
Number of serious injuries	1.46
Rate of fatalities per 100 million VMT	1002.4
Rate of serious injuries per 100 million VMT	5.02
Number of nonmotorized fatalities and nonmotorized serious injuries	86.2

Goal: Pavement/Bridge Conditions (PM2)	2-Year Target	4-Year Target
% of Interstate pavements in Good condition	n/a	≥ 75.0%
% of Interstate pavements in Poor condition	n/a	≤ 4.0%
% of non-Interstate NHS pavements in Good condition	≥ 40.0%	≥ 45.0%
% of non-Interstate NHS pavements in Poor condition	≤ 5.0%	≤ 5.0%
% of NHS bridges by deck area classified in Good condition	≥ 14.0%	≥ 11.0%
% of NHS bridges by deck area classified in Poor condition	≤ 10.0%	≤ 13.0%

Goal: System Performance (PM3)	2-Year Target	4-Year Target
% of reliable person-miles traveled on the Interstate	≥ 96.0%	≥ 96.0%
% of reliable person-miles traveled on the noninterstate NHS	n/a	≥ 87.0%
Truck travel time reliability on the Interstate system (average truck reliability index)	≤1.25	≤ 1.40

### Performance Based Programming

FRM prioritizes projects in the MTP and TIP based on whether they will make progress toward regional transportation goals and performance targets. Using highway and transit revenue forecasts, FRM projects annual revenue to baseline available funding and ensure the plan is fiscally constrained. Analysis results by issue area (streets and highways, operations, freight, rail, safety and security, transit, and bicycle and pedestrian), public input, Technical and Policy Committee input, and other evaluation criteria, such as implementation readiness and available funding, are then factored into the decision-making to refine the project list. *Chapter 5, Funding and Fiscal Constraint* identifies the investments to be advanced to meet FRM’s transportation goals and targets. Each project includes a reference to the goal(s) and performance measure(s) it addresses.

### Implementation and Evaluation

Performance measures and targets help decisionmakers understand the impacts of transportation investment decisions and equip FRM with the ability to change course when goals are trending the wrong way. An annual system performance report will describe the condition and performance of the transportation system with respect to the performance targets in Table 3-4. FRM will coordinate with WVDOH on this, evaluating progress and making any necessary changes to targets or project decisions.

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# Chapter 4:

## Analysis of the Transportation System

This chapter provides an overview of the regional transportation system's current condition and performance and identifies future needs. All modes are addressed, including roads, transit, bicycle/pedestrian facilities, air, rail and waterways. This chapter also discusses the transportation issues that cut across multiple modes: freight movement, systems operations and management, safety and security.

### Streets and Highways

This section describes the regional road network and the process used to model future roadway conditions based on the forecasted changes in population and employment discussed in Chapter 2. Roadways that are currently congested, or are projected to be congested in future years, are identified here in a series of maps. Proposed roadway improvements to address the anticipated congestion, outlined in this section, have been developed and tested with the regional travel demand model. These projects, along with proposed timeframes for their implementation, form the basis for the roadway portion of this Plan.

#### FUNCTIONAL CLASSIFICATION SYSTEM

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As in all urban areas, the system of streets and highways in the Fayette/Raleigh MPO follows a hierarchy of functionality, also known as a functional classification system. At the top of the hierarchy are **Interstates** 77 and 64. These two **limited-access highways** run concurrently north-south through the region as the West Virginia Turnpike, a tolled facility. On the south side of Beckley, I-77 heads directly south toward North Carolina, while I-64 runs east-west to cross the New River Gorge National River parklands toward the eastern edge of the region.

The second level in the hierarchy is **arterial routes**, which often are designed with limited or no access in order to more effectively move thru-traffic. U.S. Highway 19 is an excellent example of a principal arterial route, serving as a spine which connects the urban areas of Fayetteville, Oak Hill, Mount Hope and Beckley. West Virginia Highway 16, which closely parallels it, functions as a minor arterial that carries significant volumes of traffic but provides more access to adjoining properties. Other examples of arterials in the region include:

- US 60, which runs across northern Fayette County between Charleston and White Sulphur Springs before joining I-64;
- WV 612, which links Oak Hill and the U.S. 19 corridor with the West Virginia Turnpike; and
- WV 3, which passes through Beckley as it runs east-west across Raleigh County.

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Next are **collector** streets, which serve an intermediate function of collecting trips to and from the arterials and distributing them among local streets. Regional examples of collectors include Thurmond-McKendree Road and the loop through northwest Raleigh County that is formed by Maple Fork Road and WV 3.

The primary function of **local** streets, which are at the bottom of the hierarchy, is to provide access to individual properties. As one moves up the hierarchy from local to collector to arterial to Interstate, speeds generally increase and there is a corresponding decrease in access provided to adjoining properties.

**Figure 4-1** shows the road network for the MPO region categorized by functional classification. Among these highways, the most heavily traveled routes are of course the West Virginia Turnpike and Interstates 77 and 64, as well as the US 19 corridor. Very high traffic volumes (above 20,000 vehicles per day) are also recorded on WV 16 (Robert C. Byrd Drive) in Beckley near its intersection with US 19 (Eisenhower Drive), and south of its intersection with WV 3 (Harper Road).

**Figure 4-2** illustrates the routes in the MPO area whose Average Daily Traffic (ADT) exceeds 10,000 according to recent counts by the WVDOH.

## ROADWAY CAPACITY AND TRAFFIC CONGESTION

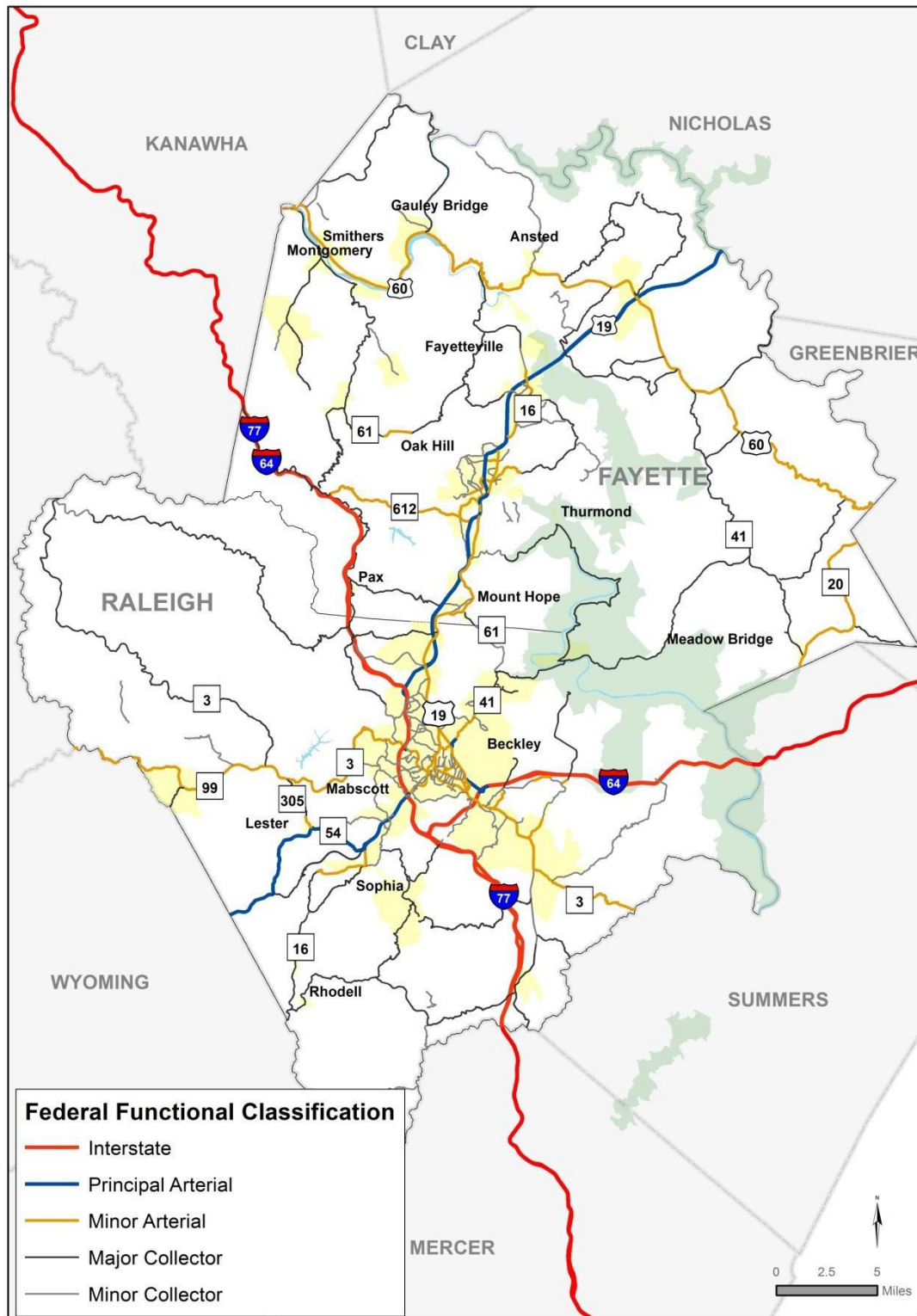
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Traffic flow along a given roadway is often presented in terms of volume-to-capacity ratio (V/C), i.e. the volume of traffic that the road is carrying compared to its maximum capacity. A roadway's capacity is based on its functional classification, number of lanes, posted speed limit, percent of truck traffic, and geometric characteristics. Volume-to-capacity thresholds vary by the functional class of the facility and whether it is classified as urban or rural.

Higher V/C ratios indicate there are a higher number of vehicles relative to the road's capacity. For example, a V/C ratio of 0.70 means that about 70 percent of the road's available capacity is being used. As the V/C ratio nears 1, it means that the traffic volume is almost equal to the maximum number of vehicles the road can carry. Locations that have high V/C ratios are therefore almost certain to be experiencing traffic congestion and delay.

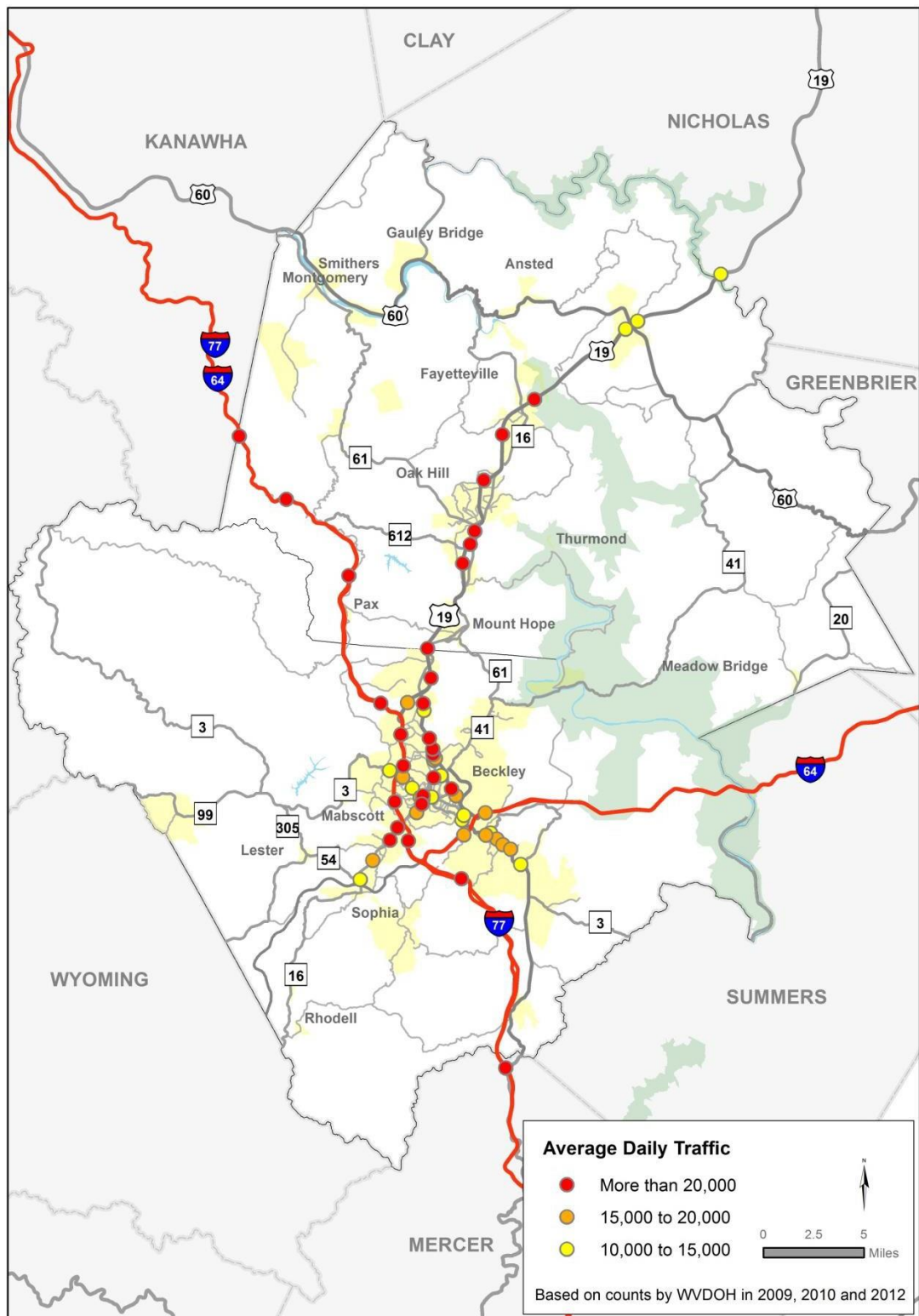
**Figure 4-3** shows the V/C ratios on the area's roadway network for the base year of the regional travel demand model (2010). As can be seen, the majority of roadway capacity deficiencies are currently occurring in the urban areas of Beckley and Oak Hill. This is not to say that drivers are not encountering delays on other roads, especially due to poor weather, oversized vehicles, special events and even daily events, such as lowered speeds that are required at certain times of day in school zones. What Figure 4-3 represents are roadway sections that experience congestion and delays for a considerable portion of the day on most days.

**Figure 4-1: MPO Roadway Network by Functional Classification**





**Figure 4-2: Locations with Average Daily Traffic (ADT) Greater Than 10,000**



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**Figures 4-3** and **4-4** provide a closer look at the particular areas in Beckley and Oak Hill where current demand exceeds roadway capacity for at least portions of the day. It is important to note that a higher V/C ratio does not necessarily mean a higher total number of vehicles are traveling on that roadway. High V/C ratios may be a result of having a two-lane road serving an area where there is sufficient traffic demand for a four-lane facility.

The most significant capacity deficiencies in Beckley are found on several sections of US 19, including:

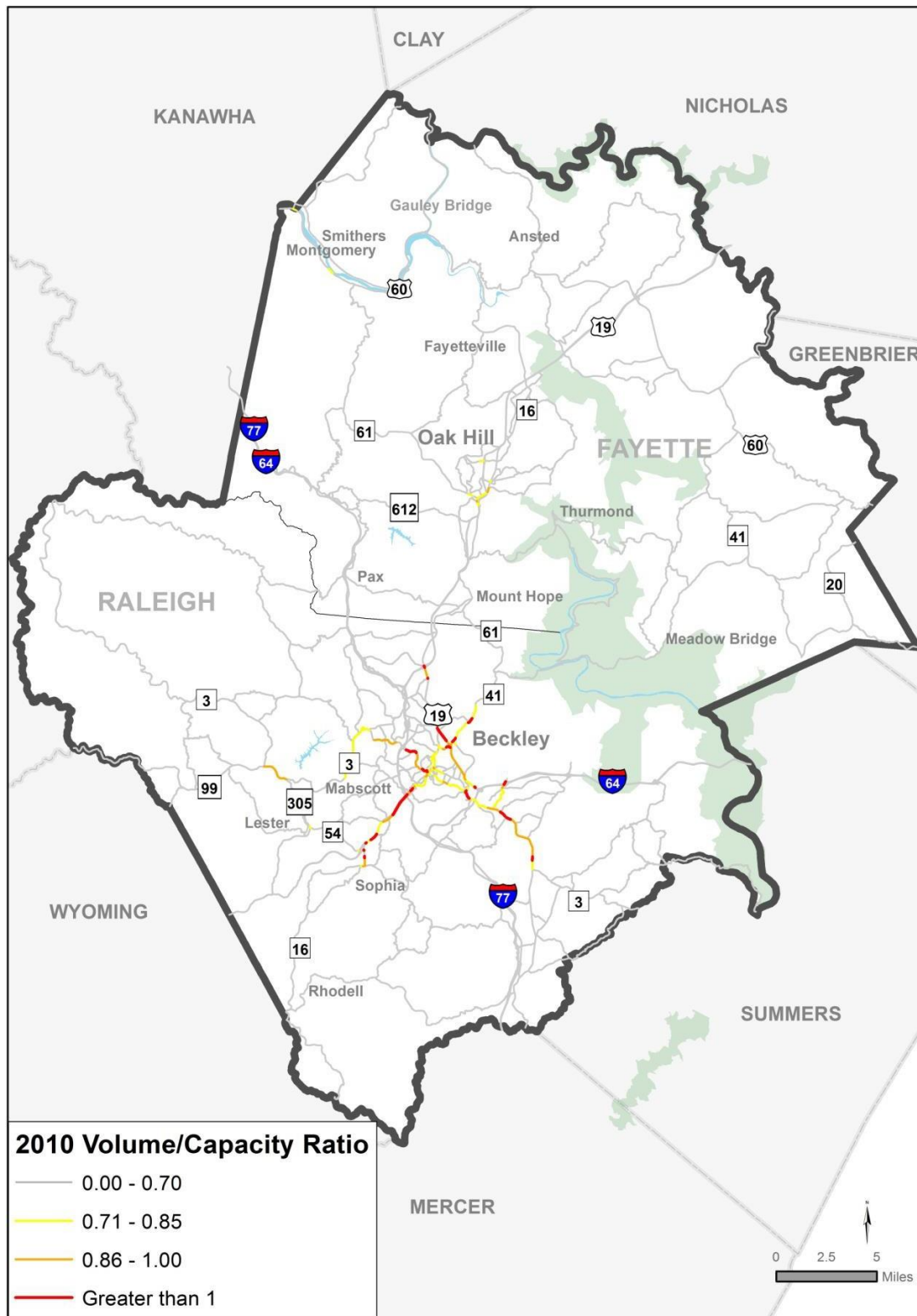
- Between Prosperity Road and the junction of US 19 and WV 16 (Robert C. Byrd Drive);
- Along the heavily commercialized portion of Eisenhower Drive, between Ragland Road and Interstate 64, where serious traffic congestion has been a motivating factor for building the East Beckley Bypass;
- Ritter Drive on the south/east side of I-64, especially between Airport Road and WV 3 (Hinton Road), passing through the Beaver, Daniels and Shady Springs areas.

Traffic issues are also experienced on WV 16 (Robert C. Byrd Drive) on the southwest side of Beckley, resulting in major traffic delays for drivers traveling between Mabscott and Sophia.

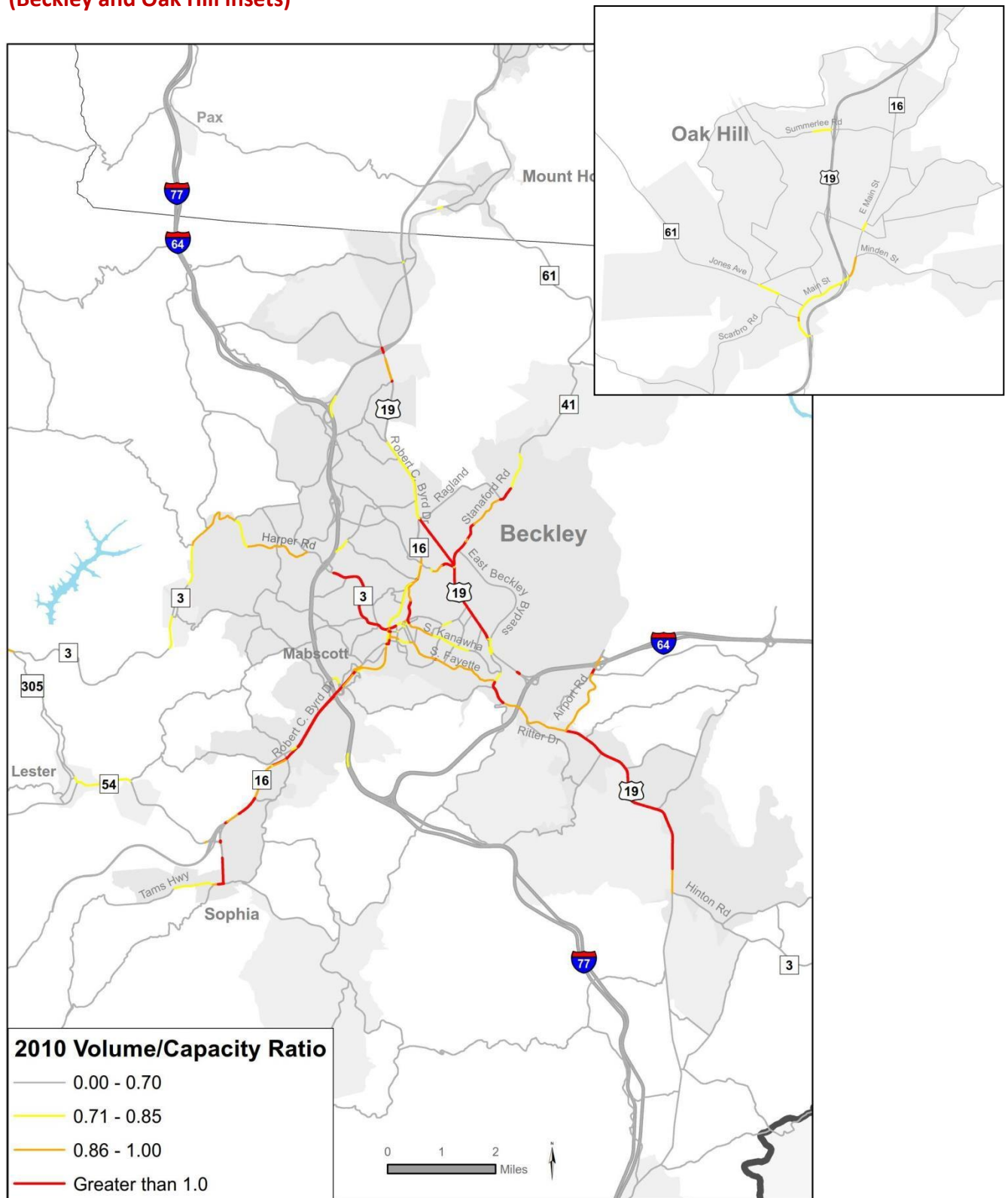
In addition, as noted in Chapter 2, Beckley leaders have identified the lack of east-west connectivity as a continuing concern for the city. The regional traffic model confirms this through the high V/C ratios found along the WV 3 (Harper Road) corridor. The demand for travel between downtown Beckley and the I-77 / Harper Road interchange has clearly outstripped the existing roadway capacity.

Roadway capacity problems are less widespread in Oak Hill, where the population is not as large and access control along US 19 provides thru-traffic with a more efficient path to travel. Capacity issues appear primarily on the section of WV 16 that passes through Oak Hill as Main Street.

**Figure 4-3: Base Year Volume/Capacity Ratios on Area Roadways**



**Figure 4-4: Base Year Volume/Capacity Ratios on Area Roadways  
(Beckley and Oak Hill insets)**



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## FORECASTING ROADWAY PERFORMANCE

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The Fayette/Raleigh MPO's travel demand model is the tool used to identify and analyze future roadway congestion problems. Modeling results are from the 2040 RTP. The projects identified for this RTP update were based on known growth and transportation implementation priorities as identified by the PAC and TAC. The model will be updated for the full FRMPO update in 2021. The model essentially divides the region up into various traffic analysis zones for purposes of forecasting. As discussed in Appendix A, forecasts were developed for future population and employment for each traffic analysis zone, then used as key inputs into the model. The model's outputs are an approximation of travel demand between zones, or how many people are expected to travel between home, work or school, shopping, doctor's office, and other destinations.

Zones will generate varying levels of traffic based on the numbers of jobs and/or homes they contain. Future traffic projections are also affected by the types of development in a zone. For example, a major regional shopping center will attract several types of trips, including shoppers, the employees who work at the stores, trucks who bring in the food and goods that are sold there, and even the trucks that take away the trash.

Once the level of travel demand is predicted for each zone, the model "loads" the appropriate number of trips onto the existing roadway network. Zones with high travel demand require roadways that have higher capacity, which would typically be an interstate, arterial street or collector street. In zones where population or employment is growing, a roadway may not be able to meet the additional travel demand without capacity improvements – a term which generally includes the addition of new travel lanes, new and modified interchanges, new roadways and roadway extensions. By using the travel demand model, the MPO can make predictions about which roadways will need capacity improvements, and how soon.

More information about the travel demand model can be found in **Appendix A**, which provides a very detailed explanation of the process and data used to update and calibrate the MPO's model.

## EXISTING + COMMITTED PROJECTS

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Even when a new transportation plan is developed, there are always some roadway improvements that are already in some stage of being constructed or are far enough along in development that they are essentially "committed" to be completed. When a travel demand model is being used, the first step in analyzing future roadway conditions is to identify the "Existing + Committed" (E+C) transportation network. This establishes a no-build condition which serves as the benchmark for identifying future roadway capacity needs and for evaluating the performance of planned projects. In this case, the model's base year is 2010, so the E+C network consists of new or modified roads completed since 2010, plus projects that are funded for construction in the current Transportation Improvement Program.

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## FUTURE ROADWAY CONDITIONS

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### Future Roadway Conditions Without Additional Improvements

**Figure 4-5** depicts the conditions anticipated in future years if the region does not make any roadway capacity improvements after completing the committed projects described above.

Traffic volumes will increase along the West Virginia Turnpike, although not to the point of capacity deficiency. Congestion is expected to increase along Robert C. Byrd Drive in northern Beckley, as well as through the Mabscott area as traffic increases on the Coalfields Expressway. Travel conditions will also worsen for drivers on US 19 (Ritter Drive), particularly near I-64.

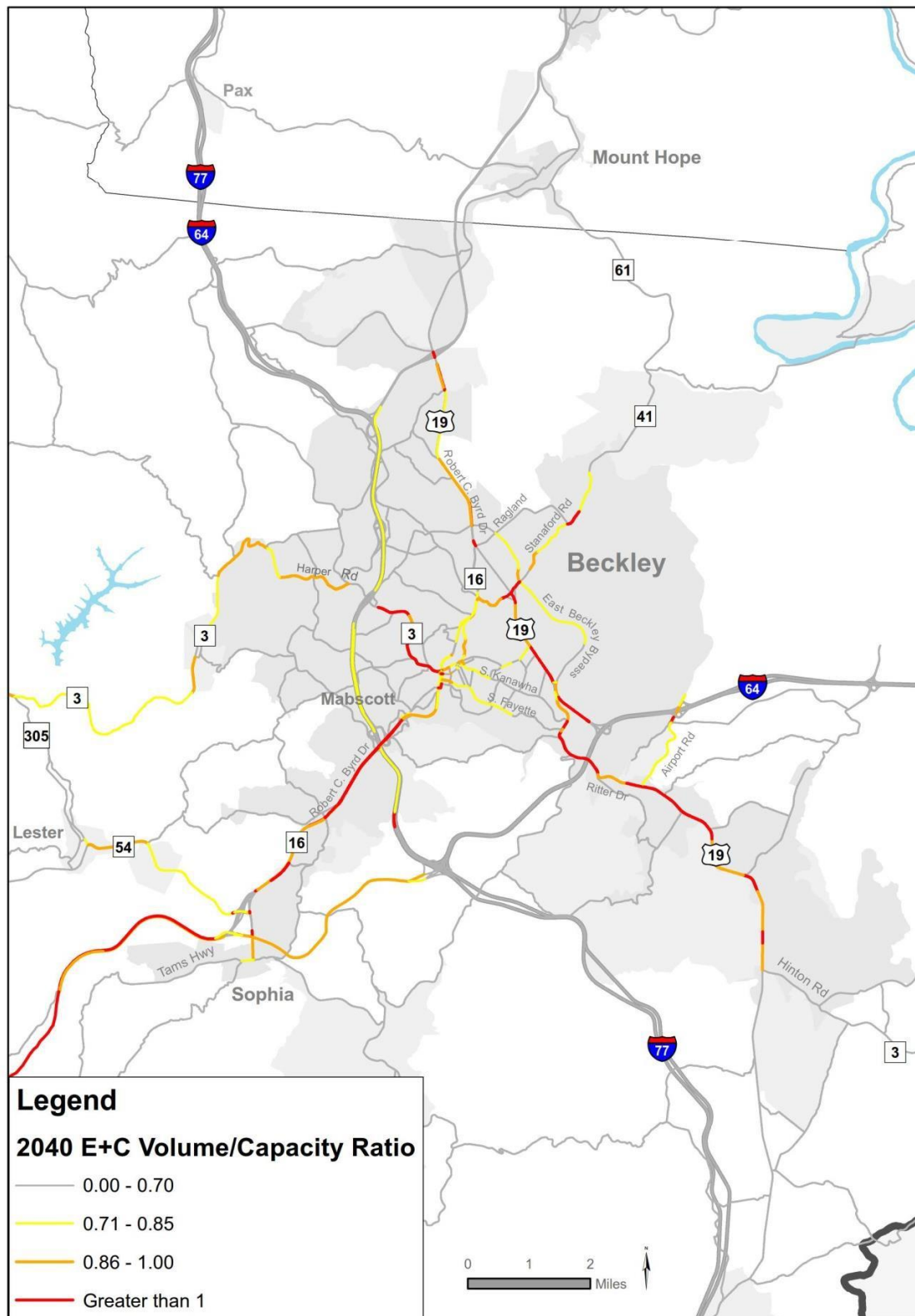


However, the completion of the Industrial Drive Connector is expected to result in improved traffic flow in downtown Beckley, on North Eisenhower Drive and along Stanaford Road, with a moderate increase in the number of drivers using Robert C. Byrd Drive north of the Industrial Drive Connector.

As shown in **Table 4-1**, the total number of hours spent driving in congested conditions is expected to increase more than 40 percent by the year 2040, compared with the roadway system's performance in the base year. Much of the additional delay is projected to occur on the urban portions of the Turnpike and along major routes in unincorporated areas.



**Figure 4-5: 2040 Existing + Committed Volume/Capacity Ratios on Area Roadways**





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**Table 4-1: Vehicle Hours of Delay, 2010 versus 2040 Existing + Committed Network**

Roadway Functional Class	2010 Base Year Network	2040 Existing + Committed Network	Percent Change
Freeways	633	1,173	85 %
Arterial Highways	6,409	6,199	- 3 %
Collector Routes	2,289	5,996	162 %
<b>TOTAL</b>	<b>9,331</b>	<b>13,368</b>	<b>43 %</b>

## RECOMMENDED ROADWAY PROJECTS

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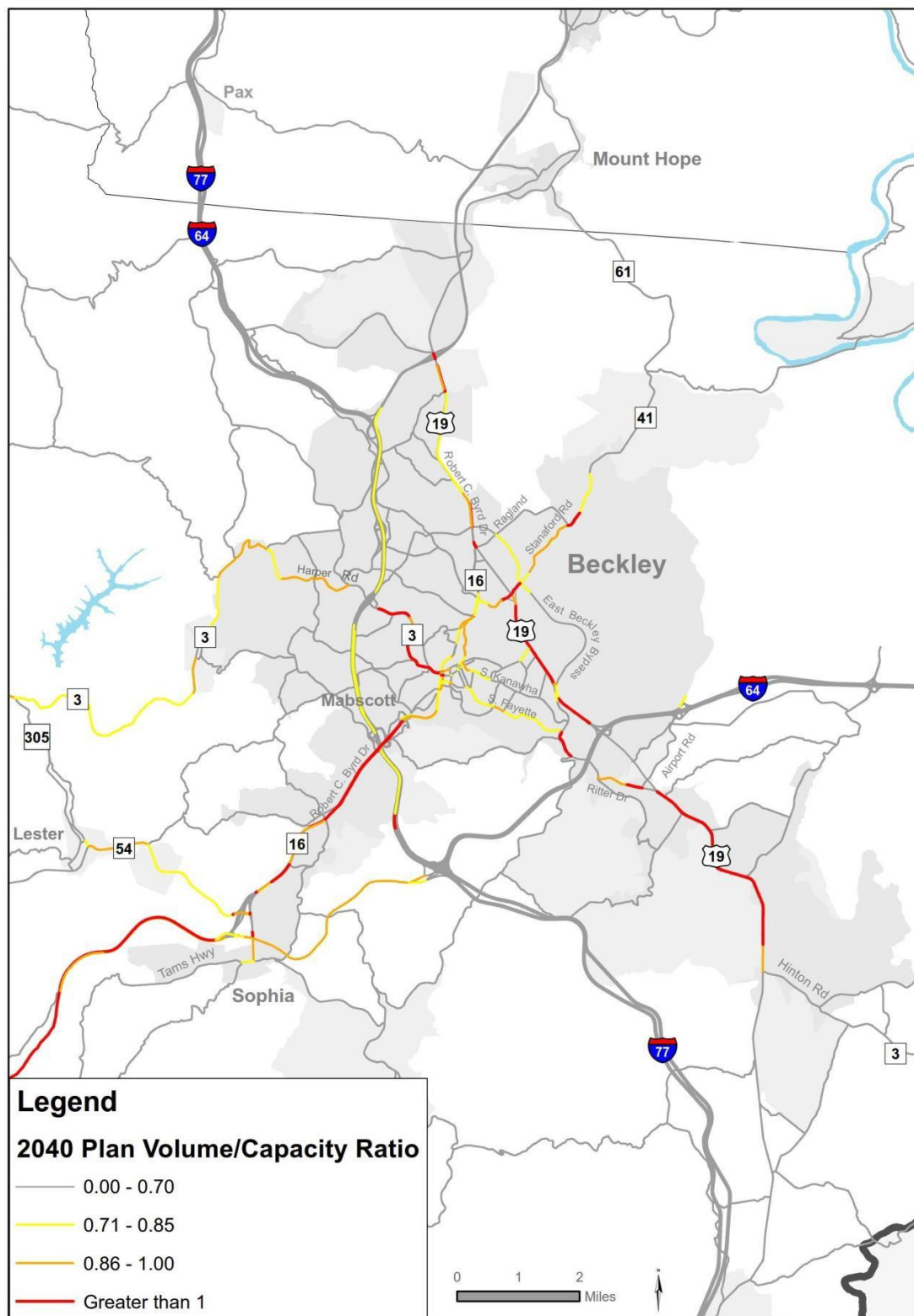
The list of recommended roadway projects provided in Chapter 5 (**Tables 5-3** through **5-5**) are proposed to address future roadway capacity deficiencies, improve traffic operations, and support important goals identified in adopted local and regional plans.

Projects with numbers beginning with “N” represent new roads or major road widenings which will significantly expand the capacity of the network. Projects with numbers beginning with “T” are recommended operational improvements which may range from modification of traffic signals, intersection improvements or increased access management. Although operational projects typically do not provide as much additional roadway capacity as a new or widened road, they can often be implemented at lower cost, with less impact to adjacent property, and more quickly. (For further discussion of operations and transportation system management, see the pages immediately following this section.)

Note that major projects may be initiated earlier than the period for which they are listed to be completed.

- **Table 5-3** lists projects proposed for completion during 2021-2025.
- **Table 5-4** lists projects proposed for completion during 2026-2035.
- **Table 5-5** lists projects proposed for completion during 2036-2045.

**Figure 4-6: 2040 Plan Volume/Capacity Ratio on Area Roadways**



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# Operations and Systems Management

In an era of reduced budgets, transportation agencies are placing increased emphasis on the efficient management of the existing transportation system, as opposed to adding new roadway capacity. There are a wide range of approaches that can be used as lower-cost, lower-impact solutions to congestion. In some cases they may completely eliminate the need to add roadway lanes; in other cases, they extend the useful life of the road and allow an agency to postpone a major widening project. Some approaches involve the use of advanced technology, while others simply require communication and cooperation.

## INCIDENT MANAGEMENT

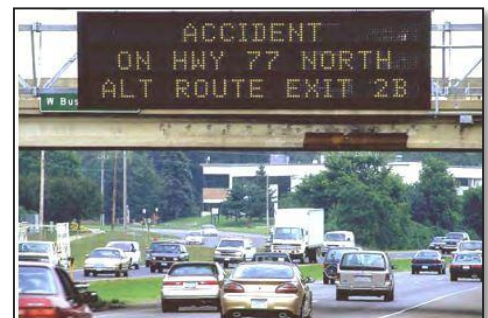
FHWA estimates that up to a third of our highway congestion is caused by incidents such as crashes, roadway debris, construction work zones, bad weather, and special events. Often the congestion resulting from a primary incident causes secondary incidents, such as rear-end crashes from drivers who were slow to notice the line of stopped traffic, or vehicles overheating or running out of fuel while waiting for the primary incident to be cleared. Given the cost of delay and the risk of secondary incidents, it is clear why state and local officials have begun to increase their focus on roadway incident management.

**Courtesy Patrol.** The state contracts for operation of a Courtesy Patrol which operates roadside assistance trucks on more than 800 miles of interstate and Appalachian Corridor routes in 30 counties, working seven days a week between 3 p.m. and 7 a.m. Routes patrolled within the MPO region include I-64 from the I-77/I-64 junction eastward in Raleigh County, and US 19 in both Raleigh and Fayette counties.



The Patrol maintains a statewide dispatch center (located in McDowell County) that sends the nearest truck to assist motorists who have run out of gas, need directions or help in changing a flat tire, or are in need of first aid. Patrol drivers also remove hazardous debris reported in the roadway and assist with traffic management during incidents as well as in scheduled work zones. The contract is managed by DOH and funded by the state Tourism Commission.

**Incident Management Plans.** The DOH has developed an Emergency Traffic Control Plan that is followed when necessary to divert traffic from the Turnpike. While this is not a regular occurrence, the recent intensity of freeze/thaw cycles experienced in southern West Virginia has resulted in a growing number of rock slides along the Turnpike. Chemical spills and major traffic accidents also require the occasional closure of the Turnpike at affected locations. The traffic that would normally use the interstate must then travel on other routes in the counties through which the Turnpike passes.



WVDOH

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Because of the large volume of tractor-trailers that use the interstate, an effective detour route must meet certain dimensional standards. According to the Turnpike Emergency Control Plan, detour routes must have lanes at least 11 feet wide, grades of 8 percent or less, vertical clearance of 14 feet and 6 inches, and curves that can be safely traveled by a vehicle that is 73.5 feet in length. Detour routes should also provide basic motorist services, such as places to purchase food and gasoline.

Although there are a number of opportunities to exit the Turnpike between Charleston and Beckley, most of the intersecting routes do not meet the detour requirements. US-19 in Fayette and Raleigh counties is therefore a designated detour route for a 45-mile stretch of the Turnpike between Exit 85 (Chelyan) in Kanawha County and the I-77/I-64 junction located on the south side of Beckley.

Given the importance that US 19 plays in the MPO area, the addition of interstate traffic to this busy corridor certainly creates disruptions in local transportation patterns. The Emergency Traffic Control Plan states that when detours are necessary, the state's Traffic Management Center will alert law enforcement and local officials for assistance in traffic control at intersections, especially where US 19 passes through busy commercial areas or downtowns.

## INTELLIGENT TRANSPORTATION SYSTEMS

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Intelligent Transportation Systems (ITS) refers to the use of advanced technologies to manage the existing transportation system more effectively, improve its efficiency, and to make the system more user friendly.

A variety of ITS technologies are in use in the MPO region, ranging from dynamic message signs that display motorist advisories to automatic vehicle locator (AVL) systems that allow the Raleigh County Community Action Association to know where its transit vehicles are at any given moment.

Closed-circuit cameras installed at strategic locations on I-77, I-64 and US 19 send video footage back to DOH's state Traffic Management Center and the Parkway Authority's Traffic Operations Center to allow monitoring of traffic conditions.

**Table 4-2** provides a list of key ITS technologies currently used in the region.

**Table 4-2: ITS Equipment Used in the MPO Region**

Type	Location	Purpose
Electronic Toll Collection (EZ Pass)	Turnpike, at toll plazas	Allows motorists and truckers to pay tolls electronically instead of with cash, reducing need to stop at toll plaza
Automatic Vehicle Location (AVL)	On RCCAA transit vehicles throughout Raleigh County	Real-time vehicle tracking so that a central dispatch can determine location or re-route a vehicle if needed
Dynamic Message Signs	<p>I-77 southbound:</p> <p>Mile Marker 81.9 near Fayette/Kanawha county line</p> <p>Mile Marker 75.8</p> <p>Mile Marker 55.8</p> <p>Mile Marker 36.5, near WV County Route 19/41</p> <p>Mile Marker 26.4, near Flat Top Road</p> <p>I-77 northbound:</p> <p>Mile Marker 68.3</p> <p>MM 58.5</p> <p>MM 55.8</p> <p>US 19:</p> <p>North of Appalachian Heights Road</p>	<p>Advise drivers of important road conditions.</p> <p>Examples: caution is needed ahead, a detour is required, or a certain exit is closed.</p>
Closed circuit video cameras	<p>On I-77:</p> <p>Mile Marker 44 (WV 3 / Harper Road interchange)</p> <p>US 19/N. Beckley interchange</p> <p>Mile Marker 74 (WV 83 / Paint Creek Road interchange)</p> <p>On I-64:</p> <p>Mile marker 125, near the WV 307 / Airport Road interchange</p> <p>On US 19:</p> <p>Appalachian Heights Road</p> <p>Glen Jean interchange</p> <p>New River Gorge Bridge</p>	<p>Monitor traffic conditions at a remote operations center.</p> <p>Provide real-time video footage on public website.</p>

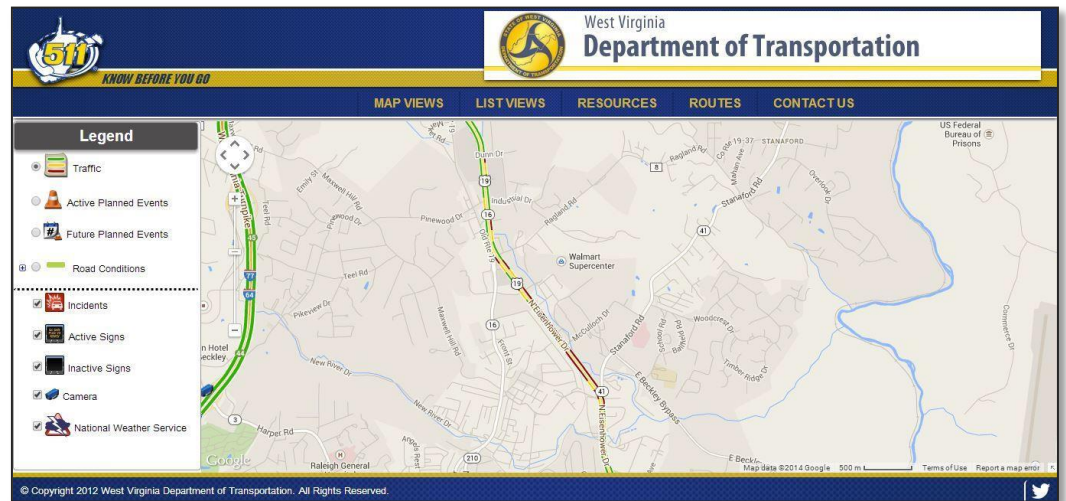
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## Traveler information

West Virginia has implemented a statewide 511 system allowing travelers to access information about road and weather conditions by phone. Similar information is made available on the WVDOT's website in both list and map formats.

*The WVDOT's 511 website (right) offers real-time maps showing the location of reported incidents, current traffic conditions (color-coded from green to red, construction work zones, and weather-related issues.*

*Within the MPO region, this real-time information is available for the I-77, I-64 and US 19 corridors.*



Website: [www.wv511.org](http://www.wv511.org)

## Signal coordination

In most regions, the traffic signal system is one of the best opportunities to make significant improvements to congestion at a relatively low cost. Proper signal coordination can greatly improve traffic flow along urban highways by reducing delay and the number of stops. Signal coordination can also decrease intersection crash rates, reduce rear-end conflicts, and reduce crashes during turning movements at signalized intersections.

However, the proper functioning of the system requires regular maintenance. Signal timing must be updated periodically as new access points are added along a road, or when development changes result in new traffic patterns. In addition, signal coordination requires individual traffic signals to be linked by a communications system, controlled by a central computer. Older signals often do not have the necessary electronic equipment to be connected in this way.

Currently WVDOH operates a coordinated system for several traffic signals along the Eisenhower Drive portion of US 19. This Plan recommends that the MPO work with WVDOH to evaluate the need for coordinated signal control on other parts of the corridor, especially given the role that US 19 is expected to play when it is necessary to divert Turnpike traffic to the corridor. A number of traffic operations projects have been recommended for near-term implementation as part of the proposed roadway projects shown in Tables 5-3 through 5-3 in the next chapter.



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## ACCESS MANAGEMENT

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A road's operational efficiency and safety can be significantly affected by the way it is designed. This is an important issue to consider as various road projects in the 2045 Plan are implemented, particularly if the region wants to preserve the capacity that is being added through those projects.

Each time a vehicle makes a turn, it increases the number of potential conflict points with other vehicular movements on the same road, and thus increases the crash risk. A driver making a left turn across oncoming traffic is in a particularly vulnerable position: in addition to the potential for being struck from the side by an oncoming vehicle, the driver is also at some risk of being rear-ended or struck at an angle by vehicles traveling in the same direction as the driver and approaching from behind.

The potential severity of such a crash is much greater on a higher-speed road, and its risks are multiplied when the road is a multi-lane highway. Some multi-lane highways are designed with a center two-way left turn lane, particularly in areas with extensive commercial development on either side of the road. There are some benefits to having this center lane. It provides a place for a left-turning vehicle to move out of the main flow of traffic while waiting to complete the left turn, which helps reduce delay for vehicles approaching from behind, as well as the risk that they will strike the turning vehicle.

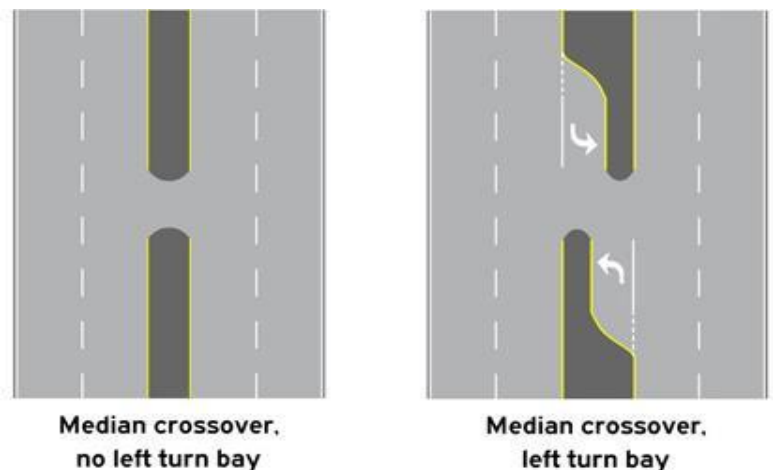
However, the center lane also introduces new risks, including the potential for a crash with other vehicles trying to move into the center lane for the same purpose. Having a continuous two-way left turn lane also means that drivers must contend with the possibility of having another vehicle move directly into their path at any given location along the road. This effectively slows the speed at which they can safely travel, particularly if they must periodically brake to avoid left-turning drivers.

### Medians

Medians serve an important safety purpose on multi-lane roadways by providing a clear physical separation between bi-directional traffic. Medians also improve traffic flow by limiting left turns across oncoming traffic to a small number of designated locations.

At locations where there are frequently multiple vehicles waiting to turn left, turn bays are provided to allow turning vehicles to move out of the travel lane until there is an opportunity to cross, so that other motorists are not delayed behind the vehicle that is waiting to turn. (See **Figure 4-7.**)

**Figure 4-7: Median Crossover Designs (from *Model Inventory of Roadside Elements*: FHWA, 2010)**





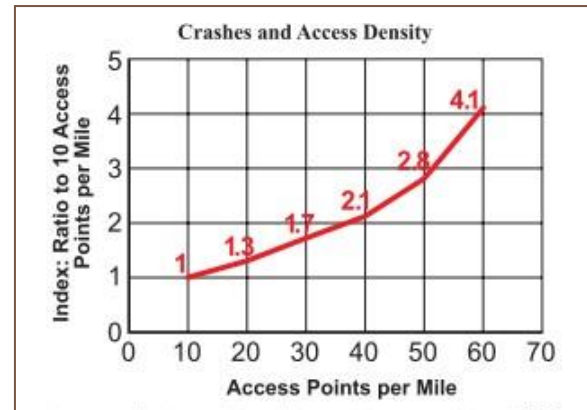
WVDOH's policy does not permit new median openings on divided highways unless it is proven through a traffic impact study that they are necessary and that the new opening will not degrade the highway's level of service for thru-traffic.

### Driveway Management

As noted earlier in this chapter, roads are classified according to their function. The primary purpose of low-speed roads is to provide property access, whereas higher-speed roadways provide few access points because their primary purpose is to carry thru-traffic. On higher-speed roads, therefore, there should be fewer driveways overall.

Driveway management on arterial routes can yield considerable operational benefits, allowing traffic speeds to improve as much as 15 to 20 miles per hour.

**Figure 4-8** shows there is also a significant safety benefit. Statistics indicate that an arterial road with 10 driveways per mile has 30 percent fewer crashes than a similar road that has 20 driveways per mile.



**Figure 4-8:** Relationship between a road's crash rate and the number of access points per mile. From the Transportation Research Board's *Access Management Manual* (2003).

In order to create a new driveway on a state route, the property owner must first apply to WVDOH for a permit. WVDOH then reviews the proposed number of driveways as well as their location and design against its regulations, which were adopted in 2004 in order to preserve operational capacity and safety on public roads.

Generally, a property with 50 feet or less of road frontage is allowed one driveway. No more than two driveways are permitted for a single property unless a traffic study shows that additional driveways would improve traffic operations on the adjoining highway. Driveways must be located so that drivers have a certain minimum sight distance, which varies according to the speed of traffic on the adjoining highway.

### Implementation

The best opportunity to achieve good access management is when a new road is being constructed, or when a major road widening project is scheduled so that driveway locations can be adjusted during construction. Local and state officials should work with adjoining property owners to discuss driveway locations during the engineering/design phase of the road project.

To preserve efficient and safe traffic flow along US 19 in Fayette County, it is very important for state and local officials to work together to maintain existing access management policies as new development occurs. Better access management should also be a goal along the commercial areas of WV 16 (Robert C. Byrd Drive) and US 19 (Eisenhower Drive, Ritter Drive) in Raleigh County.

# Freight

Although many people think most often about the transportation system in terms of their commute to and from work, it plays a vital role in a strong economy by providing efficient movement of freight and goods. Nearly 175 million tons of freight, valued at \$55 billion, is shipped from West Virginia annually.

The U.S. Bureau of the Census periodically collects data on freight shipments through the Commodity Flow Survey, most recently performed in 2012. While data at the metropolitan level had not been released in time for use in this plan, many trends impacting the Fayette/Raleigh MPO region can be understood through the state-level data that has been made available. The West Virginia Department of Transportation is also undertaking a statewide freight plan which will include additional data collection and provide an opportunity for the MPO region to participate in developing future strategies.

## TOP COMMODITIES AND TRANSPORTATION MODES

West Virginia uses rail to transport a much greater percentage of its total freight tonnage than the U.S. as a whole: 57 percent for the state versus only 16 percent nationally. This is largely due to coal's continued importance in the state's economy. As shown in **Table 4-3**, coal makes up more than three-fourths of the total freight tonnage shipped from West Virginia annually, and is also the top commodity ranked by value.

However, most of the other major commodities being shipped from West Virginia – either by tonnage or by dollar value – are predominantly transported by truck. Trucks are expected to continue to dominate the transport of goods in West Virginia for the next 25 years, according to the Federal Highway Administration's Freight Analysis Framework projections, carrying an additional 70% of freight tonnage by 2040. In light of these trends, it is critical to continue investing in the regional freight network, and to manage congestion on US 19, WV 16, WV 3 and other major routes that trucks use to access the interstates that run through the region.

**Table 4-3: Top Commodities Shipped from West Virginia, by Tonnage**

Commodity Code	Description	Pct of Total Tonnage	By Truck	By Rail
15	Coal	76%	15%	71%
12	Gravel and Crushed Stone	6%	99%	-
31	Non-metallic Mineral Products	4%	83%	17%
19	Other Coal and Petroleum Products	2%	44%	*
20	Basic Chemicals	2%	66%	29%
26	Wood Products	2%	99%	-
32	Base Metal in Primary or Semi-Finished Form	2%	95%	-
24	Plastics and Rubber	1%	41%	58%

**Source:** U.S. Bureau of the Census, 2012 Commodity Flow Survey (CFS). All other commodities are less than 1 percent of total tonnage. The symbol \* indicates values not reported in the 2012 CFS due to data confidentiality or other issues.

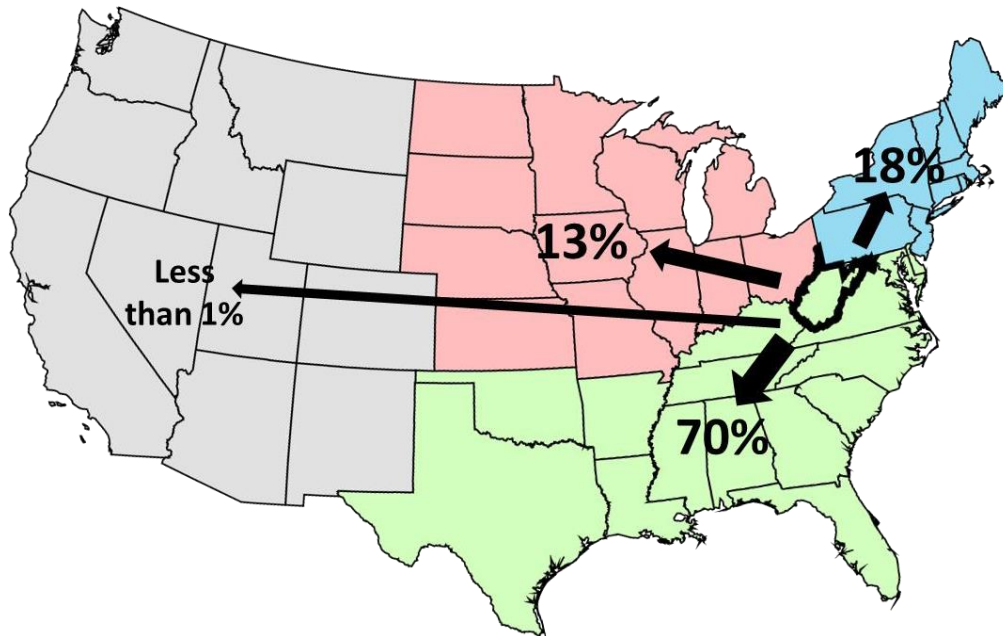
**Table 4-4: Top Commodities Shipped from West Virginia, by Dollar Value**

Commodity Code	Description	Pct of Total Value	By Truck	By Rail
15	Coal	17%	15%	71%
21	Pharmaceutical Products	13%	100%	-
32	Base Metal in Primary or Semi-Finished Form	7%	95%	-
20	Basic Chemicals	7%	66%	29%
34	Machinery	7%	98%	-
24	Plastics and Rubber	6%	41%	58%
19	Other Coal and Petroleum Products	5%	44%	*

**Source:** 2012 CFS. All other commodities are less than 5 percent of total value.

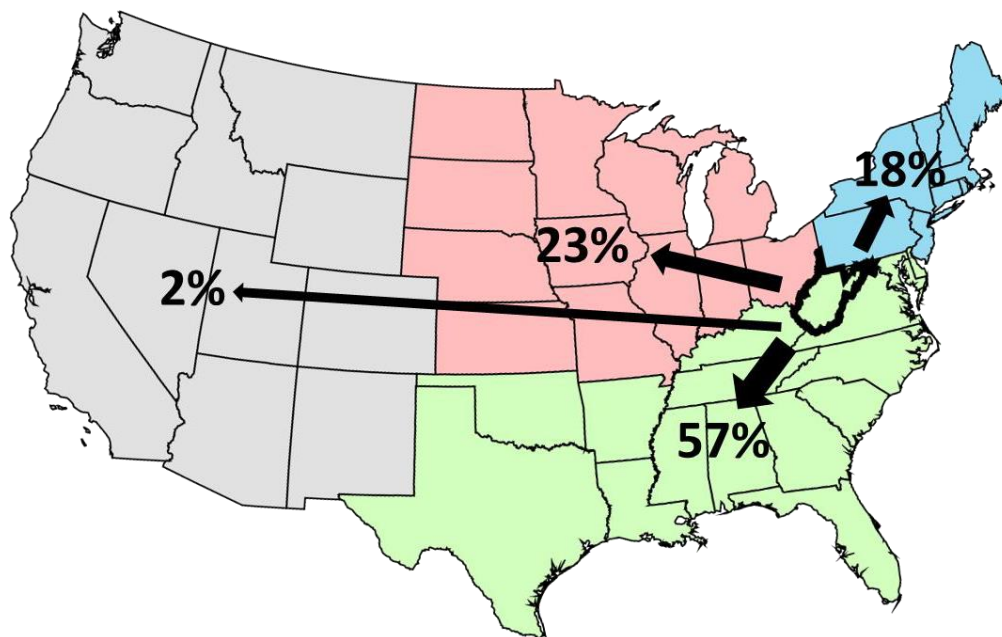
A majority of freight shipped from West Virginia is headed for destinations in the U.S. South, as shown in **Figures 4-9** and **4-10**, which underscores the statewide importance of efficient traffic flow on Interstates 64 and 77. In fact, a 2011 report by the Institute for Trade and Transportation Studies (ITTS) named Virginia and North Carolina among the state's top trading partners.

**Figure 4-9: Freight Shipments by Tonnage from West Virginia to U.S. Regions**



**Source:** Calculated from 2012 CFS data.

**Figure 4-10: Freight Shipments by Dollar Value from West Virginia to U.S. Regions**



Source: Calculated from 2012 CFS data.

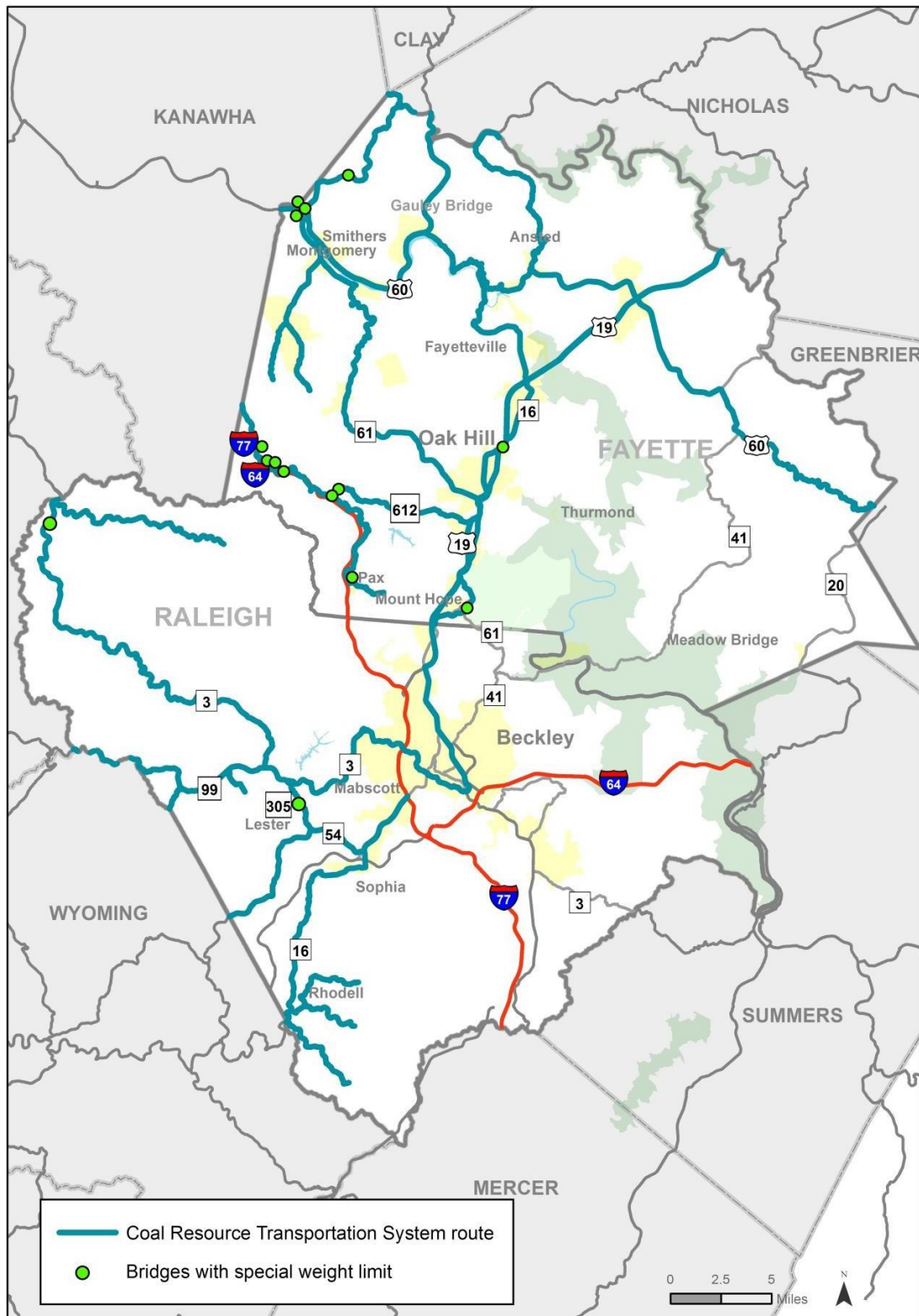
## REGIONAL ISSUES

This Plan recommends operational improvements at several locations which could help to address challenges stemming from a mix of heavy truck traffic with local and tourist automobile traffic. Particular problem spots include the I-77 interchanges at WV 3 (Harper Road) and WV 16 (Robert C. Byrd Drive) in Mabscott. Traffic flow at these interchanges is affected by the close spacing of other major roads, making it essential to establish and maintain proper signal timing. At the I-77/WV 16 interchange, heavy trucks also encounter a steep grade as they approach from the southwest, which may become more problematic as traffic volumes increase after the Coalfields Expressway is completed. Residents and local businesses near the I-64/Airport Road interchange indicated that heavy trucks encounter problems attempting to use WV 307 East (Scott Ridge Road), which has very narrow lane widths and sharp curves in certain locations. Measures could include modifying the existing overhead sign for WV 307 West to indicate it leads to US 19. Local officials may also wish to consult with WVDOH about potential vehicle restrictions for WV 307 East.

### Coal Resource Transportation System (CRTS)

Certain designated roads in Fayette and Raleigh counties are part of the Coal Resource Transportation System (CRTS), established in 2003. On these routes, coal haulers may purchase a permit to allow a Gross Vehicle Weight (GVW) of up to 120,000 pounds depending on their truck configuration. Permit fees are deposited into the Coal Resource Transportation Fund, a special account used by WVDOH to match funds provided by coal companies and other parties to repair and improve the CRTS system of roads and bridges. Bridges marked in **Figure 4-11** have special gross maximum vehicle weight limits.

**Figure 4-11: Coal Resource Transportation System (CRTS) Routes in the Fayette/Raleigh MPO**

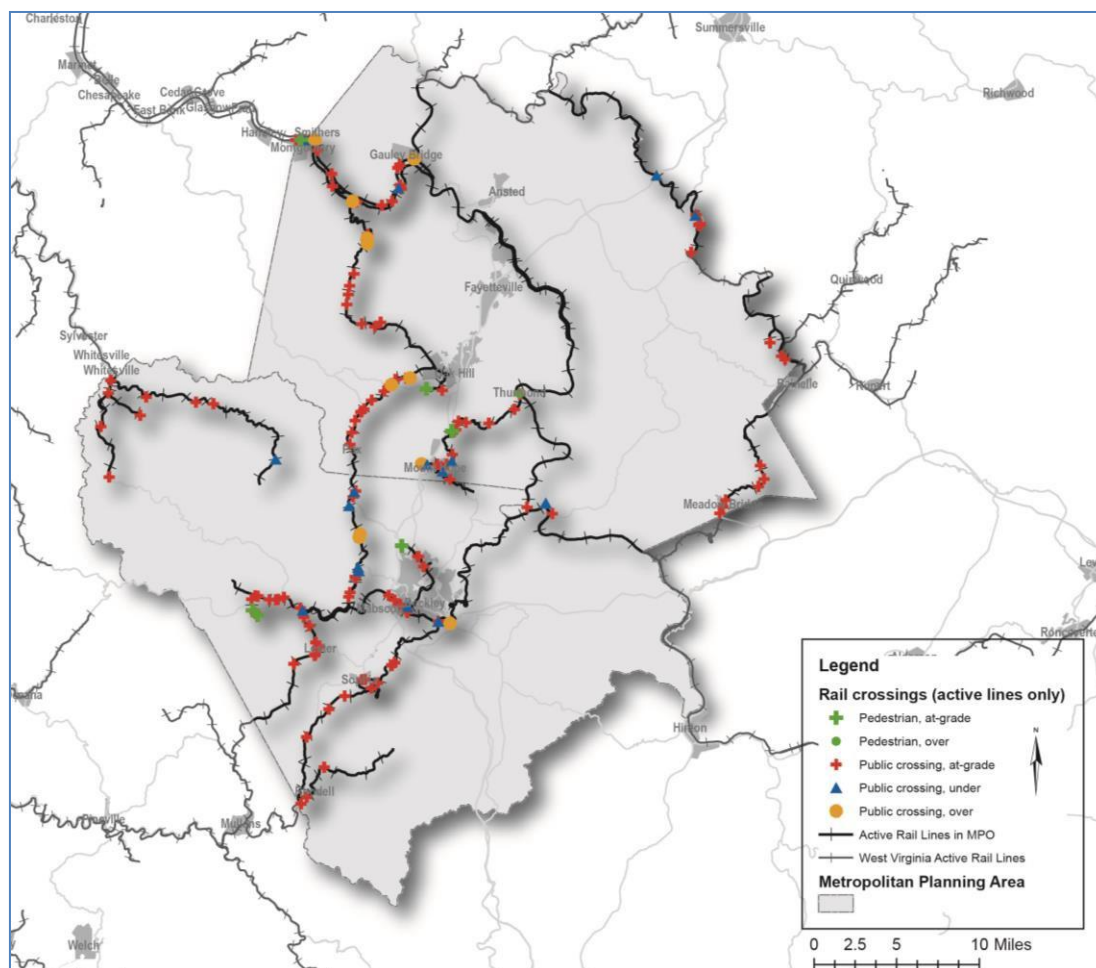




# Rail

The Fayette/Raleigh MPO is one of the most rail-dense parts of West Virginia, with 301 miles of active rail line that represents about 10% of the state's active rail network. An additional 143 miles of track is classified as abandoned, consisting primarily of spurs that previously served coal mines or other industrial sites that are no longer in operation.

**Figure 4-12: Active Rail Network and Crossings**



Source: U.S. Bureau of Transportation Statistics, 2001 National Transportation Atlas Database

## RAIL OWNERSHIP

Nearly all of the active track in the MPO region is owned by Class 1 railroads, specifically CSXT and Norfolk Southern, as shown in **Table 4-5**.

**Table 4-5: Rail Ownership in the MPO Region**

Owner	Name	Mileage
<b>CSXT</b>		<b>181.1</b>
	Baltimore and Ohio	2.0
	Chesapeake and Ohio	113.2
	Fredericksburg/Gordonsville	9.8
	Unnamed	56.2
<b>Norfolk Southern</b>		<b>118.8</b>
	Chesapeake and Ohio	5.1
	Conrail	10.6
	Fredericksburg/Gordonsville	8.9
	Nicholas Fayette Greenbrier	19.4
	Norfolk and Western	50.2
	Unnamed	24.5
<b>Private</b>		<b>0.6</b>
<b>Total</b>		<b>300.5</b>

Source: U.S. Bureau of Transportation Statistics,  
2001 National Transportation Atlas Database

## CROSSINGS

The region has 129 at-grade rail-highway crossings, or one for every 2.3 miles of active track. The majority of crossings are equipped with some sort of warning equipment, as shown below in **Table 4-6**.

Only 8 train collisions have been recorded in the region since 2004, and none resulted in fatalities. Six of those were at public crossings.

**Table 4-6: Warning Equipment Used at Grade Crossings**

Railroad	Total	Type of Highway Warning Equipment				
		None	Signs	Flashers	Gates	Other
<b>CSX</b>	81	6	26	28	5	16
<b>Norfolk Southern</b>	50	2	13	22	0	13
<b>Total</b>	<b>131</b>	<b>8</b>	<b>39</b>	<b>50</b>	<b>5</b>	<b>29</b>

Source: U.S. Federal Railroad Administration, Office of Safety (March 2014)



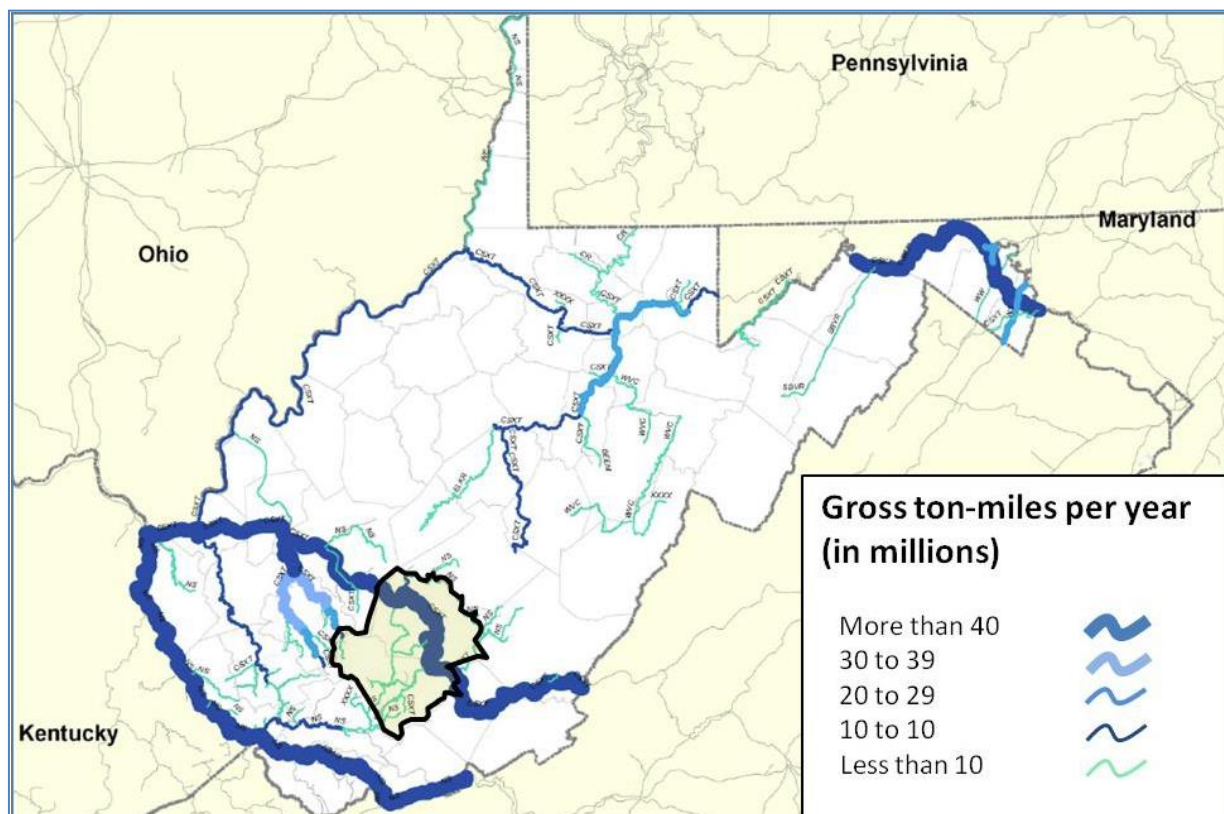
Seven grade crossings are pedestrian-only, including these locations:

- The New River line north of Mount Hope;
- The New River line in Thurmond;
- The New River line in Montgomery;
- The Raleigh Southwest south of Oak Hill;
- The short line (C&O) to the northwest of Beckley;
- Along the Pocahontas spur northwest of Lester; and
- The terminus of the Pocahontas spur northwest of Lester.

## FREIGHT RAIL SERVICES

Some of the state's most heavily used tracks (in terms of ton-miles) pass through Fayetteville, corresponding to the old Chesapeake and Ohio RR currently utilized by CSXT, and shown below in **Figure 4-13**:

**Figure 4-13: Rail Freight Density, 2003**



Source: WVDOT State Rail Plan

According to the recently completed State Rail Plan (2013), approximately 94% of all originating and 76% of all terminating rail traffic is coal. No major freight rail service improvements are planned for the MPO area.

## PASSENGER RAIL SERVICES

Amtrak currently services the Cardinal Line, which provides overnight service three times a week that connects Chicago, Washington D.C., and New York City. The Cardinal passes through Kentucky and southern West Virginia on its route between Chicago and Washington.

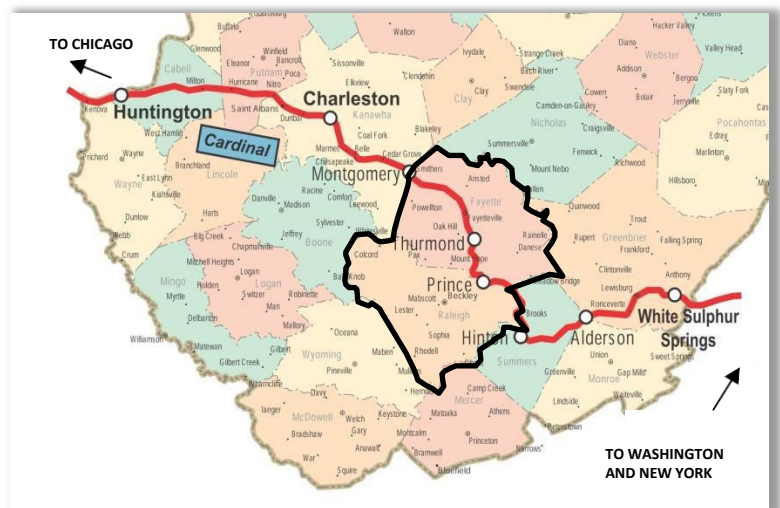
The train makes three stops in the MPO region, all of which are in Fayette County. Heading toward Washington and New York, the Cardinal makes its stops in the region between 8:45 and 10 a.m. on Wednesdays, Fridays and Sundays.

When bound for Chicago, the train stops in Fayette County between about 6:35 and 7:45 p.m. on Mondays, Thursdays and Saturdays.



*From Amtrak*

- The **Montgomery** station, located in the far northwestern part of the region near the Kanawha County line, had about 600 riders in FY2013. The Kanawha Valley Regional Transit Authority previously provided service to the Montgomery station but this is no longer the case.
- The **Thurmond** station is located just north of the intersection of County Highways 25 and 2. Passengers board at a grade crossing within a short distance of the old station building, which doubles as a National Park Service visitor center. At the height of the area's coal mining days in the early 20<sup>th</sup> century, more than 75,000 passengers boarded at this location. During FY 2013 it had a ridership of 563, making it the state's least-frequented stop according to Amtrak. Thurmond is a flag stop, meaning the train stops only if a passenger has made a reservation to board or alight at that location.
- **Prince** is the only staffed ticket office in the area and the only one that provides Amtrak baggage checking services. More than 3,400 boardings were recorded at the Prince station in FY2013. Although it is located on WV 41 just over the Fayette/Raleigh county line, this location is described by Amtrak as the Beckley depot. The nearest regular public transit service which rail passengers might use is the Raleigh Express, whose Gold Route serves Stanaford Road (WV 61) to a point about 4.5 miles from the Prince station.



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In recent years local interest in the Prince station has increased, particularly with the creation of the national Boy Scout Reserve located less than 10 miles from the station. Fayette and Raleigh counties have formed a joint authority to seek funds to make improvements at the site, including facility upgrades to increase ADA compliance.

The Cardinal Line continues to experience challenges with respect to its overall performance compared with Amtrak's other routes, ranking in the bottom third, according to the State Rail Plan. Successful operation of this service on a broader basis is therefore essential for the continued viability of passenger rail service in southern West Virginia.

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# Aviation

The nearest airport with regular multi-airline commercial service for the MPO region is Yeager Airport (CRW) in Charleston, located about 60 miles north of Beckley via I-77.

Within the MPO region, the only public airport is Raleigh County Memorial Airport (airport location ID BKW), which is a general aviation airport that supports one commercial airline and a small amount of air cargo. It is governed by the Raleigh County Airport Authority, which has responsibility for the maintenance of the airfield. In addition to Raleigh and Fayette counties, the airport's official service area also includes Summers and Nicholas counties.



*Courtesy of Raleigh County Memorial Airport Authority*

## LOCATION AND ACCESS

From the air, Raleigh County Memorial Airport is approximately three nautical miles (6 km) east of Beckley's central business district.

Access is via Airport Road, which connects with I-64 (East/West), I-77 (North/South directions) and US 19/WV County Road 3 to the south.

Available ground transportation includes three rental car services and a limousine/tour bus service.

## AIRPORT CHARACTERISTICS

The airport has two intersecting asphalt runways in order to separate airplane classes and to accommodate cross-wind conditions. Both runways are in good condition, according to the most recent Airport Master Record, and are automatically lighted at dusk and dawn.

Runway 01/19 is the main runway. As shown in **Table 4-7**, its greater length and load rating makes it suitable for a wider range of airplane classes than Runway 10/28.

**Table 4-7: Runway Characteristics**

	Runway 01/19	Runway 10/28
<b>Length</b>	6,750 ft.	5,001 ft.
<b>Width</b>	150 ft.	100 ft.
<b>Load rating</b>		
<b>Single-wheel</b>	75,000 lbs.	45,000 lbs.
<b>Double-wheel</b>	150,000 lbs.	60,000 lbs.
<b>Double-tandem</b>	200,000 lbs.	-

*Source: Airport Master Record*

## AIRPORT USAGE

One of the airport's essential regional functions is the role it plays in emergency and military air operations. In a region where not all areas are accessed easily or quickly by road, helicopters are vital in medical emergencies. Military operations also comprise a significant portion of BKW's air traffic. A small amount of air cargo is served, primarily from FedEx, a tenant in the adjacent industrial park.

The level of general aviation traffic at BKW has been increasing substantially over the past decade, even during the national Great Recession which significantly impacted many larger airports. This reflects a larger trend that will likely mean expansion for the region's airport.

Industry experts expect continued growth in general aviation traffic, particularly corporate, due to the changing nature of commercial air service. The delays and inconvenience of passenger security screening, as well as major airlines' on-time performance problems, are attracting more businesses to general aviation flights. Some are even jointly leasing corporate aircraft or purchasing them on a "time-share" basis.



*Courtesy of Raleigh County Memorial Airport Authority*

The average number of daily aircraft operations at Raleigh County Memorial Airport has doubled since 2007. As shown in **Table 4-8**, most of the air traffic is general aviation. In addition, much of the recent growth has been in transient traffic – defined as those whose origin or destination is a different airport – as opposed to local users who are both departing and returning to BKW. Since 2007, transient traffic has increased 22 percent.



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**Table 4-8: Average Daily Aircraft Operations, 2013**

Type of Operations	Pct
Local General Aviation	43%
Transient General Aviation	42%
Military	8%
Air Taxi (LocAir)	7%

*\* For 12 month period ending Sept. 30, 2013.*

*Source: AirNav, LLC, 2014*

### **Based Aircraft**

The number of based aircraft has remained consistent over the past several years, totaling 52 aircraft in 2013 (**Table 4-9**). While the majority are small aircraft, the airport is beginning to see some larger airplane classes as general aviation traffic has increased. If this trend continues, it will affect not only on-site storage requirements but also the design standards for future runway improvements.

**Table 4-9: Based Aircraft by Type, 2013**

Aircraft Type	Number
Single Engine	28
Multi-engine	13
Jet	5
Helicopter	6
<b>Total</b>	<b>52</b>

*Source: AirNav, LLC, 2014*

## **COMMERCIAL SERVICES**

Like many small airports, Raleigh County Memorial Airport has benefited from the federal Essential Air Service program, which provides funds to help guarantee flights and affordability of service. Through this program's assistance, the airport maintains commercial service by United Express (operated by Via Air, Inc.) to Shenandoah Valley and Washington-Dulles, which provides passengers with connections to international flights.

Albatross Air is a fixed base operator that provides maintenance and flight training. They provide minor and major aircraft maintenance for both airframe and power plant repair and services. Pilot training is also available, including ground school for both private and multi-engine pilots, and a Certified Flight Instructor (CFI) is available for flight checks. Jack's Flying Service also provides flight training.

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## RECENT IMPROVEMENTS

The airport recently received a \$800,000 Federal Aviation Administration (FAA) grant to improve safety and enhance the airport's functionality. The project includes the rehabilitation of runway 19, the addition of taxiway lighting and enhanced markings, and improvements to the current regulators, navigational equipment, and electrical support.

Funds were also recently awarded for rehabilitation of the interior of the airport's terminal building (built in 1978) to modernize it and to better accommodate Transportation Security Administration regulations.



*Courtesy of Raleigh County Memorial Airport Authority*

Other recent improvements have included the completion of the Airport Road loop, which improved traffic flow and safety for the Airport Industrial Park and provided bi-directional access to the airport.

## AVIATION NEEDS/ISSUES

The Raleigh County Memorial Airport's Master Plan, completed in September 2011, performed a study of existing airport needs and projected future growth in order to plan for capital improvements that will be needed through the year 2029. After analyzing the level and types of future demand for aviation services in the region, the Airport Master Plan found that current airfield capacity should be adequate to handle projected growth. No road improvements are recommended except as needed for access to new airport facilities that are built in the future.

However, the Master Plan does identify a number of other issues that need to be addressed so they do not become potential obstacles to the airport's growth during the next two decades:

**Safety improvements to runway areas.** Portions of the airport's runway visibility zones are obstructed by trees and buildings, according to the plan, and there is no clear line of sight between the ends of the two intersecting runways.

The plan also identifies concerns that the size of the runway safety areas at the ends of Runway 10-28 is below standard. A previous analysis of this issue found the amount of fill needed to moderate the steep grades was cost-prohibitive. The plan therefore recommends re-marking Runway 10-28 to move the thresholds closer in. While this reduces the available runway length by up to 340 feet for some operations, it allows the runway to meet safety area standards. If the airport authority wishes to preserve the entire 5,000 foot runway, it will be necessary to revisit the re-grading project at a future time.



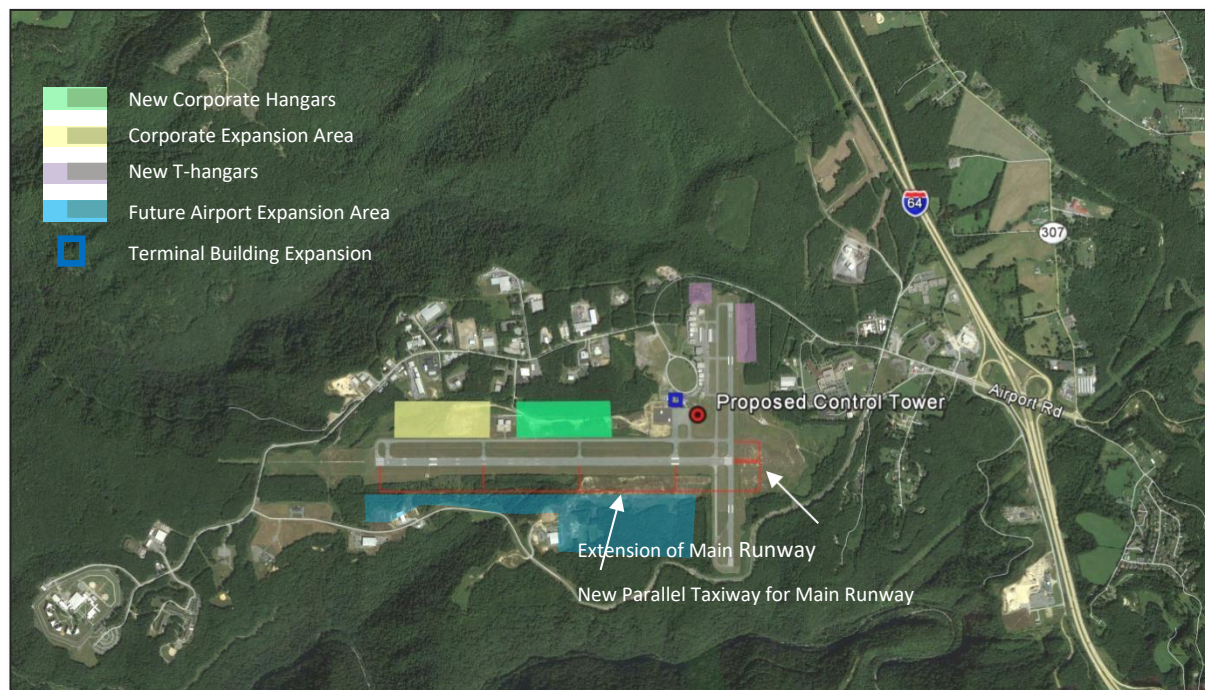
**Air Traffic Control Tower (ATCT).** The purpose of the control tower is to provide weather updates, traffic separation, and safer ground movements. Weather conditions at this airport can change rapidly, particularly fogging, due to its location in relation to the plateau. Since Raleigh County Memorial Airport currently has no tower, pilots operating under Instrument Flight Rules (IFR) must currently contact Yeager Airport for clearance.

The lack of a control tower is a issue frequently mentioned by parties who currently use the airport, as well as those who say they would use it if the tower were constructed. During the development of the Master Plan, the Federal Correctional Institute reported it would like to use the airport for prisoner transport to and from the major facility which it operates on lands adjacent to the airport. However, the agency is required to use a facility with a control tower, resulting in a drive of nearly an hour to Greenbrier Valley Airport.

Raleigh County Memorial Airport is currently involved in testing a high-tech, computer-driven "virtual tower" which was used successfully in 2013 for the Boy Scouts' summer Jamboree.

Three potential control tower sites were evaluated as part of the Master Plan. The recommended site is shown in **Figure 4-14**, along with other improvements recommended in the adopted Master Plan.

**Figure 4-14: Planned Improvements at Raleigh County Memorial Airport**



*Image from Google Earth*

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**Main runway extension.** The airport's future space needs are largely driven by the size and type of aircraft that use it frequently. As noted earlier in this section, the majority of the airport's current traffic consists of turboprop planes and smaller aircraft. However, as corporate traffic increases, Raleigh County Memorial Airport is beginning to see a growing number of flight operations by larger aircraft such as the Gulfstream V. Although this plane can use the existing airfield, it would be preferable to shift to runway design standards for the larger class of aircraft when it is possible to do so. Ideally this would occur when other major improvement projects are scheduled.

The Master Plan also identifies a trend in greater use of the airport by jets making long-range trips. The additional fuel that must be carried for these flights makes the plane significantly heavier, requiring a longer distance for takeoff.

Runway 1-19 is therefore recommended for future extension to 7,400 feet. The plan also recommends that during this project, the runway threshold should be relocated to improve safety so that aircraft using the main runway will no longer need to taxi along Runway 10-28.

The plan notes that the future extension of Runway 10/28 would also be desirable but is not likely to be feasible due to steep terrain.

**Compatibility of adjoining land uses.** Local governments and landowners adjoining the airport property should be aware that the Runway Protection Zone may need to be expanded in conjunction with the future extension of Runway 1-19.

In fact, the Airport Master Plan notes that local government zoning and development regulations do not currently specify height restrictions for structures built within the runway approach areas. In order for the region to maintain its aviation services and its eligibility for federal funds, it is important to ensure these safety requirements are addressed.

**Additional space for based aircraft.** To meet the projected demand for local general aviation traffic, the plan identifies a need over the next two decades to construct additional corporate hangar space suitable for the larger aircraft that are beginning to use the airport, six new t-hangar bays, and additional apron tie-down parking.

**Separation of commercial and GA traffic.** The U.S. Transportation Security Administration advises airports to maintain separation between general aviation traffic and the more secure areas for commercial aircraft and passengers. To address this issue as the airport grows, the Master Plan recommends expansion of the terminal apron so that transient general aviation aircraft can be parked separately from commercial traffic. Future expansion of the terminal building to the north is also planned in order to provide a separate area for commercial air service.

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# Safety & Security

## SAFETY

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Efforts to improve roadway safety involve multiple agencies that span the federal, state, and local levels. Activities typically fall into two categories: the improvement of existing roadways, and education/outreach programs designed to improve traveler behavior.

### Federal

Highway safety at the federal level is administered through the **Highway Safety Improvement Program (HSIP)**, most recently codified in the FAST Act. The HSIP provides funding to state and local agencies for highway safety programs contingent on the fulfillment of several requirements that promote a data-driven, strategic approach to reducing fatalities and injuries on highways throughout the nation. Additionally, the HSIP sets aside funding to evaluate and improve safety at highway-rail grade crossings under 23 USC 130, commonly referred to as the **“Section 130”** program. These funds are apportioned to the states for rail crossing safety data analysis, the installation of protective devices at crossings, and other improvements.

The U.S. DOT coordinates the implementation of the HSIP through its agencies, including the **Federal Highway Administration (FHWA)** and the **National Highway Traffic Safety Administration (NHTSA)**. The FHWA and the NHTSA establish programs for states to receive funding for highway improvements and driver education efforts, respectively.

### State

The West Virginia Department of Transportation (WVDOT) addresses highway safety across all of West Virginia, including Fayette and Raleigh counties. Several areas within the department have responsibilities related to highway safety, including:

- The **Traffic Safety Planning and Analysis Section** of the Division of Highways (DOH) Traffic Engineering Division, which manages and analyzes the state’s crash data, leads the state’s implementation of the Highway Safety Improvement Program (HSIP), and conducts various highway safety studies; and
- The **Governor’s Highway Safety Program (GHSP)**, an office of the Division of Motor Vehicles (DMV), which manages safety promotion, education, and enforcement programs throughout the state.

## Highway Crash Fatality Data

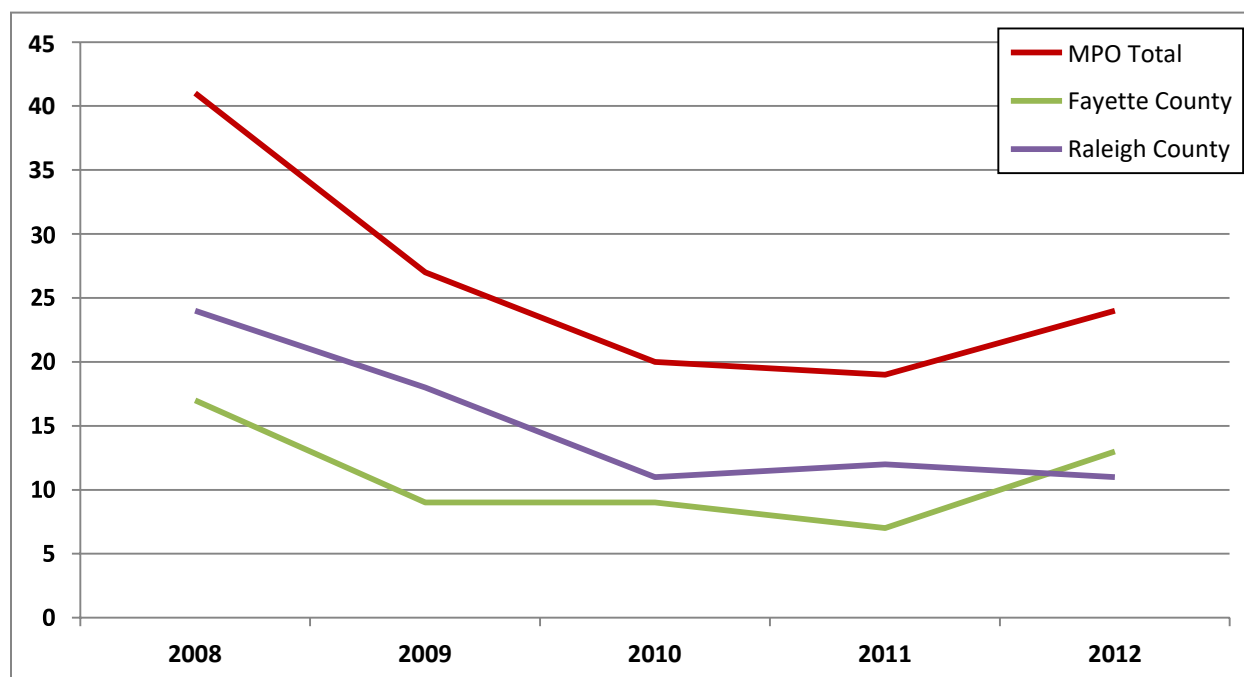
The **National Center for Statistics and Analysis (NCSA)**, an office of the NHTSA, collects and publishes a wide range of safety data for public use, including fatality data for public highways as part of the **Fatality Analysis Reporting System (FARS)**.

The most recent data available from FARS covers the five-year period from 2008 to 2012. During this time period, highway crashes in the Fayette/Raleigh MPO area resulted in 131 fatalities, of which 55 occurred in Fayette County and 76 occurred in Raleigh County. **Table 4-10** lists the number of fatalities annually for the study period for each county and the total MPO area, and **Figure 4-15** displays the trend.

**Table 4-10: Number of Traffic Fatalities, 2008–2012**

Area	Traffic Fatalities					TOTAL
	2008	2009	2010	2011	2012	
Fayette County	17	9	9	7	13	55
Raleigh County	24	18	11	12	11	76
MPO TOTAL	41	27	20	19	24	131

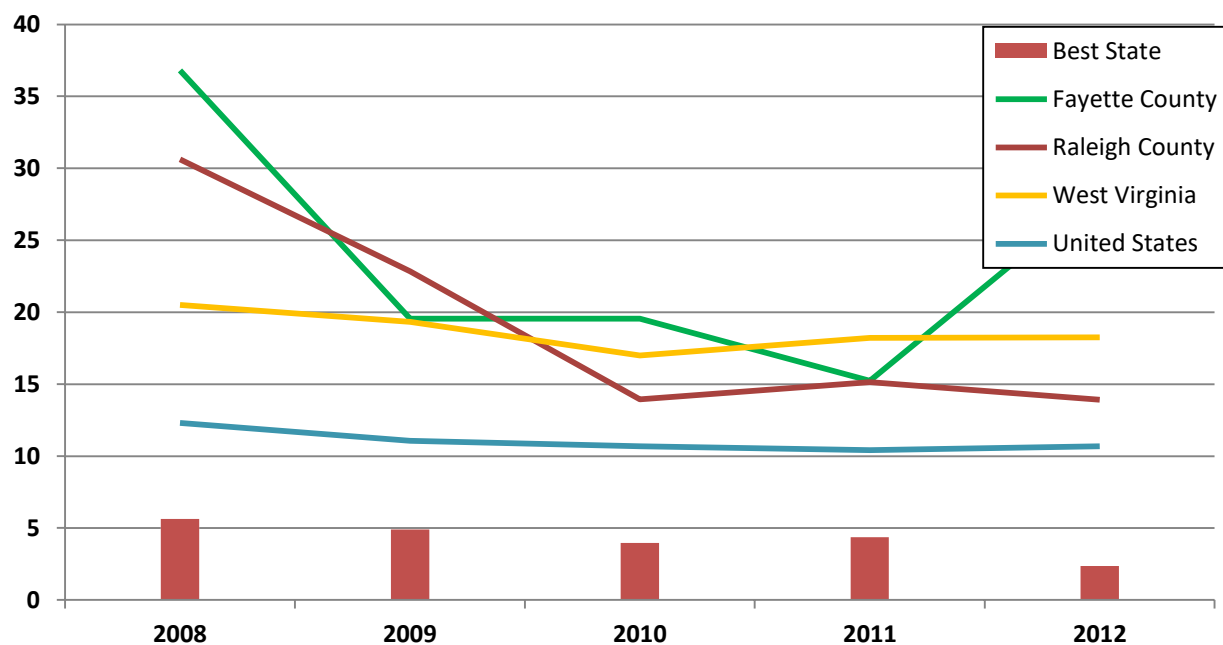
**Figure 4-15: Traffic Fatality Trend, 2008–2012**



In 2012, Fayette County had the sixth-highest number of traffic fatalities of all counties in West Virginia, accounting for approximately 4% of the state's 339 fatalities, while Raleigh County had the ninth-highest number of fatalities and 3% of the state total.

FARS also provides *fatality rates*, or the number of traffic fatalities in a particular area per 100,000 residents of that area, as a means of comparing fatalities in areas of varying population. **Figure 4-16** lists the annual fatality rates per 100,000 people during the study period for Fayette and Raleigh counties, West Virginia, the United States, and the best-performing state (as determined by having the lowest traffic fatality rate that year).

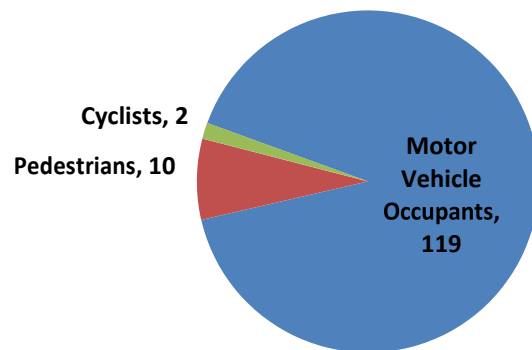
**Figure 4-16: Traffic Fatality Rates per 100,000 Persons, 2008–2012**



### Highway User Type

Of the 131 roadway traffic fatalities that occurred in the MPO area during the study period, the vast majority were motor vehicle occupants, at 91 percent. Pedestrians and cyclists made up just under 10 percent of the total, with 10 pedestrian deaths and 2 cyclist fatalities, as shown in **Figure 4-17**.

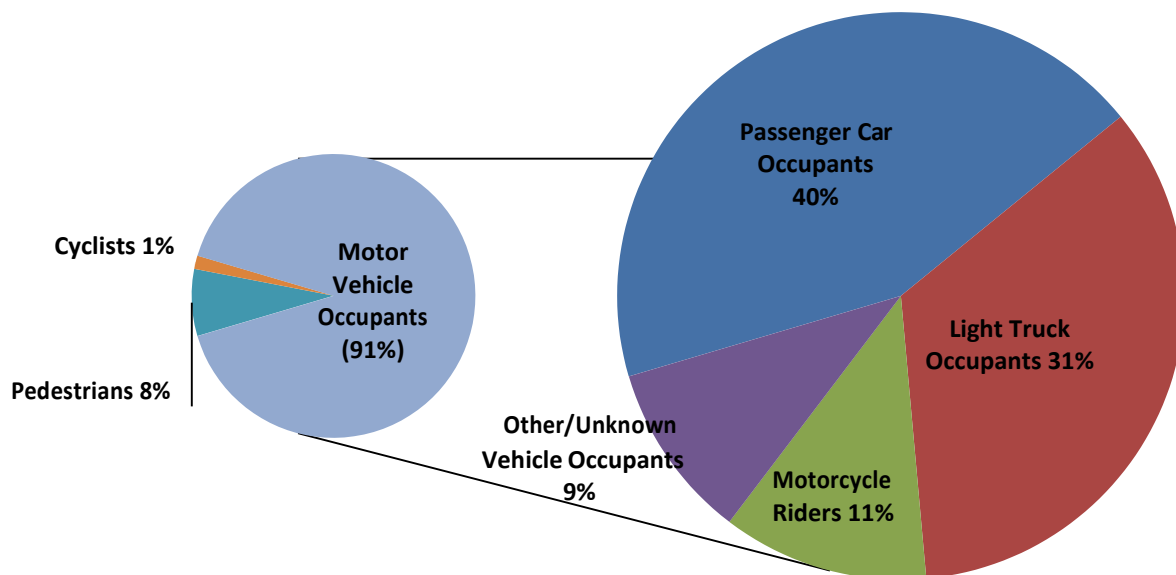
**Figure 4-17: Roadway Traffic Fatalities by Roadway User Type, 2008–2012**



### **Vehicle Type**

Most of the 119 motor vehicle occupant fatalities that occurred in the MPO area during the study period occurred in a passenger car or light truck. A total of 14 fatalities involved motorcycle occupants.

**Figure 4-18 — Motor Vehicle Occupant Traffic Fatalities by Vehicle Type, 2008–2012**

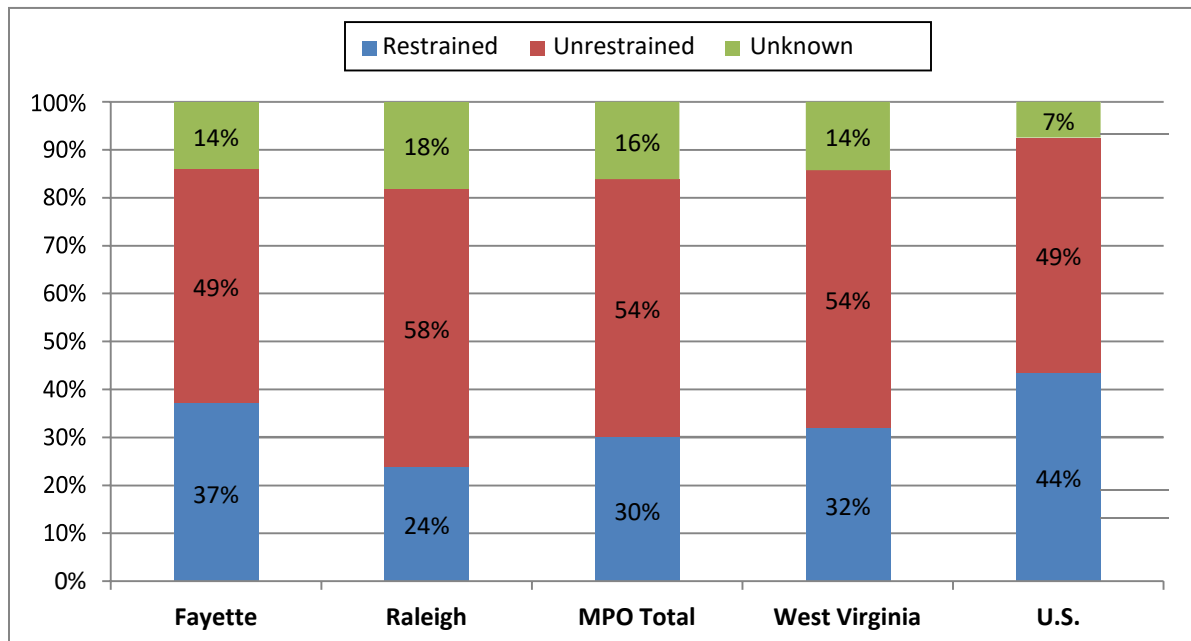




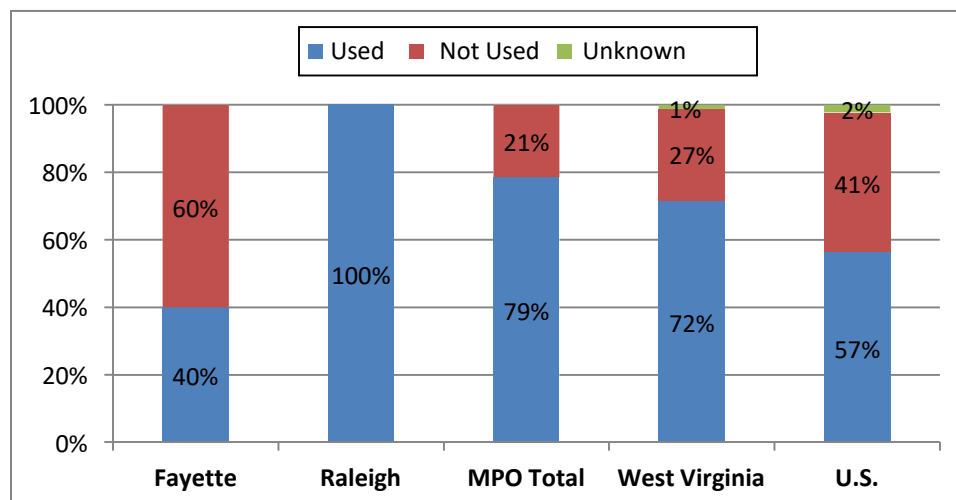
Compared with the state and U.S. as a whole, recent motor vehicle traffic fatalities in Raleigh County involved a slightly higher percentage of persons who were not using a seatbelt.

In terms of motorcycle fatalities, the majority of fatalities in Fayette County involved riders who were not wearing a helmet.

**Figure 4-19: Passenger Car and Light Truck Traffic Fatalities by Restraint Use, 2008–2012**



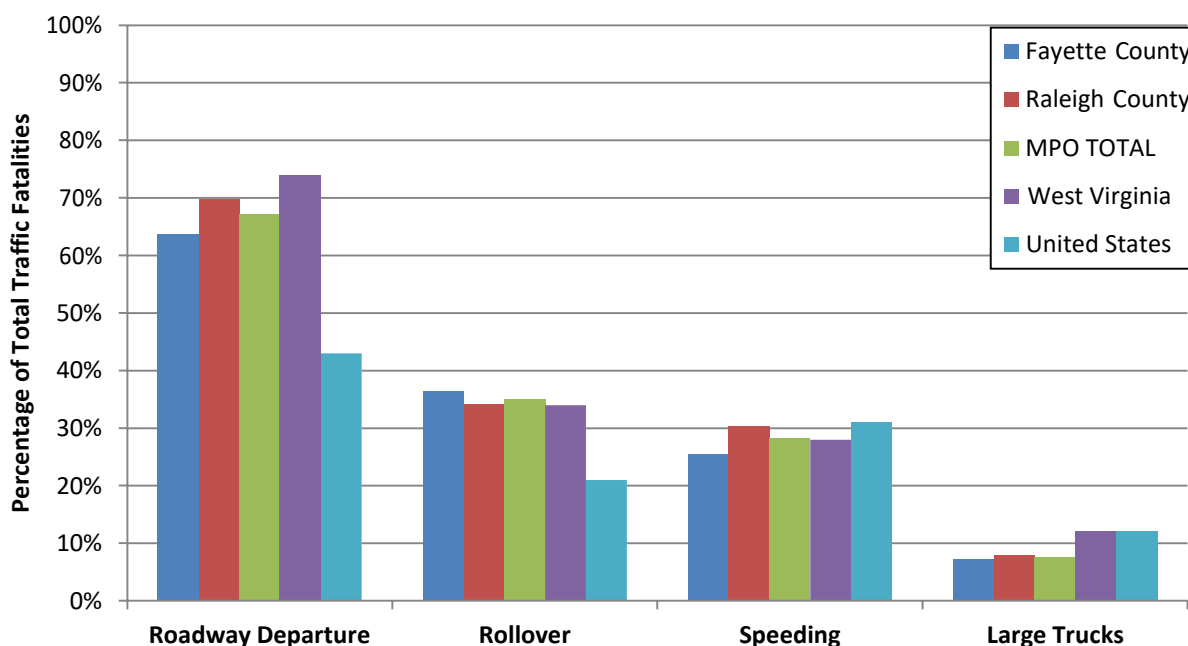
**Figure 4-20: Motorcycle Traffic Fatalities by Helmet Use, 2008–2012**



### Contributing Factors

NHTSA records factors that are considered to have contributed to traffic fatalities, including roadway departures, vehicle rollovers, speeding, or the involvement of large trucks. **Figure 4-21** displays contributing factors to traffic fatalities recorded by NHTSA as a percentage of the total traffic fatalities for the study period for each county, the MPO area, West Virginia, and the United States.

**Figure 4-21: Contributing Factors to Traffic Fatalities, 2008–2012**



As shown in the figure above, the MPO as well as the state overall has a significantly higher rate of fatalities due to *vehicle rollover* or *roadway departure* crashes – defined by the FHWA as occurring outside of an intersection and after a vehicle crosses an edge line or center line, or otherwise leaves the traveled way. This is not surprising given the number of road-miles in the region with extreme curves and grades, and the number of road-miles without nighttime lighting.

On the favorable side, Figure 4-21 also shows the region has a relatively low percentage of fatalities resulting from crashes involving large trucks.

### Pedestrian Fatalities

A total of 10 pedestrian traffic fatalities occurred in the MPO area during the study period: 3 in Fayette County and 7 in Raleigh County (**Table 4-11**).

**Table 4-11: Pedestrian Traffic Fatalities, 2008–2012**

Area	Pedestrian Traffic Fatalities					TOTAL
	2008	2009	2010	2011	2012	
Fayette County	1	0	0	0	2	3
Raleigh County	2	3	0	0	2	7
MPO TOTAL	3	3	0	0	4	10

### Cyclist Fatalities

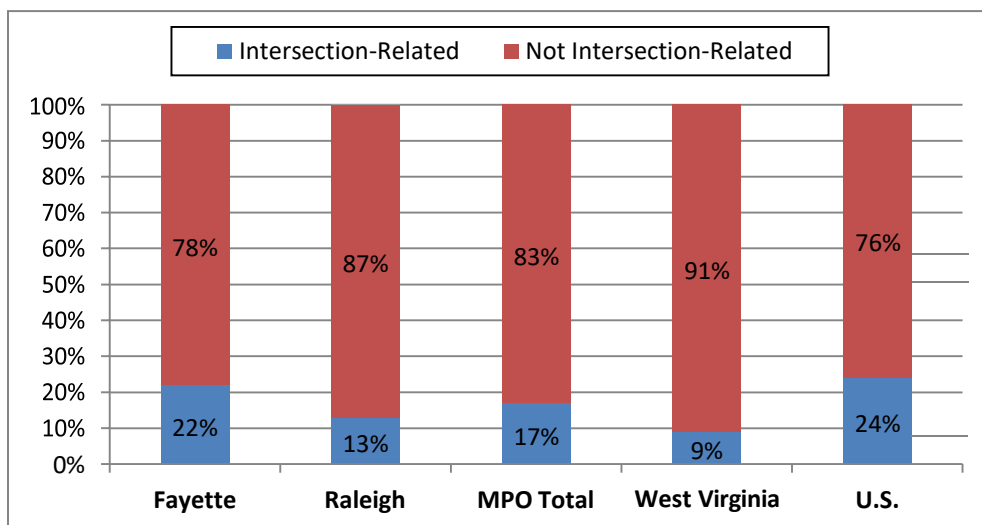
Two cyclist traffic fatalities occurred in the MPO area during the 5-year study period, both in Raleigh County.

**Table 4-12: Cyclist Traffic Fatalities in Fayette/Raleigh MPO, 2008–2012**

Area	Cyclist Traffic Fatalities					TOTAL
	2008	2009	2010	2011	2012	
Fayette County	0	0	0	0	0	0
Raleigh County	1	0	0	0	1	2
MPO TOTAL	1	0	0	0	1	2

### Location

Of the 131 traffic fatalities that occurred during the study period, 22 were intersection-related. For Fayette County, intersection-related crashes represented about 1 in 5 traffic fatalities.

**Figure 4-22: Traffic Fatalities by Location Type, 2008–2012**

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## RECOMMENDED ROADWAY SAFETY IMPROVEMENTS

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Since data regarding the location of reported crashes in the MPO region was not available for the development of this Plan, a series of interviews was conducted with area law enforcement and emergency officials who are responsible for responding to serious traffic incidents. These stakeholders, along with members of the 2045 Plan's Steering Committee, identified a number of key locations for analysis of roadway safety issues and evaluation of potential improvements.

**Table 4-13** shows the roadway safety projects recommended for the 2045 Plan.

Several projects stem from the need to accommodate visitor traffic more safely on area roadways. Many visitors are driving large recreational vehicles or pulling trailers, especially on roads that provide access to state and federal parklands, whitewater rafting businesses and other outdoor recreational business locations. Roadway modifications such as widening horseshoe turns can provide more room for large vehicles to maneuver. Other potential upgrades include the addition of acceleration/deceleration lanes at key access points to compensate for the additional time needed for heavy vehicles to reach normal operating speed (or slow down enough to turn into a driveway). These improvements have the potential to improve safety not only for visitors but also for freight traffic. This is particularly true for regional routes such as US 60, which is designated as a scenic byway but also functions as a highway on which heavy trucks are allowed to operate.

There are also a number of routes, including WV 61 and Gatewood Road, where the addition of shoulders will enhance motor vehicle safety while also providing more space for bicyclists to safely use the road. Enabling safer travel by bicycle on these routes will provide better connections between Mount Hope, Oak Hill and Fayetteville for local residents as well as visitors who have come to the region to enjoy opportunities for active outdoor recreation.

Improvements are proposed to reduce the number of intersection-related accidents, particularly along the US 19 corridor in Fayette County, where limited access allows motorists to travel at higher speeds and leads to crashes of greater severity. While the safety issues at the US 19/Glen Jean intersection have received particular attention from stakeholders and the general public, the 2040 Plan recommends that the MPO conduct a comprehensive study of the entire US 19 corridor to prioritize other locations for safety improvements and develop site-specific designs.

## SAFETY COUNTERMEASURES

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In addition to the specific projects identified in Table 4-13, this Plan recommends that various safety countermeasures (shown in **Table 4-14**) be incorporated into routine road maintenance projects as they occur throughout the region. The list includes low-cost measures such as *Safety Edge*, which several states have found effective in reducing roadway departure crashes on two-lane roads with unpaved shoulders. With this asphalt paving technique, the road pavement edge is tapered at a 30-degree angle instead of being left as a vertical dropoff. When a driver's wheel drops off the road, the gentler angle helps prevent the driver from losing control as he or she steers back onto the roadway.

**Table 4-13: Roadway Safety Projects Proposed for Implementation in the 2045 Plan**

PROJ NO	ROADWAY	FROM	TO	MILES	COUNTY	TYPE OF IMPROVEMENT
S-1	Virginia St at Oyler Ave	-	-	-	Fayette	Intersection safety improvements
S-2	Virginia St at Oak Hill Rail-Trail	-	-	-	Fayette	Intersection safety improvements, incl. pedestrian crossing
S-3	WV 16 at Veterans Dr	-	-	-	Raleigh	Intersection safety improvements
S-5	Minden Road Underpass	-	-	-	Fayette	Vehicle detection/warning with pullouts
S-8	US 60	Hawks Nest Lookout	New River Campground	6.9	Fayette	Add shoulders and widen horseshoe turns for trucks and RVs. Add pulloffs for scenic touring and/or slow moving vehicles to allow passing.
S-10	US 19 / WV 16 junction	Pinewood Dr	McCulloch Dr	1.0	Raleigh	Safety improvements, including consolidation of access points where possible
S-11	WV 61	Page Bottom Rd	Baker St	7.6	Fayette	Add minimum shoulders, safety-related signage and markings
S-12	New River Dr	WV 16 (Robert C. Byrd Dr)	Pikeview Dr	1.9	Raleigh	Construct new intersection at New River Dr and WV 16 (Robert C. Byrd) by realigning New River Dr between Ollie's Bargain Outlet and Rhonda's Home Pharmacy to align New River Drive with the existing Kanawha Street intersection
S-21	US 60 at Hawks Nest Golf Course entrance	-	-	-	Fayette	Intersection safety improvements
S-6	WV 16 (Robert C. Byrd Dr) at I- 64/77	Stovers Fork Rd	Old Eccles Rd	0.3	Raleigh	Corridor safety improvements, including access management
S-22	US 19 Corridor Safety Improvements	WV 16 (Court St., Fayetteville)	Wood Mountain Rd (CR 19/19)	10.7	Fayette	Safety improvements at US 19 intersections throughout Fayette County
S-16	US 19 / Glen Jean intersection	-	-	-	Fayette	Upgrade to interchange
S-9	Gatewood Rd	WV 16 (E. Main St, Oak Hill)	WV 16 (N. Court St, Fayetteville)	10.2	Fayette	Add 4-foot shoulders, other safety improvements
T-30	US 19 at Beckley Crossing	-	-	-	Raleigh	Align southbound approach at US 19/Beckley Crossing intersection as recommended in US 19 Corridor Study
S-31	Thurmond Rd Bridges			-	Raleigh	Improve bridges over Dunloup Creek

PROJ NO	ROADWAY	FROM	TO	MILES	COUNTY	TYPE OF IMPROVEMENT
T-32	Maxwell Hill Road and Rural Acres	-	-	-	Raleigh	Construct dual westbound left-turn lanes and an exclusive northbound right-turn lane at WV 16 (Robert C. Byrd)
S-30	US 19 and Rural Acres Dr/Stanaford Rd	-	-	-	Raleigh	Reconstruct right turn lane on northbound approach as recommended in US 19 Corridor Study
S-32	A St Safe Pedestrian Crossings	Minnesota Ave	Kanawha St		Raleigh	Addition of pedestrian crossing between Minnesota Ave and Kanawha Street
S-33	Kanawha St/Main St ADA Compliant Connection	Williams St	YMCA		Raleigh	Providing an ADA-compliant connction from the WVU Tech residence hall to the YMCA of Southern
S-34	Beckley Sharrows/Bike Lane Network	WVU Tech	Beckley Rail Trail		Raleigh	Third recommendation from WVU Tech Study. Include last recommendation from study in mid to long term
S-35	WVU Tech to YMCA Paul Cline Memorial Youth Sports Complex connections	WVU Tech	YMCA Paul Cline Sports Complex		Raleigh	Building a connection from WVU Tech to the YMCA Paul Cline Memorial Youth Sports Complex to provide student athletes and coaches with a path to and from the complex and connect to the surrounding community.



**Table 4-14: Safety Countermeasures to Incorporate into Routine Roadway Maintenance Projects**

<b>Contributing Factor to Crashes</b>	<b>Countermeasures</b>
<b>ROADWAY DEPARTURE</b>	
<p>Involved in <b>64% of crashes</b> in Fayette and Raleigh counties (19 points higher than national rate)</p> <p>Contributed to <b>88 traffic deaths</b> between 2008-2012</p>	<p><b>Rumble strips / rumble stripes</b> Alerts driver when vehicle departs the travel lane</p> <p><b>High-friction pavement surfaces</b> Increases skid resistance on wet pavement</p> <p><b>Guardrail / concrete barrier</b> Restrains out-of-control vehicles from dropoff or roadside obstacles</p>
<b>VEHICLE ROLLOVER</b>	
<p>Involved in <b>36% of crashes</b> in Fayette and Raleigh counties (15 points higher than national rate)</p> <p>Contributed to <b>46 traffic deaths</b> between 2008-2012 Ten times more likely to result in fatality</p>	<p><b>Safety Edge<sub>SM</sub></b> Increases driver control when recovering from pavement edge dropoff</p> <p><b>Seatbelt use</b> Reduces occupant ejection during crashes</p> <p><b>Curve warning signs</b> Alerts drivers of rollover-prone vehicles to sharp or sudden curves</p>
<b>SPEEDING</b>	
<p>Involved in <b>25% of crashes</b> in Fayette and Raleigh counties Contributed to <b>37 traffic deaths</b> between 2008-2012</p>	<p><b>Speed advisory signs</b> Alerts drivers to conditions requiring lower speeds</p> <p><b>Regulatory signs</b> Reminds drivers of posted speed for roadway</p> <p><b>Traffic calming</b> Encourages lower speeds on urban low-speed roads</p>

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## SECURITY

Generally the role of transportation agencies in security is to provide support to the state, local and/or federal emergency management officials who oversee overall response efforts. Traffic control is often an essential service to emergency agencies when they are managing a crisis situation.

Transportation agencies may also work in coordination with emergency and homeland security officials to identify transportation infrastructure that is particularly critical or vulnerable, and develop plans to reduce the risk that these locations or routes will become impassable. Often the plans or lists generated through this process are not made publicly available so that the area is not advertising its weaknesses to those who might pose a threat.

Fayette and Raleigh counties each have a Local Emergency Planning Committee (LEPC) responsible for designating facilities for emergency use and ensuring preparedness to restore critical infrastructure, as well as a Emergency Management Center which coordinates the response of public and private agencies to incidents, including those that impact the region's transportation system.

## HIGHWAYS

**Strategic Highway Network (STRAHNET).** The Strategic Highway Network, also known as STRAHNET, is a system of about 61,000 miles of highways which are considered important to the nation's strategic defense. An additional 2,000 miles of STRAHNET major connectors link approximately 200 major military installations and ports. Together, STRAHNET and the Connectors define the total minimum public highway network necessary to support military deployment needs. Special considerations for STRAHNET routes include maintenance of bridge capability, pavement conditions, and congestion management.

STRAHNET routes in the MPO region include I-77 and I-64.

**Real-time monitoring.** The state's Courtesy Patrol (described in more detail under Operations and Systems Management) uses drivers who receive Homeland Security training to monitor roadways, bridges and overlooks as they make their regular rounds on interstates and other major highways. Suspicious activities and potential threats are reported to law enforcement, along with the locations of concern. Patrol drivers also help law enforcement when Amber Alerts are issued by watching area highways for vehicles and persons who are being sought in connection with the alert.

## TRANSIT

The Raleigh County Community Action Association, which provides various public transportation services throughout Raleigh County, has automatic vehicle location technology on its vehicle fleet. This allows a central dispatcher to monitor in real time where its drivers are located. Two-way communications also allow transit drivers to inform dispatchers if they encounter a threatening situation either on the road or if an issue occurs on the vehicle.

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# Transit

## Framework for Services

The designation of Fayette and Raleigh counties as a Metropolitan Planning Organization led to a number of changes in the way transit services are funded and administered in the region. In March 2014, several local governments jointly formed the **New River Transit Authority**, a two-county body responsible for directing the operations and finances of the region's public transit services.

Prior to the creation of the new authority, there was no public transit agency in Raleigh County, although the Raleigh County Community Action Association (RCCAA) is a nonprofit agency that has essentially operated public transit for many years. Local governments in Fayette County were members of the Mountain Transit Authority (MTA), whose service area also includes Nicholas, Webster, and Greenbrier counties. (Figure 4-23)

**Figure 4-23: Regional Public Transit Authorities in Southern West Virginia**



When Fayette County's transit classification changed from rural to urban as a result of the MPO designation, it was determined to be more effective for Fayette and Raleigh counties to establish joint urban transit operations, especially since the rest of MTA's service area remains rural.

The New River Transit Authority's operating funds are primarily federal and are received through the MPO. The transit authority is responsible for coordinating with the MPO Policy Board to identify transit needs for the area and assist in developing the multi-modal Regional Transportation Plan.

All federally funded transit projects and programs must be included in the MPO's Plan and its short-term Transportation Improvement Program.

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## Existing service in Raleigh County

Raleigh County has transportation service provided by 6 agencies in the health/human services sector, and by five small operators of private taxicabs, limousines or ambulance service, shown below in **Tables 4-15** and **4-16**.

**Table 4-15: Human Services Agencies that Provide Transportation in Raleigh County**

Agency	Type of Services
Burlington United Methodist Family Services	Treatment facility for troubled teens
FRMS Health Systems	Psychiatric and primary care for persons with mental health and/or substance abuse issues
Mountain State Centers for Independent Living	Education/employment for persons with disabilities
Raleigh County Commission on Aging	Services to senior citizens
Raleigh County Community Action Association	Range of services for low-income persons, including public transportation, housing/shelter, food and clothing, employment services, disability services, Head Start and medical services
Women's Resource Center	Domestic violence shelter

**Table 4-16: Private Taxicab/Ambulance Operators**

Ambassador Limousine & Taxi Service
Best Transports Ambulance
Jan-Care Ambulance Service
New River Taxi
General Ambulance

Except for the Raleigh County Community Action Association (RCCCA), each of the human services agencies' services are currently limited to a particular group of clients. FRMS Health Systems, Inc. provides transportation to its mental health/substance abuse program participants; Mountain State Centers for Independent Living provides transportation to education and employment sites for individuals with disabilities; and the Raleigh County Commission on Aging provides transportation for senior citizens, primarily to nutrition sites. RCCAA provides program-specific transportation for Head Start. All other RCCAA transportation services are open to the general public.

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## **DEVIATED FIXED-ROUTE SERVICE**

Through its “Raleigh Express” program, RCCAA operates four deviated fixed routes: the Red and Gold routes which provide daily weekday service within the City of Beckley, and two county routes which each operate two days per week (**Figure 4-24**).

### **CITY ROUTES**

The Red and Gold routes operate Monday through Friday from 8 a.m. to 4 p.m. and include both scheduled stops as well as “flag” stops, at which the bus will pick up or drop off passengers only when there is a specific request or if there are people waiting at the designated location. The Red and Gold routes both begin and end at the Walmart on North Eisenhower Drive, providing a transfer point between the two routes.

The Raleigh Express operates its bus routes as a deviated fixed-route system, meaning that the bus will deviate up to 3/4 mile to pick up or drop off a passenger. This policy is important because the U.S. Department of Transportation requires public transportation operators to provide ADA-compliant “paratransit” service for people with a disability that makes them unable to use the regular fixed route. The paratransit service must be provided for the same days and hours of service as the fixed routes. The minimum required service area for paratransit is a corridor that extends 3/4 mile from each side of the fixed route. However, if a transit system has flexible routing that will deviate at least that distance, it meets the ADA requirement and a separate paratransit service is not required.

### **Red Route**

Geographically, the Red Route serves the western portions of Beckley, generally tracing a circle that leaves from Walmart and turns south onto West Virginia Highway 16 (Robert C. Byrd Drive) and on to downtown via North Kanawha Street. The bus makes a loop past the public library, City Hall and the West Virginia University campus, then along Second Street and Neville Street, providing access to key governmental agencies including local offices for Medicaid, WV Works, and other family assistance programs.

The Red Route then leaves downtown via Prince Street and follows Harper Road, providing riders with access to Raleigh General Hospital, the public health department, Kroger and other major retail stores. Heading north along Dry Hill Road, Deering Drive and Prosperity Road to U.S. Highway 19, the bus then heads north on US 19 to Crossroads Mall before returning down Robert C. Byrd Drive past the Raleigh Mall and back to the Walmart where riders may transfer to the Gold Route.

### **Gold Route**

The Gold Route serves East Beckley, the Eisenhower Drive corridor, Stanaford and portions of Piney View. Leaving Walmart, it travels northeast along Ragland Road past manufacturing facilities such as Lewis-Goetz & Company, then drives along WV 41 into Lanark and Piney View. As the bus returns south

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on Stanaford Road, it provides service to the Beckley Appalachian Regional (BAR) Hospital and clinic. Upon reaching Eisenhower Drive the bus turns south to Johnstown Road, passing Pinecrest Hospital, then loops around East Beckley past the post office, down F Street and around to Barber Avenue, past Stratton Elementary School and the police annex.

The Gold Route then heads westward toward downtown via South Fayette Street, Beaver Avenue past the Corner Shop, and then along Hargrove Street. Although there are no formal transfer points here, the Gold and Red Routes are close enough together that a passenger could leave the Gold Route bus and walk to a Red Route stop, where the wait would be 45 to 60 minutes based on current schedules.

### **Schedule**

Each Gold and Red bus stop is served by two morning runs and two afternoon runs, each an hour and a half apart. Morning and afternoon runs are two hours apart to allow a half-hour lunch break for the drivers, as shown in RCCAA's published schedule (**Figure 4-25**).

### **COUNTY ROUTES**

The Raleigh Express also operates two county routes. Each provides service two days a week between rural portions of the county and the Beckley Walmart used by the city routes as a transfer point. The Monday/Wednesday bus route serves the area southwest of Beckley, running along WV 16 through Mabscott and west along WV 97 to Lester. This includes service to the communities of Macarthur, Crab Orchard and Glen White. The Monday/Wednesday county route also serves Sophia and extends even further south to the Coal City community.

The Tuesday/Thursday route reaches county residents living southeast of Beckley, running down US 19 through the Beaver-Daniels, Shady Springs and White Oak communities. It provides service as far south as Ghent, Winterplace Resort and Flat Top, and westward along the Raleigh/Mercer County line to the Odd community. Service is also provided north to Grandview State Park and eastward along Interstate 64 to Exit 133 (WV County Route 27/Pluto Road).

### **FARES**

All public bus routes cost \$2.50 for a one-way trip, plus \$2 for each additional stop.

### **RIDERSHIP**

The Red and Gold city routes typically carry more than 75% of the ridership on the Raleigh Express, averaging between 9,000 and 10,000 passenger trips per year. The county routes, which operate fewer days per week and serve less populated areas, average between 2,000 and 3,000 annual passenger trips. (**Figures 4-26 and 4-27**) According to Raleigh Express staff, ridership on the county routes is notably higher around the first of each month, perhaps because this is when households typically receive transfer payments from public assistance programs and thus have money available to purchase food, medicine and other items.



**Figure 4-24: Red and Gold Routes (RCCAA)**

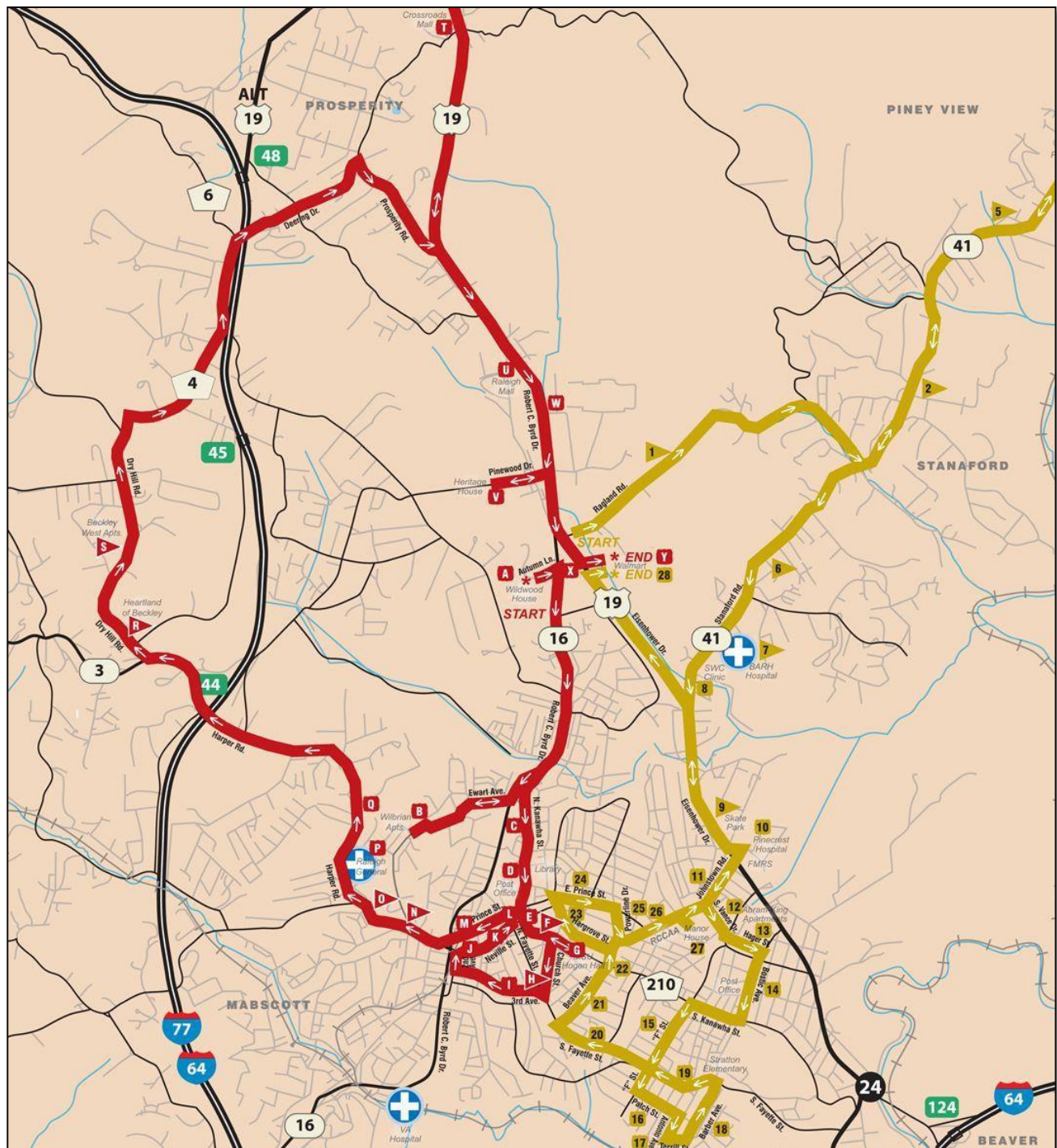


Figure 4-25: Red and Gold Route Schedule

RED ROUTE

(Arrival Times)

A	RC Byrd/Wildwood Apts.	8:30	10:00	12:00	1:30
B	Wilbrian Apartments .....	8:34	10:04	10:04	1:34
C	North Kanawha.....	8:38	10:08	12:08	1:38
D	Library.....	8:39	10:09	12:09	1:39
E	Executive Manor Apt .....	8:40	10:10	12:10	1:40
F	City Hall .....	8:41	10:11	12:11	1:41
G	MSU/Hogan Hall.....	8:42	10:12	12:12	1:42
H	Church Street .....	8:43	10:13	12:13	1:43
I	Second Avenue.....	8:44	10:14	12:14	1:44
J	Neville Street .....	8:45	10:15	12:15	1:45
K	Main Street/Court House .	8:46	10:16	12:16	1:46
L	N. Fayette Street .....	8:47	10:17	12:17	1:47
M	East Prince St/Post Office.	8:48	10:18	12:18	1:47
N	Harper Road.....	8:50	10:20	12:20	1:50
O	Health Center.....	8:51	10:21	12:21	1:51
P	Raleigh General Hospital.	8:52	10:22	12:22	1:52
Q	Kroger (Harper Road) ....	8:54	10:24	12:24	1:54
R	Heartland .....	9:06	10:36	12:36	2:06
S	Beckley West Apts. ....	9:12	10:44	12:42	2:12
T	Crossroads Mall .....	9:30	11:02	1:02	2:30
U	Raleigh Mall.....	9:40	11:12	1:12	2:40
V	Heritage House .....	9:42	11:14	1:14	2:42
W	K-Mart/Staples.....	9:45	11:17	1:17	2:45
X	Kroger (Beckley Crossing)	9:50	11:27	1:22	2:50
Y	Wal-Mart (transfer location)	10:00	11:30*	1:30	3:00

\*driver's lunch break

GOLD ROUTE

(Arrival Times)

1	Ragland Road .....	8:30	10:10	12:10	1:40
2	Stanaford Road .....	8:34	10:14	12:14	1:43
3	Smiths/Piney view .....	8:40	10:18	12:18	1:48
4	Lanark Post Office .....	8:46	10:22	12:20	1:50
5	Hughes Packette .....	8:52	10:23	12:23	1:53
6	White Pines Court.....	8:56	10:26	12:26	1:56
7	B.A.R. Hospital .....	9:00	10:28	12:28	1:58
8	SWV/ARH Clinic .....	9:05	10:30	12:30	2:00
9	Eisenhower Drive .....	9:09	10:32	12:32	2:02
10	Pincrest Hospital .....	9:13	10:35	12:35	2:05
11	Johnstown Road.....	9:16	10:37	12:35	2:07
12	S. Vance Drive.....	9:18	10:39	12:39	2:09
13	Abram King /Hager.....	9:20	10:40	12:40	2:10
14	Bostic Avenue .....	9:21	10:41	12:41	2:11
15	F Street.....	9:23	10:44	12:44	2:14
16	Patch Street .....	9:25	10:46	12:46	2:16
17	Antonio Avenue .....	9:28	10:50	12:50	2:20
18	Barber Avenue .....	9:30	10:52	12:52	2:22
19	E Beckley Police Annex ....	9:33	10:54	12:54	2:24
20	S. Fayette Street.....	9:36	10:56	12:56	2:26
21	Beaver Avenue .....	9:38	11:00	1:00	2:30
22	Corner Shop .....	9:40	11:03	1:03	2:33
23	Hargrove Terr. Apt .....	9:42	11:05	1:05	2:35
24	E Prince Street.....	9:44	11:07	1:07	2:37
25	Powerline Drive.....	9:46	11:09	1:09	2:39
25	Johnstown Road.....	9:48	11:12	1:12	2:42
27	Manor House Apt .....	9:50	11:15	1:15	2:45
28	Wal-Mart .....	10:00	11:30*	1:30	3:00

\*driver's lunch break



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## **WORKFORCE TRANSPORTATION (JOB ACCESS)**

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A majority of the new jobs being added to the U.S. economy over the past 20 years are in the services sector, and the Fayette/Raleigh MPO area is no exception. Many of these jobs do not fit the traditional office schedule of 8 a.m. to 4 p.m. This means a growing percentage of the labor force is unable to use the local bus routes to travel to and from work. The issue is one that many communities across the U.S. are facing, thus the launch of the federal Job Access program to help address the challenge. Many communities used the funds to increase bus service frequency and/or to extend the hours of service, so that second and third shift employees would have transportation options. Although the program was discontinued when Congress passed the transportation legislation that took effect in 2012, the same level of funding previously allocated to Job Access has been rolled into the FTA-5307 urbanized transit funding program. Like other federal transit funds, it requires matching dollars.

RCCAA has been able to secure federal grant funds over the past several years through the Job Access program. The funds have been used to extend service to Saturdays as well as increasing the number of hours that daily service is available. RCCAA now operates vans from 6 a.m. to midnight, Monday through Saturday, to transport riders to their workplace or to adult education/training classes. The fare is the same as deviated fixed route or Dial-a-Ride service: \$2.50 per one-way trip.

Seats on a van are reserved by calling RCCAA and providing advance information about the location, days of the week and schedule for which a recurring ride is needed. RCCAA then puts together vans based on groups of people who are going to the same general location on roughly the same timeframe. Recognizing that many households are either single parents or both parents are working the same hours, RCCAA also allows riders to schedule a side trip to childcare on the way to and from work.

More than 9,000 passenger trips are made annually by people using the RCCAA vans to travel to work or employment training. Like Dial-a-Ride, the program is now at capacity until additional resources can be identified.

## **SENIOR & DISABLED PERSONS TRANSPORTATION**

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Similar to the Job Access program, there was until recently a standalone funding program called New Freedoms which was used to fund additional service for senior citizens and disabled persons. The program was discontinued in 2012 and the funds were then rolled into the FTA-5307 funding program.

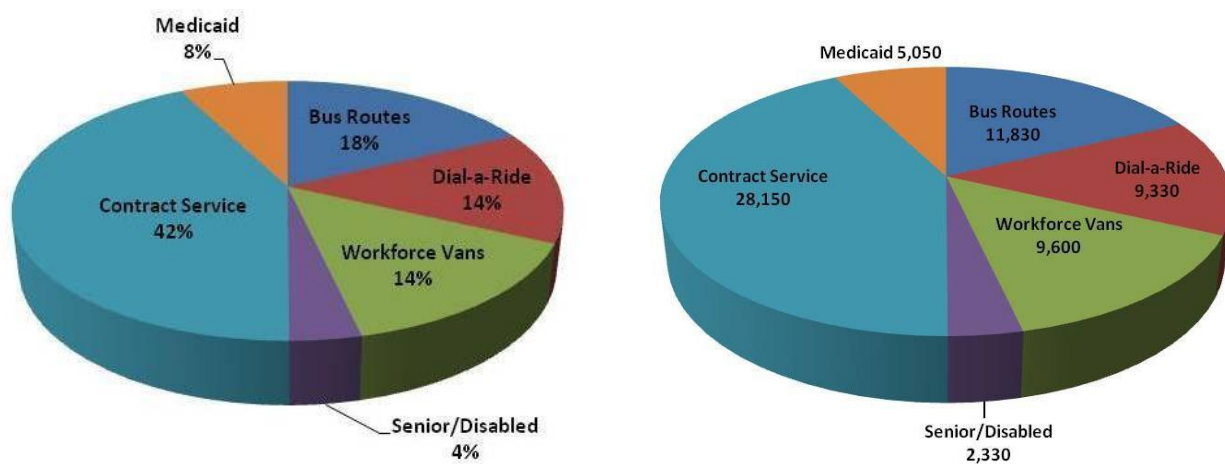
RCCAA has used these funds in a way similar to the Job Access funds: to provide extended hours of service. Depending on the desired schedule and origin/destination, the same van may be able to transport riders in both categories. About 2,000 to 2,500 annual passenger trips are made using this service. It should be noted that the Raleigh County Commission on Aging also provides transportation for senior citizens, so the demand for RCCAA's service is likely for locations and/or times that the Commission on Aging does not serve.

## CONTRACT SERVICE

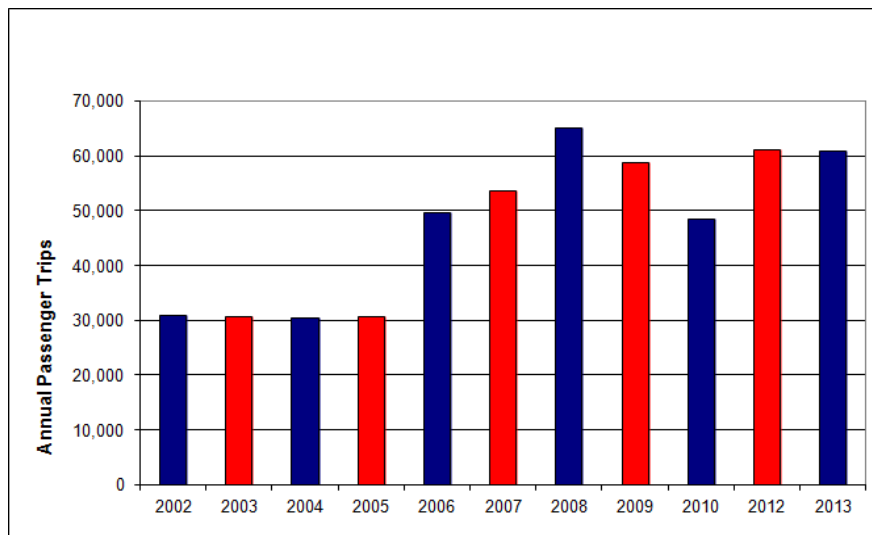
RCCAA also provides special transportation on a contract basis, apart from its regular services, when drivers and vehicles are available. This can be an important source of revenue for a transit agency since it provides non-federal funds that can be used to match other program dollars.

Historically, most contract service is requested during the summer in association with youth camps. RCCAA's contract service represents about 28,000 passenger trips per year, of which the majority occur as part of a single week's event held by the YMCA.

**Figure 4-26: RCCAA Passenger Trips in 2013, by Type of Service**



**Figure 4-27: RCCAA Ridership Trends, 2002 to Current**



Source: RCCAA. 2011 ridership data not available.

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## CAPITAL FACILITIES & EQUIPMENT

**Table 4-17** shows the vehicles currently owned by RCCAA for use in public transportation services. Like many agencies, RCCAA was able to take advantage of federal economic stimulus funds provided under the American Recovery and Reinvestment Act (ARRA) to acquire a number of new vehicles. Nonetheless, multiple vehicles are beyond their useful life and need replacement soon, particularly the vans in the fleet. Federal matching ratios are favorable for such capital expenditures. Whereas transit operating funds require a one-to-one match (50/50), capital purchases are eligible for an 80/20 match.

**Table 4-17: RCCAA Vehicle Fleet**

Year	Type	Number
2003	Ford Econoline	1
2004	Ford Econoline	1
2006	Ford E450	2
1989	Ford E340	1
1999	Chevy Venture	1
2008	Ford Econoline	1
2005	Dodge Caravan	1
2008	Chevy Uplander	2
2011	Converted Van - Dial A Ride	1
2009	Goshen Coach	1
2010	Goshen Coach	1
2011	Goshen Coach	1

*Source: RCCAA Transportation Operations*

RCCAA is notable in the region for having its own vehicle maintenance facility, a distinct advantage in cost and convenience for a transit provider. The agency operates Action Auto, a program in which mechanics employed by RCCAA perform auto repair for the general public at sliding scale rates based on income. In addition to working on customers' vehicles, the mechanics are responsible for maintaining the vehicles used for RCCAA's Head Start program, Dial-a-Ride and the Raleigh Express.

However, staff have identified a critical need for vehicle storage space. As the transportation program has grown, the RCCAA site is becoming unable to accommodate the size of the vehicle fleet. Expansion of the current building and parking area is unlikely, so an offsite location is needed.

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## FUNDING

Despite not having a public transit authority, Raleigh County has for years enjoyed one of the state’s most robust rural public transportation services. By housing the transportation program at the local community action agency, rather than forming a standalone organization, RCCAA has been able to leverage resources from the wide range of other social services programs that it operates.

This arrangement is an excellent example of the funding coordination that federal agencies have been encouraging through the “United We Ride” initiative over the past decade. The U.S. Departments of Transportation (DOT), Housing & Urban Development (HUD), Health and Human Services (HHS), and Veterans Administration (VA) have urged their state and local-level grantees to work cooperatively so that federal dollars are not spent on duplicative transportation services. As an example, multiple agencies that need to provide transportation for their clients could pool the federal funds used for that purpose and provide a more centralized, cost-effective service.

To promote and incentivize this cooperation, the U.S. government has begun to allow Federal Transit Administration program funds to be matched by other federal funds from non-DOT programs. This is an unusual opportunity for local agencies to stretch federal funds even further, and can be particularly helpful to communities where per capita incomes are lower than average.

RCCAA is Raleigh County’s designated agency for receipt of Community Service Block Grant (CSBG) funds through HHS and the West Virginia Department of Economic Opportunity. A portion of those federal CSBG funds are being spent directly on the public transportation programs that RCCAA operates, and also serve as match for the federal transportation funds that RCCAA has been receiving from WVDOT. **Figure 4-28** and **Table 4-18** show the breakdown of revenue sources for RCCAA’s transportation programs based on the agency’s FY2014 budget.

**Figure 4-28: FY2014 Revenue Sources for RCCAA Transportation Services**





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About one-quarter of the funding for public transportation in Raleigh County currently comes from farebox revenue, contract service such as the YMCA summer programs, and support from local governments. In recent years the City of Beckley has provided \$35,000 and Raleigh County has provided \$30,000 annually to support the services.

**Table 4-18: FY2014 Revenue Sources for RCCAA Transportation Services**

Source	Amount
Federal Transit Administration Funds	\$ 243,443
CSBG Direct Services	\$ 175,245
CSBG Allocated Costs	\$ 83,147
Fares	\$ 46,200
Contract income	\$ 71,420
City of Beckley	\$ 35,000
Raleigh County	\$ 30,000
<b>TOTAL</b>	<b>\$684,455</b>

*Source: RCCAA FY2014 budget*

## Existing Service in Fayette County

Public transportation services in Fayette County are very limited in comparison with those available in Raleigh County. This partly reflects the more rural nature of the county. As noted earlier, the only areas designated as urbanized by the U.S. Census Bureau are Mount Hope, Oak Hill and Fayetteville along the US 19 corridor. Fixed route service is financially difficult to operate in areas where the population density is less than 4 homes per acre, which describes most of the county.

Fayette County does have service provided by 7 agencies in the health/human services sector, and by 6 small operators of private taxicabs, limousines or ambulance service as shown in **Tables 4-19** and **4-20**.

**Table 4-19: Human Services Agencies that Provide Transportation**

Agency	Type of Services
Mountain Transit Authority	Regional public transit authority serving Fayette, Nicholas, Webster, and Greenbrier counties
New River Health Associates	Medical services
Southern Appalachian Labor School (SALS)	Wide range of social service programs, including afterschool and summer school programs where transportation is a significant challenge
Energy Express	Youth summer camp provided through the WVU Extension Service
Fayette County Senior Programs	Services for senior citizens, including transportation to non-emergency medical appointments and nutrition sites
Fayette County Child Development	Operates the Head Start program
Metropolitan Community Development Corporation	Transportation to non-emergency medical appointments, with priority given to seniors and disabled persons

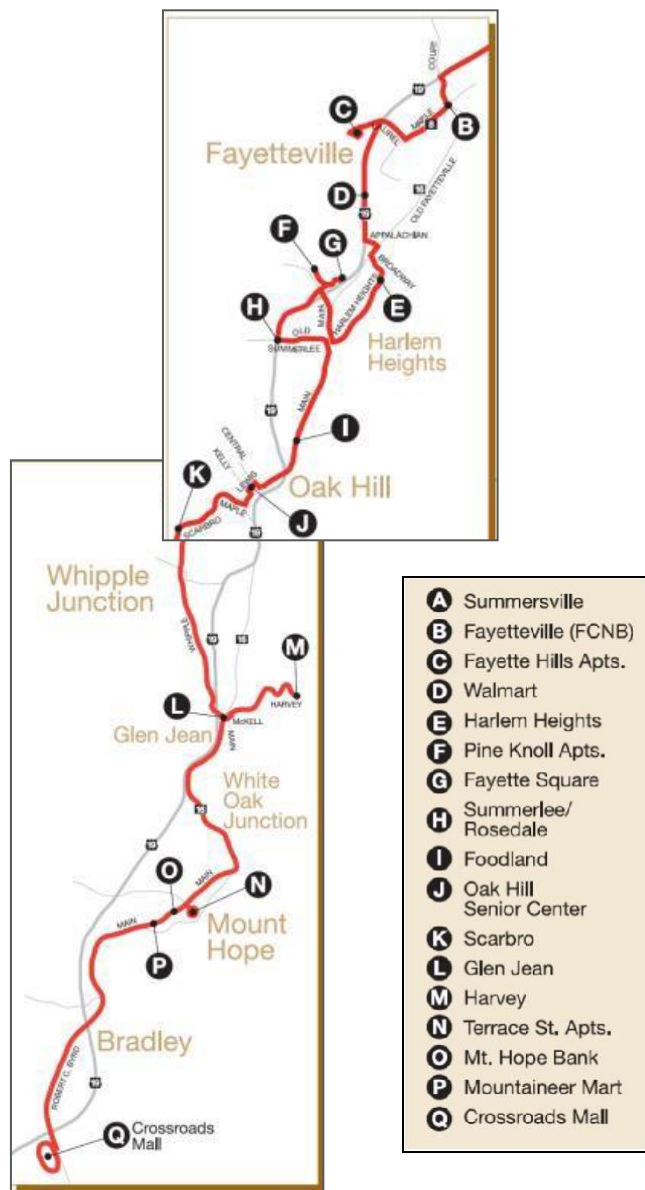
**Table 4-20: Private Taxicab/Ambulance Operators**

City Cab Company
General Ambulance
Jan-Care Ambulance Service
Medical Runners
MTS Medical Transportation Services
Multi-County Transportation Services
Ready Transportation Services

## DEVIATED FIXED-ROUTE SERVICE

As this plan is under development, Mountain Transit Authority is operating one deviated fixed route which serves the US 19 corridor between the Town of Fayetteville and the Fayette/Raleigh county line, turning around at Crossroads Mall. (**Figure 4-29**) Service is provided Monday through Friday from 8:30 a.m. to 4 p.m. The route is convenient to several of the area's apartment complexes and is important in providing service to the Mount Hope Housing Authority's properties. MTA is scheduled to operate this service until the end of calendar year 2014, at which point the New River Transit Authority must find a new provider.

**Figure 4-29: Deviated Fixed-Route Service in Fayette County (from MTA)**



**Figure 4-30: Fayette County Deviated Fixed Route Schedule**

Summersville	8:00 AM	-----
Fayetteville (FCNB)	8:30 AM	12:30 PM
Fayette Hills Apts.	8:40 AM	-----
Walmart	8:45 AM	12:40 PM
Harlem Heights	8:50 AM	-----
Pine Knoll Apts.	8:55 AM	-----
Fayette Square	9:00 AM	12:50 PM
Summerlee/Rosedale	9:05 AM	-----
DHHR	Call For Service	
Foodland	9:30 AM	1:00 PM
Oak Hill Senior Center	9:35 AM	1:05 PM
Scarbro	9:40 AM	1:10 PM
Glen Jean	9:45 AM	1:15 PM
Harvey	Call For Service	1:25 PM
Terrace St. Apts.	10:00 AM	1:35 PM
Mt. Hope Bank	10:05 AM	1:40 PM
Mountaineer Mart	10:10 AM	1:45 PM
Crossroads Mall	10:20 AM	1:55 PM
Mountaineer Mart	10:30 AM	2:05 PM
Mt. Hope Bank	10:35 AM	2:10 PM
Glen Jean	10:45 AM	2:20 PM
Harvey	10:55 AM	Call For Service
Scarbro	11:00 AM	2:35 PM
Oak Hill Senior Center	11:05 AM	2:40 PM
Foodland	11:10 AM	2:45 PM
Harlem Heights	11:15 AM	-----
Pine Knoll Apts.	11:20 AM	-----
Fayette Square	11:25 AM	2:55 PM
Walmart	11:35 AM	3:10 PM
Fayette Hills Apts.	11:40 AM	3:15 PM
Fayetteville (FCNB)	11:50 AM	3:20 PM
Summersville	-----	4:00 PM

Like the Raleigh Express, MTA operates a deviated fixed route system by providing service upon advance request to areas located within 3/4 mile of either side of the route. The entire route operates with flag stops, each of which is served twice daily based on the current schedule. (Figure 4-30)

The service has experienced the same “vicious circle” that challenges many other very small transit operations: if buses are not frequent, then ridership is low – and if ridership is low, it is difficult to justify providing more frequent buses.

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## TRANSIT NEEDS AND ISSUES

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Input on the region's transit needs was obtained through questionnaires and a stakeholders workshop as part of a 2013 study sponsored by WVDOT and the MPO. Key transit needs identified by the study included:

**Service for the “average working person.”** A number of grant programs are currently targeted to provide transit to groups who are typically considered to be in greatest need. This includes seniors and disabled persons, as well as people who are clients of Headstart, Temporary Assistance to Families in Need (TANF), and other human services programs. The group who may be falling through the cracks are those who are currently employed and licensed to drive, but for various reasons are not able to drive a personal vehicle for their transportation needs. This could be a household that has multiple workers but only one car. It could also be a single person who is employed full-time whose paycheck is already stretched to cover the costs of housing, food, medical needs and perhaps enrollment in continuing education.

**Evening and weekend service.** A majority of jobs being added to the economy are in the service sector, which includes major retail stores that are open in the late evening as well as 24-hour establishments such as hotels. Public transit service that ends at 5 p.m., or does not run on Saturdays and Sundays, does not match the schedule of the fastest-growing part of the workforce. Raleigh County has been providing Jobs Access transportation in the evenings and weekends through the use of specially targeted federal grant funds. However, demand for the services currently outstrips supply, and even maintaining the current level of service will require increased financial commitment from the region's local governments and employers.

**Enhanced marketing efforts.** Regular outreach and distribution of informational materials is vital to ensure that citizens (and major employers) are aware of the service and how to use it. Public websites are a valuable communications method, but the public needs to receive information in more than one format. The transit study recommended that the MPO's staff and TAC members assist with regular distribution and placement of hard copy transit marketing materials in public offices, community centers, stores and other heavily visited sites.

**Increased partnerships between public transit and human services agencies.** The study recommended holding a regional-level meeting similar to the state's Transportation Coordinating Council, which convenes public and non-profit organization who receive federal funds used for providing transportation, whether it be funds received through the U.S. DOT, the Veterans Administration, Health and Human Services, or another agency. Instead of each organization spending its funds to provide a separate transportation service, some funds could be pooled to create a cost-efficient program that serves all. Either the MPO or New River Transit Authority, or both, could host this meeting.

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**Increased partnerships with the region’s employers.** Economic success means a workforce that has reliable transportation to work. The NRTA needs the support of the business community to help meet the increasing demand for the Jobs Access program. This does not necessarily mean that employers will be asked to make direct financial contributions to public transit operations, although there are communities in which that occurs. There are other key roles employers can play. For example, they can distribute information about existing public transit services to their workers; encourage and facilitate the formation of carpools or vanpools; and explore the potential for payroll tax deduction by providing commute benefits to employees.

**Expanded services for Fayette County.** Although there is deviated fixed-route service along the main Fayetteville – Oak Hill – Mount Hope corridor, there is no “dial-a-ride” service for more remote areas of the county. The 2013 transit study notes that it may be difficult to serve greater portions of Fayette County without significant cost, and recommends further evaluation after the implementation of the state’s non-emergency medical transportation brokerage.

**Visitor-oriented transit service.** Particularly in Fayette County, there are a growing number of businesses who recognize the potential benefits of transit for regional visitors. Groups traveling to the national park or the new Boy Scout reserve could be transported in fewer vehicles than if they drove individually, lessening the burden on constrained roads and helping to protect the region’s natural resources. Depending on the nature and frequency of demand, it might be possible for some of the services to be provided on a contract basis by existing transit operators such as RCCAA.

## Recommendations

**Tables 4-21** through **4-23** show the proposed transit investments for the region during the period of the 2045 Plan. It includes needs for ongoing and expanded transit operations, preventive maintenance and capital projects, including regular vehicle replacements and the addition of more shelters and other amenities at bus stops.

This list is based on current needs based on a discussion with NRTA in November 2020. As the MPO continues to work on transit planning activities with NRTA and local governments, the region’s goals for transit service may evolve and this will be reflected in future Plan updates.

**Table 4-21: Proposed Transit Investments for 2021-2026**

PROJ NO	PROJECT	TYPE OF IMPROVEMENT	COUNTY	DESCRIPTION
TR-1	Operate deviated fixed route transit service	Operations	Fayette, Raleigh	Weekday service for Raleigh Express (city) and former MTA routes; Raleigh County routes twice per week
TR-2	Vehicle fleet expansion and replacements	Capital	-	Add vehicles as needed to provide planned new service. Replace transit vehicles that have reached the end of their useful life
TR-3	Building/facility maintenance and equipment	Prev. Maint.	-	Routine maintenance, repairs to equipment, operating facilities and passenger facilities.
TR-4	Bus stop amenities (benches, shelters, signage)	Capital	Fayette, Raleigh	Add or replace passenger amenities along regular transit routes
TR-5	Dispatching software and Automatic Vehicle Location system	Capital	-	Acquire technology to assist in scheduling and real-time routing



**Table 4-22: Proposed Transit Investments for 2026-2035**

PROJ NO	PROJECT	TYPE OF IMPROVEMENT	COUNTY	DESCRIPTION
TR-6	Operate deviated fixed route transit service	Operations	Fayette, Raleigh	Weekday service for Raleigh Express (city) and former MTA routes; Raleigh County routes twice per week
TR-7	Building/facility maintenance and equipment	Prev. Maint.	-	Routine maintenance, repairs to equipment, operating facilities and passenger facilities.
TR-8	Bus stop amenities (benches, shelters, signage, etc.)	Capital	Fayette, Raleigh	Add or replace passenger amenities along regular transit routes
TR-9	Upgrade communications / dispatching software	Capital	-	
TR-10	Vehicle fleet expansion and replacements	Capital	-	Add vehicles as needed to provide planned new service. Replace transit vehicles that have reached the end of their useful life
TR-11	Enhance service for New River Transit city routes	Operations	Raleigh	Add evening and weekend service.
TR-12	Enhance Fayette County deviated fixed-route service	Operations	Fayette	Improve headways (frequency). Consider weekend service.
TR-14	Mini-hub / transfer point on N Eisenhower Drive	Capital	Raleigh	Consider Beckley Crossings area
TR-15	Transit hub in Oak Hill	Capital	Fayette	Co-locate with public facility / parking

**Table 4-23: Proposed Transit Investments for 2036-2045**

PROJ NO	PROJECT	TYPE OF IMPROVEMENT	COUNTY	DESCRIPTION
TR-16	Operate deviated fixed route transit service	Operations	Fayette, Raleigh	Daily daytime and evening service for Raleigh Express (city) and former MTA routes; Raleigh County routes twice per week
TR-17	Building/facility maintenance and equipment	Prev. Maint.	-	Routine maintenance, repairs to equipment, operating facilities and passenger facilities.
TR-18	Bus stop amenities (benches, shelters, signage)	Capital	Fayette, Raleigh	Add or replace passenger amenities along regular transit routes
TR-19	Rehabilitation of transit center / administrative facilities	Capital	Raleigh	
TR-20	Vehicle replacements and expansion	Capital	-	Replace transit vehicles that have reached the end of their useful life. Add vehicles as needed to provide planned new service.
TR-22	Mini-hubs in Mount Hope and Fayetteville	Capital	Fayette	Co-locate with public facility / parking
TR-23	Connecting service to KAT (Charleston) and BAT	Operations	Fayette	Provide service to a stop in northwest Fayette County where passengers can transfer between NRTA and KAT

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# Bicycle & Pedestrian System

The past few years have seen growing interest nationally in “Complete Streets,” the philosophy that a transportation corridor should provide safe travel for non-motorized users as well as cars, motorcycles and trucks. In many cases the facilities may physically share a route, while in some circumstances the non-motorized users may be better accommodated through a parallel facility. By making it safer and more convenient to walk and bicycle, the region can expand the transportation choices available to citizens and visitors while also promoting improved health.

## EXISTING BICYCLE/PEDESTRIAN FACILITIES

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Considerable progress has been made on plans for a regional network that combines on-road and off- road facilities to link various communities and public lands in Fayette, Raleigh, and adjoining counties. These initiatives are driven partly by the region’s economic strategy, which centers on its popularity for outdoor recreation. In fact, most of the local governments in the two-county area specifically support particular trails in their adopted comprehensive plans that would link their own communities into the larger network.

**Figures 4-31** and **4-32** show existing trails in Raleigh and Fayette counties as mapped by the National Coal Heritage Area’s *Trail Plan for Greenways and Blueways* (2010). **Tables 4-24** and **4-25** correspond to each map, listing the trails represented on each map and the area in which they are located. A large percentage of the region’s trail mileage lies within publicly owned lands, including the New River Gorge National River, Little Beaver State Park, Babcock State Park, and Hawks Nest State Park.

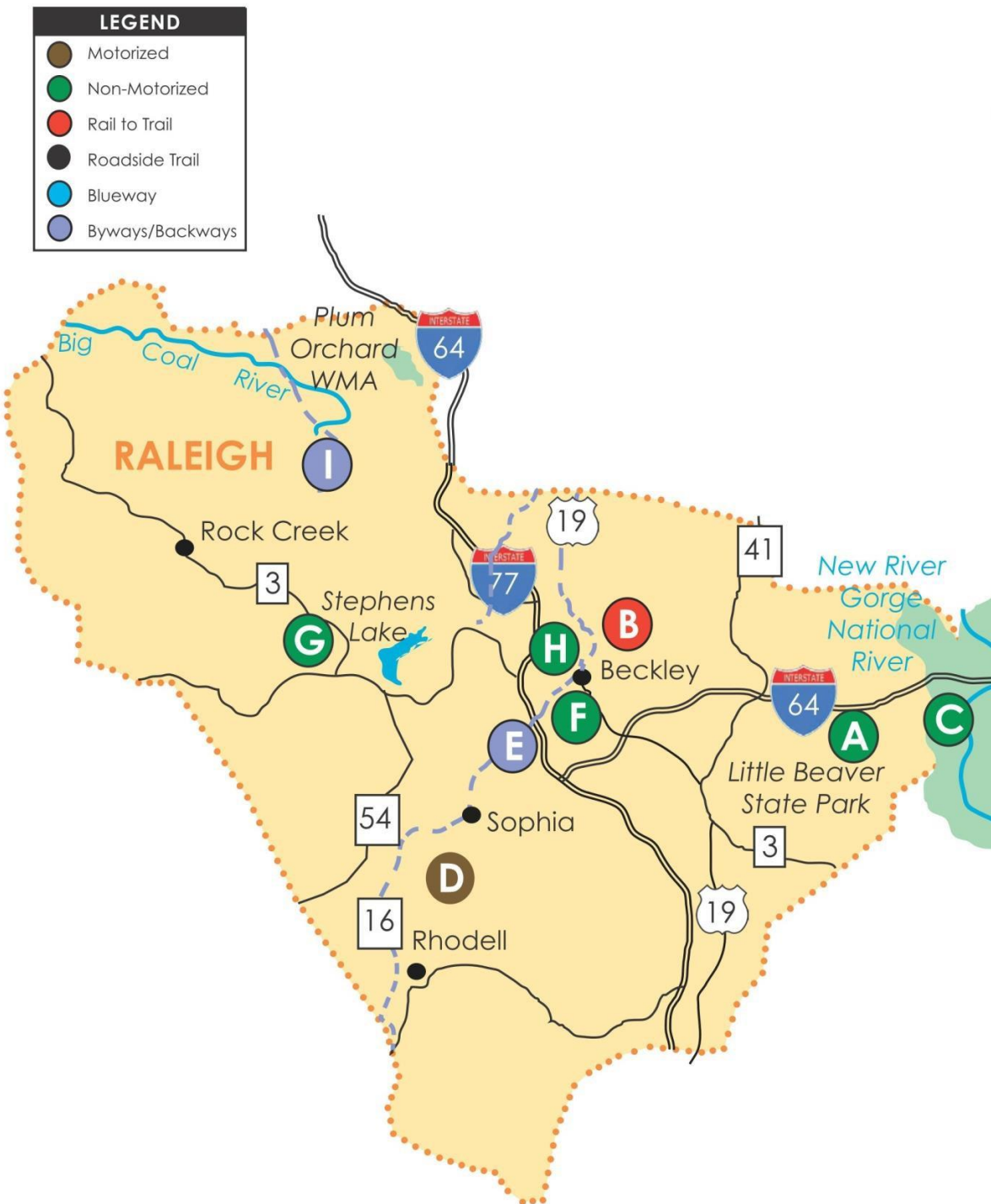
**Figure 4-33** shows the concept outlined in the *New River Gorge General Management Plan* (GMP) for the linkages among the region’s public lands and its neighboring communities. These links would primarily consist of off-road facilities, but could include some on-road segments in certain communities.

Trail partner organizations in the MPO region include:

New River Gorge National River	White Oak Rail-Trail Commission
Gauley River National Recreational Area	Fayette County Green Advisory Team
Little Beaver State Park	Fayette County Improvement Board
Raleigh County Memorial Airport	Ansted Improvement Motivators
Raleigh County Cycle Club	Piney Creek Watershed Association
Babcock State Park	Cities of Ansted, Beckley, Mount Hope, Oak Hill and Fayetteville
Fayette and Raleigh counties	

The Boy Scouts of America has also been a major partner, and has provided critical volunteer labor to begin construction of some of the proposed trails.

**Figure 4-31: Existing Trails in Raleigh County**



**Table 4-24: Existing Trails in Raleigh County**

<b>A</b>	<b>Little Beaver State Park</b>	Beaver Creek Trail	.5 miles
		Billy Goat's Gruff Trail	.6 miles
		Creek Bed	0.4 miles
		Deer Loop	0.4 miles
		Deer Trail	0.8 miles
		Laurel Creek Crossing	1.8 miles
		Nature Ridge Trail	0.8 miles
		Railroad Grade	1.95 miles
		Rhododendron Run Trail	2.5 miles
		Topper's Ridge	0.6 miles
<b>B</b>	<b>Beckley</b>	Beckley Rail Trail	4 miles
<b>C</b>	<b>New River Gorge National River</b>	Big Buck Trail	0.8 miles
		Canyon Rim Trail	1.6 miles
		Castle Rock Trail	0.5 miles
		Grandview Rim Trail	1.5 miles
		Island Loop Trail	0.6
		Park Loop Trail Royal	miles 1
		Trail	mile
		Terry Top Trail	2.6 miles
		Tunnel Trail	1.6 miles
		Turkey Spur	0.3
<b>D</b>	<b>Burning Rock Off-Road Park</b>	Woodland Loop	miles 2
			miles
			0.6 miles
		Off-Road trail system for ATVs and dirt bikes	100 miles
<b>E</b>	<b>Driving tour through Fayette, Raleigh, McDowell, Mercer, and Wyoming counties</b>	Coal Heritage Trail National Scenic Byway	157 miles
<b>F</b>	<b>Beckley area</b>	Fitzpatrick Trail	1.3 miles
		Soccer fields trail	1.5 miles
<b>G</b>	<b>Lake Stephens</b>	Mountain bike and hiking trail	4.6 miles
<b>H</b>	<b>New River Park</b>	New River Park Trail	0.6 miles
<b>I</b>	<b>Driving tour through Raleigh, Fayette and Kanawha counties</b>	Paint Creek State Scenic Byway	42 miles

**Figure 4-32: Existing Trails in Fayette County**

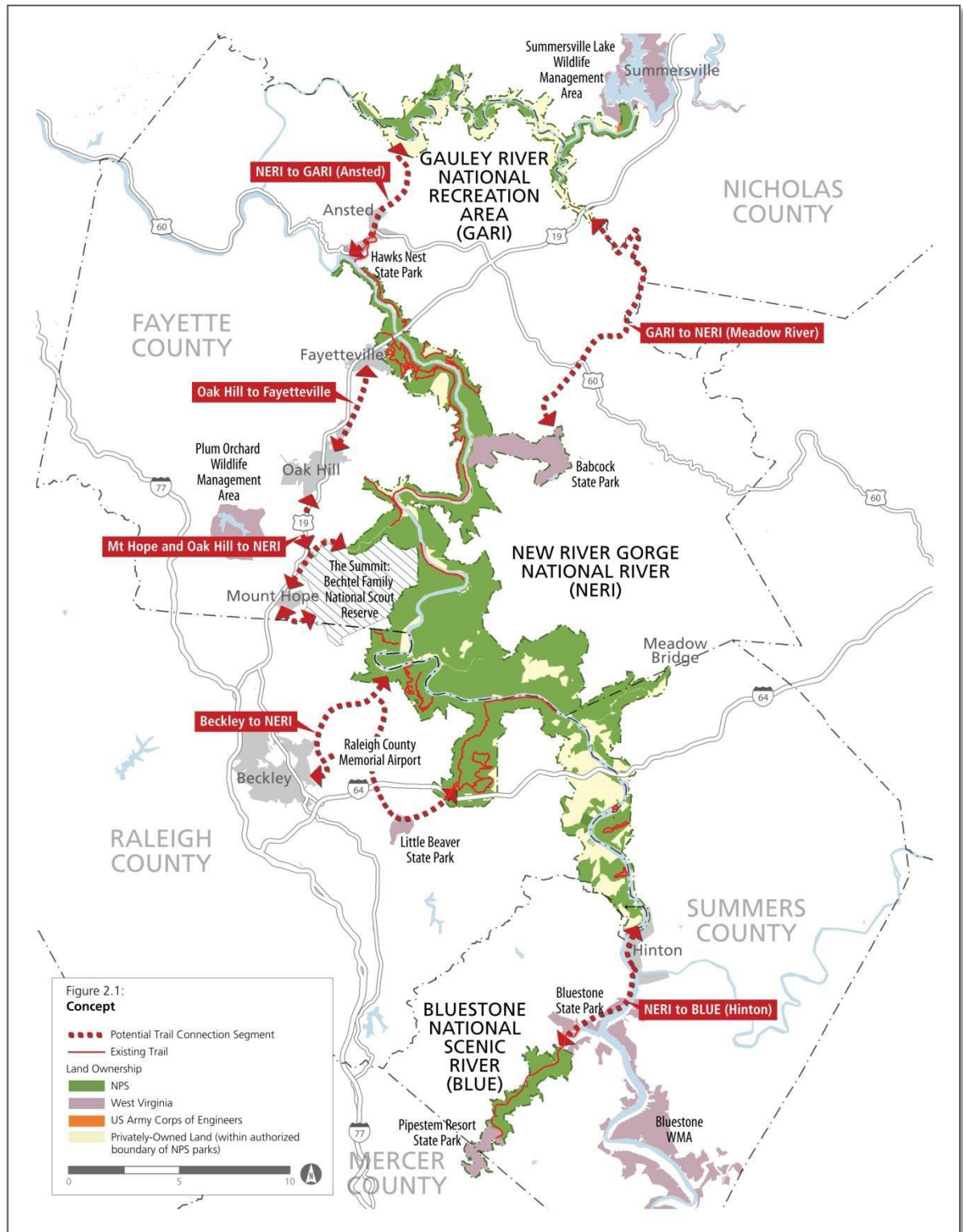


**Table 4-25: Existing Trails in Fayette County**

<b>A</b>	<b>New River Gorge National River</b>	Arbuckle Connector	0.2 miles
		Church Loop Trail	0.2 miles
		South Side Junction Trail	5.2 miles
<b>B</b>	<b>New River Gorge National River</b>	New River Gorge National River Trail system	38 miles
<b>C</b>	<b>New River Gorge National River</b>	Brooklyn Mine Trail	2.7 miles
		Kaymoor Trail	8.3 miles
		New River Bridge	1.6 miles
<b>D</b>	<b>Hawks Nest State Park</b>	Cliffside Trail	2 miles
		Fisherman's Trail	2 miles
		GYP Trail Lovers	1.5 miles
		Leap Trail	0.3 miles
<b>E</b>	<b>Driving tour through Fayette, Raleigh, McDowell, Mercer, and Wyoming counties</b>	Coal Heritage Trail National Scenic Byway	157 miles
<b>F</b>	<b>Babcock State Park</b>	Fisherman's Trail	2 miles
		Lakeview Trail	1 mile
		Manns Creek Gorge	2 miles
		Mountain Health Trail	0.3 miles
		Narrow Gauge Trail	3.5 miles
		Rocky Trail	0.5 miles
		Skyline Trail	2 miles
		Wilderness Trail	2.5 miles
<b>G</b>	<b>Town of Ansted</b>	Hawks Nest Rail Trail	1.8 miles
<b>H</b>	<b>Along US 60 (Midland Trail National Scenic Byway)</b>	Midland Trail Bikeway	1.7 miles
<b>I</b>	<b>US 60 in Fayette County, Kanawha, Cabell and other counties</b>	Midland Trail National Scenic Byway	138 miles
<b>J</b>	<b>Raleigh, Fayette and Kanawha counties</b>	Paint Creek State Scenic Trail	42 miles
<b>K</b>	<b>New River Gorge National River</b>	Stone Cliff Trail	2.8 miles
<b>L</b>	<b>Oak Hill</b>	White Oak Rail Trail	7 miles
<b>M</b>	<b>New River Gorge National River</b>	Thurmond-Minden Rail Trail	3.4 miles



**Figure 4-33: New River Gorge GMP Concept for Linking Communities to Public Lands**



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## BICYCLE DESIGNATIONS AND LAWS

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### Share the Road

The MPO area has a number of roads on which there are no marked, separate on-road bicycle facilities, but motorists are explicitly reminded that bicycles may be present and that they can legally use the roadway.



In Fayette County, “Share the Road” signs are posted in these areas:

- US 19 north of Fayetteville, near WV 5 where there are several outdoor recreation-oriented businesses;
- WV 41 along the Fayette/Greenbrier county line and at the route’s junction with US 60 (Midland Trail National Scenic Byway); and
- WV 8 through the Town of Fayetteville.

Areas in Raleigh County where “Share the Road” signs are posted include:

- WV 9 (Grandview Road) near the edge of the New River Gorge National River lands;
- Airport Road;
- WV 307 (Scott Ridge Road) in the area of Grandview Country Club;
- WV 210 (S. Kanawha Street) through downtown Beckley; and
- Maxwell Hill Road, Pinewood Drive and Pikeview Drive.

### The 3-foot Law

In 2014 West Virginia became one of 22 states that have put the “3-foot law” into effect, requiring drivers to maintain a minimum distance of three feet from cyclists when passing them on the road:



*“The driver of a vehicle overtaking a bicycle traveling in the same direction shall pass to the left of the bicycle at a distance of not less than three feet at a careful and reduced speed, and may not again drive to the right side of the roadway until safely clear of the overtaken bicycle.”*

(West Virginia Code §17C-7-3)

State law also requires on-road cyclists who are not riding at the normal traffic speed to ride as far to the righthand curb or road edge as practicable. Exceptions include when passing another bicycle; when it is necessary to avoid striking an object, including roadway debris not swept off the shoulder; and when riding in a “substandard-width lane,” defined as a lane that is too narrow for a bicyclist and motor

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vehicle to ride safely side-by-side. Unfortunately, in many parts of Fayette and Raleigh counties, substandard-width lanes are common.

The challenges facing the MPO region for on-road bicycle use are similar to those that arise when identifying routes for Turnpike detours. A large proportion of roads do not have standard shoulder width (10 to 12 feet), or even the 4-foot minimum shoulder needed for motorists to be able to pass a cyclist and comply with the new 3-foot law. Opportunities for a motorist to pass by using the oncoming traffic lane are limited on many roads because of curves and grades that obstruct sight distance ahead. As a result, only very experienced cyclists are likely to feel comfortable riding in the travel lane, especially on more rural roads.

For these reasons, it is particularly important for the MPO region to incorporate new bicycle and pedestrian facilities as part of future projects to build new or widened roads. This has actually been a requirement for many years for roadway improvements which utilize federal funds. Many bicycle/pedestrian advocates have begun to urge that the same policy be followed for projects using state and local funds, a concept they call “Complete Streets.”

The East Beckley Bypass is an excellent example of how a region can gradually expand its overall bicycle and pedestrian network by following a Complete Streets policy.

As development occurs along the route, it will be important to consider how to maintain a safe environment for pedestrians and cyclists.

One example is to manage new access by keeping driveways and intersecting roads to a minimum. As discussed earlier, good access management improves safety and helps preserve efficient traffic flow. This is true not only for motorized traffic, but also for pedestrians and cyclists. Every location where a vehicle is turning onto and off the highway is a location where a pedestrian or cyclist is at risk of being struck. The safest design is to allow turns only at signalized or marked intersections, where motorists, pedestrians and cyclists have crosswalks and walk signals that clearly indicate who has right of way.



*The design for the East Beckley Bypass included sidewalks and paved shoulders which now become part of the regional bicycle and pedestrian network.*

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## LOCAL BICYCLE/PEDESTRIAN FACILITIES

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Both Beckley and Oak Hill have constructed major rail-trail facilities that citizens use not only for recreational walking/cycling, but also for traveling to and from work. Some neighborhoods already have the ability to walk directly to the trail, but there are opportunities to add sidewalks to provide additional neighborhoods with safe access to the rail trails.

As noted earlier, there are also proposals to connect the local rail-trails to the larger regional bicycle/pedestrian network. The stated goal is to attract visitors from national parklands into the downtown business districts, but the new connections would also expand local residents' ability to travel between communities such as Beckley and Oak Hill even if they do not have access to a personal vehicle.



*Riding bicycles on the Beckley Rail Trail*

*(Photo by Chuck Holton, available at <https://www.flickr.com/photos/rangerholton/144158>)*

However, as with roads, expansion cannot always take priority over maintenance. In some communities there are portions of the local sidewalk network that are in such poor condition that residents are forced to walk in the street. The MPO can work with local governments to conduct sidewalk inventories and develop cost estimates and a prioritization system for repairs. Priority could be given to repairing sidewalks on roads that have a transit route, in areas around schools and other community facilities, or in neighborhoods that are known to have a high proportion of residents with limited access to a vehicle. For projects in low-income areas, there may be opportunities to fund sidewalk repairs with a combination of community development funds and transportation dollars.

## FUTURE BICYCLE/PEDESTRIAN NETWORK DEVELOPMENT

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Further development of the bicycle/pedestrian network in the MPO area should be guided by a standalone regional bicycle and pedestrian plan that focuses on these significant issues:

- **Completing, repairing and maintaining the sidewalk network that serves the area's transit routes.** Every transit rider is also a pedestrian at the beginning and ending of his/her trip. Major gaps on the current fixed route transit system include portions of the WV 3 (Harper Road) corridor between I-77 and Hylton Lane, as well as from Northwestern Avenue to the Kroger shopping center. Robert C. Byrd Drive also lacks sidewalk access for any points north of Ragland Road. There are other isolated gaps in the system. For example, at the entrance drive to Raleigh Memorial Hospital, there are no sidewalks to serve the crosswalk marked between the hospital and the medical building on the opposite side of Harper Road.

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As the New River Transit Authority refines its routes, it should work in partnership with the MPO to identify additional, similar gaps and prioritize locations for maintenance and improvement.

- **Expanding the bicycle and pedestrian network to better link neighborhoods and commercial centers to existing major trails.** The Beckley Rail-Trail, White Oak Rail-Trail, and other planned facilities are popular recreational corridors where residents have the opportunity to enjoy physical activity and meet others who live in the area. They also provide important access to work, shopping and other community services for residents who don't drive or don't have access to a vehicle.
- **Continuing to build and improve bicycle and pedestrian connections from gateway communities to adjoining state and federal parklands.** Many of the adopted local comprehensive plans in the MPO area include particular trails that would link the communities to the larger network. The *Connecting Communities* regional trail plan also proposes on-street improvements ranging from the addition of marked crosswalks at trail intersections to the addition of pedestrian refuge islands as part of future highway widening projects, such as WV 61 in Mt. Hope. Many of these projects can be submitted for consideration as various grant opportunities arise, including the federal Transportation Alternatives Program (TAP) and Federal Lands Access Program (FLAP).

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# Chapter 5:

## Funding and Fiscal Constraint

This chapter consolidates the project and program recommendations made in previous chapters to present a financially feasible plan that meets the needs of the region’s transportation system over the next 25 years. Available funding sources are identified and described here, along with the range of transportation investments that are eligible for various types of funding. Forecasts are presented for the level of funding anticipated to be available from each source through the year 2045.

The projected revenue is then compared to the recommended projects and programs to demonstrate that the anticipated level of funding will be sufficient to cover the cost of implementing the recommended Plan. This chapter also identifies projects and services that have been identified in the region as transportation needs, but cannot currently be funded.

### SOURCES OF TRANSPORTATION FUNDING

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#### Federal Transportation Funding

**Table 5-1** provides a summary of the major federal funding programs that are available to implement projects and programs in Metropolitan Planning Organizations (MPOs), including the Fayette/Raleigh MPO. Nearly all require non-federal matching funds, usually either state or local dollars.

One of the Federal Transit Administration programs, Section 5307, provides a direct funding allocation to the region annually, based on factors such as population, number of vehicle revenue-miles, etc. The region may also submit applications to the West Virginia Division of Public Transit (WVDPT) to request funding for projects eligible for Sections 5339 and 5310. These programs are described in further detail in following pages.

Since the majority of the region’s roads are managed by the West Virginia Division of Highways (WVDOH), the state generally determines which federal program funds are appropriate to use toward each eligible project. This provides WVDOH with the flexibility to maximize all sources of revenue and manage cash flow. Having budget flexibility is particularly critical in the current environment, in which federal funding has become unpredictable because Congress has continued to pass short extensions to the federal transportation authorization act instead of passing a multi-year bill which guarantees specific funding levels.

Based on the region’s goal to strengthen connections between parklands and the adjacent gateway communities, the MPO should maintain ongoing discussions with DOH about the availability of funds from the Federal Lands Access Program (FLAP) and Transportation Alternatives Program (TAP), which many communities know from its previous name, Transportation Enhancements.



In addition, the numerous operational improvements which are recommended in this 2045 Plan should also be considered for Congestion Mitigation/Air Quality Improvement funds, which are typically used for projects that result in better traffic flow, improve signalization and signal timing, and improve intersections.

**Table 5-1: Federal Transportation Funding Programs**

<b>Federal Program</b>	<b>Description</b>
<b>National Highway Performance Program (NHPP)</b>	Provides funding for construction, reconstruction, resurfacing, restoration, rehabilitation, preservation, or operational improvement of segments of the National Highway System (NHS). This includes Interstate highways and bridges on the NHS. It also includes all of the state's Appalachian Development Highway System routes. Projects must support progress toward national goals for the condition and performance of the system.
<b>Surface Transportation Program (STP)</b>	Provides funding for roads functionally classified as rural major collector and above. Funds may be utilized on projects in Rural Areas, Urbanized Areas, Small Urban Areas, Safety and Rail-Highway Crossings. Funds may be used for bicycle/pedestrian projects or "flexed" for transit use. Also funds bridge replacement & rehabilitation on non-federal aid routes.
<b>Highway Safety Improvement Program (HSIP)</b>	Provides funds to make improvements to high hazard locations on any public road, including highway-rail grade crossings, and any publicly owned bicycle/pedestrian facility. Projects are selected based on crash rate and crash frequency.
<b>Transportation Alternatives Program (TAP)</b>	Combines former funding programs for Enhancements, Safe Routes to Schools, Scenic Byways, and Recreational Trails. Eligible activities include bicycle and pedestrian facilities, sidewalks near elementary and middle schools, main street and boulevard projects, and environmental mitigation to address impacts of the transportation system.
<b>Congestion Mitigation/Air Quality Improvement (CMAQ)</b>	Provides funding for transportation projects that contribute to meeting the national ambient air quality standards by reducing air pollution related to motor vehicles, locomotives, barges and ships and other forms of transportation.
<b>Federal Lands Access Program</b>	Provides funding for projects on transportation facilities that are located on or adjacent to federal lands, or that provide access to federal lands.
<b>Federal Transit Administration (FTA) Section 5307</b>	Section 5307 is a formula grant program for urbanized areas providing capital, operating, and planning assistance for mass transportation. This program now includes funds previously available through the Job Access/Reverse Commute program (FTA-5316), which provides new or expanded transportation service to fill gaps that exist for welfare recipients and other low-income individuals to and from jobs and other employment-related services. Reverse Commute projects facilitate the provision of new or expanded public mass transportation services for the general public from urban, suburban, and rural areas to suburban work sites.
<b>FTA-5310</b>	Section 5310 is a formula grant program for the special needs of elderly individuals with disabilities. Funds (which are subject to annual appropriations) are appropriated annually based on an administrative formula that considers the number of elderly individuals with disabilities in each State. Funds available through the former New Freedoms program (FTA- 5317), which encourages services and facility improvements that go beyond those required by the Americans with Disabilities Act, are now combined with this program.
<b>FTA-5339</b>	Section 5339 is a formula grant program that provides capital funding to replace, rehabilitate and purchase buses and related equipment, and to construct bus-related facilities.



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## State Transportation Funding

The State Road Fund, used by WVDOT to cover nearly all of its activities – including not only capital projects but all maintenance, project and program administration – includes the federal funding resources described above. (It should be noted that not all roads are eligible for federal-aid funds; in fact, only 27% of the state’s road-miles qualify, which are the roads functionally classified as rural major collectors and higher. Chapter 4 includes a discussion of roadway functional classifications.)

The state revenue portion is generated from these four categories:

- **Motor Fuel Taxes**, which produce roughly half of the total revenue generated;
- **Registration Fees**, which include vehicle registration as well as driver’s license, permits and litter control fees;
- **Privilege Taxes**, collected when a vehicle’s certificate of title is issued; and
- **Miscellaneous Revenues**, which include interest on state investments, map sales, permits, etc. Recently the State Road Fund also began to receive a ‘rebate’ from the State General Fund for the cost of sales tax paid by DOT contractors when they purchase construction materials for state projects.

There is increasing concern about the ability of the State Road Fund to keep pace with growing transportation needs. Since FY 1994, the real value of total dedicated tax revenues in the State Road Fund has declined by nearly one-third due to the impact of inflation. The state’s road system is also aging, like much of the country’s other infrastructure, and is in great need of significant investment in maintenance and renovation. With overall funding limited, the need and desire for new road projects is often a forced tradeoff with the need to preserve the existing system.

## HIGHWAY REVENUE FORECASTS

Federal planning legislation requires every MPO’s plan to be fiscally constrained. In other words, the proposed projects and programs in the 2045 Plan are limited to what can be funded with the level of future revenue that is reasonably expected to be available to the region. The additional needs that cannot be funded are presented in an “illustrative” list (presented later in this chapter) which shows the other investments that the MPO would make if additional revenue becomes available.

The anticipated amount of funding available for capital projects during the period of the 2045 Plan is provided to each MPO by WVDOT. Revenue projections are based on a review of historical funding averages, consumer and construction price indices, each region’s percentage of vehicle-miles traveled statewide, highway mileage, and population. FY 2017 through FY 2021 are based on official State Road Fund estimates, while projections for the remaining years assume that costs and revenue both increase at an annual rate of 4.3 percent.

According to the state’s projections, estimated roadway funding specifically available to the FRMPO region is about 6.4 percent of the total funds spent in MPO areas. During the 25-year period of the plan,

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a total of \$402 million is estimated to be available for highway improvements in the FRMPO region. Projected annual revenue is shown in **Table 5-2** and has been expressed in year-of-expenditure dollars as required by the U.S. DOT.

**Table 5-2: Estimated Revenue for Roadway Improvements in the FMRPO Region**

<b>Fiscal Year</b>	<b>Available</b>
2021	7,789,000
2022	9,697,000
2023	10,113,000
2024	10,548,000
2025	11,002,000
2026	11,475,000
2027	11,969,000
2028	12,483,000
2029	13,019,000
2030	13,579,000
2031	14,163,000
2032	14,771,000
2033	15,406,000
2034	16,069,000
2035	16,759,000
2036	17,479,000
2037	18,232,000
2038	19,015,000
2039	19,833,000
2040	20,685,000
2041	21,574,000
2042	22,502,000
2043	23,470,000
2044	24,480,000
2045	25,533,000
<b>TOTAL</b>	<b>401,645,000</b>

For purposes of demonstrating that the 2045 Plan is fiscally constrained, these revenue estimates have been grouped into three major horizons, or timeframes, in which projects will be implemented:

- Near-term horizon: 2021 - 2025
- Mid-term horizon: 2026 to 2035
- Long-term horizon: 2036 to 2045

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## RECOMMENDED ROADWAY PROJECTS

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It is important to note that the horizon in which a roadway project is listed in the Plan indicates the year in which the project is expected to be open to traffic. The fact that a project is listed in the mid-term horizon does not necessarily mean that it is only “medium priority,” or that work will not begin earlier. Major projects such as the US 19 (Ritter Drive) widening may take several years to complete, starting with environmental studies and approvals and preliminary engineering, the purchase of right-of-way, and finally the construction phase.

**Tables 5-3** through **5-5** show the roadway projects recommended for implementation in the three horizons of the Plan, along with their estimated costs (in year of expenditure), compared to the amount of revenue anticipated to be available during each Plan horizon.

As noted in Chapter 1, the Regional Transportation Plan is updated at least every four years to ensure that it reflects the latest conditions. Given the financial uncertainties for transportation, it is possible that regional revenue projections will need to be revised at some point. Project costs could also fluctuate as global economic conditions affect the price of steel, oil and other materials used in road and bridge construction. Also, changes in financial circumstances sometimes increase the amount of funds available, as when Congress passed the American Recovery and Reinvestment Act (ARRA) in the middle of the last decade. Millions of dollars became available to states who could spend them quickly on “shovel-ready” infrastructure projects.

## ILLUSTRATIVE LIST OF ROADWAY PROJECTS

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The number of major roadway projects proposed for the Fayette/Raleigh region for the 2036 - 2045 horizon exceeded the amount of revenue projected to be available. Two of the projects have therefore been placed on the Plan’s illustrative list, which shows the investments the MPO would make if additional funding became available. The two projects are N-6, which is the ultimate extension of the East Beckley Bypass from Pinewood Drive northward to connect with US 19 in the Bradley community, and N-9, which is the final section of the proposed New River Parkway, running from Falls Branch to the I-64 interchange at Sandstone.

**Table 5-3: Roadway Projects Proposed for Completion in 2021 - 2025** *(continued next page)*

PROJ NO	ROADWAY	FROM	TO	COUNTY	TYPE OF IMPROVEMENT	COST (YOE)
T-2	WV 3 (Harper Rd)	Dry Hill Rd	Carriage Dr	Raleigh	Signal operations	200,000
T-30	US 19 at Beckley Crossing	-	-		Align southbound approach at US 19/Beckley Crossing intersection as recommended in US 19 Corridor Study	110,000
T-31	US 19 at WV 16/Ragland Rd	-	-		Reconfigure the eastbound and westbound approaches and eliminate a southbound through lane as recommended in WV 19 Corridor Study	2,000,000
T-32	Maxwell Hill Road and Rural Acres	-	-		Construct dual westbound left-turn lanes and an exclusive northbound right-turn lane at WV 16 (Robert C. Byrd)	1,300,000
T-4	Beckley Crossing Shopping Center	WV 16	US 19 (N Eisenhower	Raleigh	Improve westbound approach to WV 16 and Beckley Crossing Shopping Center intersection. Convert to a public street, define roadway with curbs and further define parking areas.	1,632,000
T-6	US 19 (N Eisenhower Dr)	WV 16	Dunn Dr.	Raleigh	Signal operations	399,000
T-8	WV 16 (Robert C Byrd Dr)	Reading St	Old Eccles Rd	Raleigh	Signal operations	65,000
N-1	US 19 (Ritter Dr)	WV 3	WV 307 (Airport Rd)	Raleigh	Widen from 2 to 3 lanes and improve WV 3 (Ritter Dr) at Airport Rd	35,000,000
S-1	Virginia St at Oyler Ave	-	-	Fayette	Intersection safety improvements	85,000
S-2	Virginia St at Oak Hill Rail-Trail	-	-	Fayette	Intersection safety improvements, incl. pedestrian crossing	16,000
S-3	WV 16 at Veterans Dr	-	-	Raleigh	Install sturdier curb and delineator combination and extend at least 200 feet north of the intersection	30,000

PROJ NO	ROADWAY	FROM	TO	COUNTY	TYPE OF IMPROVEMENT	COST (YOE)
S-5	Minden Road Underpass	-	-	Fayette	Vehicle detection/warning with pullouts	207,000
S-8	US 60	Hawks Nest Lookout	New River Campground	Fayette	Add shoulders and widen horseshoe turns for trucks and RVs. Add pulloffs for scenic touring and/or slow moving vehicles to allow passing.	629,000
S-10	US 19	Ragland Rd	McCulloch Dr	Raleigh	Restripe to a center two-way left-turn lane and construct a median in front of the right-in/right-out entrance as recommended in US 19 Corridor Study	109,000
S-12	New River Dr	WV 16 (Robert C. Byrd Dr)	Pikeview Dr	Raleigh	Construct new intersection at New River Dr and WV 16 (Robert C. Byrd) by realigning New River Dr between Ollie's Bargain Outlet and Rhonda's Home Pharmacy to align New River Drive with the existing Kanawha Street intersection	1,500,000
S-21	US 60 at Hawks Nest Golf Course entrance	-	-	Fayette	Intersection safety improvements	48,000
S-30	US 19 and Rural Acres Dr/Stanaford Rd	-	-	Raleigh	Reconstruct right turn lane on northbound approach as recommended in US 19 Corridor Study	816,000
S-32	A St Safe Pedestrian Crossings	Minnesota Ave	Kanawha St	Raleigh	Addition of pedestrian crossing between Minnesota Ave and Kanawha Street, utilizing speed tables and special signing to raise motorist awareness and slow their speeds.	70,000
S-33	Kanawha St/Main St ADA Compliant Connection	Williams St	YMCA	Raleigh	Providing an ADA-compliant connection from the WVU Tech residence hall to the YMCA of Southern West Virginia, within the public right-of-way.	140,000
S-31	Thurmond Rd Bridges	-	-	Raleigh	Improve bridge and culvert over Dunloup Creek	2,500,000

PROJ NO	ROADWAY	FROM	TO	COUNTY	TYPE OF IMPROVEMENT	COST (YOE)
S-34	Beckley Sharrows/Bike Lane Network	WVU Tech	Beckley Rail Trail	Raleigh	Creating a connection from WVU Tech to the Beckley Rail Trail to connect the campus to the surrounding bicycle network, and to provide students with a means for accessing commercial destinations in the surrounding region.	30,000
<b>Total Project Costs, 2021 to 2026</b>						<b>46,886,000</b>
<b>Estimated Revenue Available, 2021 to 2026</b>						<b>49,149,000</b>

**Notes:** YOE means the project costs have been estimated in year of expenditure.

**Table 5-4: Roadway Projects Proposed for Completion in 2026 - 2035**

PROJ NO	ROADWAY	FROM	TO	COUNTY	TYPE OF IMPROVEMENT	COST (YOE)
N-30	Raleigh County Memorial Airport	CSX Connection	Airport Connection	Raleigh	Construct roadway connection from railroad access area to the Raleigh County Memorial Airport	21,000,000
S-6	WV 16 (Robert C. Byrd Dr) at I-64/77	Stovers Fork Rd	Old Eccles Rd	Raleigh	Corridor safety improvements, including access management	502,000
N-7	New River Dr	WV 16 (Robert C. Byrd Dr)	Harper Rd	Raleigh	Implement Concept E Modified from Maxwell Hill Area Study and provide improved connection between Harper Rd (WV 3) and WV 16 (Robert C. Byrd Dr.)	19,749,000
N-8	Crosstown Connector	New River Dr/Pikeview Dr	VanKirk Dr	Raleigh	Construct 4-lane overpass across I-64/77 to Tamarack	54,433,000
S-9	Gatewood Rd	WV 16 (E. Main St, Oak Hill)	WV 16 (N. Court St, Fayetteville)	Fayette	Add 4-foot shoulders, other safety improvements	10,887,000
S-11	WV 61	Page Bottom Rd	Baker St	Fayette	Add minimum shoulders, safety-related signage and markings	1,915,000
S-22	US 19 Corridor Safety Improvements	WV 16 (Court St., Fayetteville)	Wood Mountain Rd (CR 19/19)	Fayette	Safety improvements at US 19 intersections throughout Fayette County	13,022,000
S-35	WVU Tech to YMCA Paul Cline Memorial Youth Sports Complex connections	WVU Tech	YMCA Paul Cline Sports Complex	Raleigh	Building a connection from WVU Tech to the YMCA Paul Cline Memorial Youth Sports Complex to provide student athletes and coaches with a path to and from the complex and connect to the surrounding community.	400,000
<b>Total Project Costs, 2026 to 2035</b>						<b>121,908,000</b>
<b>Estimated Revenue Available, 2026 to 2035</b>						<b>139,693,000</b>

**Notes:** YOE means the project costs have been estimated in year of expenditure.



**Table 5-5: Roadway Projects Proposed for Completion in 2036 - 2045**

PROJ NO	ROADWAY	FROM	TO	COUNTY	TYPE OF IMPROVEMENT	COST (YOE)
T-3	WV 3 (Harper Rd) at Ewart Ave	-	-	Raleigh	Intersection Improvement - Align Ewart and N Pike, add SB left turn lane	568,000
N-2	US 19 Connector / Beaver Bypass	WV 307 (Airport Rd)	I-64	Raleigh	Construct new 3-lane highway with overpass at WV 307	88,870,000
T-7	US 19 (Eisenhower Dr)	WV 41	I-64 overpass	Raleigh	Add passing lanes on significant grades	1,475,000
S-16	US 19 / Glen Jean intersection	-	-	Fayette	Upgrade to interchange	22,085,000
T-12	WV 307 (Airport Rd)	800 ft N of Whispering Pine Dr	Scott Ridge Rd	Raleigh	Add northbound truck climbing lane	3,975,000
<b>Total Project Costs, 2036 to 2045</b>						<b>116,973,000</b>
<b>Estimated Revenue Available, 2036 to 2045</b>						<b>212,803,000</b>

*Notes: YOE means the project costs have been estimated in year of expenditure.*

**Table 5-6: Illustrative Roadway Projects (Unfunded)**

PROJ NO	ROADWAY	FROM	TO	COUNTY	TYPE OF IMPROVEMENT	COST (2040)
N-6	East Beckley Bypass Extension	Ragland Rd.	US 19 (Bradley)	Raleigh	Construct new 4-lane highway	227,063,000
N-9	New River Parkway – Section 3	Falls Branch	I-64 interchange at Sandstone	Raleigh	Construct new 2-lane scenic parkway, including bridge over the New River	273,719,000

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Each of the two projects on the illustrative list is estimated to cost more than \$96 million, which is the amount of revenue that remains unprogrammed in the 2036-2045 horizon. The remaining revenue could be used to initiate development of either or both of the two projects, but no commitment to that effect is being made by adoption of this Plan.

Following the adoption of this Plan, which is its first formal effort to identify and prioritize projects on a regional basis, the MPO will continue to perform studies and work with WVDOH on the operational improvements proposed for 2021-2026. In the course of these ongoing planning activities, the region may also identify new needs on which the unallocated revenue could be spent, or perhaps find ways to modify other projects to lower their cost and allow the illustrative projects to be included in the Plan. Such changes would occur either as a later amendment to the 2045 Plan, or incorporated when it is time to develop the 2050 Plan.

## **TRANSIT REVENUE FORECASTS**

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As with roadway projects, the transit portion of the 2045 Plan must be fiscally constrained. In other words, it can include only the public transit projects and services that can be funded with the amount of revenue expected to be available for such purposes over the life of the Plan.

As noted at the beginning of this chapter, the Fayette/Raleigh County region receives an annual allocation from one of the Federal Transit Administration programs, Section 5307. The designated recipient is the New River Transit Authority (NRTA), which receives the federal funds through a contract with WVDPT. The region is no longer eligible for state funding assistance for transit since it has become an urbanized area. All federal funds must be matched with local dollars – either public, nonprofit or private – generally 20 percent for capital projects and preventive maintenance, and 50 percent for operating expenses.

The anticipated amount of funding available for transit during the period of the 2045 Plan was developed based on recent historic funding and annual estimates shown in the Transportation Improvement Program. A very conservative revenue growth rate was assumed: 0.5 percent annually, with a 1 percent increase in 2025, 2035, and 2045. Transit cost estimates were equally conservative: costs are assumed to increase by 1 percent annually through the year 2025, by 1.5 percent annually from 2026 to 2035, and by 2 percent annually for the remainder of the Plan.

During the 25-year period of the plan, a total of \$48 million is estimated to be available for transit in the FRMPO region. Projected transit operating and capital revenue for each Plan horizon is shown in **Tables 5-7** and **5-9**, expressed in year-of-expenditure dollars as required by the U.S. DOT. **Tables 5-8** and **5-10** show the estimated transit operating and capital costs for each Plan horizon. These costs are derived from the proposed transit investments shown in **Tables 5-11** through **5-13**.

The region is not projected to spend all of its available federal revenue in the near-term horizon, in part because local governments must gradually ramp up their budgets in order to match all of the federal funds available. The unspent funds will help offset increased operating costs in the mid-term horizon.

**Table 5-7: Estimated Transit Operating Revenue by Plan Horizon**

	<b>FTA 5307 Operating (Federal)</b>	<b>Local Match</b>	<b>Total Revenue Available</b>
<b>2021-2025</b>	1,981,856	1,981,856	<b>3,963,712</b>
<b>2026-2035</b>	4,297,000	4,297,000	<b>8,594,000</b>
<b>2036-2045</b>	4,617,000	4,617,000	<b>9,234,000</b>
<b>TOTAL</b>	<b>10,895,856</b>	<b>10,895,856</b>	<b>21,791,712</b>

**Table 5-8: Estimated Transit Operating Costs by Plan Horizon**

	<b>FTA 5307 Operating (Federal)</b>	<b>Local Match</b>	<b>Total Revenue Available</b>
<b>2021-2025</b>	2,415,000	2,415,000	<b>4,830,000</b>
<b>2026-2035</b>	9,875,000	9,875,000	<b>19,750,000</b>
<b>2036-2045</b>	11,875,000	11,875,000	<b>23,750,000</b>
<b>TOTAL</b>	<b>24,165,000</b>	<b>24,165,000</b>	<b>48,330,000</b>

**Table 5-9: Estimated Transit Capital Revenue by Plan Horizon**

5307 Preventive Maintenance							5307 Capital Projects		Total Revenue Available
	Federal Portion	Local Match	Total	Federal Portion	Local Match	Total			
2021-2025	322,688	80,672	403,360	322,688	80,672	403,360	1,022,780		
2026-2035	900,000	225,000	1,125,000	900,000	225,000	1,125,000	2,700,000		
2036-2045	1,300,000	325,000	1,625,000	1,300,000	325,000	1,625,000	3,700,000		
TOTAL	2,522,688	630,672	3,153,360	2,522,688	630,672	3,153,360	7,422,780		

**Table 5-10: Estimated Transit Capital Costs by Plan Horizon**

5307 Preventive Maintenance							5307 Capital Projects		Total Revenue Available
	Federal Portion	Local Match	Total	Federal Portion	Local Match	Total			
2021-2025	80,000	20,000	100,000	1,320,000	330,000	1,650,000	1,750,000		
2026-2035	160,000	40,000	200,000	2,560,000	640,000	3,200,000	3,400,000		
2036-2045	200,000	50,000	250,000	3,960,000	990,000	4,950,000	5,200,000		
TOTAL	440,000	110,000	550,000	7,840,000	1,960,000	9,800,000	10,350,000		

**Table 5-11: Proposed Transit Investments for 2021-2025**

PROJ NO	PROJECT	TYPE OF IMPROVEMENT	COUNTY	DESCRIPTION	PLAN COST (YOE)
TR-1	Operate deviated fixed route transit service	Operations	Fayette, Raleigh	Weekday service for Raleigh Express (city) and former MTA routes; Raleigh County routes twice per week	4,830,000
TR-2	Vehicle replacements	Capital	-	Add vehicles as needed to provide planned new service. Replace transit vehicles that have reached the end of their useful life	1,100,000
TR-3	Building/facility maintenance and equipment	Prev. Maint.	-	Routine maintenance, repairs to equipment, operating facilities and passenger facilities.	100,000
TR-4	Bus stop amenities (benches, shelters, signage)	Capital	Fayette, Raleigh	Add or replace passenger amenities along regular transit routes	250,000
TR-5	Dispatching software and Automatic Vehicle Location system	Capital	-	Acquire technology to assist in scheduling and real-time routing	300,000
<b>Total Transit Costs, 2021 to 2025</b>					<b>6,505,000</b>

**Table 5-12: Proposed Transit Investments for 2026-2035**

PROJ NO	PROJECT	TYPE OF IMPROVEMENT	COUNTY	DESCRIPTION	PLAN COST (YOE)
TR-6	Operate deviated fixed route transit service	Operations	Fayette, Raleigh	Weekday service for Raleigh Express (city) and former MTA routes; Raleigh County routes twice per week	8,250,000
TR-7	Building/facility maintenance and equipment	Prev. Maint.	-	Routine maintenance, repairs to equipment, operating facilities and passenger facilities.	200,000
TR-8	Bus stop amenities (benches, shelters, signage, etc.)	Capital	Fayette, Raleigh	Add or replace passenger amenities along regular transit routes	500,000
TR-9	Upgrade communications / dispatching software	Capital	-		300,000
TR-10	Vehicle fleet expansion and replacements	Capital	-	Add vehicles as needed to provide planned new service. Replace transit vehicles that have reached the end of their useful life	2,200,000
TR-11	Enhance service for New River Transit city routes	Operations	Raleigh	Add evening and weekend service.	9,000,000
TR-12	Enhance Fayette County deviated fixed-route service	Operations	Fayette	Improve headways (frequency). Consider weekend service.	2,500,000
TR-14	Mini-hub / transfer point on N Eisenhower Drive	Capital	Raleigh	Consider Beckley Crossings area	100,000
TR-15	Transit hub in Oak Hill	Capital	Fayette	Co-locate with public facility / parking	100,000
<b>Total Transit Costs, 2026 to 2035</b>					<b>23,150,000</b>

**Table 5-13: Proposed Transit Investments for 2036 - 2045**

PROJ NO	PROJECT	TYPE OF IMPROVEMENT	COUNTY	DESCRIPTION	PLAN COST (YOE)
TR-16	Operate deviated fixed route transit service	Operations	Fayette, Raleigh	Daily daytime and evening service for Raleigh Express (city) and former MTA routes; Raleigh County routes twice per week	23,500,000
TR-17	Building/facility maintenance and equipment	Prev. Maint.	-	Routine maintenance, repairs to equipment, operating facilities and passenger facilities.	250,000
TR-18	Bus stop amenities (benches, shelters, signage)	Capital	Fayette, Raleigh	Add or replace passenger amenities along regular transit routes	500,000
TR-19	Rehabilitation of transit center / administrative facilities	Capital	Raleigh		1,000,000
TR-20	Vehicle replacements and expansion	Capital	-	Replace transit vehicles that have reached the end of their useful life. Add vehicles as need to provide planned new service.	3,300,000
TR-22	Mini-hubs in Mount Hope and Fayetteville	Capital	Fayette	Co-locate with public facility / parking	150,000
TR-23	Connecting service to KAT (Charleston) and BAT	Operations	Fayette	Provide service to a stop in northwest Fayette County where passengers can transfer between NRTA and KAT	250,000
<b>Total Transit Costs, 2036 to 2045</b>					<b>28,950,000</b>



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# Chapter 6:

## Environmental Screening: Potential Impacts and Mitigation

One of the Fayette/Raleigh MPO's adopted goals, as outlined in Chapter 3, is for the transportation system to help protect and enhance the natural and cultural environment. The analysis in this chapter helps to evaluate how well the 2045 Plan meets that goal. The FAST Act also requires this type of review to ensure that appropriate consideration is given to potential environmental, historic and cultural impacts of the projects proposed in the Plan, as well as potential mitigation strategies.

One result of this review is a list of specific projects that are identified or "flagged" as potentially having environmental impacts, so that the discussion of avoidance and/or mitigation can begin early. More recently, MPOs have also begun to consider the relationship of the natural environment and the transportation system at a much broader scale, in terms of climate change and the network's resiliency to extreme weather events.

This chapter also assesses the extent to which the 2045 Plan fulfills the principles of Environmental Justice mentioned in Chapter 1. A geographic analysis is performed for the proposed transportation investments to identify whether there could be disproportionate impacts on minority or low-income populations, either through direct effects or through the lack of transportation investment.

### ENVIRONMENTAL CONSULTATION PROCESS

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The Fayette/Raleigh MPO has used the following approach to ensure the consideration of environmental factors in the 2045 Plan:

- An appropriate level of review was undertaken to assess potential environmental, historic and cultural resource impacts in likely areas for mitigation activities in transportation planning;
- Federal, state, tribal and local land use management, natural resources, wildlife, environmental protection, conservation and historic preservation agencies were consulted in the development of the Plan and provided with the opportunity to comment; and,
- The Plan summarizes the disposition of comments identified by the affected agencies.

### REVIEW OF PROPOSED TRANSPORTATION PROJECTS

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A review of available GIS databases was utilized to identify and locate known wetlands, flood zones, historic sites, and historic districts within the MPO boundary. Data collected were used to produce base maps of potential area impacts. Locations of the proposed projects in the 2045 Plan were then incorporated onto the base maps to identify possible resource impacts.

Based on the data collected, the 2045 Plan does include projects that have the potential to impact sensitive environmental areas. The scopes of these projects vary and range from spot or intersection improvements to construction on new alignment. The locations shown for the projects are still at a planning level of detail and do not necessarily represent the final limits or exact design of the project. All federally-funded transportation projects must still go through the more detailed review of potential impacts required by the National Environmental Policy Act (NEPA). As a project is further developed, its footprint will continue to be refined and impacts will be better known.

It is also important to note that while the physical constraints of the project may not directly intersect an identified environmentally sensitive area, it is possible that project-related activities may have an indirect impact on the area. The final environmental impacts associated with each project will be determined only after an environmental study for the project is completed.

### Section 4(f) Screening

Section 4(f) of the Department of the Department of Transportation Act of 1966 requires consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development. Data from the National Park Service was used to identify historic districts and other properties listed on the National Register of Historic Places, shown in **Table 6-2**. Recreational 4(f) sites, including parks, trails, and wildlife refuges, were identified using data collected by the West Virginia State GIS Data Clearinghouse. These sites were then compared with the general location of proposed transportation projects, as shown in **Figure 6-1**, to identify projects located within 1,000 feet of a 4(f) property. Nine proposed transportation projects are located within the specified distance.

**Table 6-1: Projects with Potential Impact on Section 4(f) Properties**

Location*	Project	Year	Description
Fayetteville Historic District	S-22	2026	Safety improvements at US 19 intersections throughout Fayette County
Hawk's Nest State Park	S-8	2021	Add shoulders and widen horseshoe turns for trucks and RVs. Add pulloffs for scenic touring and/or slow moving vehicles to allow passing.
Babe Ruth Park	T-7	2036	Add passing lanes on significant grades
Fayetteville Historic District	S-9	2036	Add minimum 4-foot shoulders and other safety improvements to Gatewood Road from E. Main St. in Oak Hill to N. Court St. in Fayetteville
Bank of Glen Jean	S-16	2036	Upgrade US 19/Glen Jean intersection to an interchange
Beckley Courthouse Square Historic District	S-32	2021	Addition of pedestrian crossing between Minnesota Ave and Kanawha Street, utilizing speed tables and special signing to raise motorist awareness and slow their speeds.
Beckley Courthouse Square Historic District	S-33	2021	Providing an ADA-compliant connection from the WVU Tech residence hall to the YMCA of Southern West Virginia, within the public right-of-way.

Location*	Project	Year	Description
Beckley Courthouse Square Historic District	S-34	2021	Creating a connection from WVU Tech to the Beckley Rail Trail to connect the campus to the surrounding bicycle network, and to provide students with a means for accessing commercial destinations in the surrounding region.
Babe Ruth Park	S-35	2026	Building a connection from WVU Tech to the YMCA Paul Cline Memorial Youth Sports Complex to provide student athletes and coaches with a path to and from the complex and connect to the surrounding community.

*\*Locations are shown if located within 1,000 feet of the centerline of the road proposed for improvement.*

**Table 6-2: Locations listed on the National Register of Historic Places in the Fayette/Raleigh MPO Region**

County	Site / District	Location	
Fayette	Dr. John Hughart House	Landisburg	Off WV 41
Raleigh	Beckley Feed and Hardware Company	Beckley	405 Prince St.
Fayette	Contentment	Ansted	Along US 60
Fayette	Tyree Stone Tavern	Clifftop	East of Clifftop off US 19 on WV 10
Fayette	Altamont Hotel	Fayetteville	110 Fayette Ave.
Fayette	Fayette County Courthouse	Fayetteville	Court St. between Wiseman and Maple Aves.
Fayette	Gauley Bridge Railroad Station	Gauley Bridge	Off WV 16/39
Fayette	Main Building	Montgomery	West Virginia Institute of Technology campus
Fayette	Page-Vawter House	Ansted	Rt. Box 20
Fayette	Prince Brothers General Store--Berry Store	Prince	WV 41
Raleigh	Wildwood	Beckley	117 Laurel Ter.
Raleigh	St. Colman's Roman Catholic Church & Cemetery	Sandstone	WV 26
Fayette	Halfway House	Ansted	Off Old US 60
Fayette	Whipple Company Store	Whipple	Jct. of County Roads 15 and 21/20
Fayette	Glen Ferris Inn	Glen Ferris	US 60 overlooking Kanawha Falls
Fayette	Oak Hill Railroad Depot	Oak Hill	Junction of Virginia Ave. and Central Ave.
Raleigh	Little Beaver Dam	Crow	SW of Crow, NW Corner of Little Beaver Dam
Fayette	Bank of Glen Jean	Glen Jean	Main St.
Fayette	Thurmond Historic District	Thurmond	WV 25 at New River
Fayette	E.B. Hawkins House	Fayetteville	120 Fayette Ave.
Fayette	Kay Moor	Fayetteville	Along the New River, south of US 19
Fayette	Fayetteville Historic District	Fayetteville	Roughly bounded by WV 16, Maple and Fayette Ave.
Fayette	Camp Washington-Carver Complex	Clifftop	County Road 11/3
Raleigh	Trump-Lilly Farmstead	Hinton	WV 26/3, 2.5 miles from WV 26
Raleigh	Beckley Courthouse Square Historic District	Beckley	Roughly bounded by Prince, Kanawha, Church, Lebanon, Howe, McCreery, Earwood, Alaska and First

This map of Fayette County, West Virginia, displays various geographical and administrative features. The county is bordered by Kanawha, Boone, Raleigh, Summers, Mercer, and McDowell counties. Major highways shown include US-60, US-19, US-41, US-20, WV-61, WV-62, WV-64, WV-77, WV-99, WV-305, WV-54, WV-3, WV-16, WV-18, WV-19, WV-20, WV-21, WV-22, WV-23, WV-24, WV-25, WV-26, WV-27, WV-28, WV-29, WV-30, WV-31, WV-32, WV-33, WV-34, WV-35, WV-36, WV-37, WV-38, WV-39, WV-40, WV-41, WV-42, WV-43, WV-44, WV-45, WV-46, WV-47, WV-48, WV-49, WV-50, WV-51, WV-52, WV-53, WV-54, WV-55, WV-56, WV-57, WV-58, WV-59, WV-60, WV-61, WV-62, WV-63, WV-64, WV-65, WV-66, WV-67, WV-68, WV-69, WV-70, WV-71, WV-72, WV-73, WV-74, WV-75, WV-76, WV-77, WV-78, WV-79, WV-80, WV-81, WV-82, WV-83, WV-84, WV-85, WV-86, WV-87, WV-88, WV-89, WV-90, WV-91, WV-92, WV-93, WV-94, WV-95, WV-96, WV-97, WV-98, WV-99. The map also shows the location of several National Register of Historic Places Sites, National Register of Historic Places Districts, County/City Parks, and Wildlife Management Areas. A legend in the bottom left corner identifies these symbols. A scale bar in the bottom right corner indicates distances of 0, 2.5, and 5 miles. A north arrow is also present in the bottom right corner.

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### Wetland and Floodplain Screening

Potential impacts to floodplains and wetlands were also evaluated as part of the environmental screening. Proposed transportation projects were compared to areas designated as within the 100-year floodplain, defined by the Federal Emergency Management Agency (FEMA) as an area that will be inundated by a flood event having a 1 percent chance of being equaled or exceeded in a given year. Projects with potential floodplain impacts are listed in **Table 6-3** and shown in **Figure 6-2**. Traffic operations projects involving signals and/or driveway management were not considered to have significant potential impact. The Coalfields Expressway, Industrial Drive Connector, and Thurmond Bridge replacement are also not listed since these projects have approved NEPA documents.

Potential wetland impacts were also reviewed. The U.S. Environmental Protection Agency defines wetlands as “lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface.” Wetlands are further described under the Clean Water Act as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” National Wetlands Inventory data was mapped for the MPO region for comparison with proposed projects in the 2045 Plan. Projects potentially impacting wetland areas larger than one acre have been identified and compiled in **Table 6-4** and are shown in **Figure 6-2**.

**Table 6-3: Projects with Potential Impact on 100-Year Floodplains**

Project	Year	Description
S-11	2026	Add minimum shoulders, safety-related signage and markings to WV 61 from Page Bottom Rd. to Baker Street in Fayette County.
T-12	2036	Add northbound truck climbing lane to WV 307 (Airport Rd.)
N-1	2021	Widen US 19 (Ritter Drive) from 2 to 3 lanes from WV 3 to WV 307 (Airport Rd.)
N-2	2036	Construct new 3-lane road from WV 307 (Airport Rd.) to Interstate 64
S-21	2021	Intersection safety improvements
S-22	2026	Safety improvements at US 19 intersections throughout Fayette County
S-16	2036	Upgrade US 19/Glen Jean intersection to an interchange
N-30	2026	Construct roadway connection from railroad access area to the Raleigh County Memorial Airport

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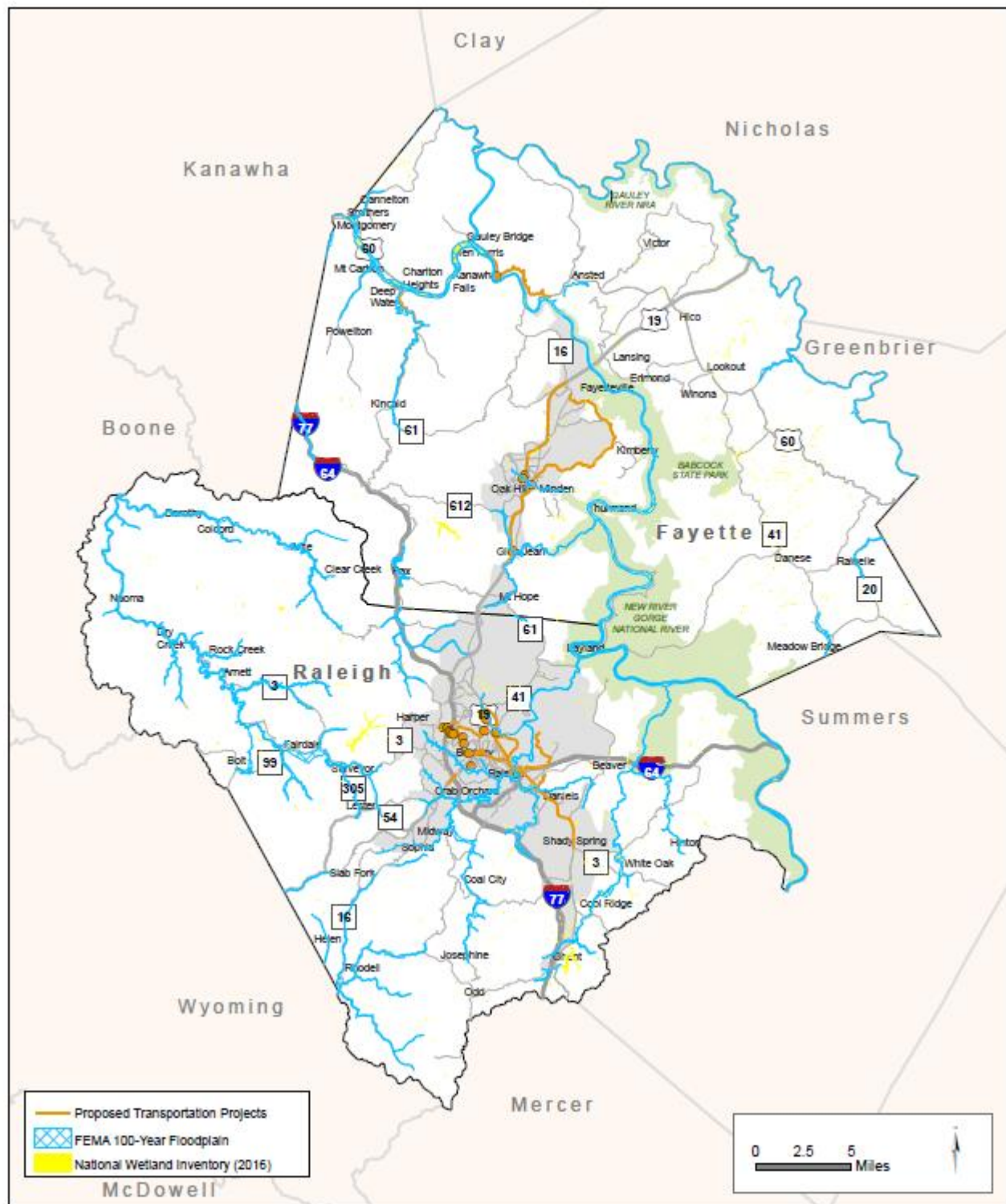
**Table 6-4: Projects with Potential Impact on Identified Wetlands \***

Project	Year	Description
S-2	2021	Intersection safety improvements, incl. pedestrian crossing
S-8	2021	Add shoulders, widen horseshoe turns and add pullouts to US 60 from Hawks Nest Lookout to New River Campground
S-11	2026	Add minimum shoulders, safety-related signage and markings
S-9	2036	Add minimum 4-foot shoulders and other safety improvements to Gatewood Rd.

*\*Projects are identified here if a wetland area larger than one acre is located within 500 feet of the centerline of the road proposed for improvement.*



**Figure 6-2: Projects with Potential Impact on Identified Wetlands and/or 100-Year Floodplain**



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## ENVIRONMENTAL MITIGATION STRATEGIES

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As previously mentioned, the FAST Act directs states and MPOs to expand the consideration of environmental issues and impacts within the transportation planning process. Metropolitan and statewide transportation plans must include a discussion of types of potential environmental mitigation activities as part of their plans. The following strategies have been developed by the Fayette/Raleigh MPO to address and consider environmental impacts relative to its decisions early in the planning process:

- Continue to use GIS information to identify environmental features (both physical and cultural) early in the planning process, in order to avoid impacts and/or to establish early corrective action plans prior to project construction.
- Partner with local, state, and federal resource agencies early in the planning process to identify potential issues relative to projects under consideration in the MPO's plans and programs to develop appropriate solutions prior to beginning the official project development process.

Environmental impacts cannot always be avoided. Mitigation is the attempt to offset potential adverse effects of human activity on the environment. Potential mitigation activities should be consistent with the requirements of agencies who have responsibility for the human and natural environments. Steps to take in the project development process include:

- **Avoid Impacts**  
The first strategy in the environmental process is to avoid adverse impacts altogether.
- **Minimize Impacts**  
Minimizing a proposed activity / project size or its involvement may be an option.
- **Mitigate Impacts**  
Precautionary, special operational management features and/or abatement measures may be used to reduce construction impacts and repair or restore existing resources.
- **Compensate for Impacts**  
Compensation could be made for environmental impacts by providing suitable replacement, or by substituting environmental resources of equivalent or greater value on or off-site.

The Fayette/Raleigh MPO will continue to work with WVDOH and resource agencies in the long-range planning process and in the actual project development process, if appropriate. The MPO recognizes that not every project will require the same level of mitigation. All impacts on environmentally sensitive areas will be analyzed on a project-by-project basis to determine what mitigation strategies are appropriate.

For major construction projects, such as new roadways, or for projects that may have a region-wide environmental impact, a context sensitive solution process should be considered in which considerable public participation and alternative design solutions are used to lessen the impact of the project.

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## CLIMATE CHANGE AND RESILIENCY TO EXTREME WEATHER EVENTS

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Considering the implications of the transportation system on global climate change is a relatively recent direction for metropolitan transportation planning. There is general scientific consensus that the earth is experiencing a warming trend, and that it is important to minimize human-induced increases in atmospheric greenhouse gases (GHGs) to help combat this trend. The combustion of fossil fuels is by far the biggest source of GHG emissions. In the United States, approximately 29 percent of GHG emissions are from transportation sources.

### Climate Change Strategies

Because greenhouse gas emissions from transportation sources (fuel combustion and vehicle air conditioning systems) account for a large percentage of the total U.S. GHG emissions, the transportation sector will likely play a large role in the ongoing discussion of national GHG reduction goals.

Some of the activities that the region could undertake to reduce transportation GHG emissions include:

- **Use of low-carbon fuels**  
MPO members and partner agencies could sponsor projects to promote the use and availability of alternative fuels that have lower carbon content and therefore generate fewer transportation GHG emissions. These alternative fuels include ethanol, biodiesel, natural gas, liquefied petroleum gas, low-carbon synthetic fuels (such as biomass-to-liquids), hydrogen, and electricity.
- **Improving transportation system efficiency**  
Operational strategies, mentioned in Chapter 4, improve transportation system efficiency through reduced vehicle travel time, better traffic flow and decreased idling, which can also result in lower energy use and GHG emissions. Strategies range from truck-idle reduction, to reducing congestion through Intelligent Transportation Systems (ITS) and other innovative forms of traffic management, to air traffic control systems that route aircraft more efficiently and reduce delays. Efficiency can also be improved by shifting travel to more efficient modes, where such shifts are practical in terms of price and convenience—such as passenger vehicle to bus, or truck to rail.
- **Reducing carbon-intensive travel activity**  
The objective of this group of strategies is to influence travelers' activity patterns to shift travel to more efficient modes, increase vehicle occupancy, eliminate the need for some trips, or take other actions that reduce energy use and GHG emissions associated with personal travel.

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## Adaptation to Climate Change

Although the Fayette/Raleigh MPO region will not be directly affected by coastal sea level changes, climate change has other weather-related effects that are very relevant to the region. Most notable are extreme fluctuations in temperature and the trend toward more intense precipitation events.

Even small amounts of rainfall can significantly impact the transportation system when it is received in short, intense bursts. Since water is moving too quickly to be absorbed into the ground, it instead becomes surface runoff, causing dangerous ponding on streets and sometimes undermining their substructure. In areas of karst terrain, repeated deluges of fast-moving water can accelerate the erosion of limestone, creating caverns beneath roadways that may unexpectedly give way. Repeated freeze/thaw cycles also form cracks in rock that gradually widen and split, leading to roadside rockfalls.

In recent years the WVDOH has been dealing with a growing number of slips and rock slides, including two major slides on I-77 in 2013 and another in late 2013 that closed a portion of WV 3 in Raleigh County for more than a week, critically affecting access to schools, businesses and homes. Ironically, the roads most vulnerable to extreme weather are often the ones that provide the only passage through difficult terrain.



*Photo by Brad Davis, Beckley Register-Herald*

Adapting to these changes may require increasing the annual budget for maintenance activities. Agencies should also consider expanding their efforts to regularly assess hillside stability along major routes, adding stabilization or using proactive blasting where necessary to prevent unexpected slips and slides. Adaptation to climate change will also require agencies to consider ways to improve the overall resiliency of the transportation system by providing redundancy necessary to meet essential travel needs. Alternative routes – including the US 19 corridor, which is designated throughout the MPO area as a detour route for the West Virginia Turnpike – must be properly maintained and improved as necessary to ensure they are able to carry detour traffic safely. Communities may also need to evaluate their emergency plans to identify areas that are most at risk of being cut off from vital services due to flooding or road collapse.

## Environmental Justice and Title VI

Federal laws require that MPOs ensure federal funds are used fairly and without discrimination. Title VI of the Civil Rights Act of 1964 states that “No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”

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Environmental Justice Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice (EJ) in Minority and Low-Income Populations*, clarified the need to involve minority and low-income populations in transportation decision-making processes and the need to assess the equity of transportation investments. The EO calls for identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. Low-income population is defined as one whose median household income is at or below the Department of Health and Human Services poverty guidelines.

The intent of EO 12898, and the U.S. Department of Transportation's corresponding guidance, is to ensure that these groups are included in the transportation decision-making process, and to ensure that they may benefit equally from the transportation system without shouldering a disproportionate share its burdens.

A disproportionately high and adverse effect is one that is:

- Predominantly borne by a minority and/or low-income population; or
- Suffered by a minority and/or low income population more severely or in greater magnitude than the adverse effect suffered by the non-protected population.

Disproportionately high and adverse effects are not determined solely by the size of the population, but rather the comparative effects on these populations in relation to either non-minority or higher income populations. In this EJ assessment, U.S. Census data was used to identify the demographics of the area in order to recognize potential "communities of concern." Communities of concern are areas where the percentage of low-income households or minorities is greater than that of the entire MPO area.

It is important to note that impacts from transportation projects can be either positive or negative. For example, positive impacts could be improved traffic conditions, decreased accidents, and new/improved sidewalks and bikeways. A negative impact could be the disruption to residents and businesses during the project's construction period as well as potential impacts from right-of-way that may need to be acquired. As the projects in the 2045 Plan progress through the planning and design stages, these areas should be carefully addressed.

## **ENVIRONMENTAL JUSTICE ANALYSIS**

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To identify communities of concern within the MPO area, concentrations of minority and low-income populations were mapped using Census block groups or tracts. The determination of what is disproportionately high and adverse human health or environmental effect is context dependent. All block groups/tracts include some members of protected populations, and the approach used in the development of the Plan to identify communities of concern is only based on Census data and the proportion of protected populations that they contain. As each project enters the development process, additional local knowledge of individual neighborhoods should be used to identify potential communities of concern that might have been missed during this Census-based analysis.



## Minority Populations

2010 Census data indicates that minority persons comprise about 9.7 percent of the population in the MPO area, as shown in **Table 6-5**.

**Table 6-5: Percent Minority Population in the MPO Area**

	Total Population	Minority Population	Pct. Minority Pop.
Fayette County	46,039	3,013	6.5%
Raleigh County	78,859	9,059	11.5%
<b>MPO Region</b>	<b>124,898</b>	<b>12,072</b>	<b>9.7%</b>

**Figure 6-3** shows the percentage of minority persons by census block group, relative to the location of proposed transportation projects.

Projects located in or adjacent to block groups with a minority population 15% or greater include those listed in **Table 6-6**.

**Table 6-6: Projects Located in or Adjacent to Minority Communities**

Project	Year	Description
S-11	2026	Add minimum shoulders, safety-related signage and markings to WV 61 from Page Bottom Rd. to Baker Street in Fayette County.
T-12	2036	Add northbound truck climbing lane to WV 307 (Airport Rd.)
S-3	2021	Intersection safety improvements at WV 16 and Veterans Dr.
N-1	2021	Widen US 19 (Ritter Drive) from 2 to 3 lanes from WV 3 to WV 307 (Airport Rd.)
N-2	2036	Construct new 3-lane road from WV 307 (Airport Rd.) to Interstate 64
N-7	2026	Widen New River Dr. from 2 to 4 lanes
S-22	2030	Safety improvements at US 19 intersections throughout Fayette County
S-9	2040	Add minimum shoulders and other safety improvements to Gatewood Rd.
S-30	2021	Reconstruct right turn lane on northbound approach as recommended in US 19 Corridor Study
S-32	2021	Addition of pedestrian crossing between Minnesota Ave and Kanawha Street, utilizing speed tables and special signing to raise motorist awareness and slow their speeds.
S-33	2021	Providing an ADA-compliant connection from the WVU Tech residence hall to the YMCA of Southern West Virginia, within the public right-of-way.
S-34	2021	Creating a connection from WVU Tech to the Beckley Rail Trail to connect the campus to the surrounding bicycle network, and to provide students with a means for accessing commercial destinations in the surrounding region.
N-30	2026	Construct roadway connection from railroad access area to the Raleigh County Memorial Airport
S-35	2026	Building a connection from WVU Tech to the YMCA Paul Cline Memorial Youth Sports Complex to provide student athletes and coaches with a path to and from the complex and connect to the surrounding community.

### Low-Income Populations

According to the 2010 Census, about 18 percent of the households in the region are living below the poverty level. **Figure 6-4** shows the general location of areas where the number of low-income households is greater than the regional average, relative to the location of proposed transportation projects. (Reliable census data is no longer available at the level of detail previously used for this type of planning analysis, so “low-income community” may or may not be an accurate description for some of these areas.)

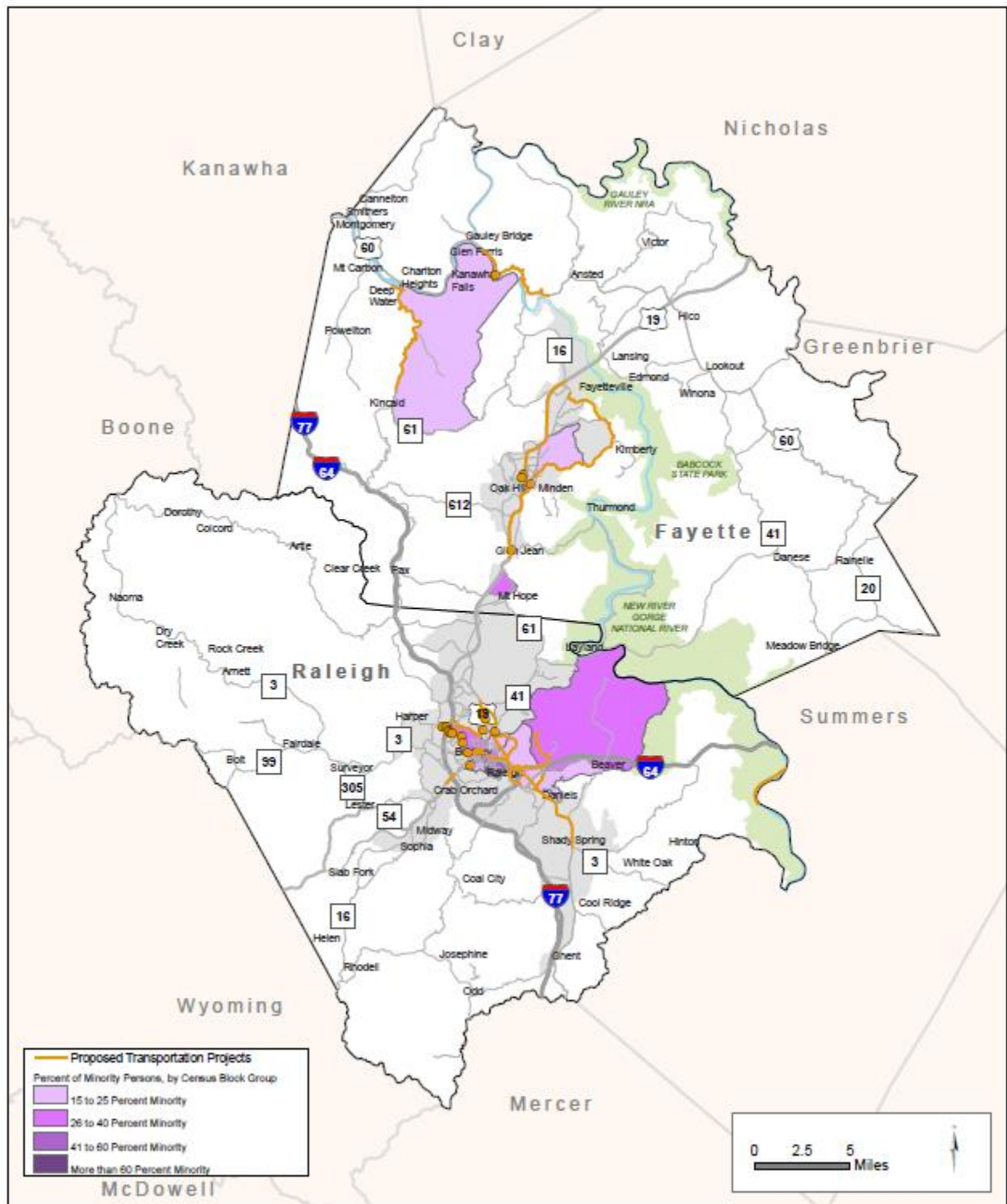
Projects located in or adjacent to these areas include those listed in **Table 6-7**.

**Table 6-7: Projects Located in or Adjacent to Areas With Above-Average Percentage of Low-Income Persons**

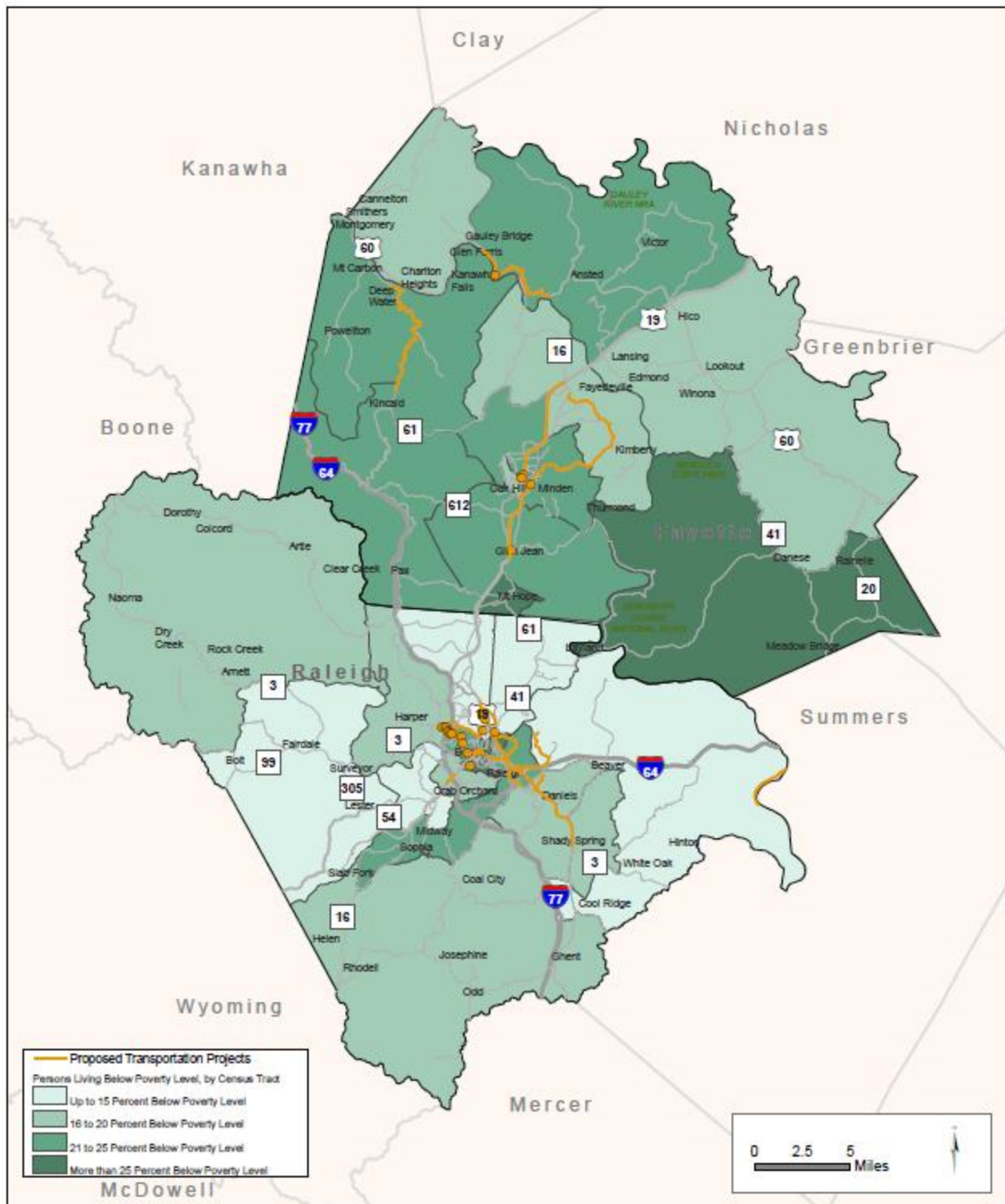
Project	Year	Description
S-11	2026	Add minimum shoulders, safety-related signage and markings to WV 61 from Page Bottom Rd. to Baker Street in Fayette County.
S-3	2021	Intersection safety improvements at WV 16 and Veterans Dr.
S-1	2021	Intersection safety improvements at Virginia St. and Oyler Ave.
S-2	2021	Safety improvements at Virginia St. and Oak Hill Rail-Trail, including ped crossing
S-5	2021	Safety improvements at Minden Rd. underpass
S-8	2021	Add shoulders, widen horseshoe turns and add pullouts to US 60 from Hawks Nest Lookout to New River Campground
S-21	2021	Intersection safety improvements at US 60 and Hawks Nest Golf Course entrance
T-7	2036	Add passing lanes on US 19 (Eisenhower Dr.) between WV 41 and I-64
N-7	2026	Widen New River Dr. from 2 to 4 lanes
S-22	2026	Safety improvements at US 19 intersections throughout Fayette County
S-9	2026	Add minimum shoulders and other safety improvements to Gatewood Rd.
S-16	2036	Upgrade US 19/Glen Jean intersection to an interchanges
S-30	2021	Reconstruct right turn lane on northbound approach as recommended in US 19 Corridor Study
T-30	2021	Align southbound approach at US 19/Beckley Crossing intersection as recommended in US 19 Corridor Study
T-31	2021	Reconfigure the eastbound and westbound approaches and eliminate a southbound through lane as recommended in WV 19 Corridor Study
T-32	2021	Construct dual westbound left-turn lanes and an exclusive northbound right-turn lane at WV 16 (Robert C. Byrd)
N-30	2026	Construct roadway connection from railroad access area to the Raleigh County Memorial Airport
S-32	2021	Addition of pedestrian crossing between Minnesota Ave and Kanawha Street, utilizing speed tables and special signing to raise motorist awareness and slow their speeds.
S-33	2021	Providing an ADA-compliant connection from the WVU Tech residence hall to the YMCA of Southern West Virginia, within the public right-of-way.
S-34	2021	Creating a connection from WVU Tech to the Beckley Rail Trail to connect the campus to the surrounding bicycle network, and to provide students with a means for accessing commercial destinations in the surrounding region.
S-35	2021	Improve bridges over Dunloup Creek



**Figure 6-3: Proposed Transportation Projects in Relation to Areas with Above-Average Percentage of Minority Persons**



**Figure 6-4: Proposed Transportation Projects in Relation to Areas with Above-Average Percentage of Low-Income Persons**



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## **ALLOCATION OF FUNDS TO COMMUNITIES OF CONCERN**

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### **Highway Projects**

Approximately \$292 million in highway projects is planned for investment throughout the MPO area as part of the 2045 Plan. About \$133 million of this investment is for projects that are totally or partially located in, or adjacent to, communities of concern. This represents approximately 47 percent of the total dollars invested in highway projects. Only a small number of projects involve major road widening or construction of new roads, so the overall level of concern is relatively low; however, as described earlier, each project will need to be studied in more detail as the specific designs for the projects are developed.

### **Roadway Safety and ITS Projects**

The roadway safety and ITS projects identified in the Plan are scattered throughout the MPO area and many of them may be developed in conjunction with proposed highway improvements. These improvements typically require little or no right-of-way acquisition and will have a significant positive impact on the residents and businesses as they address existing safety or traffic congestion problems.

### **Transit Projects**

The transit projects identified in the Plan involve continuing operating assistance for transit services and continuing capital assistance for the replacement of buses, replacement and upgrade of miscellaneous capital equipment, and to upgrade existing facilities. No major capital investment involving land acquisition is proposed.

### **Bicycle and Pedestrian Projects**

The bicycle and pedestrian projects identified in the Plan are scattered throughout the MPO area and many of them will be developed in conjunction with proposed highway improvements. The bicycle and pedestrian improvements that are independent projects will require little or no right-of-way acquisition and are not expected to involve any displacements of businesses or residents.

## **SUMMARY**

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Although all segments of the population who live adjacent to roadway construction projects may endure some short-term construction related impacts related to visual changes, noise changes, and alterations in access, neither minority or low-income populations in the MPO region are likely to experience disproportionate impacts due to the projects proposed in the Plan.

Because populations shift and change, additional efforts to identify potential communities of concern should be undertaken as part of the future phases of each project. To ensure that all persons are involved, special outreach efforts are made by local and state agencies during the project development process to identify, and either avoid or help mitigate any adverse impacts and/or burdens from transportation improvements for those areas identified as communities of concern.

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Many of the projects identified in the Plan will likely utilize federal funding, in which case documentation in compliance with the National Environmental Policy Act (NEPA) will be required. During the NEPA process, a variety of issues will be evaluated, including an EJ analysis pursuant to EO 12898. In addition, the development of the NEPA document will require public participation, and local coordination with potential environmental justice issues can be identified and addressed.

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# Chapter 7:

## Public Participation

This chapter outlines the process used to encourage involvement in the development of the 2045 Plan and summarizes the input and comments received from stakeholders, partner agencies, and the community at large.

### **PUBLIC PARTICIPATION PLAN**

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The FRMPO Policy Board has an adopted Public Participation Plan which describes the procedures the staff undertakes to collect public and stakeholder input and how that input is used in the development and adoption of its plans and programs, including the Regional Transportation Plan as well as the Transportation Improvement Program (TIP) and the Unified Planning Work Program (UPWP).

#### **Stakeholders**

In addition to participation from the general public, the Public Participation Plan includes the goal of involving freight shippers and providers of freight transportation services, representatives of public transportation employees, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties in the development of the Plan.

#### **Methods of Outreach**

Information about all MPO meetings is advertised through at least one or more of the following outreach channels and media outlets, depending on the nature and significance of the meeting: publication via the local newspapers editions of the Beckley Register-Herald and/or the Fayette Tribune, local radio and TV stations including but not limited to WJLS Radio, WOAY TV, WQAZ Radio, WVNS/CBS TV, WOAY Radio and Summit Media Broadcasting, LLC. In addition, the agenda for upcoming meetings and other public information is posted on the FRMPO's website at [www.frmpo.org](http://www.frmpo.org). All members of the FRMPO are also encouraged to distribute meeting information to their councils and other interested parties via their own websites or through other distribution channels.

### **PUBLIC PARTICIPATION IN THE 2045 REGIONAL TRANSPORTATION PLAN**

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#### **Steering Committee**

The FRMPO Policy Board appointed a Steering Committee to provide guidance in the development of the region's first long range transportation plan. Members included representatives from the WV Division of Highway and Division of Public Transit, local governments, local and regional economic development agencies, local transit agencies, bicycling organizations and freight carriers. A full list of Steering Committee members is provided in **Appendix B**.

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The Steering Committee met at key points during the development of the 2045 Plan update to review and comment on the content and priorities of the draft list of proposed projects.

## **PUBLIC COMMENTS ON THE DRAFT PLAN**

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Note: This section will be updated after the completion of the 45 day public review period November 17 through December 31, 2020.