SAWMPO

2045 Long Range Transportation Plan

Adopted: December 2, 2020

Staunton Augusta Waynesboro
Metropolitan Planning Organization

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Title

SAWMPO 2045 Long Range Transportation Plan

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Disclaimer

This report has been prepared in cooperation with, and financed in part, by the U.S. Department of Transportation Federal Highway Administration, the Federal Transit Administration, the Virginia Department of Transportation, and the Virginia Department of Rail and Public Transportation. The contents of this report reflect the views of the Central Shenandoah Planning District Commission and Staunton-Augusta-Waynesboro Metropolitan Planning Organization, which are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Highway Administration, Federal Transit Administration, the Virginia Department of Transportation, or the Virginia Department of Rail and Public Transportation. This report is not a legal document, and does not constitute a standard, specification, or regulation. Although much care was taken to ensure the accuracy of information presented in this document, CSPDC does not guarantee the accuracy of this information.

Acceptance of this report as evidence of fulfillment of the objectives of this planning study does not constitute endorsement/approval of the need for any recommended improvement, nor does it constitute approval of their location and design or a commitment to fund any such improvements. Additional project level environmental impact assessments and/or studies of alternatives may be necessary.

Non-Discrimination Statement

The SAWMPO ensures non-discrimination and equal employment in all programs and activities in accordance with Title VI and Title VII of the Civil Rights Act of 1964. If you have questions or concerns about your civil rights in regard to this project, or if you need special assistance for persons with disabilities or limited English proficiency, please contact the SAWMPO. For more information, or to obtain a Title VI Complaint Form, view the SAWMPO PPP and Title VI Plans, or call (540) 885-5174.

Resolution

RESOLUTION APPROVING THE STAUNTON-AUGUSTA-WAYNESBORO METROPOLITAN PLANNING ORGANIZATION (SAWMPO) 2045 LONG RANGE TRANSPORTATION PLAN (LRTP)

WHEREAS, the Staunton-Augusta-Waynesboro Metropolitan Planning Organization (SAWMPO) Policy Board has developed the 2045 LRTP in accordance with federal and state planning guidelines and requirements; and

WHEREAS, the 2045 LRTP was developed by SAWMPO staff, consultants and the Technical Advisory Committee (TAC), and reviewed by the TAC and Policy Board; and

WHEREAS, the 2045 LRTP included early stakeholder and public outreach, and was released for presentation to the public for comment at the Policy Board meeting, and duly advertised in the local media; and

WHEREAS, the SAWMPO has documented all public comments, and all agency comments received have been addressed;

NOW, THEREFORE, BE IT RESOLVED, by the SAWMPO Policy Board, that it does hereby approve for final adoption the 2045 LRTP on this 2nd day of December 2020.

SIGNED:

Bobby Henderson
Chairman
Staunton-Augusta-Waynesboro
Metropolitan Planning Organization

ATTEST:

Bonnie Riedesel
Secretary/Treasurer
Staunton-Augusta-Waynesboro
Metropolitan Planning Organization

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Glossary

23 CFR, Part 450
Title 23 Code of Federal Regulations, Part 450 is Federal regulations pertaining to statewide and metropolitan transportation planning.

23 USC 134
23 United States Code 134 is the part of the USC that governs the metropolitan transportation planning process.

3C
Employing a Continuing, Cooperative and Comprehensive (3C) planning process is a requirement for all MPOs as specified in 23 CFR 450.300.

Average Annual Daily Traffic (ADT)
Average Annual Daily Traffic is a measure used primarily in transportation planning and transportation engineering. It is the total volume of vehicle traffic of a highway or road for a year divided by 365 days. (Fredericksburg)

Accessibility
Accessibility is the extent to which facilities are barrier-free and useable by persons with disabilities, including wheelchair users.

Americans with Disabilities (ADA)
The Americans with Disabilities Act is a Federal law that requires public facilities, including transportation services, to be accessible to persons with disabilities, temporary disabilities and the conditions related to substance abuse.

Constrained Long Range Plan (CLRP)
Developed and approved by the SAWMPO, the Financially-Constrained Long Range Transportation Plan (CLRP) is a regional plan that includes all transportation projects and programs that the MPO realistically anticipates can be implemented over the next 25 years. In order to receive federal funding, transportation projects must be included in the CLRTP and the TIP.

Civil Rights Act of 1964, Title VI
Title VI of the Civil Rights Act of 1964 prohibits federal agencies and sub-recipients of federal funds from discriminating, on the basis of race, color or national origin, against participants or clients of programs that receive Federal funding. Subsequent laws and Presidential Executive Orders added handicap, sex, age, or income status to the criteria for which discrimination is prohibited.

Commonwealth Transportation Board (CTB)
The 17-member Commonwealth Transportation Board, appointed by the governor, establishes the administrative policies for Virginia's transportation system. The CTB allocates highway funding to specific projects, locates and provides funding for airports, seaports and public transportation.

Department of Rail and Public Transportation (DRPT)
Virginia Department of Rail and Public Transportation is an agency under the Virginia Secretary of Transportation (as is VDOT) providing technical and financial assistance to Virginia's public transit.

Environmental Justice
The 1994 Presidential Executive Order directs Federal agencies to identify and address the needs of minority and low-income populations in all programs, policies and activities.

Executive Order 12898
Executive Order 12898 mandates that federal agencies address equity and fairness or Environmental Justice toward low-income and minority populations.

Executive Order 13166
Executive Order 13166 mandates that federal agencies ensure that people who have Limited English Proficiency (LEP) have meaningful access to federally-conducted and/or funded programs and activities.

Federal Highway Administration (FHWA)
Within the U.S. Department of Transportation, the Federal Highway Administration is responsible for highway issues, including federal laws and regulations related to metropolitan transportation planning.

Fixing America's Surface Transportation (FAST) Act
The Fixing America's Surface Transportation (FAST) Act, passed by Congress in 2015, is a funding and authorization bill to govern United States federal surface transportation spending. The $305 billion, five-year bill is funded without increasing transportation user fees.

Fiscal Constraint
Ensuring that a given program or project can reasonably expect to receive funding within the time allotted for its implementation.

Federal Transit Administration (FTA)
Within the U.S. Department of Transportation, the Federal Transit Administration is responsible for public transit issues, including federal laws and regulations related to metropolitan transportation planning.

Functional Classification
The process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Roadways are assigned to one of several possible functional classifications within a hierarchy according to the character of travel service each roadway provides. Planners and engineers use this hierarchy of roadways to channel transportation movements efficiently and cost effectively.

Moving Ahead for Progress in the 21st Century Act (MAP-21)
Moving Ahead for Progress in the 21st Century Act was signed into law in 2012 and provides Federal funding authority for surface transportation programs at over $105 billion for fiscal years (FY) 2013 and 2014. MAP-21 is the first long-term highway authorization enacted since 2005.

Metropolitan Planning Organization (MPO)
Federal transportation laws and regulations require the establishment of a Metropolitan Planning Organization in every urbanized area of the U.S. with a population over 50,000. MPOs are responsible for meeting the federal metropolitan planning regulations for transportation.

Multimodal
A multimodal transportation system has the availability of multiple transportation options. A multimodal approach to transportation planning focuses on the most efficient way of getting people or goods from place to place, be it by truck, train, bicycle, automobile, airplane, bus, boat, foot and including telecommuting.

National Highway System (NHS)
The National Highway System is an approximately 160,000-mile network consisting of the 42,500 miles of the Interstate system, plus other key roads and arterials through the United States. Designated by Congress in 1995 pursuant to a requirement of the Intermodal Surface Transportation Efficiency Act, the NHS is designed to provide an interconnected system of principal routes to serve major travel destinations and population centers.

Paratransit
Paratransit is defined as comparable transportation service required by the ADA of 1990 for individuals with disabilities who are unable to use fixed-route transportation systems.

Performance Measures
Indicators of how well the transportation system is performing with regard to such things as average speed, reliability of travel and accident rates. Used as feedback in the decision-making process.

Policy Board
The Policy Board directs and approves transportation planning and related implementation activities within the metropolitan area. The Policy Board consists of seven elected or appointed officials from the Cities of Staunton and Waynesboro, Augusta County and VDOT. The Board adheres to and abides by the SAWMPO Bylaws.

SAFETEA-LU
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users is the 2005 amendment of the U.S. Code Transportation section and related federal funding bill.

Scenario Planning
Scenario planning is a process that evaluates the effects of alternative policies, plans, and/or programs on the future of a community or region. This activity can provide information to decision-makers as they develop transportation plans.

Section 504 of the Rehabilitation Act of 1973
Section 504 of the Rehabilitation Act of 1973 states that no qualified disabled person shall, solely by reason of his disability, be excluded from participation in, be denied the benefits of or be subjected to discrimination under any program or activity that receives or benefits from federal financial assistance. This Act protects qualified individuals from discrimination based on their disability.

Smart Scale
SMART SCALE is the method of evaluating state-wide transportation grant applications on measures such as congestion, safety, economic development, accessibility, etc. The applications are based on the needs identified in VTrans. Localities can submit applications every two-years.

State Transportation Improvement Program (STIP)
The State Transportation Improvement Program is a four-year programmatic document that requires joint FHWA and FTA approval and that portrays the projected use of legally committed federal obligated dollars to transportation projects over the course of the four-year documents. The STIP is produced at least every four years.

Transportation Advisory Committee (TAC)
The Transportation Advisory Committee is a committee of elected officials within the local MPO responsible for communication and coordination between various policy boards and that takes action on issues in the transportation planning process.

Transportation Alternatives Program (TAP)
MAP-21 created a funding category for projects that enhance the compatibility of transportation facilities with their surroundings. Examples of Transportation Alternatives projects include bicycle and pedestrian paths, restoration of rail depots or other historic transportation facilities, and acquisition of scenic or open space lands next to travel corridors.

Transportation Analysis Zone (TAZ)
A traffic analysis zone or transportation analysis zone is the unit of geography most commonly used in conventional transportation planning models. The size of a zone varies, but for a typical metropolitan planning software, a zone of under 3,000 people is common.

Transit Development Plan (TDP)
The Transit Development Plan is an intermediate-range transit plan (usually five years) that examines service, markets and funding to make specific recommendations for transit improvements.

Transportation Demand Management (TDM)
Transportation demand management (TDM), is defined a set of strategies aimed at maximizing traveler choices. TDM provides travelers with choices, such as work location, route, time of travel and mode. In the broadest sense, TDM is defined as providing travelers with effective choices to improve travel reliability.

Travel Demand Model
Travel demand models use current travel behavior to predict future travel patterns from a sample of travel behavior data. Travel demand models are critical tools for planners and engineers, who use them to forecast the transportation needs of the communities they serve.

Transportation Improvement Plan (TIP)
The Transportation Improvement Program is a list of projects and programs that will be implemented over the next six years. In order to receive federal funding, projects must be included in the CLRP and the TIP.

Title VI Civil Rights Act of 1964
Ensures that no person shall, on the grounds of race, color, sex, national origin, or physical handicap, be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination under any program receiving Federal assistance from the United States Department of Transportation.

Transportation Disadvantaged
People who are unable to transport themselves or purchase transportation due to disability, income status or age.

Unified Planning Work Program (UPWP)
This document defines the transportation planning processes and programs used by the Metropolitan Planning Organization and is normally developed and adopted on an annual basis.

Virginia Department of Transportation (VDOT)
Virginia Department of Transportation is the agency responsible for statewide transportation facility planning, construction and maintenance.

Vision List
The SAWMPO LRTP defines the Vision List as those projects which the MPO has identified as needs for the next 25 years, but which exceed the projected available revenues for the planning period.

Vehicle Miles Traveled (VMT)
Vehicle Miles Traveled is the total number of miles driven by all vehicles within a given time and geographic area, and it is used by regional transportation and environmental agencies for planning purposes. Since 1970, vehicle emissions have decreased even as vehicle miles traveled have increased.

Volume over Capacity (V/C)
Volume/Capacity ratio: A ratio >1 indicates the facility is carrying more traffic than it can handle and improvements may be needed.

Executive Summary

This Long Range Transportation Plan (LRTP) is the second Long Range Plan for the Staunton-Augusta-Waynesboro Metropolitan Planning Organization (SAWMPO), which was established in 2012 following the 2010 U.S. Census. It offers a model for collaborative, regional decision making about transportation needs, and lays the groundwork for future long range planning updates.

The SAWMPO 2045 LRTP emphasizes the transportation system's role in economic vitality for the region, and safety for all travelers on the network. The SAWMPO 2045 LRTP documents:

E-1: Planning Context and Requirements. The background of the SAWMPO and federal transportation planning law, purpose and context for the Plan, and compliance with Title VI, the Map-21, and the Americans with Disabilities Act (see Introduction and Chapter 1).

E-2: Public Outreach. The public and stakeholder outreach and involvement process that accompanied development of the Plan, as well as the interagency consultations with resource agencies (see Chapter 2).

E-3: Existing Conditions. The existing land use and transportation conditions and deficiencies that help define future transportation needs for the region (see Chapter 3).

E-4: Socio-Economic Trends and the Transportation Demand Model. The statewide and regional trends for future growth, and how the 2045 LRTP Scenario Planning Process has been updated to reflect these changing regional trends (see Chapter 4).

E-5: Multi-Modal Transportation Needs. The transportation deficiencies that should be addressed over the 25-year period (see Chapter 5).

E-6: Performance-Based Programming and Project Evaluation. The project evaluation and ranking process that provided decision makers with objective, data-based indicators of project need and value (see Chapter 6).

E-7: Revenue and Cost. The estimated costs to fund projects contained in the LRTP, and the estimated revenues available to fund projects over the life of the plan, i.e., through the year 2045 (see Chapter 7).

E-8: Constrained Long Range Plan. The Constrained Long Range Plan (CLRP), which identifies projects and their year of expenditure and estimated cost, and a review of the Benefits and Burdens analysis (see Chapter 8).

E – 1 Planning Context and Requirements

As a result of the 2010 U.S. Census, the Cities of Staunton and Waynesboro and portions of Augusta County were defined as an Urbanized Area (UZA), and required the formation of a Metropolitan Planning Organization (MPO) to provide for cooperative transportation planning efforts amongst the jurisdictions. As a newly-formed MPO, an initial responsibility is to develop the region's Long Range Transportation Plan (LRTP). The purpose of the 2045 SAWMPO LRTP is to satisfy the metropolitan planning requirements of the federal transportation planning process and to establish an informed program for implementing priority transportation investments in the region.

Overview of Federal Laws & the Transportation Planning Process

The LRTP for the SAWMPO was developed in accordance with the current federal transportation law known as The Fixing America's Surface Transportation (FAST) Act. Passed by Congress in 2015, the FAST Act is a funding and authorization bill to govern United States federal surface transportation spending. The $305 billion, five-year bill is funded without increasing transportation user fees. Along with the Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2012, these two federal laws have shaped the way transportation investments are conceived, planned, funded, and implemented at the state and regional levels of government.

Compliance with Federal Regulations

A primary purpose of the LRTP is to establish compliance with all current federal laws and regulations. These regulations require all MPO's to develop a Unified Planning Work Program (UPWP), a Transportation Improvement Program (TIP), and the LRTP. The LRTP's goals as outlined in Chapter 6 are shaped by the involvement of the region's citizens and stakeholders. Chapter 2 describes specific stakeholder and community outreach.

Federal Planning Factors

The MAP-21 identifies eight planning factors (23 CFR 450.316) which must be considered as part of the transportation planning process for all metropolitan areas. The SAWMPO LRTP addresses these factors in the plan goals, existing conditions inventory, alternatives/scenario analysis, and the CLRP.

Title VI of the Civil Rights Act of 1964

The SAWMPO is a sub-recipient of federal financial assistance, and is required to comply with Title VI and other federal non-discrimination laws. It is also required to provide an overview of how the SAWMPO addresses Executive Order 12898 on Environmental Justice, as well as Executive Order 13166 on Limited English Proficiency (LEP), and how it complies with the Title VI plan. As part of addressing Environmental Justice, a Benefits and Burdens Analysis is included in Chapter 7, where the plan's fiscally constrained projects are identified with respect to the location of underserved or potentially vulnerable population segments.

Americans with Disabilities Act (ADA)

Enacted in 1990, The Americans with Disabilities Act (ADA) prohibits discrimination on the basis of disability by public entities. A primary function of transportation is to deliver opportunities for basic mobility to society. The greatest challenge of the LRTP is to prioritize and implement a transportation network that is multimodal and inclusive of all users. Transportation facilities should be accessible to all users allowing full participation in society, including employment, school, commerce and recreation activities. It is vital that government strive to ensure that transportation systems are not only safe and efficient, but usable by all.

E – 2 Public Outreach and Consultation

The public and stakeholder outreach process focused on two phases. The phase included an online survey and a series of pop-up meetings at multiple venues around the region. Staff brought maps, flyers, and postcards with survey links to community events and venues in Staunton, Verona, and Waynesboro in the fall of 2019.

Due to the limitations on safely holding in-person meetings during the COVID-19 pandemic, the final round of public engagement to share the proposed list of projects was conducted exclusively online with an extensive, mobile-ready interactive website with project maps and a survey. Comments received during the 21-day public comment period are included in Appendix D.

The outreach process for the LRTP also includes consulting with state and federal resource management agencies on the identification of transportation needs and the selection of projects, which may affect the programs, lands, or policies over which they administer. Appendix E contains the letter used to contact each agency and the responses to the request for comment on the project evaluation and selection processes.

E – 3 Existing Conditions

Existing conditions with regard to population, demographics, existing infrastructure, and transportation system performance help identify existing deficiencies within the SAWMPO planning area. The maps and tables in Chapter 3 illuminate demographic trends including higher-than-state average disabled, aging, and low-income populations that contrast with infrequent transit service and an incomplete non-motorized transportation network, and indicate deficiencies in the transportation system that future investments should address.

Analysis of existing roadway and traffic conditions reveals adequate capacity on the region's roadways, but heavy truck freight movement on the interstate system. New roadway connections, improvements to existing facilities, and expansion of transit service and bike and pedestrian facilities address network gaps and deficiencies

E – 4 Socio-Economic Trends and Travel Demand Model

This chapter reviews statewide and regional trends for future growth, and how the 2040 LRTP Scenario Planning Process has been updated to reflect these changing regional trends. The 2040 LRTP Scenario Planning Process created a preferred scenario for where growth would occur in the region. The preferred scenario then informed the selection of transportation investments in the Plan. Updated population and employment growth trends for 2018-2045 informed the development of the SAWMPO's first Travel Demand Model.

Scenario Planning Process from the 2040 Plan

At the outset of the 2045 LRTP update process, the SAWMPO TAC and Board agreed to uphold the 2040 preferred Growth Scenario and update it as needed.

Changes to the 2040 Preferred Scenario

The most notable updates to the 2040 Preferred Growth Scenario for population growth are Weldon Cooper Center's revised projection for population growth in the County, and the MPO's revised assumption for the percentage of that growth that will occur within the MPO's planning area. The 2040 Plan assumed that 75% of the County's growth between 2015 and 2040 would occur within the MPO planning area, while the 2045 update adjusts the estimate to be 50%.

Travel Demand Model

The first travel demand model for the SAWMPO region, the program is a computer-based forecasting tool used to estimate travel behavior and travel demand on the transportation network on a large scale based on a set of regional land-use and transportation related assumptions. The SAWMPO model inputs were calibrated to local traffic data, socio-demographic factors, travel behavior (such as the amount of travel), and other variables for the 2018 base year.

E – 5 Multi-Modal Transportation Needs

Transportation needs are defined as the gap between existing transportation network deficiencies and the 2045 vision for the region. Needs were identified by the general public; local stakeholders across all transportation modes and industries; and staff from local, regional, state and federal agencies. This chapter focuses on the network capacity and safety needs for roads and freight, bridges, transit, Transportation Demand Management, and bicycle and pedestrian infrastructure.

Many of the needs identified in the 2040 LRTP have remained the same. Congestion forecasts illustrate that the region will experience limited traffic congestion between 2020 and 2045. Needs continue to be focused on addressing the congestion, safety, multi-modal, and transit needs along the interstate corridors, in the cities of Staunton and Waynesboro, and Augusta County's designated growth areas in Fishersville, Stuarts Draft, and Verona. Stakeholder and public input indicate that addressing congestion on I-81, improving multi-modal connections and transit service, and continuing to maintain existing roadways are the highest regional priorities.

E – 6 Performance-Based Programming and Project Evaluation

With the passage of Moving Ahead for Progress in the 21st Century (MAP-21) in 2012, and the subsequent Fixing America's Surface Transportation (FAST) Act in 2015, the FHWA and FTA mandated that States and MPOs establish performance measures to integrate system-performance management into the transportation and transit planning process.

The 2045 LRTP updates the 2040 LRTP's goals to meet current federal and state performance-based planning requirements. The region's goals are informed by MAP-21 goals, the FAST Act, and VTrans 2045 goals, and regional priorities. The MPO's Travel Demand Model outputs measure specific projects to further ensure goals are addressed.

The LRTP Working Group developed a project scoring methodology that reflects the needs of each locality and provides an objective scoring framework to evaluate projects in the region. The methodology includes the Plan's goals, Travel Demand Model outputs, SMART SCALE project factors weighted to reflect the region's priorities, and planning-level cost estimates.

E – 7 Costs and Revenues

This chapter explains the methodology for developing project cost estimates and revenue projections. As a condition of receiving federal funding for transportation projects, MPOs are required to demonstrate that projects

in the Plan are reasonably expected to be funded over a 25-year period. Revenue projections are projected over seven funding categories: Interstate-81 Improvement Program, District Grant Program, High Priority Projects, Transportation Alternatives, Revenue Sharing, Highway Safety Improvement Program, State of Good Repair, and projects funded by private developers.

Projects are prioritized by the project scoring methodology outlined in Chapter 6, and the highest priorities are included in the Constrained Long Range Plan (CLRP), which is a list of projects fiscally constrained by projected revenues over the 25-year period. If additional funding becomes available during the life of the LRTP, projects included on the Vision (unfunded) List could be eligible to receive funding.

E – 8 Constrained Long Range Plan

The final requirement of the LRTP is a fiscally constrained list of projects called the Constrained Long Range Plan (CLRP), which identifies what projects the MPO may finance over a 25-year period. A total of 48 projects are included in the CLRP, of which 22 are new projects since the 2040 Plan. The remaining projects, which are unfunded but meet key regional needs, are included in the Vision List in Appendix A.

As part of the LRTP's compliance with the Title VI Act, staff conducted a "Benefits and Burdens" analysis on the projects in the CLRP. Project locations were overlaid with U.S. Census data on the locations of underserved or minority populations in order to evaluate if projects would either unduly burden a certain population, or conversely, underserve a population. The analysis revealed that projects in the CLRP are equitably distributed across the MPO Planning Area, and proposed new construction, or capacity-adding projects seem unlikely to burden minority or underserved populations in their proposed alignments.

Chapter 1: Planning Context

1 – 1 Introduction

As a result of the 2010 U.S. Census, the Cities of Staunton, Waynesboro, and the urbanized portions of Augusta County met the criteria to be defined as an urbanized area (UZA), which requires the formation of a Metropolitan Planning Organization (MPO) under federal law. UZA's are defined as densely developed residential, commercial, and other nonresidential areas of 50,000 people or greater. The SAWMPO was formed in November 2012, and received official recognition from the Governor of Virginia on March 26, 2013. Similar to other MPOs in Virginia, the SAWMPO is administered by a Planning District Commission (PDC). The Central Shenandoah Planning District Commission (CSPDC) acts as the fiscal and administrative agent for the SAWMPO.

The MPO is governed by a Policy Board comprised of elected and appointed officials representing the respective jurisdictions. The Policy Board appoints members to a Technical Advisory Committee that is charged with making recommendations to the Policy Board and providing assistance in reviewing issues related to regional transportation priorities and key technical or procedural matters in updating planning documents. Both bodies operate under a set of by-laws that define leadership responsibilities and terms.

The SAWMPO's partner agencies include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Virginia Department of Transportation (VDOT), the Virginia Department of Rail and Public Transportation (DRPT), and the Virginia Department of Aviation.

1 – 2 Purpose of the Plan

The 2045 Long Range Transportation Plan (LRTP) for the SAWMPO outlines the goals, objectives, policies and improvements that are needed to maintain a safe and efficient multimodal transportation system for the movement of people and goods throughout the area in a manner that will enhance the economic, social and environmental qualities of the community. The purpose of this document is to satisfy the metropolitan planning requirements of the federal transportation planning process and to identify priority transportation investments in the region.

The 2045 LRTP replaces the 2040 LRTP, which was adopted on December 2, 2015. The 2045 LRTP update process began in March 2019, and plans for transportation projects to 2045. The MPO formed an LRTP Working Group comprised of SAWMPO TAC members to establish the goals of the region's transportation network and guide the planning process.

1 – 3 Federal Laws and the Transportation Planning Process

The SAWMPO LRTP has been developed in accordance with the federal transportation law, the Moving Ahead for Progress in the 21st Century Act (MAP-21). This federal law shapes the way transportation investments are conceived, planned, funded, and implemented at the state and regional levels of government. In December 2015, President Obama signed the Fixing American's Surface Transportation (FAST) Act into law. The FAST Act provided four additional years of funding for surface transportation projects, and upheld the performance based planning and programming requirements of MAP-21.

The Federal Transportation Planning Framework

The MPO must meet the requirements of the federally-mandated transportation planning processes. These processes include the development of several documents:

1. The Unified Planning Work Program (UPWP) defines MPO planning activities and is updated each year. The UPWP is the annual work program and budget for the MPO. It details the administrative and planning activities to be undertaken during the fiscal year, and the federal, state and local funds used for these activities. The Policy Board can make recommendations to MPO staff on the activities and funding levels in the UPWP during the annual process of developing the Plan. VDOT and DRPT provide the MPO with annual allocation of planning funds in the spring.
2. The Transportation Improvement Program (TIP) that identifies transportation projects to be funded within the next six years. The TIP is the region's fiscally-constrained four-year programming document for all transportation and transit projects scheduled to receive federal transportation funds, require a federal action, or are deemed "regionally significant." Federal regulations require that all transportation projects and programs in the MPO's region funded under U.S.C Title 23 and 49 be listed in the TIP
3. The LRTP defines the long-range transportation needs and includes a fiscally-constrained list of projects that will be eligible for inclusion in the TIP. Through the LRTP, the MPO establishes the investment priorities of federal transportation. The LRTP is reviewed and updated every 5 years, and must cover at least a 20-year planning horizon, with the SAWMPO using a 25-year planning horizon to 2045.

Federal Transportation Planning Factors and the 3-C Agreement

Planning Factors

MAP-21 identifies ten planning factors (23 CFR 450.316) which must be considered as part of the transportation planning process for all metropolitan areas. These planning factors were integrated into the development of the LRTP, and include the following:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility of people and for freight;

- 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;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism

In compliance with MAP-21, the LRTP addresses these factors in the Plan goals, existing conditions, and the CLRP. Strategic planning concepts were integrated throughout development of the LRTP to support development of a sustainable, multimodal, and cost-effective transportation plan. These concepts include bicycle and pedestrian mobility, travel demand management, safety and security, and intermodal considerations, as well as the financial limitations for investing in these strategies. These comprehensive planning strategies align with the SAWMPO planning goals and objectives and have shaped development of the CLRP.

3-C Agreement

Regional long-range transportation planning, by legislative definition must be:

- Comprehensive (including all modes)
- Cooperative (involving a broad array of stakeholders and other interested parties)
- Continuous (ever improving and evolving)

Planning efforts must reflect an overall purpose to efficiently move people and goods, while supporting regional land use and economic development plans and policies. This process directs cooperation with all levels of government to develop a plan which addresses long- and short-range multimodal goals and strategies for transportation improvements and priorities for the implementation of projects to fulfill those goals.

1 – 4 Compliance with Federal Regulation

A primary purpose of the LRTP is to establish the MPO's compliance with all current federal laws and regulations.

Title VI of the Civil Rights Act of 1964

The SAWMPO is a sub-recipient of federal financial assistance and is required to comply with Title VI and other federal non-discrimination laws as well as provide an overview of how the SAWMPO addresses Executive Order 12898 on Environmental Justice as well as Executive Order 13166 on Limited English Proficiency (LEP) and complies with the Title VI plan. Detailed Environmental Justice guidelines and outreach strategies for protected classes are included in the SAWMPO's Public Participation Program. As part of addressing Environmental Justice,

a Benefits and Burdens Analysis is included in Chapter 7, where the Plan's fiscally constrained projects are identified with respect to the location of underserved or potentially vulnerable population segments. This analysis provides a tool for decision makers to gauge how projects and programs may impact social equity and environmental justice.

Americans with Disabilities Act (ADA)

Enacted in 1990, The Americans with Disabilities Act (ADA) prohibits discrimination by public entities on the basis of disability. A primary function of transportation is to deliver opportunities for basic mobility to society. The greatest challenge of the LRTP is to prioritize and implement a transportation network that is multimodal and inclusive of all users. Transportation facilities should be accessible to all users allowing full participation in society – including employment, school, commerce and recreation activities. It is vital that government strive to ensure that transportation systems are not only safe and efficient, but usable by all. Projects identified in the LRTP go through a subsequent, detailed ADA-compliance review process during the design and engineering stage of implementation.

Chapter 2: Public Outreach and Consultation

This chapter covers the 2045 LRTP public outreach process and resource agency consultations. Community members provided input from two public engagement phases. The first phase gathered input from the public, stakeholders, and local government to understand the region's transportation needs, while the second phase focused on receiving public comment on the draft LRTP document, and the projects identified in the CLRP.

This chapter addresses:

2 – 1 Needs Identification

2 – 2 LRTP Draft Input

2 – 3 Resource Agency Consultations

2 – 1 Phase One: Needs Identification

SAWMPO Staff conducted the first public engagement phase from August to November 2019 to assess current and future transportation needs in the areas of safety, congestion, access, and mobility. The first phase consisted of seven in-person meetings with transportation stakeholders and the public, as well as an online survey. The meetings included four "pop-up" meetings around the region to gather input on transportation needs, one meeting with regional transportation stakeholders, a work session with the SAWMPO policy board, and a meeting with BRITE Transit. Five themes were identified from the input:

- Improve pedestrian and bicycle connections;
- Improve transit service;
- Prioritize travel options for the aging population;
- Address I-81 and I-64 and congestion and safety; and
- Develop multi-modal infrastructure as an economic development tool.

Stakeholder Meeting and Policy Board Input

Staff conducted a stakeholder engagement meeting with a regional group of local government and transportation professionals on August 23, 2019, and the Policy Board on September 4, 2019 to collect input on current and future transportation challenges in the region. The meetings focused on further prioritizing needs in the areas of safety, congestion, access and mobility, and economic development.

Both meetings included a presentation and small group discussion. SAWMPO Staff presented a regional profile of existing socio-demographic, employment, and transportation conditions, and also projected regional conditions in 2045.

Participants formed four groups to discuss present and future transportation needs within each of the four needs areas of safety, congestion, access and mobility, and economic development. Each group then shared their input and summarized their discussion. The Policy Board also held a discussion in all four needs areas.

Summary of Input by Needs Area

Below is a summary of input from both meetings for each needs area. The full comments for each meeting are in Appendix D.

Safety – What areas feel unsafe or are a risk to travel, either by driving, walking, biking or taking transit?

- Sidewalk and shared-use path connectivity and circulation for pedestrians and bicyclists is disconnected in the urban areas of Staunton and Waynesboro, schools, and senior living areas.
- Transit stop shelter facilities need improved connectivity and circulation.
- Poor access management fragments pedestrian facilities and creates stop-and-go driving.
- Diverted traffic from incidents on I-81 leads to safety concerns along parallel routes.
- Distracted driving, such as cell phone use, continues to be a problem.

Congestion – What areas have consistent travel delay, and at what time during the day do delays occur?

- Overall, the region has limited congestion. The main concern is the continued growth of traffic volume on I-81 and I-64, and the congestion along exits and interchanges.
- Future growth along interstate interchanges may require redesign, restricted use, or new interchanges.
- Congestion occurs during the morning and evening commutes. Specific sites mentioned include exit 235 at BRCC and exit 94 in Waynesboro.
- Future new development outside of Staunton and Waynesboro and within Fishersville should be focus areas for future planning efforts.

Access and Mobility – What areas or population segments lack transportation options, alternatives, and proximity to basic services such as food and medical care?

- Transit stop shelter facilities need improved connectivity and circulation.
- Bus service from the SAW area to Charlottesville and Harrisonburg should be a priority.
- Passenger rail improvements from the SAW area to DC.
- Connecting transit and transportation infrastructure to senior living facilities should be a priority as the population ages.
- An intercity greenway and multi-use trail connecting Staunton, Augusta County, and Waynesboro.

- Sidewalk and shared-use path connectivity and circulation for pedestrians and bicyclists is disconnected, with a need for improvement in the urban areas of Staunton and Waynesboro, schools, and senior living homes.

Economic Development – What areas need improved access or efficiency for the movement of goods, people, and services?

- Improved multi-modal infrastructure could augment the area's already high quality of life and increase competitiveness in attracting and retaining businesses and individuals.
- Similarly, transit and passenger rail service connectivity to Charlottesville and DC may also make the region more attractive to employers.
- Anticipate growth in areas such as Staunton Crossing, the airport, and Fishersville to improve access and circulation.
- Ensure access for trucking and rail in the future.
- Future plans and projects need to continue to ensure efficient throughput and access for freight and rail, and also anticipate future development and traffic conditions along interstate interchanges.

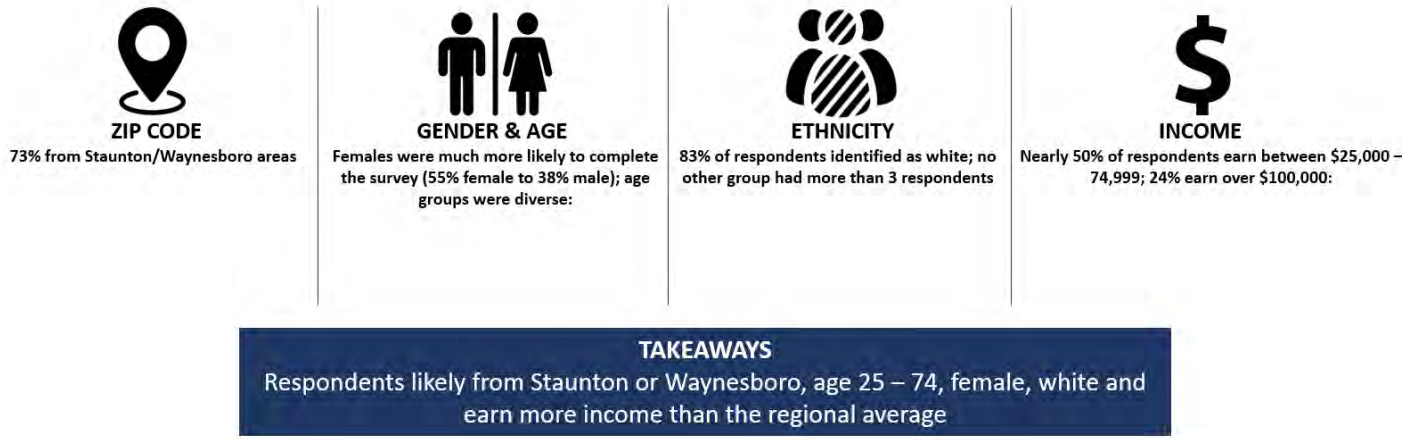
Figure 1: Stakeholder Meeting Invitation



Online Survey Summary

The survey was available to the public from September 6 to November 7, 2019 and had a total of 206 respondents. Figure 2 summarizes the background of respondents.

Figure 2: Summary of First Public Survey



The results from the online survey reinforce the priorities from the in-person meetings (see Figure 3). Online respondents prioritized improving pedestrian infrastructure, enhancing transit service, and continuing to address I-81 concerns. There was also support for improved road safety measures and the maintenance of existing roads. See Appendix D for the full survey results.

Figure 3: Survey and Stakeholder Input Summary

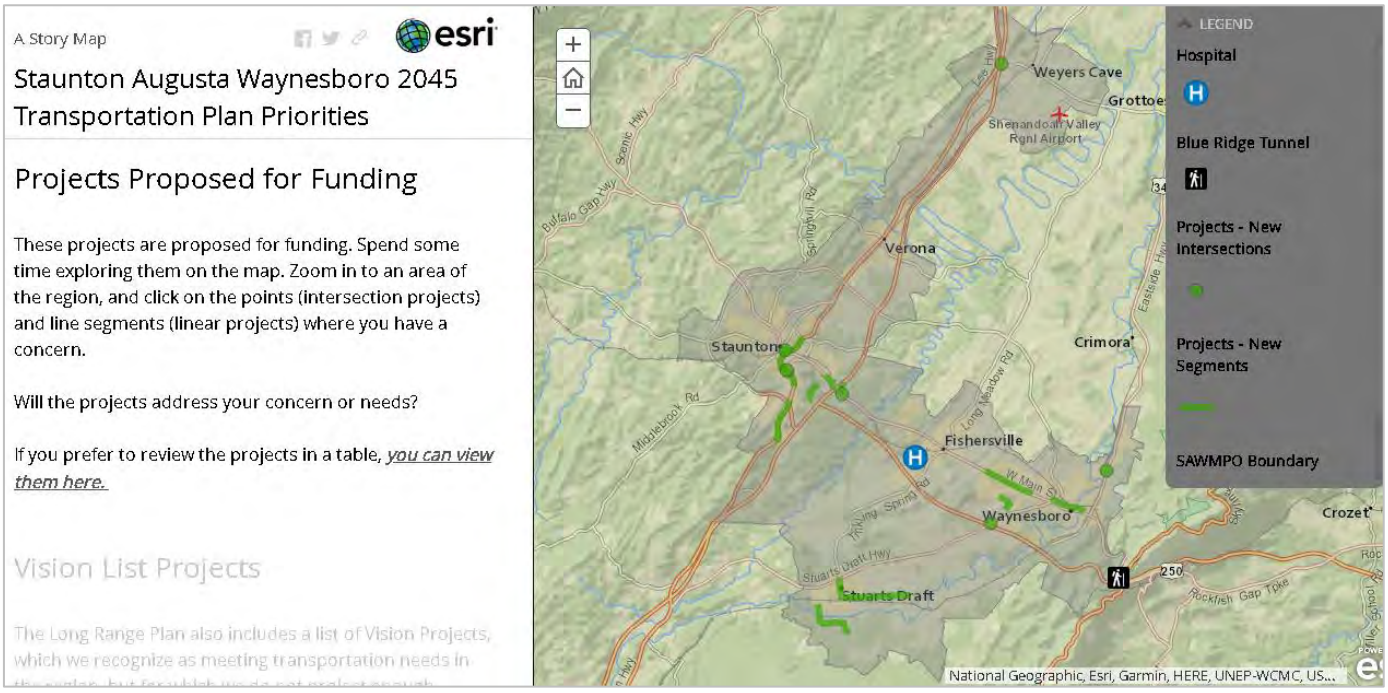


2 – 2 Phase Two: Input on Proposed LRTP Projects

The second LRTP public engagement phase focused on receiving input on the proposed CLRP and Vision List projects included in Chapter 8 and Appendix A. Due to the limitations on safely holding in-person meetings during the COVID-19 pandemic, the second public engagement phase was exclusively online with an interactive website with project maps and a questionnaire. The website was available to the public from October 1 – 31, 2020, and advertised in local newspapers, the SAWMPO website, and social media accounts associated with MPO localities.

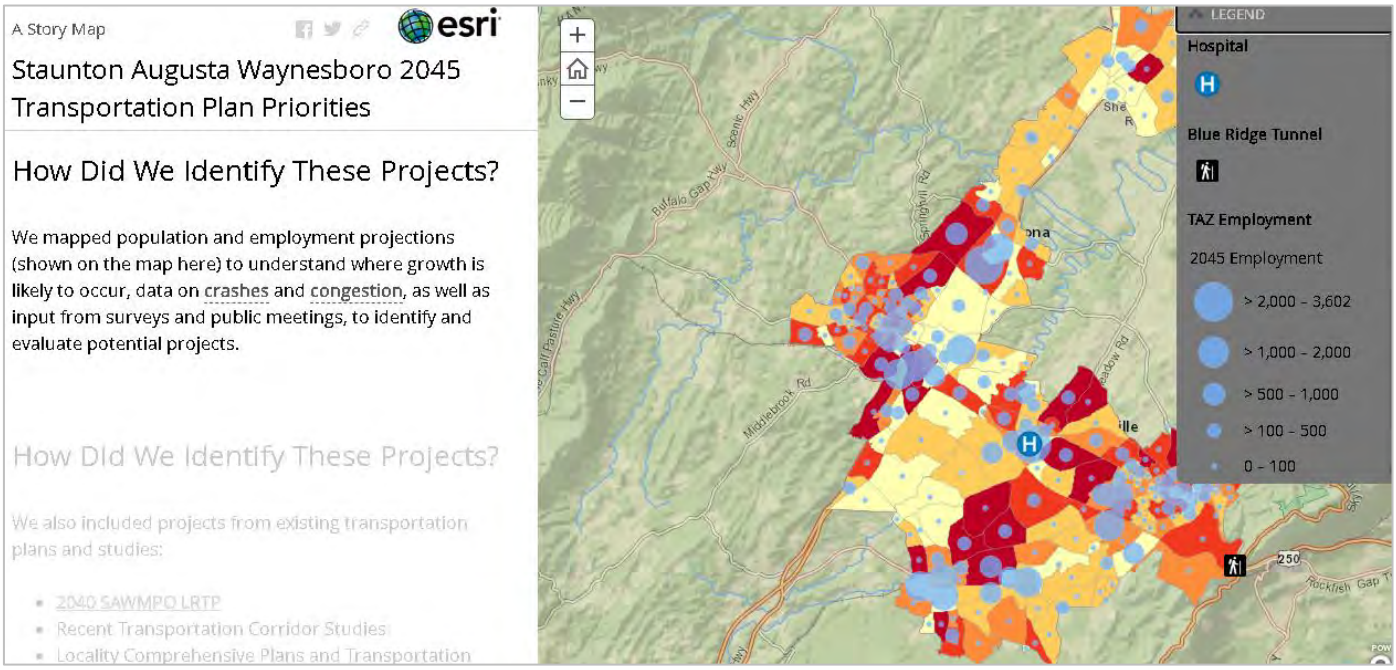
The online map-based platform through ESRI and ArcGIS Online allowed users to review LRTP projects by location, description, and estimated cost. Respondents could share their thoughts on how well the projects meet their transportation needs, or if there are other challenges or concerns not addressed by the projects (see Figure 4), which outlines the projects proposed for funding). Additionally, the BRITE Transit expansions and improvements to routes, service hours, and amenities were included in the application for review.

Figure 4: Proposed Projects Map from Online Public Engagement Application



The website also summarized the LRTP planning process, goals, and provided an outline on how projects were evaluated and identified. A map showing population and employment projections was included to allow users to understand where growth is likely to occur, data on crashes and congestion, as well as input from the fall 2019 surveys and public meetings.

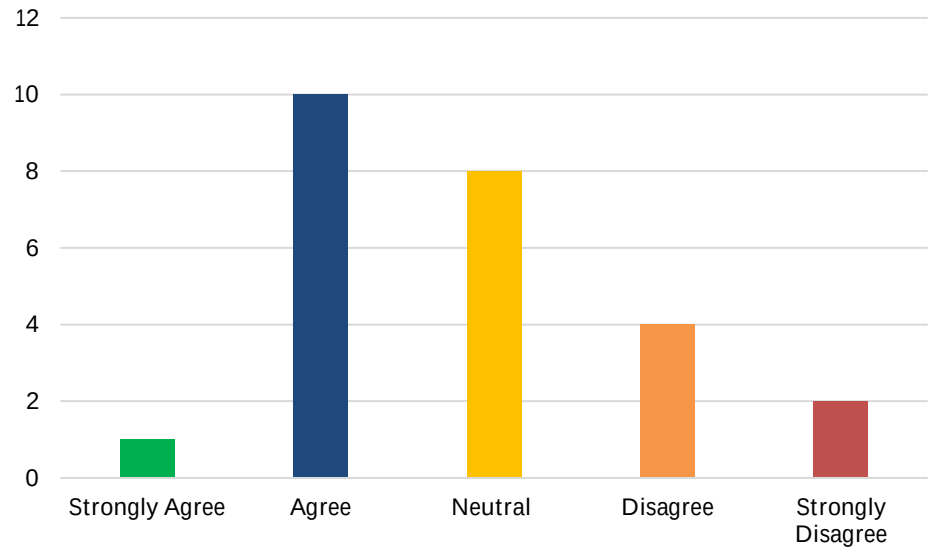
Figure 5: Population and Employment Map from Online Public Engagement Application



Phase Two Summary

A total of 25 respondents completed the ArcGIS Online questionnaire. The input was incorporated into the final draft of the report and reviewed by the Policy Board at the November 4, 2020 Board meeting. When asked if the proposed projects meet the region's future transportation needs, the majority of responses ranged from "Neutral" to "Agree" (see Figure 6). Comments, which are included in Appendix D, reiterated the needs identified from the first public engagement phase, which outlined needs for more multi-modal transportation options such as improved pedestrian and bicycle connections, greenways, shared use paths, and transit.

Figure 6: Do the Proposed Projects Meet the Region's Transportation Needs?



2 – 3 Resource Agency Consultations

The outreach process included consulting with a list of state and federal resource management agencies provided by the FHWA on the selection of projects, which may affect the programs, lands, or policies over which they administer (see Figure 6).

Staff requested their comments related to the planning process, sections of the draft plan, the proposed projects, and also the potential impacts of the projects on other transportation modes and natural and cultural resources on September 23, 2020. The input, which was requested by November 25, 2020, is documented in Appendix E, and was reviewed at the November 4, 2020 Policy Board meeting.

Figure 7: Resource Agency Consultations

Federal	State	Regional/Local
Federal Highway Administration (FHWA)	Virginia Clean Cities (VCC)	Amtrak
Federal Transit Administration (FTA)	Virginia Department of Conservation and Recreation (VDCR)	Buckingham Branch Railroad
National Park Service (NPS)	Virginia Department of Emergency Management	CSX

Federal	State	Regional/Local
United States Army Corps of Engineers (USACE)	Virginia Department of Environmental Quality (VDEQ)	Greater Augusta Regional Tourism
United States Environmental Protection Agency (USEPA)	Virginia Department of Forestry (VDOF)	Greater Augusta Regional Chamber of Commerce
United States Department of Agriculture (USDA)	Virginia Department of Game and Inland Fisheries (VDGIF)	Norfolk Southern
United States Fish and Wildlife (USFWS)	Virginia Department of Historic Resources (VDHR)	RideShare
United States Geological Survey (USGS)	Virginia Marine Resources Commission (VMRC)	Shenandoah Valley Railroad

Appendix D includes the letter sent to each agency, and the responses to the request for comment on the project evaluation and selection processes.

2 – 4 Summary

Overall, public and stakeholder input from the two public engagement phases identified the need to address the region's existing road network through safety and congestion improvements, and further developing a multi-faceted network that accommodates non-motorized travel needs of pedestrians, bicyclists, and transit users.

Chapter 3: Existing Conditions

The purpose of this chapter is to summarize the existing demographics, infrastructure, and transportation conditions within the Staunton-Augusta-Waynesboro (SAWMPO) planning area. The physical transportation network is comprised of roads, public transportation (bus and rail), pedestrian and bicycle facilities, air transportation, and freight/passenger rail service.

This chapter contains the following:

3 – 1 Regional Context

3 – 2 Socio-Demographic Profile

3 – 3 Existing Transportation Network

Unless otherwise noted, all data and maps are based on data from the U.S. Census Bureau's 2013-2017 ACS Five-Year Estimates. Because some census block groups extend beyond the SAWMPO boundary, the data for these block groups does not perfectly reflect the demographic characteristics of the SAWMPO.

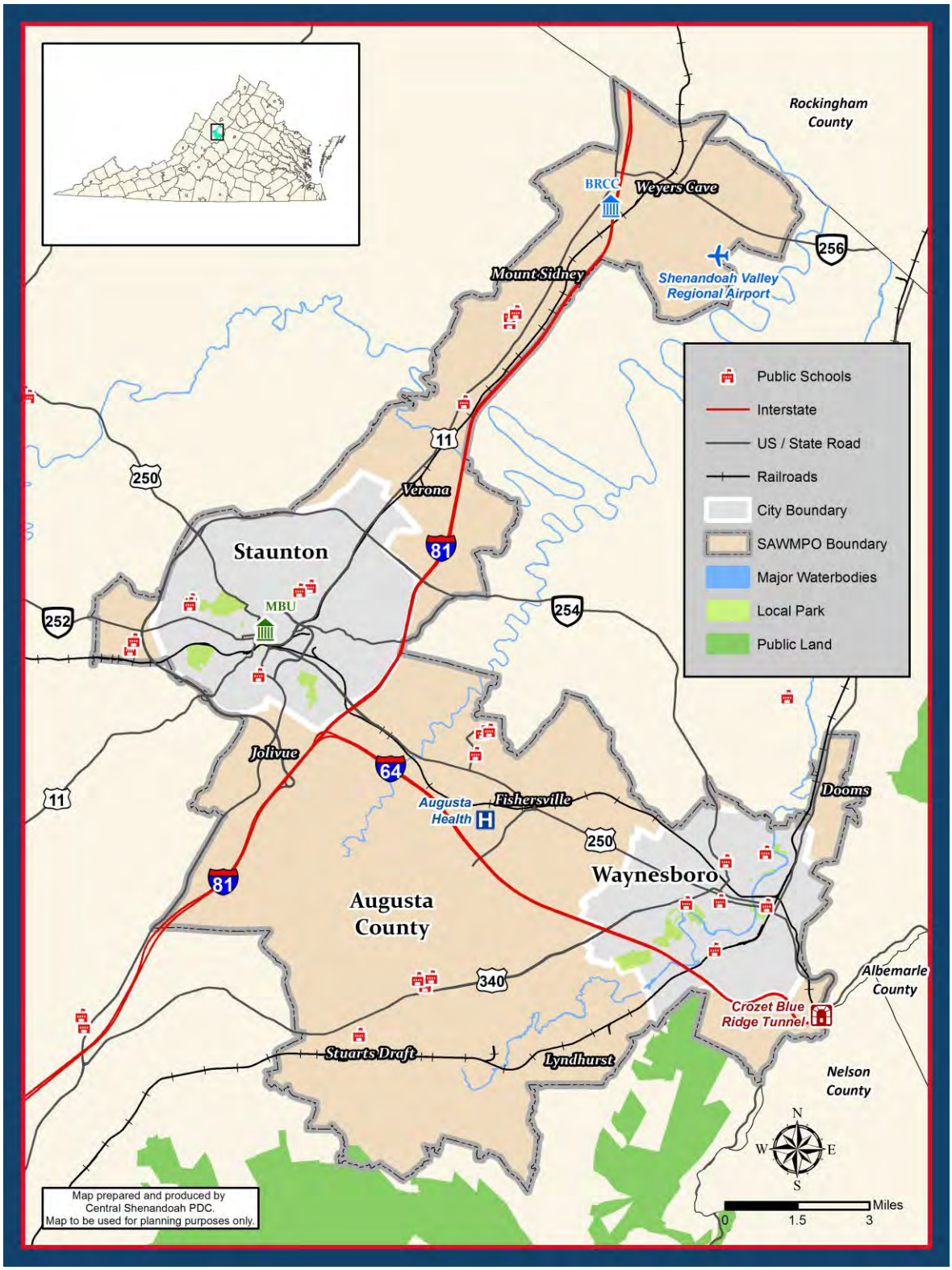
3 – 1 Regional Context

The SAWMPO planning area includes the cities of Staunton and Waynesboro, and the portion of Augusta County that is expected to urbanize in the next 25 years, including Fishersville, Verona, Stuarts Draft, Jolivue, Weyers Cave, and Lyndhurst. Unless otherwise noted, reference to Augusta County refers to the area within the SAWMPO's planning area. The SAWMPO is situated in the scenic Shenandoah Valley, near destinations such as Skyline Drive, Blue Ridge Parkway, and Shenandoah National Park. Augusta County has a strong agricultural history. The County has the most farm acreage by county in the state, and also ranks second in the state for farm income. Agritourism businesses have capitalized on the area's heritage and demonstrated the potential for future economic diversification.

Staunton is the county seat of Augusta County. It is a city with a rich history that is reflected in the city's distinct downtown architecture. Staunton is home to Mary Baldwin University, a private, liberal arts school with an enrollment of 1,761 students. Western State Hospital, founded as a facility for the mentally ill in 1828, and the Virginia School for the Deaf and Blind, which accepts students ages 2 through 22 for specialized academic and social development, are also located in Staunton.

Waynesboro is located on the eastern boundary of the SAWMPO and is similar to Staunton by population size. It has a walkable downtown and is easily accessible via I-64. Located on the South River, Waynesboro has a strong industrial history. DuPont's location of their facility to produce rayon transformed the community into a major manufacturing town.

Map 1: SAWMPO Region



Population[1]

Table 1 shows the population trends for the SAWMPO planning region. In 2017, the estimated total population for the entire area, including non-MPO planning areas, was 120,283 people, which was a 1.5% increase from 2010. Overall, the highest population growth increase since 2000 was in Augusta County and Waynesboro; however, growth in all three jurisdictions slowed between 2010 and the 2017 estimate year.

2017 Weldon Cooper population estimates show more growth than U.S. Census data.

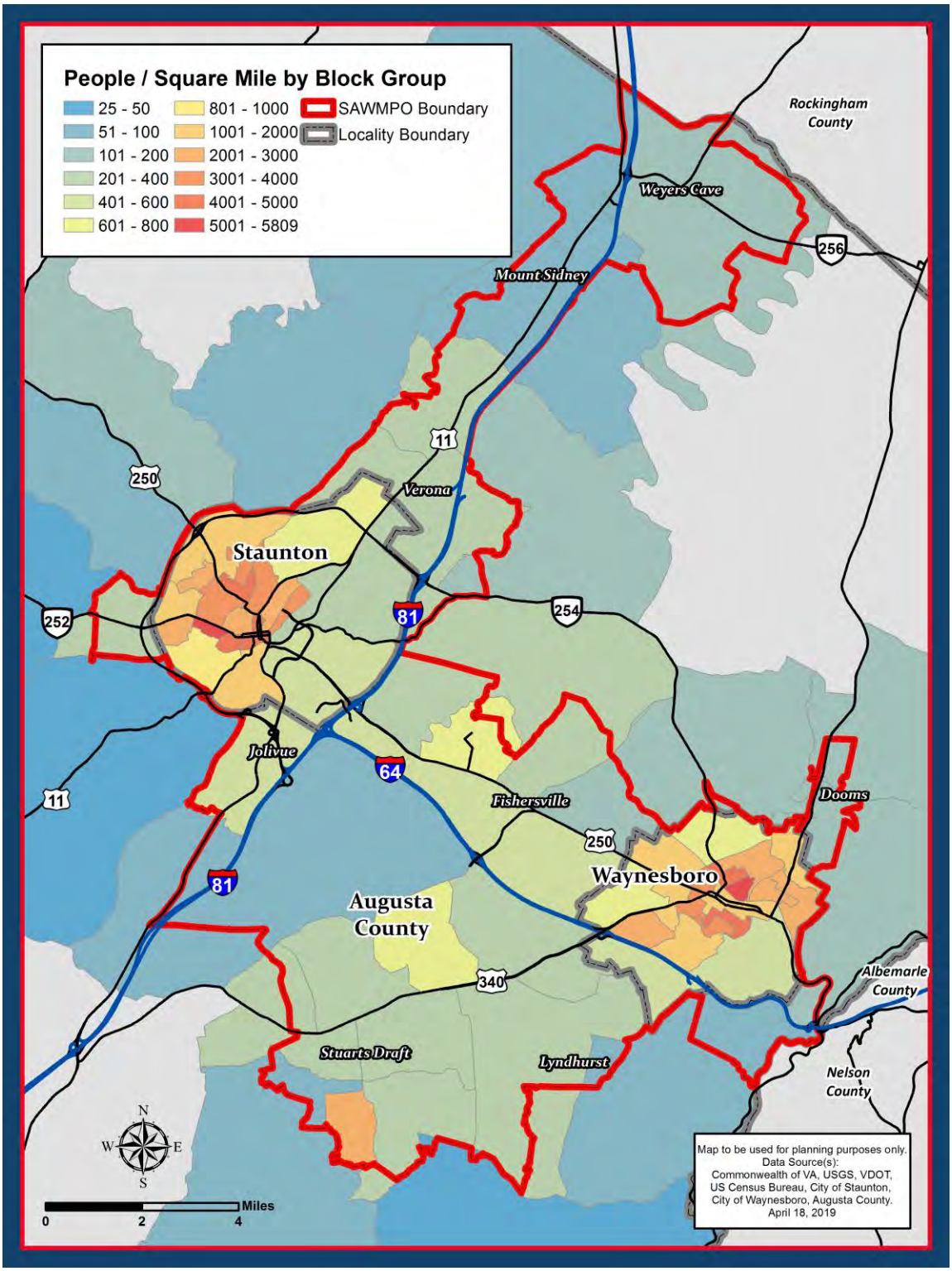
Table 1: SAWMPO Region Population

Area	2000 (Census)	2010 (Census)	2017 (ACS Estimates)	Population change (2010 – 2017)	Weldon Cooper Center Estimate (2017)	Population change (2010 – 2017)
Augusta County	65,615	73,750	74,390	640	75,013	1,263
Staunton	23,853	23,746	24,273	527	24,761	1,015
Waynesboro	19,520	21,006	21,620	614	22,285	1,279
SAWMPO	-	78,794	83,171	4,377	-	-

Map 3 on the following page illustrates the population density by block group for the SAWMPO planning area. Population is concentrated around the downtown areas of Staunton and Waynesboro. Population densities around Fishersville and Stuarts Draft are underrepresented due to the size of the county block groups in these areas.

[1] The U.S. Census is the primary data source. The SAWMPO boundary is not contiguous with census tract limits, requiring that data be extrapolated relative to the size of the census tracts that intersect the boundary.

Map 2: Population Density



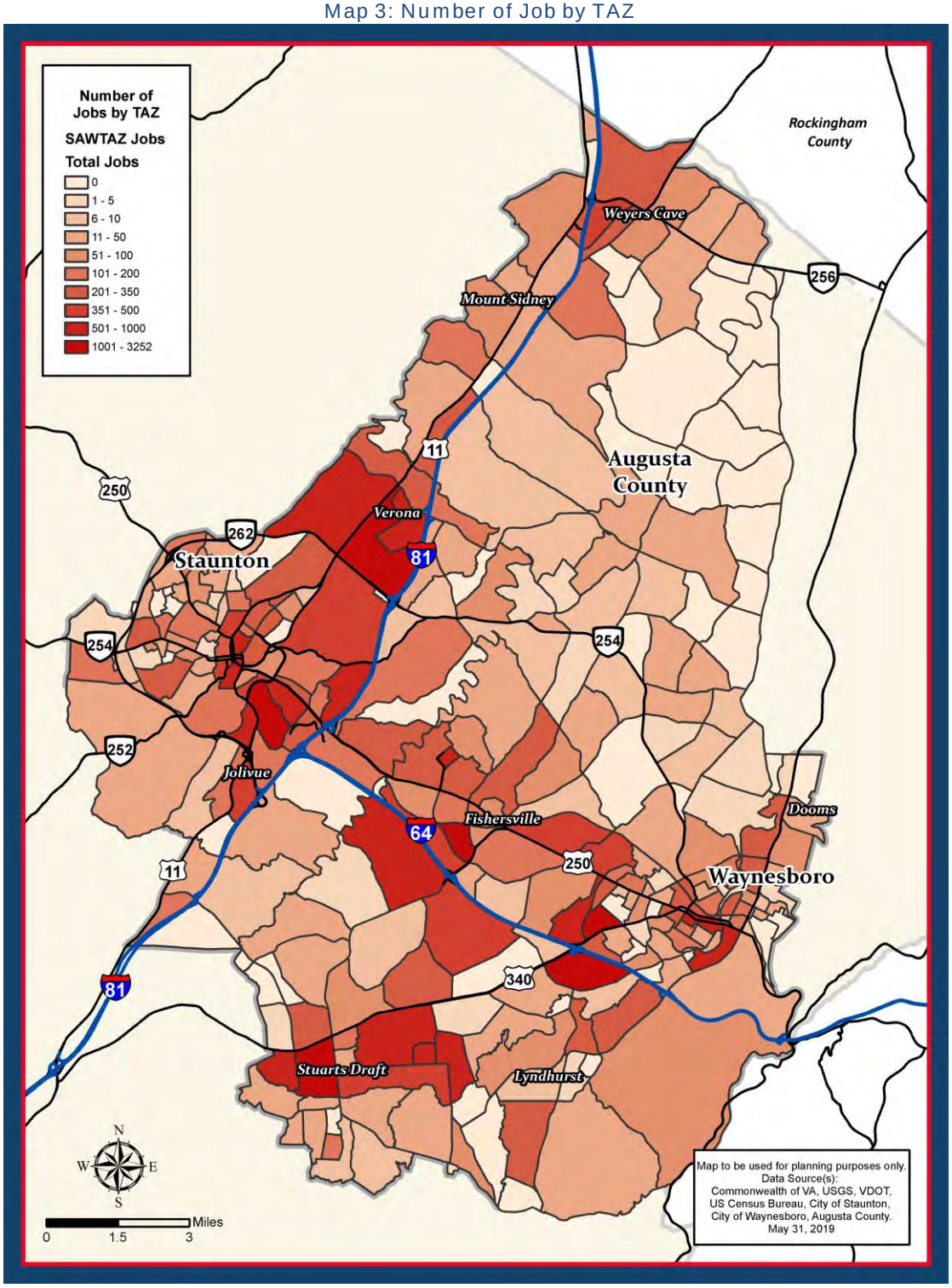
Employment

Travel generated by employers and employees contributes significantly to peak-time trips on a transportation network. That may include impacts on traffic volumes and traffic congestion, demands for new or upgraded access or infrastructure, or an opportunity for targeted investments in public transit.

Map 3 illustrates the estimated number of jobs in the MPO area in 2018 by traffic analysis zone (TAZ). TAZs, which are described in detail in Chapter 4, are a common way to measure socioeconomic variables within a region. The TAZs are largely based on U.S. Census tracts, and also a region's population distribution, existing roads, and natural borders.

Employment density is highest in the major urban areas of the MPO, as well areas close to interstate interchanges such as Verona and southwest of Waynesboro, and the activity centers of Augusta Health in Fishersville and Blue Ridge Community College in Weyers Cave.

Map 3: Number of Job by TAZ



3 – 2 Socio-Demographic Profile

Environmental Justice (EJ) is the overarching policy adopted in the United States for the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." As a result of such policies, there has been an increased need to incorporate EJ principles into transportation planning.

The following three federal acts and two executive orders define the principles of EJ, including the specific populations that are to be considered:

- The *Civil Rights Act of 1964, Title VI*, which prohibits discrimination on the basis of race, color, or national origin;
- The *Age Discrimination Act of 1975*, which prohibits discrimination on the basis of age;
- The *Americans with Disabilities Act of 1990*, along with the Americans with *Disabilities Act Amendment Act of 2008,* which prohibit discrimination on the basis of disabilities;
- *Executive Order 12898 on Environmental Justice (1994),* which protects minority and low income populations from disproportionately high and adverse impacts;
- *Executive Order 13166 on Improving Access to Services for Persons with Limited English Proficiency (2000*), which aims to improve access to services for persons who have limited English proficiency.

Title VI of the Civil Rights Act of 1964, established the foundation of EJ by stating as follows: 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.

All recipients of federal aid are required to certify and the U.S Department of Transportation (USDOT) must ensure, non-discrimination under Title VI of the Civil Rights Act of 1964. For the purposes of long-range transportation planning, MPOs must specifically address EJ while developing and advancing transportation programs and projects.

In 1997, the USDOT issued its Order on Environmental Justice which expanded upon the EJ requirements of Executive Order 12898 and provided direction on implementation. Shortly thereafter, the Federal Highway Administration (FHWA) issued Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which highlight the three primary EJ objectives:

- To identify, address, minimize, mitigate, and (preferably) avoid disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations;
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process by providing public involvement opportunities and dissemination of

information, including meaningful access to public information concerning the human health or environmental impacts, when soliciting input from affected minority and low-income populations when considering alternatives during the planning and development of transportation infrastructure investments;

- To ensure that no person – particularly those of minority or low income populations – is excluded from participating in, denied the benefits of, or in any other way subjected to discrimination under any program or activity receiving federal assistance.

Additionally, the federal government has defined Minority and Low-Income populations as follows:

- Low-Income means a person whose median household income is at or below the Department of Labor poverty guidelines.
- Low-Income Population means any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity.
- Minority means a person who is:
  - Black: a person having origins in any of the black racial groups of Africa;
  - Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race;
  - Asian American: a person having origins in any of the original people from the Far East, Southeast Asia, or the Indian subcontinent;
  - American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition;
  - Native Hawaiian and Other Pacific Islander: people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
  - Minority Population means any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy, or activity.

In consideration of the EJ policies identified above, a geographic analysis was conducted to identify the locations and concentration of minority, low-income, and other traditionally underserved populations in the SAWMPO planning area. For the purposes of this study, traditionally underserved also includes senior, non-English speaking, and zero-car household populations.

Datasets and mapping were assembled as a baseline inventory of demographic attributes for the following:

- Low-Income (below poverty line)

- Minority
- Senior (Elderly)
- Disabled
- Limited English proficiency
- Zero-car households

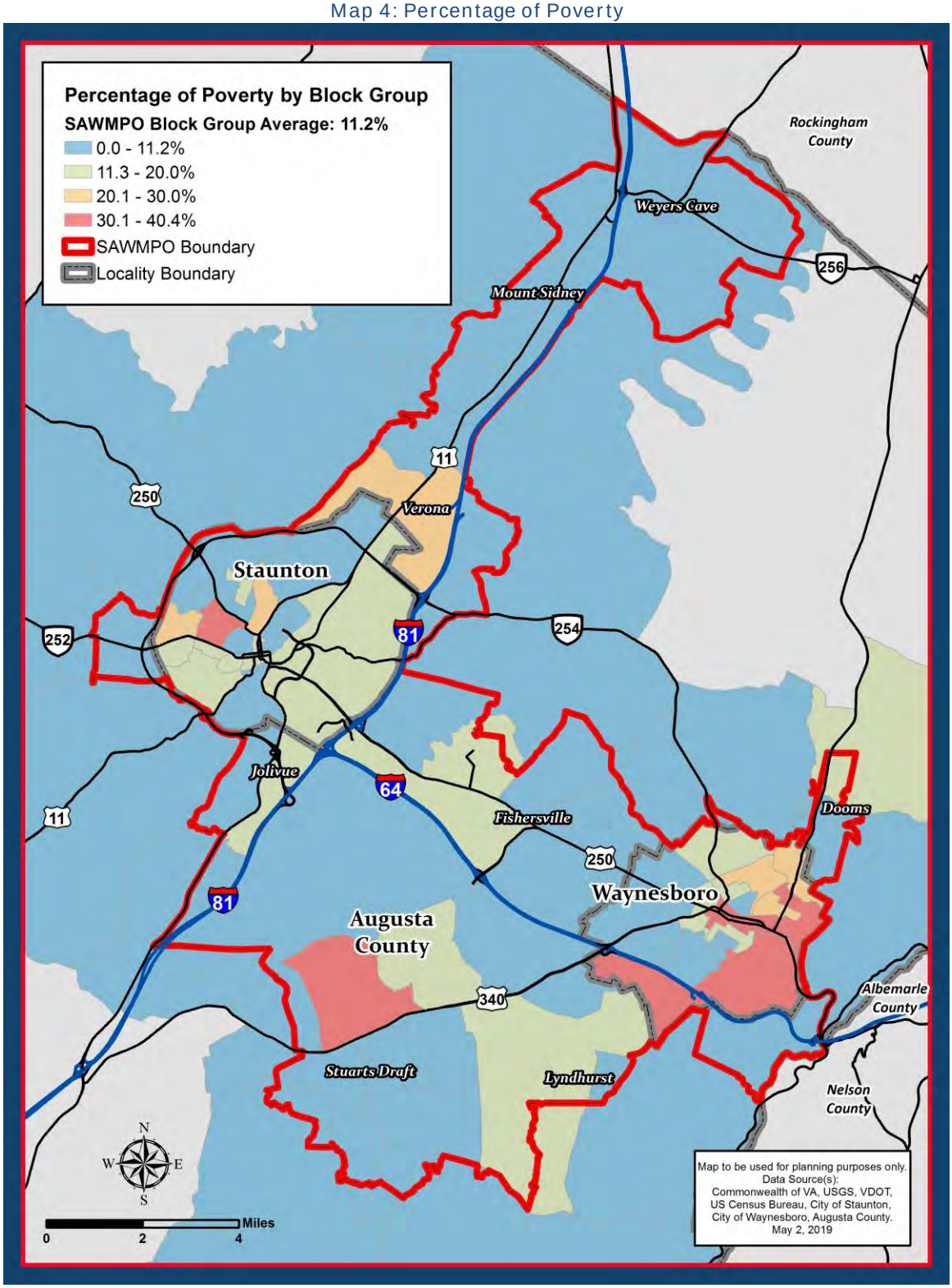
The primary and most comprehensive data source for these populations is the U.S Census Bureau's 2017 ACS five-year estimates at the census tract level. However, a census tract with a large land area may report demographic results based on a limited population sample. Refer to the text of each map for the population percentiles for each demographic based on U.S. census data.

Poverty

Map 4 shows the percent of the population living below the poverty level. The percentage of the population below the poverty level was calculated by dividing the number of individuals living below the poverty level by the total population per block group. According to 2017 ACS estimates, the percentage of persons living below the poverty line was 13.3% in Staunton, 17.4% in Waynesboro, and 8.9% in Augusta County. By comparison, the 2017 ACS statewide poverty average estimate was 11.2%.

The areas with the highest percentage of the population below the poverty level had poverty rates above 30%. These areas are concentrated in western Staunton, in the southern, eastern, and northern portions around Waynesboro, and north of Stuarts Draft. Certain areas around Fishersville and Stuarts Draft may be underrepresented due to large census block group size.

Map 4: Percentage of Poverty



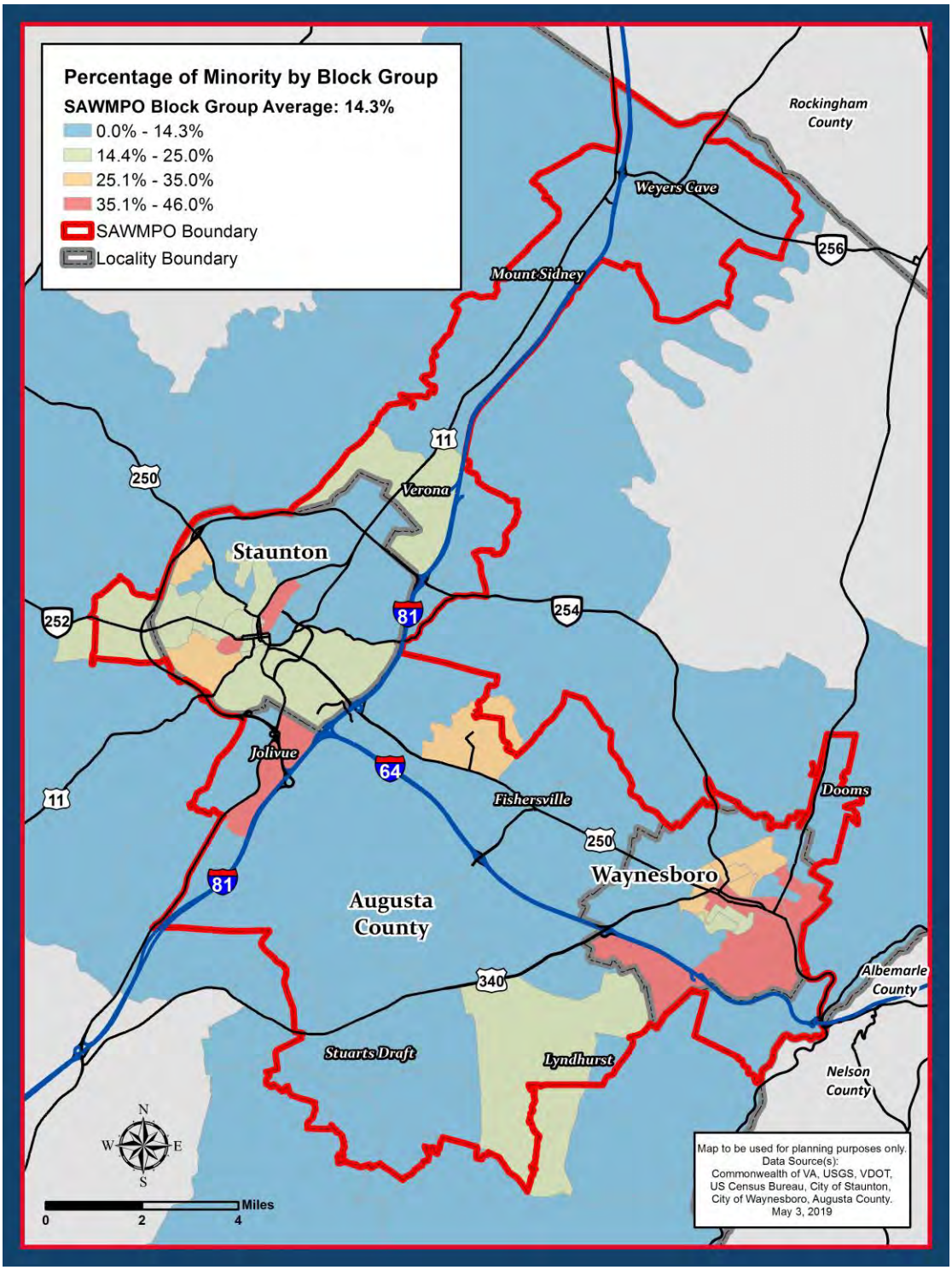
Minority Populations

Map 5 illustrates the concentrations of minority populations within the SAWMPO region by census block by 2017 estimates. The racial/ethnic minority percentage of the population was calculated by subtracting the White Alone (non-Hispanic/Latino) from the total population per block group and then dividing that number by the total population. The average for the combined area of Augusta County and Staunton and Waynesboro is 14.3%.

Waynesboro is the most diverse community in the SAWMPO area and has the highest percentage of both African American (13.6%) and Hispanic or Latino (7.2%) populations. Comparatively, Staunton is 11.2% African American and 2.9% Hispanic or Latino, while Augusta County is 4.4% African American and 2.7 Hispanic or Latino. SAWMPO area numbers are lower than the state average of 19.2% African American and 9% Hispanic or Latino.

Non-white populations are more likely to be found in the older neighborhoods located adjacent to downtown Staunton and Waynesboro, and the Jolivue area.

Map 5: Percentage of Minorities



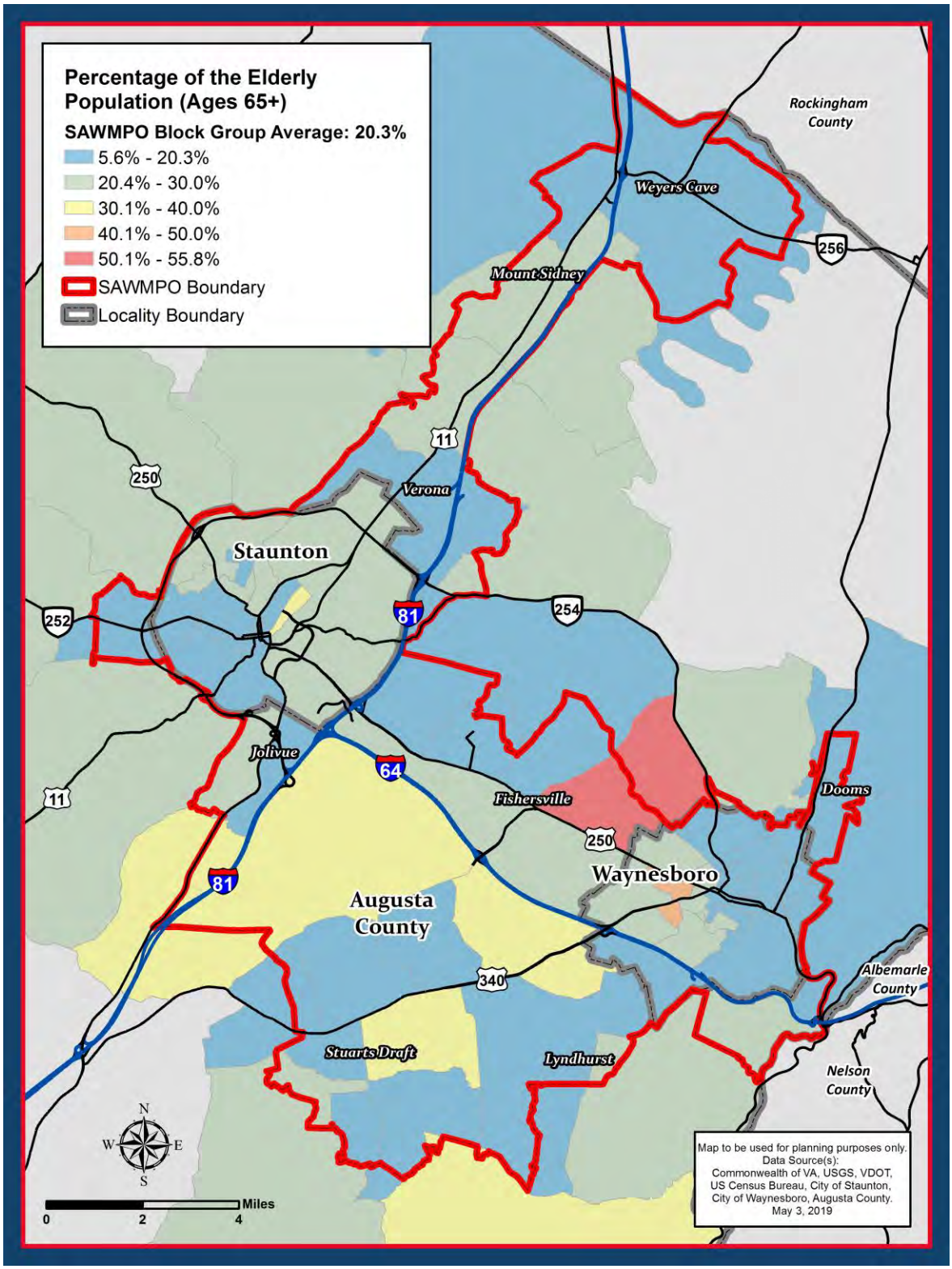
Elderly Population

The elderly population percentage was calculated by summing the populations of persons age 65 and older. That sum was divided by the total population. The SAWMPO block group average population of elderly persons (65 of years of age and over) is 20.3%, which is higher than the 2017 state average of 15%. Map 6 highlights areas with higher concentrations of the population over 65 years. Areas around Waynesboro and northeast of Fishersville have the highest percentages of elderly individuals in the SAWMPO area.

Aging populations have unique transportation needs that include a decreased reliance on vehicles and an increasing need for alternative modes of travel. Many seniors do not drive due to health, economic, or personal preferences. Other seniors do drive, but would prefer not to, if a convenient and frequent transit service were available to them. Age-restricted and assisted living communities are located throughout the region, many of which provide limited private transportation options for their residents.

For communities located outside Staunton and Waynesboro, public transportation options are limited, although the BRITE bus system offers connections between both cities and some county destinations.

Map 6: Elderly Population

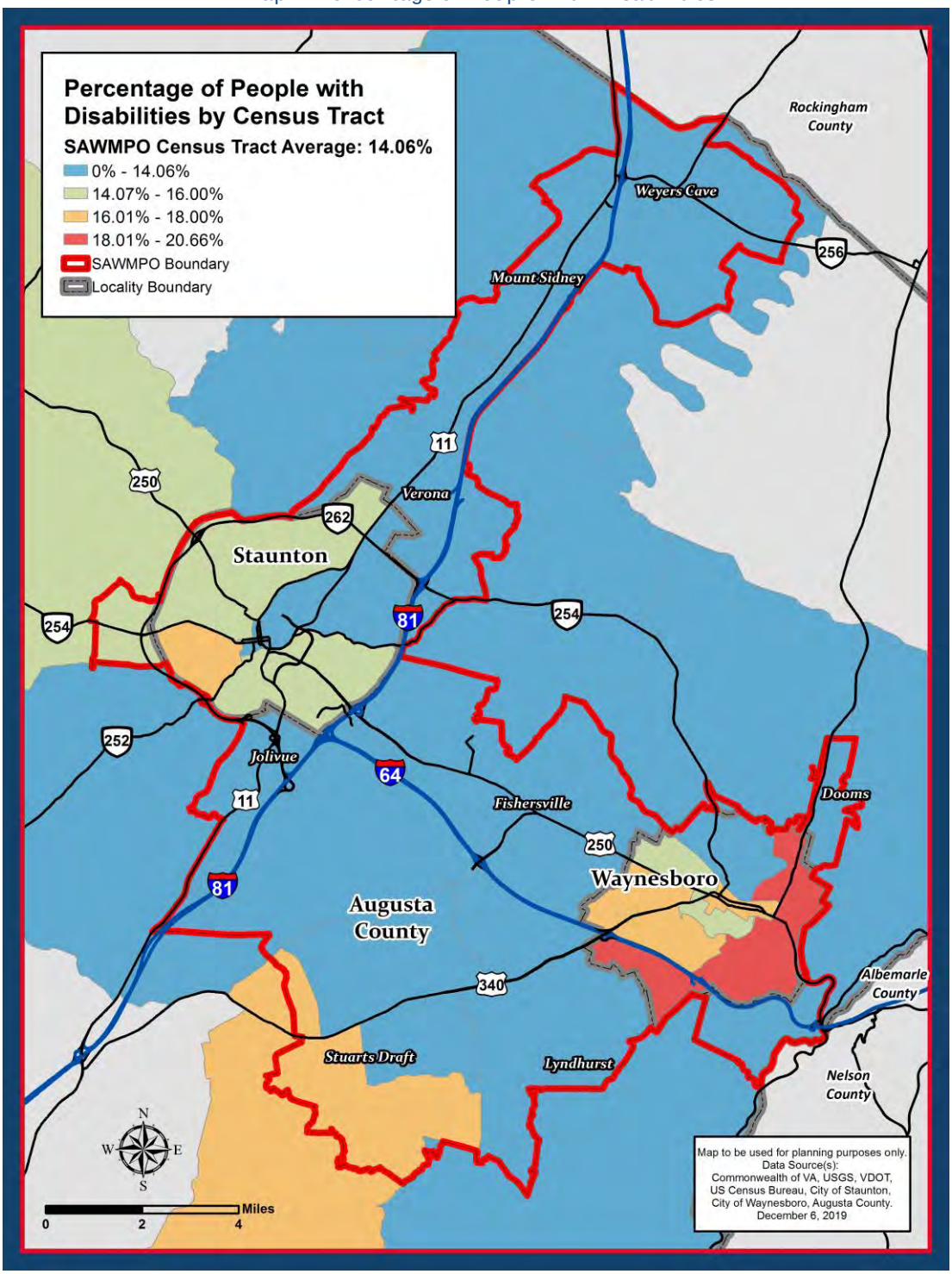


Disabled Population

The U.S. Census collects information on disabled persons by asking questions on six disability types: hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty. Respondents who report anyone of the six disability types are considered to have a disability. According to the 2017 ACS Census data, the SAWMPO census tract average population of disabled persons is 14.6%, which is higher than national (12.6%) and state (11.5%) figures.

Map 7 highlights areas with higher concentrations of the population with disabilities. Waynesboro has the highest percentage, with over 16% of the population classified disabled, followed by Staunton at 15%, and Augusta County at nearly 13%.

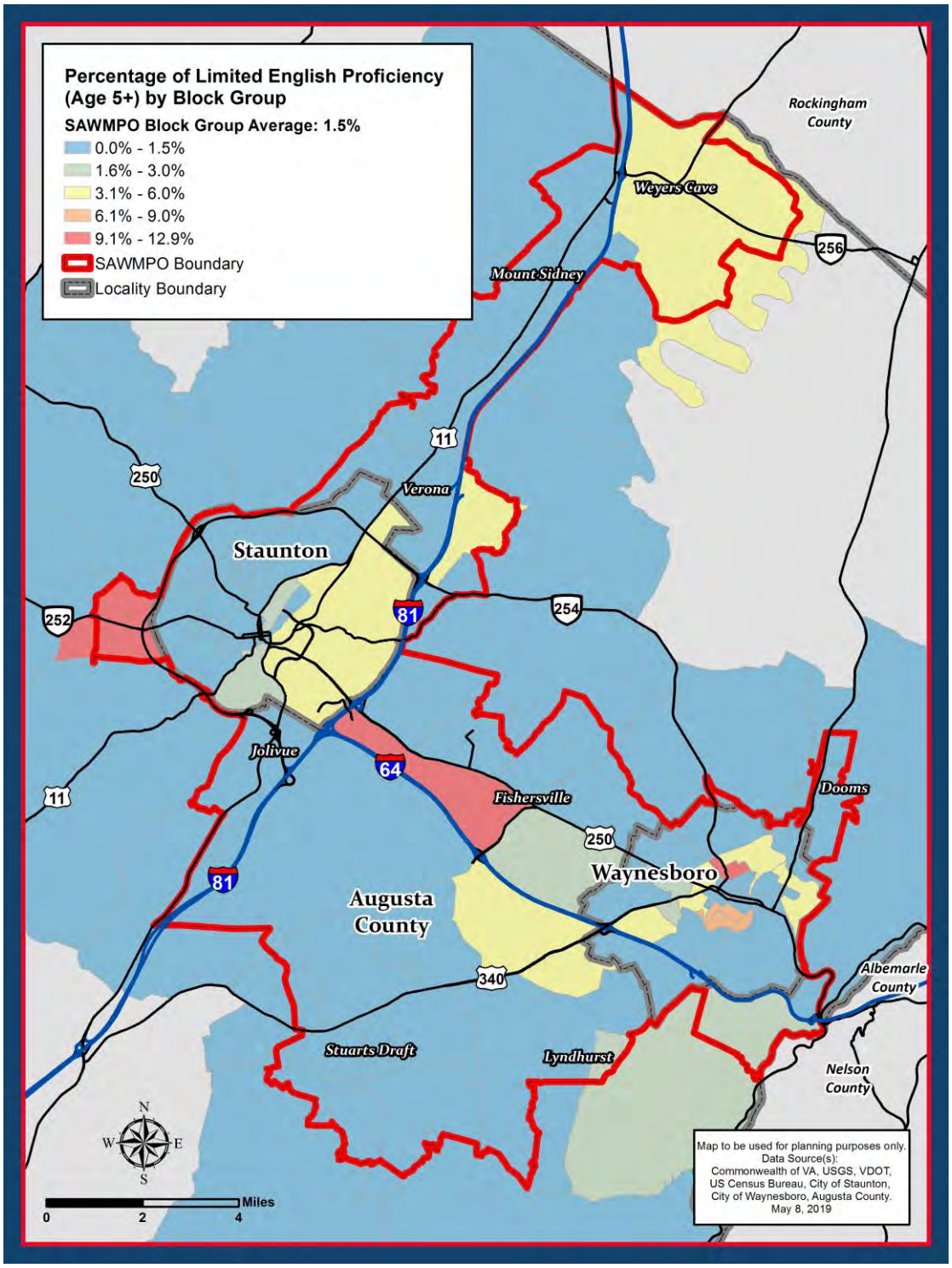
Map 7: Percentage of People with Disabilities



Language

Map 8 displays U.S. Census data on the percentage of the population over the age of 5 that speaks English less than "very well," and have at least some difficulty speaking the language. Overall, the SAWMPO area's limited English-speaking population is 1.5% of the population, which is lower than the state average of 2.6%. One census tract west of Staunton exceeds 9%, as well as the area east of I-81 towards Fishersville, and a small area in Waynesboro.

Map 8: Percentage of LEP Population

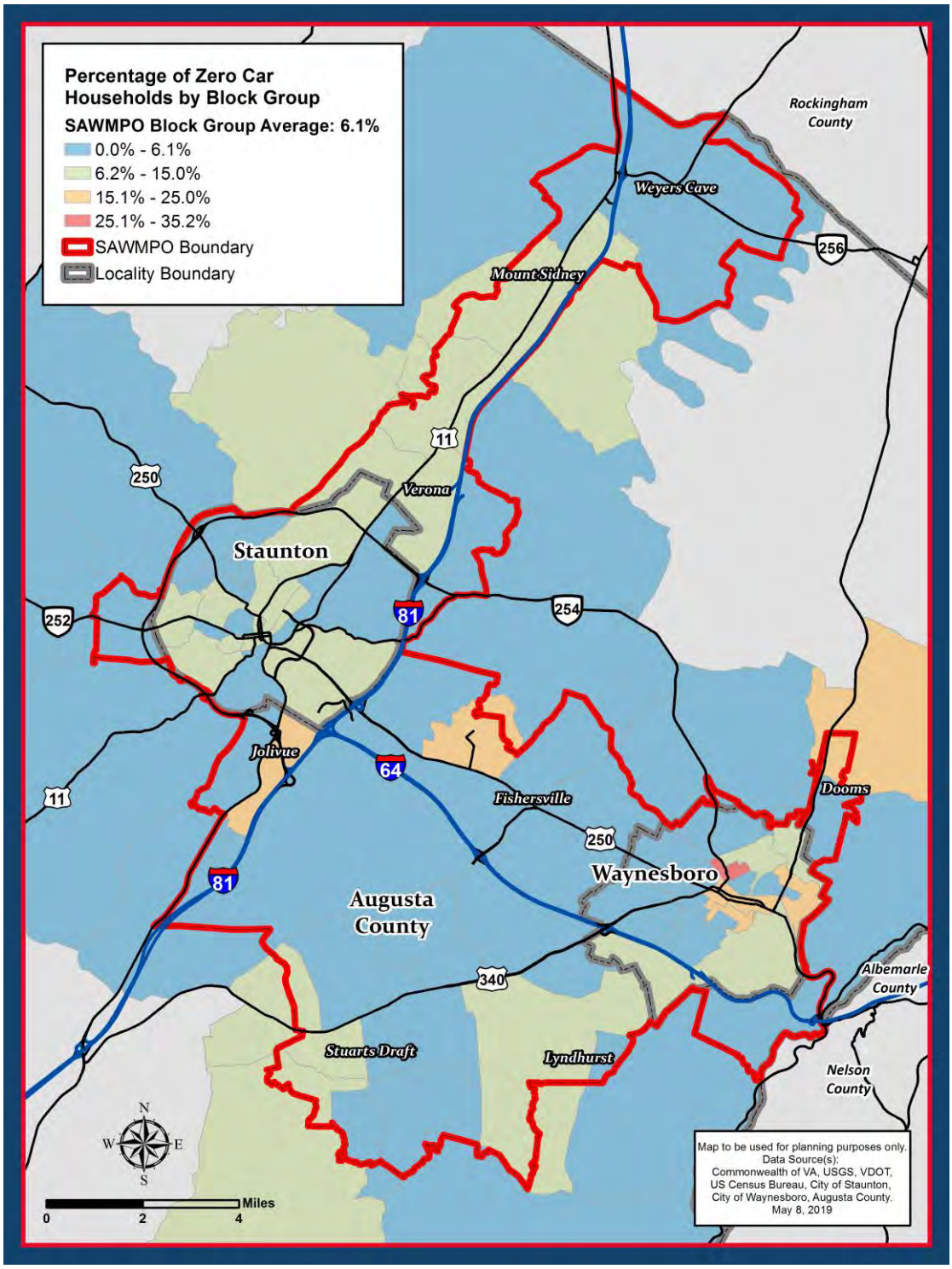


Zero Car Households

On average, 6.1% of households in the SAWMPO area do not own a vehicle. The highest percentage is in downtown Waynesboro, which has over 25% of the population classified as not owning a vehicle. Additionally, areas northwest of Fishersville, and near Jolivue, have percentages over 15%. These increased percentages are likely due to the presence of Woodrow Wilson Rehabilitation Center, which provides vocational training and medical interventions for people with disabilities.

Map 9 on the following page illustrates the number of zero car households by census block group within the SAWMPO planning area. The percentage of zero car households was calculated by dividing the sum of zero car households by the total number of households per block group.

Map 9: Percentage of Zero Car Households



3 – 3 Existing Transportation Network

Roadway System

The transportation network within the SAWMPO planning area includes a mix of road types, a public transportation system (bus and rail), and bicycle and pedestrian facilities. The efficiency and connectivity of the entire network will be evaluated in the document based on the coverage of roads, transit services, bicycle facilities, and sidewalks. Staunton and Waynesboro maintain their own roadway networks, while VDOT maintains all public roads within Augusta County.

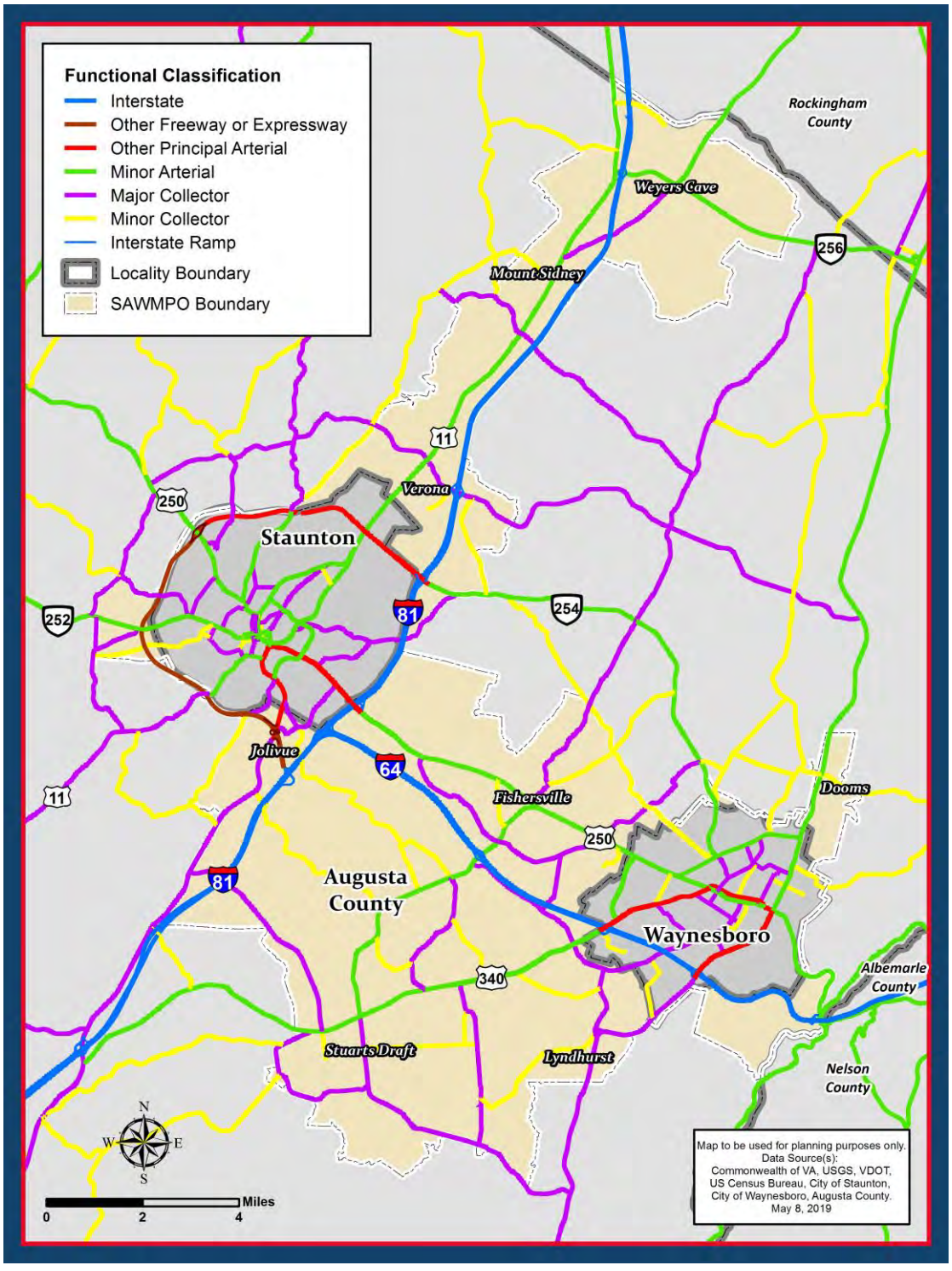
Two major interstates cross through the SAWMPO planning area. Interstate 81 (I-81) runs south-north from east-central Tennessee to the Canadian border in New York. Interstate 64 (I-64) runs east-west from Norfolk, Virginia, to St. Louis, Missouri. Within the SAWMPO, these two interstates run concurrently from the southern boundary to just southeast of Staunton. I-81 and I-64 provide important connections to nearby cities such as Harrisonburg and Charlottesville. Additionally, I-81 is a significant north-south corridor for freight and other travel between states up and down the East Coast.

Within the SAWMPO planning area, there are six distinct functional classifications of roads: Interstate, Principal Arterial, Minor Arterial, Major Collector, Minor Collector, and Local. Each road is assigned a functional classification based on the road's intended purpose, or role it plays in serving the flow of trips through a transportation network. Criteria used to assign a functional class to a road include types of trips being served, expected volumes, network characteristics, population center thresholds, and interval spacing[2]. VDOT uses the functional classification to obtain funding for Highway Performance Monitoring System federal reporting and to establish construction priorities.

Map 10 depicts the functional classification of roadways within the MPO area.

[2] Virginia Statewide Functional Classification System

Map 10: Functional Classification



VDOT defines the functional classes as follows:

Interstate

- Highest traffic volume corridors
- Roads serving the longest trip desires
- Carry significant amounts of intra-area travel
- Does not provide land access and interconnects primarily with other classification routes

Other Principal Arterials

- Serve corridor movements of substantial state or interstate travel
- Provides an integrated network without stub connections

Minor Arterial

- Links cities and large towns (and other generators, such as major resorts)
- Spaces at such intervals so that all developed areas of the State are within a reasonable distance of an arterial highway
- Provide service to corridors with trip lengths and travel density greater than those served by collectors or local systems.
- Design should be expected to provide for relatively high overall speeds, with minimum interference to through movement

Major Collector

- Provide service to any county seat not on an arterial system, to larger towns not directly served by higher systems
- Link the above to nearby larger towns or routes of higher classification
- Serve the more important intra-county travel corridors

Minor Collector

- Spaced at intervals, consistent with population density
- To collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road
- Provide service to the remaining smaller communities
- Link local traffic generators with their rural hinterland

Local

- Serves primarily to provide direct access to adjacent land
- Provide service to travel over relatively short distance as compared to collectors or other higher systems

Transit

The CSPDC administers transit for the SAWMPO area through the BRITE public transit system. The CSPDC assumed the administrative role following the creation of the SAWMPO, which made the Staunton-Augusta-Waynesboro area eligible to receive Section 5307 urbanized area formula funding through the Federal Transit Administration that are only available to public entities.

The transit service is operated under a contract with Virginia Regional Transit (VRT), which provides service supervision, operators, buses, and all maintenance functions. The agreement between CSPDC and VRT is a five-year contract that was executed in March 2017, with an effective date of July 1, 2017, and allows for two, two-year extensions.

BRITE operates ten deviated fixed routes and two paratransit services (see Map 11). The 250 Connector route between Staunton and Waynesboro was the initial fixed route of the transit service. BRITE also provides transportation through ADA Compliant Complementary Paratransit Service and Deviated Fixed Route Service within a ¾ mile radius of any of the BRITE fixed routes.

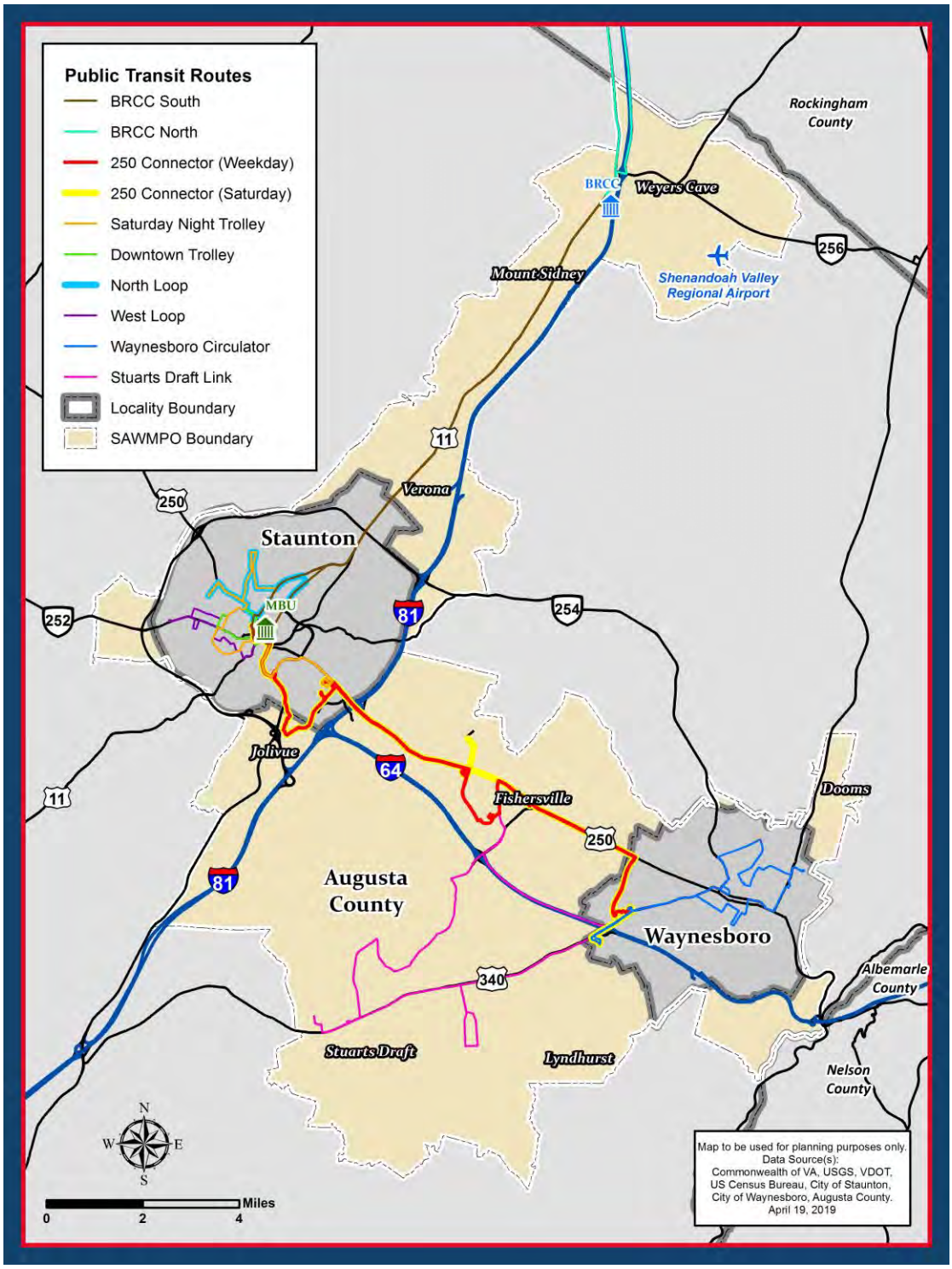
These transportation services are designed for individuals with disabilities as defined by the ADA who cannot otherwise access BRITE's fixed route bus service for some or all trips. This is an origin-to-destination service whereby passengers are typically picked up at the curb of their pick-up point and delivered to the curb of their destination.

The CSPDC adopted a Transit Development Plan (TDP) in August 2015 to establish broad policy goals and functional service needs. The TDP provides information on service delivery gaps, community needs for expanded service, organizational and financial management, marketing initiatives, and service delivery standards.
The TDP provides information on service delivery gaps, community needs for expanded service, organizational and financial management, marketing initiatives, and service delivery standards. The next TDP updated is scheduled for 2020.

Intercity Bus Service

The Virginia Breeze, established in 2017 by DRPT through the private bus service Megabus, is an intercity bus service connecting Blacksburg with Union Station in Washington, D.C. The daily route includes several stops between the two locations, including a stop at the Martins store on Richmond Road in Staunton. The service is oriented on college students from Virginia Tech and James Madison University traveling the I-81 corridor. From January to March 2019, the Staunton stop had 129 northbound trips and 22 southbound trips. In spring 2020, the service announced new routes connecting Danville to Washington, D.C., and Martinsville to Richmond.

Map 11: Transit Routes



Rideshare

The CSPDC offers coordination assistance for ride sharing through free carpool and vanpool coordination, and also operates a Guaranteed Ride Home program. There are two rideshare park and ride lots within the SAWMPO planning area. One is located east of Verona on Lodge Lane at Laurel Hill Road, near I-81, and the other is located at Waynesboro Town Center off Route 340 south of the I-64 interchange.

Bicycle Facilities

The region has a limited system of bicycle facilities and lacks accommodations for bicycles on many major corridors and routes. Nonetheless, Waynesboro's Bicycle Plan and the Staunton Bicycle and Pedestrian Master Plan focus on increased local connections within the cities, as well as connecting to proposed trail systems in Augusta County to create a true regional trail network. Current facility types include multi-use paths, bike lanes, and sharrows marked for shared lanes. As the network grows, it can increasingly be more than a recreational resource, and can serve cyclists for commuting to work, school, and for other personal trips.

The initiatives of Waynesboro, Staunton, and Augusta County to create new facilities and modify existing ones to better accommodate cyclists is a response to overall growth in the SAWMPO and a changing approach to mobility. Many of the roadways in the SAWMPO lack paved shoulders for bicyclists to use, and as population growth occurs and bicycling becomes more popular, further steps are needed to recognize this mode. Since 2004, VDOT has had a "Policy for Integrating Bicycle and Pedestrian Accommodations" that states that VDOT "will initiate all highway construction projects with the presumption that the projects shall accommodate bicycling and walking."

In 2019, regional partners held the first annual Walk-Bike Summit to improve the health, safety, and economy of the region by making it more accommodating to pedestrians and bicyclists. These efforts illustrate an increasing regional awareness of the importance of alternative transportation modes.

Pedestrian Facilities

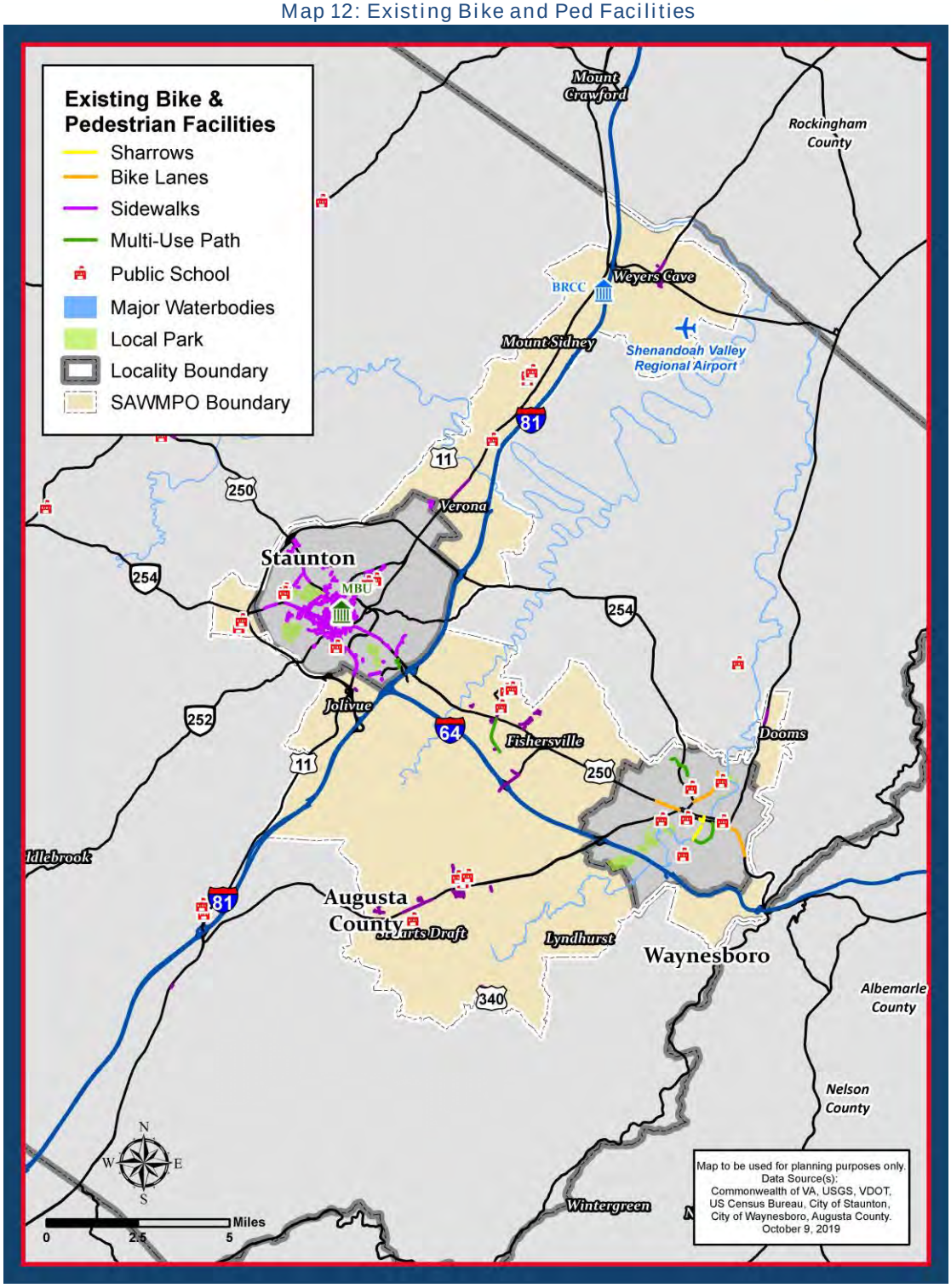
As the primary pedestrian centers in the SAWMPO, downtown Staunton and Waynesboro have sidewalk networks that cover most of their streets. Sidewalks are largely absent outside downtown areas, fragmented, and associated with specific developments. This pattern is consistent with regional, state, and national trends, with historic urban centers having streets with sidewalks. The lack of pedestrian facilities in many areas creates a greater need for a dependable and consistent public transportation system.

Sidewalk facilities in support of pedestrians are now widely regarded as being a desirable and necessary part of mobility and accessibility. The SAWMPO communities have worked to extend sidewalk and pedestrian facilities through federal grant programs offered through the Transportation Alternative Program (TAP) including traditional enhancement projects, and Safe Routes To Schools projects. In addition to Staunton and Waynesboro, County communities have developed pedestrian networks, including Verona, Fishersville, Stuarts Draft, and Weyers Cave. The pedestrian networks in these communities are limited and do not connect with any outside pedestrian networks, or adjacent land uses.

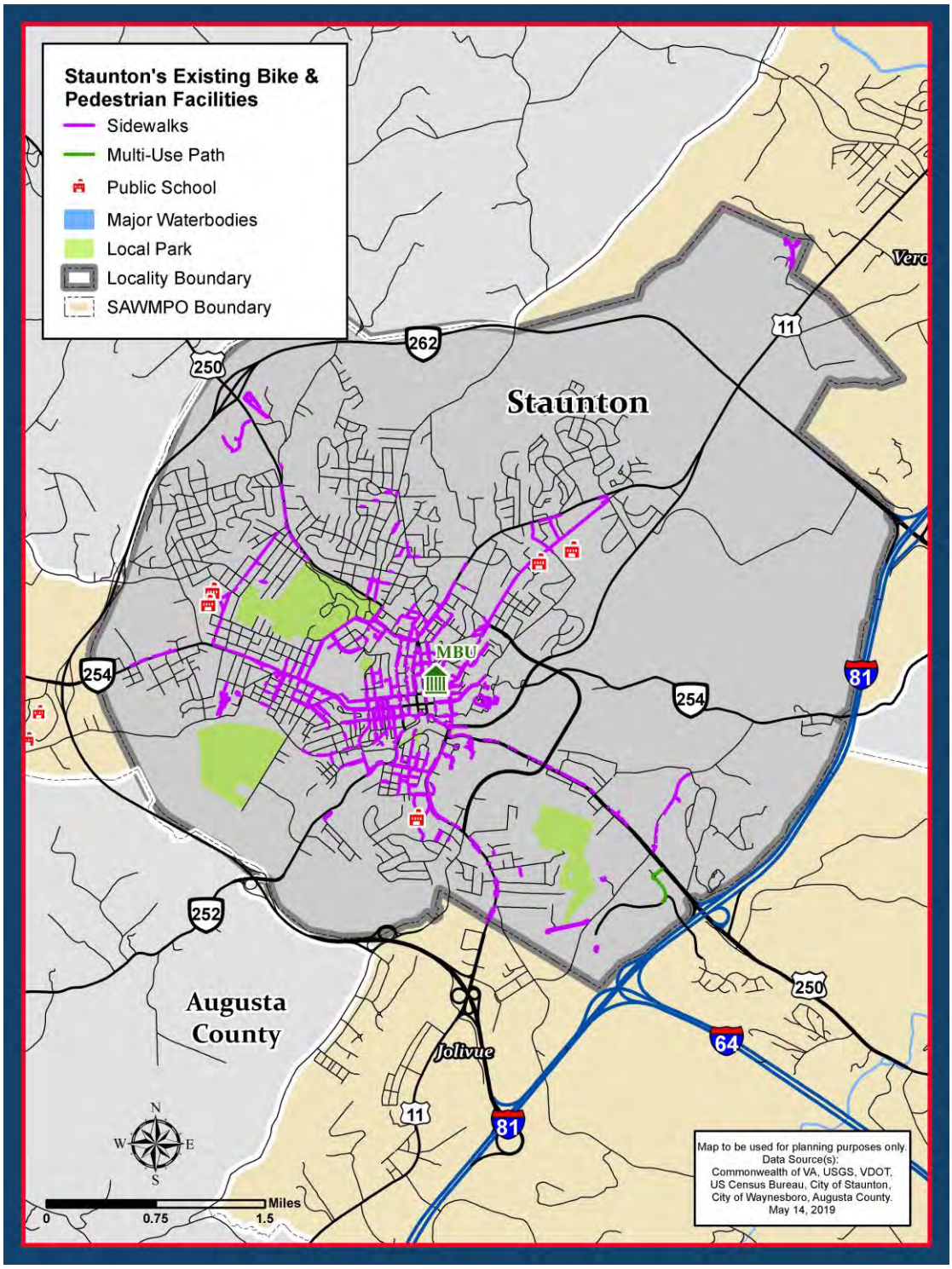
Reflecting current perspectives, new developments are being added in the SAWMPO that have sidewalks. In certain locations, such as around Augusta Health, the Wilson Workforce and Rehabilitation Center, sidewalk /trail networks are becoming components of the transportation system. However, in other places the new facilities are part of small networks of sidewalks that do not connect to a wider system of sidewalks or paths, forcing pedestrians onto the shoulders of busy roads and limiting opportunities for making short trips on foot. There is a need to establish larger networks of pedestrian facilities, so that users can conveniently and safely reach their destinations via continuous travel on sidewalks and paths.

Map 12 depicts pedestrian facilities throughout the SAWMPO area. Maps 13 and 14 reflect pedestrian facilities in the Cities of Staunton and Waynesboro, respectively.

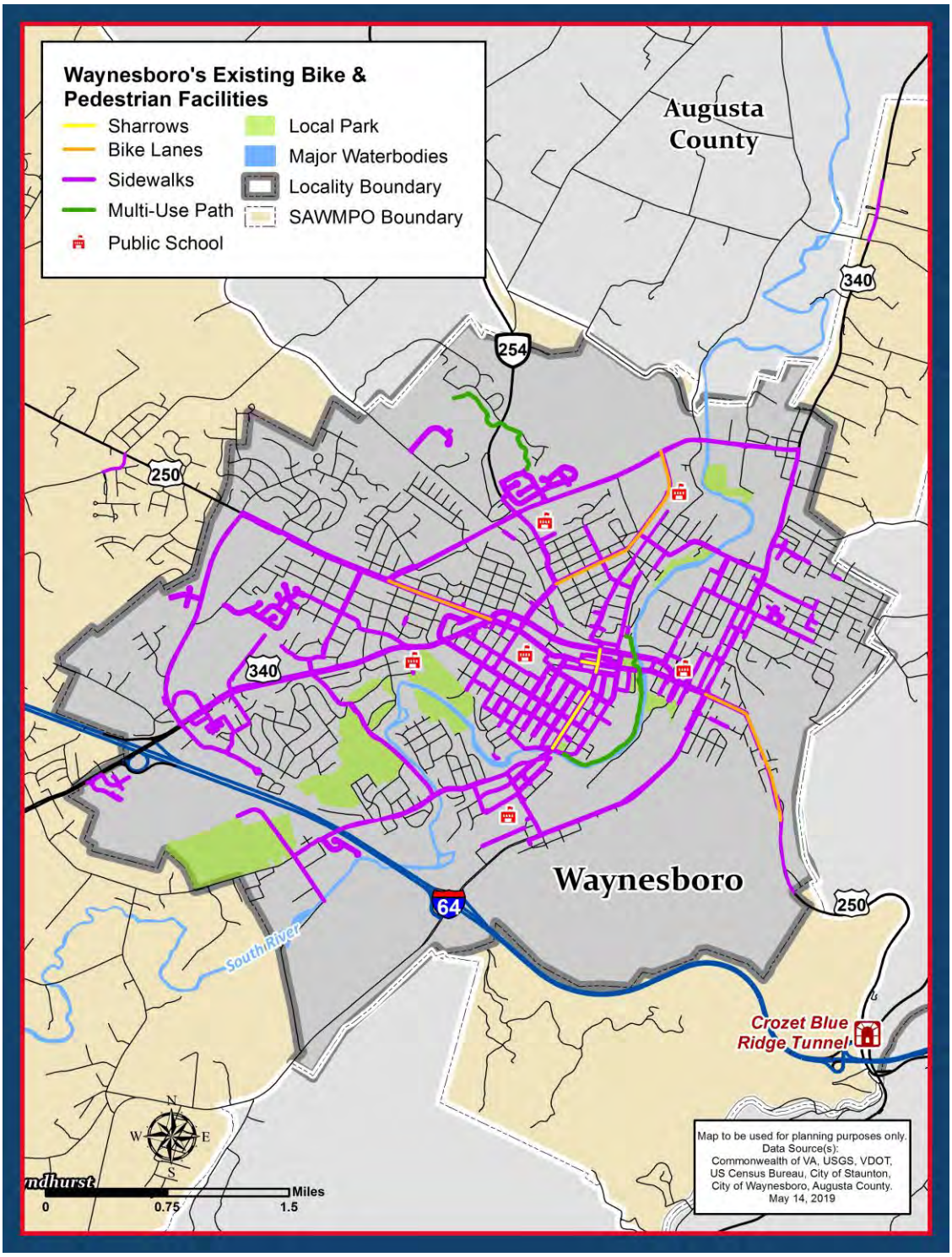
Map 12: Existing Bike and Ped Facilities



Map 13: Staunton's Existing Bike and Ped Facilities



Map 14: Waynesboro's Existing Bike and Ped Facilities



Air and Rail Service

Airports

The Shenandoah Valley Regional Airport (SHD), located in Weyers Cave, offers scheduled air service through United Express Airlines, which provides access to two major hubs: Washington-Dulles International Airport (IAD) and Chicago O'Hare International Airport (ORD). Both routes are operated by United's regional partner, SkyWest Airlines, utilizing a 50-seat seat plane.

The Charlottesville Albemarle Airport (CHO) is 35 miles northeast of Waynesboro and offers daily nonstop flights to Washington-Dulles, Charlotte, Atlanta, Philadelphia, New York LaGuardia, and Chicago. The airport has car rentals and hotel shuttles, but no other ground transportation.

Eagles Nest Airport is a small, private general aviation airport offering flight instruction and aircraft maintenance west of Waynesboro.

Passenger Rail Service

Amtrak provides limited passenger rail service in downtown Staunton. The westbound "Cardinal" line connects New York City – via Washington, D.C. and Charlottesville – with Chicago on Sundays, Wednesdays, and Fridays, with a scheduled arrival into Staunton on those days of the week. The eastbound Cardinal departs Chicago on Tuesdays, Thursdays, and Saturdays, with a scheduled stop in Staunton on Wednesdays, Fridays, and Sundays. Daily rail service connecting New York and New Orleans via Washington, D.C. and Atlanta is available in Charlottesville.

Amtrak operates connecting "Thruway" bus service to and from the train station in Charlottesville to Richmond, allowing rail passengers on the "Atlantic Coast Service" (Boston to Miami) through Richmond to connect with Charlottesville. However, for passengers originating in or destined for the SAWMPO, outside of the limited-schedule Cardinal there is no Amtrak or intercity bus service between the SAWMPO and Charlottesville.

Freight Rail Service

Class 1 freight rail service is provided by CSX and Norfolk Southern over their own rails. Buckingham Branch Railroad (BBRR) runs on the CSX line east to west, while the Shenandoah Valley Railroad owns their tracks connecting to the CSX lines, which are operated by BBRR in Staunton, running north to south. The BBRR and Shenandoah Valley are both Class II short-line railroads.

The Norfolk Southern and Buckingham Branch rail lines intersect in Waynesboro, with the former line running north-south along the eastern side of the City, including bisecting the City's industrial park. The Shenandoah Valley Railroad runs north from Staunton, approximately paralleling the I-81 corridor. It interchanges with the BBRR at Staunton. The BBRR extends from Staunton through the central part of the MPO through Waynesboro. Maintaining these short-line railroads is critical for shipper access to the freight rail system.

The SAWMPO region has many opportunities to access rail facilities with interconnectivity between the CSX and Norfolk Southern lines. There are two transloading facilities in the Fishersville area of Augusta County, and a transloading facility in the City of Staunton. There are a number of sidings located in conjunction with transloading facilities and customers, and generally where industrial activity occurs. Freight is transported via semi-truck rely on local roadway networks to access inter-regional transportation networks – the interstates and railroads. To maintain or expand the opportunities for intermodal freight connections, it is critical to maintain industrial zoning on parcels adjacent to the railroads. These sites provide additional opportunities for developing transloading facilities, or sidings, and the ability to move more freight via rail.

In December 2019, the State and CSX announced a $3.7 billion agreement for the state to buy 225 miles of track and build new passenger rail improvements. Between Doswell, Charlottesville, Staunton and Clifton Forge, the State will also purchase the 173-mile Buckingham Branch Line, which could be used for future east-west passenger rail service. For now, the tracks will remain in use for freight services. Passenger rail advocates and other groups want to resurrect a defunct east-west rail line that would run from the Blue Ridge Mountains to Virginia Beach.

Goods and Freight Movement

The SAWMPO region supports large manufacturing and industrial concentrations in the Shenandoah Valley, and truck freight is the region's most utilized method of goods movement by a significant margin. Within the SAWMPO, Interstate 81 is the primary north-south truck route, transporting goods within Virginia and beyond, with over three-quarters of the truck tonnage being pass-through freight per the Office of Intermodal Planning and Investment (OIPI) Multimodal Freight Study.

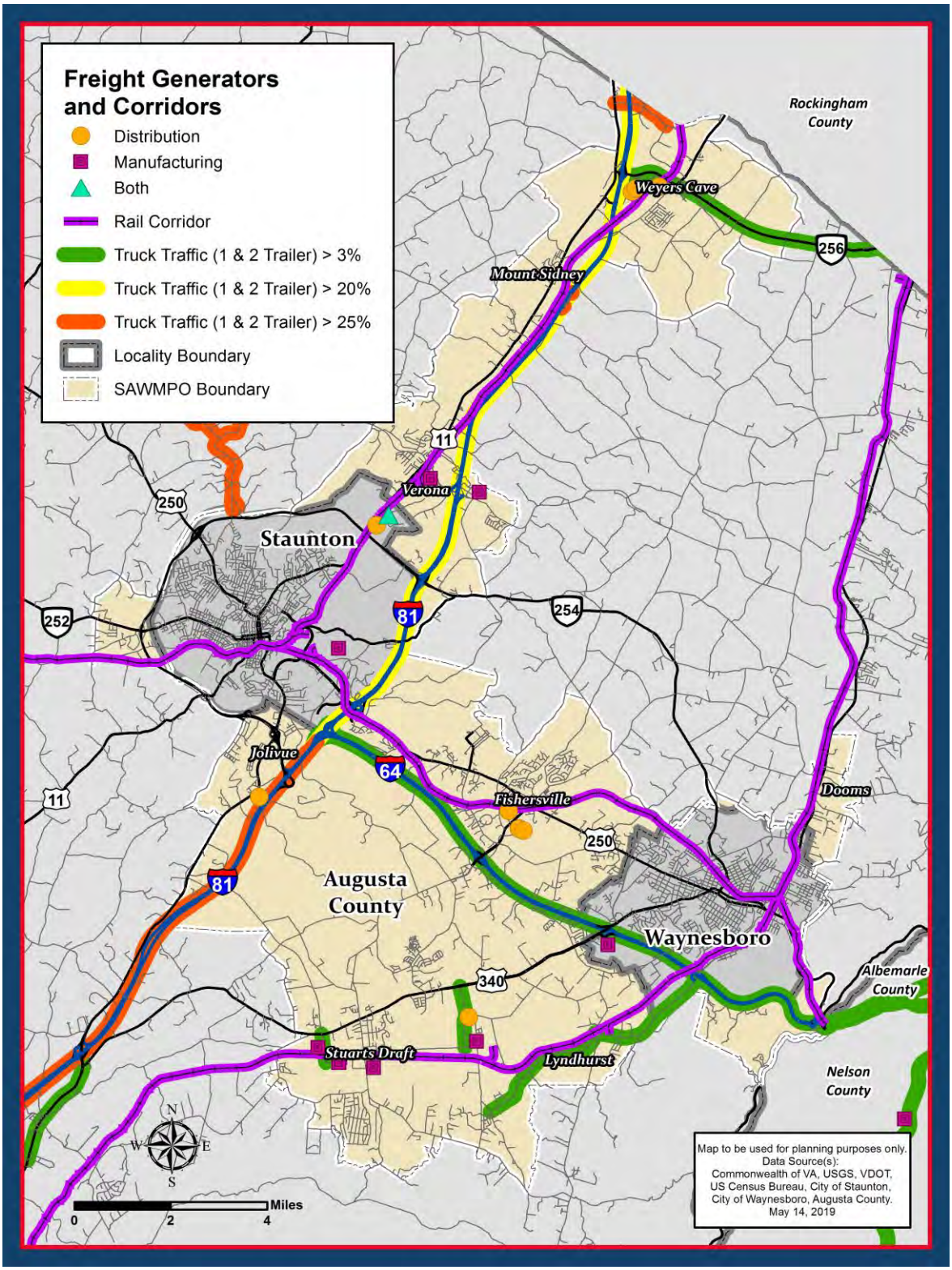
In 2017, I- 81 carried approximately 55,000 trips per day, with the section south of Staunton having over 25% truck traffic, and north of Staunton between 20 – 25 %. Paralleling Interstate 81, Route 11 serves as a backup to the interstate, particularly when incidents occur. Route 11 supports 3-6% of truck trips throughout the urbanized area, mainly providing connectivity for local goods movement. I-64 carries significantly less truck traffic than I-81, with the section between Staunton and Afton Mountain carrying approximately 3-9% truck traffic.

In December 2018, the Commonwealth Transportation Board (CTB) approved the I-81 Corridor Improvement Plan. The study identified a $2 billion package of projects for the corridor. In April 2019, the General Assembly passed I-81 Improvement Program legislation amendments related to funding mechanisms for improvements to the corridor. Most of the new revenues will come from increased registration fees for trucks, based on their weight and wear on roadways, as well as higher taxes on diesel fuel.

Distribution Centers

Virginia continues to experience significant growth in large-scale warehousing development which is often associated with high-volume or "big box" importers. These importers rely upon uninterrupted flows of cargo through Virginia's ports and then onto highway and rail connections. Over 12 distribution and manufacturing centers were identified in the SAWMPO area (see map 15).

Map 15: Freight Generators and Corridors



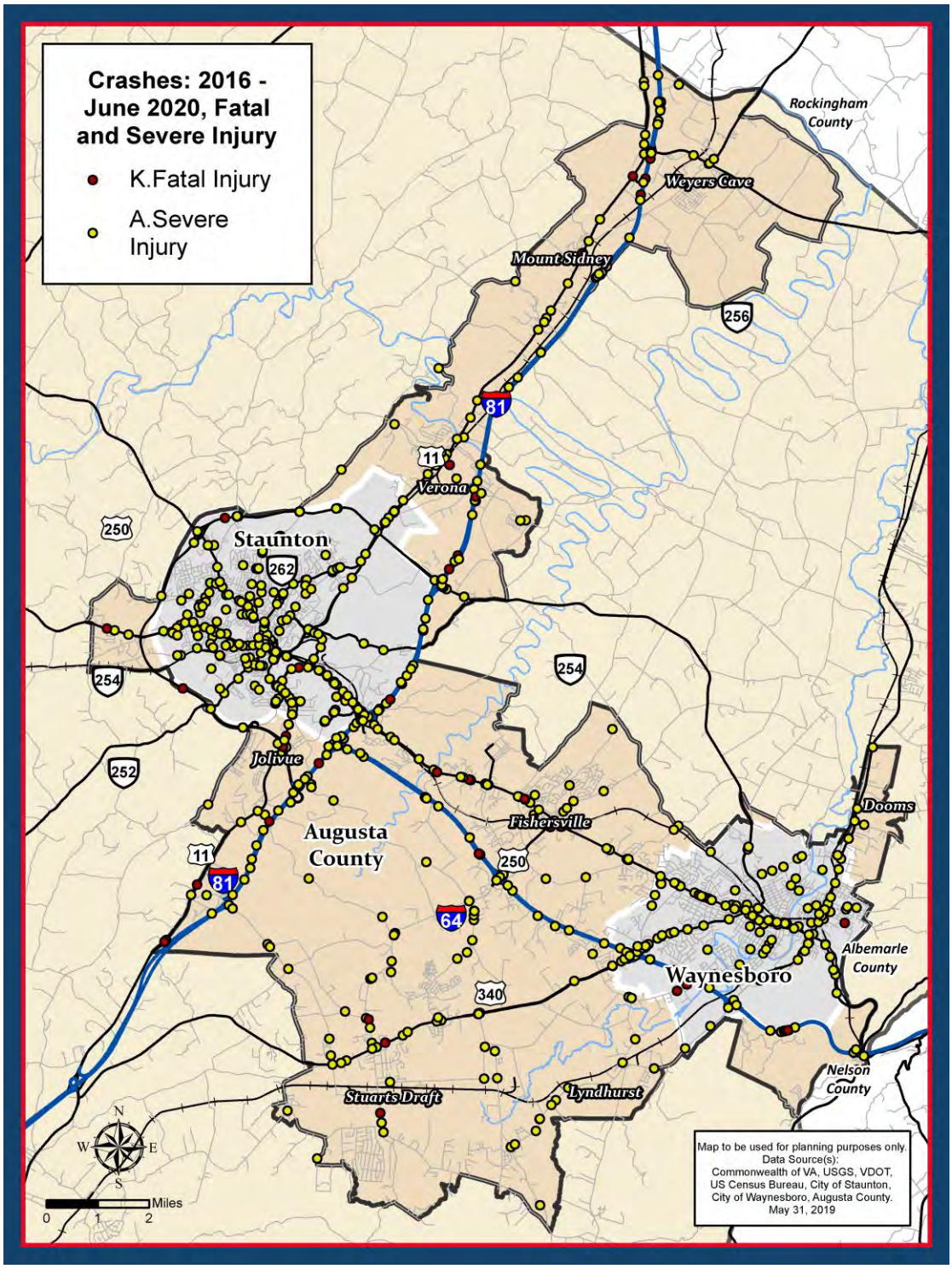
Safety

The number of crashes involving pedestrians, cyclists, and motor vehicles is an indicator of the safety of the road and intersections in the SAWMPO. Crash data specifying the type, location, and severity of crashes can be used to identify the corridors and intersections in need of further study and improvements.

Crash data from the time period of 2016 to June 2020 shown in Map 16 indicates a general pattern of property damage and injury from vehicular crashes along the interstate, and major and minor arterials in the MPO area. The minor arterial and collector roads with larger numbers of property damage and injury have been the subject of smaller area studies to identify operational improvements to address crashes; however, a more in-depth analysis of crash rates, crash type, and whether crashes are likely to be reduced based on improvements is required before specific corridors and intersections can be identified for improvements.

Chapter 5 further details MPO crash data, and specific areas identified as priority areas for safety improvements, starting on page 83.

Map 16: Crashes, 2016 - June 2020



Chapter 4: Socio-Economic Trends and the Travel Demand Model

This chapter reviews statewide and regional trends for future growth, and how the 2040 LRTP Scenario Planning Process has been updated to reflect these changing regional trends. Scenario planning is an analytical process that helps stakeholders visualize how they can shape their region's future growth to realize a long-term vision. By analyzing the land use, population and employment trends that affect growth, scenario planning tests how well different future growth patterns meet the region's goals.

The 2040 LRTP Scenario Planning Process created a preferred scenario for where growth would occur in the region. The preferred scenario then informed the selection of transportation investments in the Plan. Updated population and employment growth trends for 2018-2045 informed the development of the SAWMPO's first Travel Demand Model ("the Model"), which uses land use and transportation network characteristics for a region to predict where travel will occur. The Model is a tool both for understanding regional travel patterns, and for evaluating the performance of individual transportation projects for certain metrics.

Through the development of the travel demand model, and the information that it provides about current and future transportation network performance, the LRTP working group adjusted the preferred scenario for 2045.

This chapter contains the following:

4 – 1 VTrans 2045 and Statewide Trends

4 – 2 Scenario Planning Process from 2040 Plan

4 –3 Changes to the 2040 Preferred Scenario

4 –4 Travel Demand Model

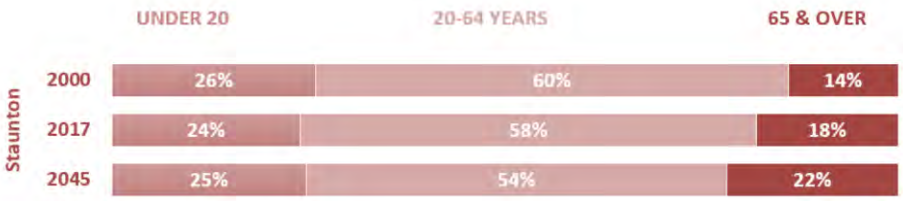
4 -1 VTrans 2045 and Statewide Trends

VTrans 2045, the statewide long-range transportation plan, evaluates statewide and regional trends in demographics and employment to understand transportation needs on a large scale. VTrans projects that 84% of the state's population growth between 2018 and 2045 will occur in Northern Virginia, Hampton Roads, and Richmond. The rest of the state will see modest growth, or even continue depopulation trends in some cases.

By 2045 in the VDOT Staunton Construction District, which is an area that covers jurisdictions west of the Blue Ridge from Rockbridge County to Frederick County, 22% of the population will be age 65 or older. The area will see a 75% increase in persons 75 and older between 2017-2045 (see Figure 7). Through Chapter 5, Needs

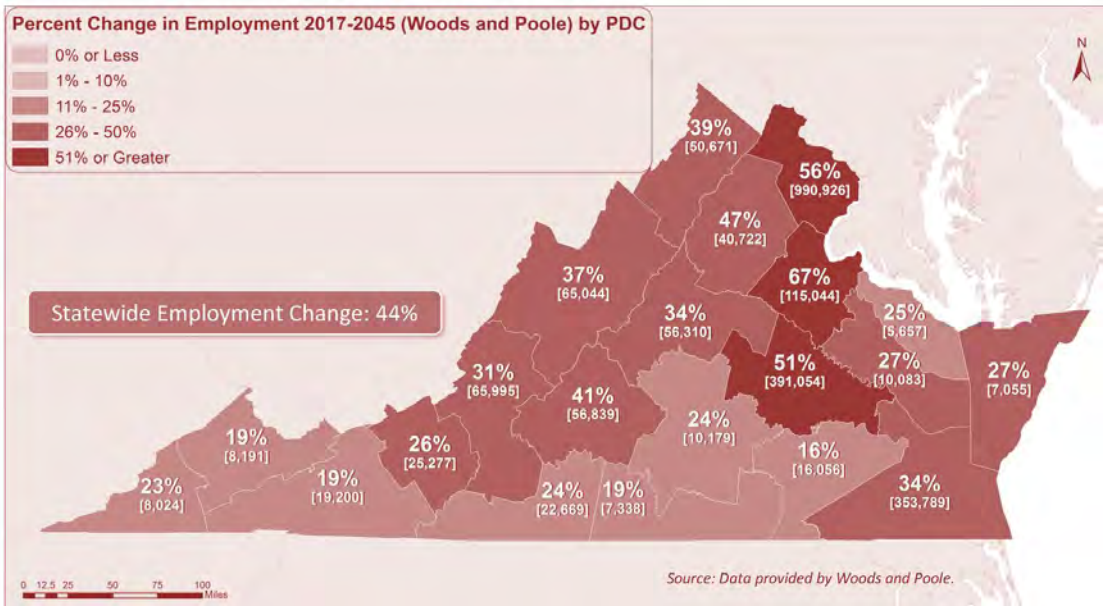
Assessment, and through the projects identified in this Plan, SAWMPO will address the changes in travel behavior that will come with our region's growing aging population, as they become less reliant on car travel, and will need alternative means of mobility.

Figure 8: Historic Population Growth, VDOT Staunton District



Employment growth in Virginia will concentrate in major urban areas, with steady growth in the rest of the State. VTrans projects that the CSPDC region will gain 65,044 jobs between 2017 and 2045, with much of that growth in the health care and professional and technical services sectors, while manufacturing jobs in the region will slowly decline (see Figure 8).

Figure 9: Forecast Employment Change by PDC, 2017 - 2045



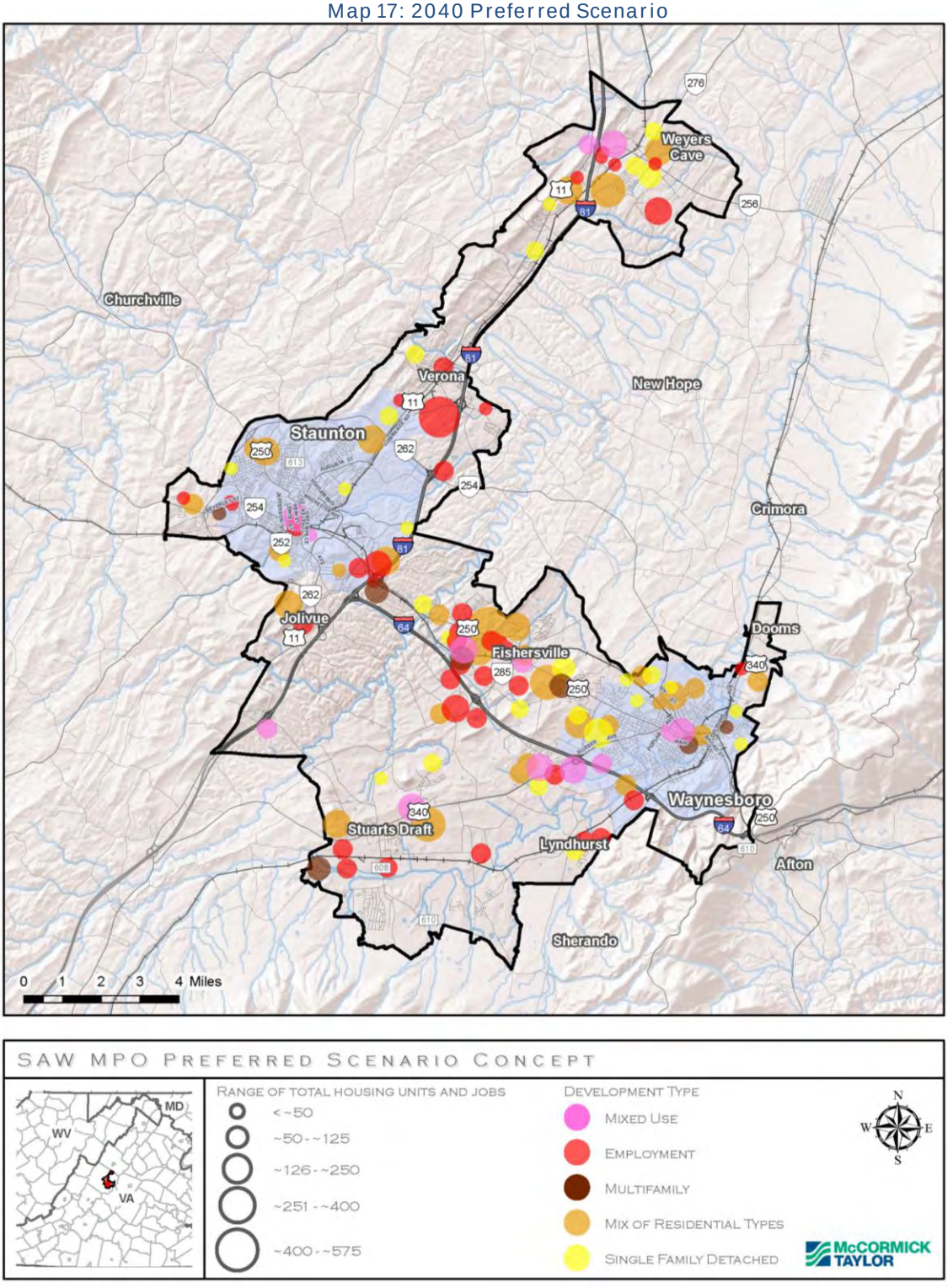
The LRTP working group reviewed regionally-specific data from the same sources as the VTrans effort to update the SAWMPO preferred scenario for 2045 and develop the Travel Demand Model.

4 – 2 Scenario Planning Process from 2040 Plan

The 2040 LRTP developed a preferred future land use scenario of where growth would ideally occur between 2015 and 2040 to direct supporting transportation investments. The preferred future land use scenario was reflective of the future land use plans in the localities' Comprehensive Plans. Using base year (2015) population, household and employment data and future year (2040) projections, the preferred growth scenario assigned population and jobs to sub-areas of the MPO as represented in Map 17.

At the outset of the 2045 LRTP update process, the SAWMPO TAC and Board agreed to uphold the 2040 preferred Growth Scenario and update it as needed. Since the 2040 LRTP was adopted in December, 2015, all three localities have updated their Comprehensive Plans, but maintained future land use patterns that align with this regional preferred growth scenario

Map 17: 2040 Preferred Scenario



4 –3 Changes to the 2040 Preferred Scenario

Population

Since 2015, Weldon Cooper Center has adjusted its population estimates and projections for Staunton, Augusta County, and Waynesboro. Table 2 compares 2040 Plan projections to Population to 2045 Plan estimates and projections.

Table 2: Population Projections Comparison

Population Projections					
Source	Census	2040 Plan Population Weldon Cooper		2045 Plan Population Weldon Cooper Center	
Year	2010	2019 (projection)	2040 (projection)	2018 (estimate)	2045 (projection)
Augusta County Total (excluding 2 cities)	73,750	75,651	94,730	75,254	87,939
Augusta County within MPO*	34,042	35,420	49,894	35,914	48,366
% of Augusta County w/in MPO*	46%	47%	53%	48%	55%
Staunton	23,746	24,775	26,440	24,972	25,468
Waynesboro	21,006	21,497	24,613	22,285	25,332
MPO Total	78,794	81,692	100,947	158,425	187,106

* 2019--2045 figures estimated because the County MPO area is not an official census designation

2018 population estimates for the two cities are slightly higher than the 2019 projection developed in 2015. Yet Staunton's population projection for 2045 declines slightly due to the Weldon Cooper Center's methodology for projecting future population. The projection reflects trends from the past several decades, during which time Staunton's population was nearly static. The City of Waynesboro's growth has been modest, but its population is projected to continue to grow through 2045. Weldon Cooper also reduced its projection for growth in Augusta County by 2045 by nearly 6,800 people.

Employment

When the 2040 plan was developed in 2013, the SAWMPO region was experiencing aftershocks of the Great Recession. Without projections to a return to steady employment growth, the 2040 Plan took a conservative approach to estimating new jobs in the region. The SAWMPO region has shared in the nation's economic recovery since 2013, and 2018 estimates for jobs in the MSA have already outpaced the 2040 projection.

Table 3: Employment Projections Comparison

Employment Projections				
	2040 Plan Employment		2045 Plan Employment	
Source	VEC		Moodys	
Year	2013	2040	2018	2045
Augusta County Total (excluding 2 cities)	24,753	28,403	26,340	29,516
Staunton	20,593	21,593	13,233	14,758
Waynesboro			11,168	12,487
MSA Total	45,346	49,996	50,742	56,761

2045 Updates

The most notable updates to the 2040 Preferred Growth Scenario for population growth are Weldon Cooper Center's revised projection for population growth in the County, and the MPO's revised assumption for the percentage of that growth that will occur within the MPO's planning area. The 2040 Plan assumed that 75% of the County's growth between 2015 and 2040 would occur within the MPO planning area.

Based on trends from the ensuing five years, the MPO has revised its assumptions for concentrating population growth in the County and shifted to more of a trend development pattern with just less than 50% of the County's population and household growth occurring in the MPO area. The County continues to focus on directing new growth in the Verona, Fishersville and Stuarts Draft urban service areas within the MPO, but it also continues to see by-right subdivisions of larger parcels for low-density residential development occurring in the rural areas.

This adjustment to the Preferred Growth scenario does not shift how the MPO evaluates investments in the regional transportation network. Population and job growth is still occurring in the region's growth centers, and the region's transportation network still has enough capacity to accommodate the projected growth.

The stronger employment figures for base year 2018 and 2045 are still compatible with the population estimates and projections. In most localities not heavily weighted to one land use type (i.e. bedroom communities), employment is generally 50% of total population. For Augusta County, Staunton and Waynesboro, the percent comparisons are:

Table 4: Employment Percent of Population Comparison, 2018 and 2045

2018			
Locality	Population	Employment	Employment % of Population
Augusta County (excluding cities)	75,254	26,340	35%
Staunton	24,972	13,233	53%
Waynesboro	22,285	11,168	50%
MSA	122,511	50,742	41%

2045			
Locality	Population	Employment	Employment % of Population
Augusta County (excluding cities)	87,939	29,516	34%
Staunton	25,403	14,758	58%
Waynesboro	25,332	12,487	49%
MSA	138,674	56,761	41%

4 –4 Travel Demand Model

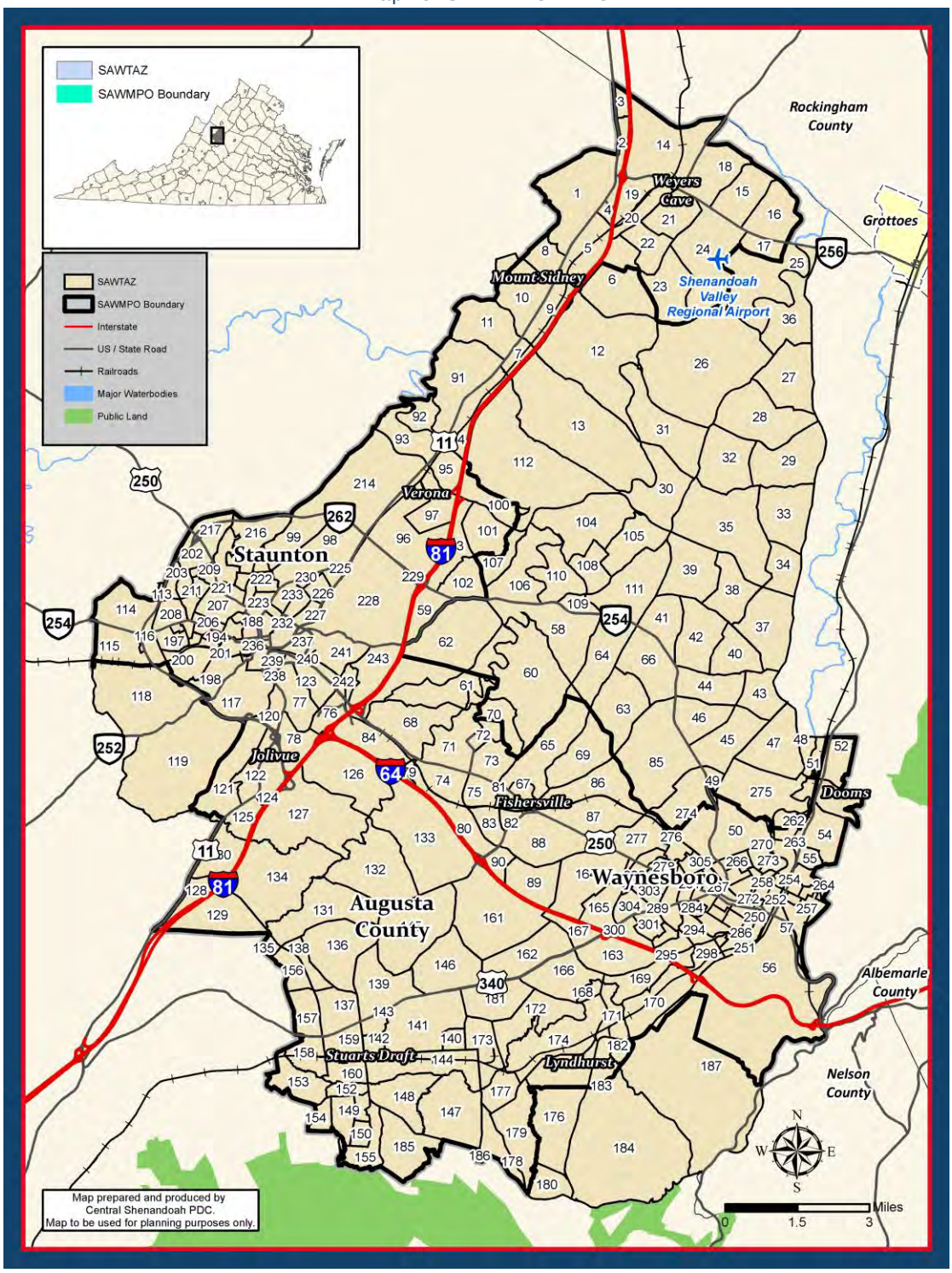
A travel demand model is a computer-based forecasting tool used to estimate travel behavior and travel demand on the transportation network on a large scale based on a set of regional land-use and transportation related assumptions. The SAWMPO model used a four-step transportation forecast process that includes trip generation, trip distribution, mode choice, and route assignment. The SAWMPO model inputs were calibrated to local traffic data, socio-demographic factors, travel behavior (such as the amount of travel), and other variables for the 2018 base year.

A transportation analysis zone (TAZ) is a common unit of geography used in travel demand models to measure socioeconomic variables, such as population, households, employment, and vehicle ownership. The TAZ boundary is based on U.S. Census tracts and population distribution, existing roads, and natural borders. The TAZs are used as inputs into the Model to forecast trends in the region over a 25-year period (see Map 18)[3].

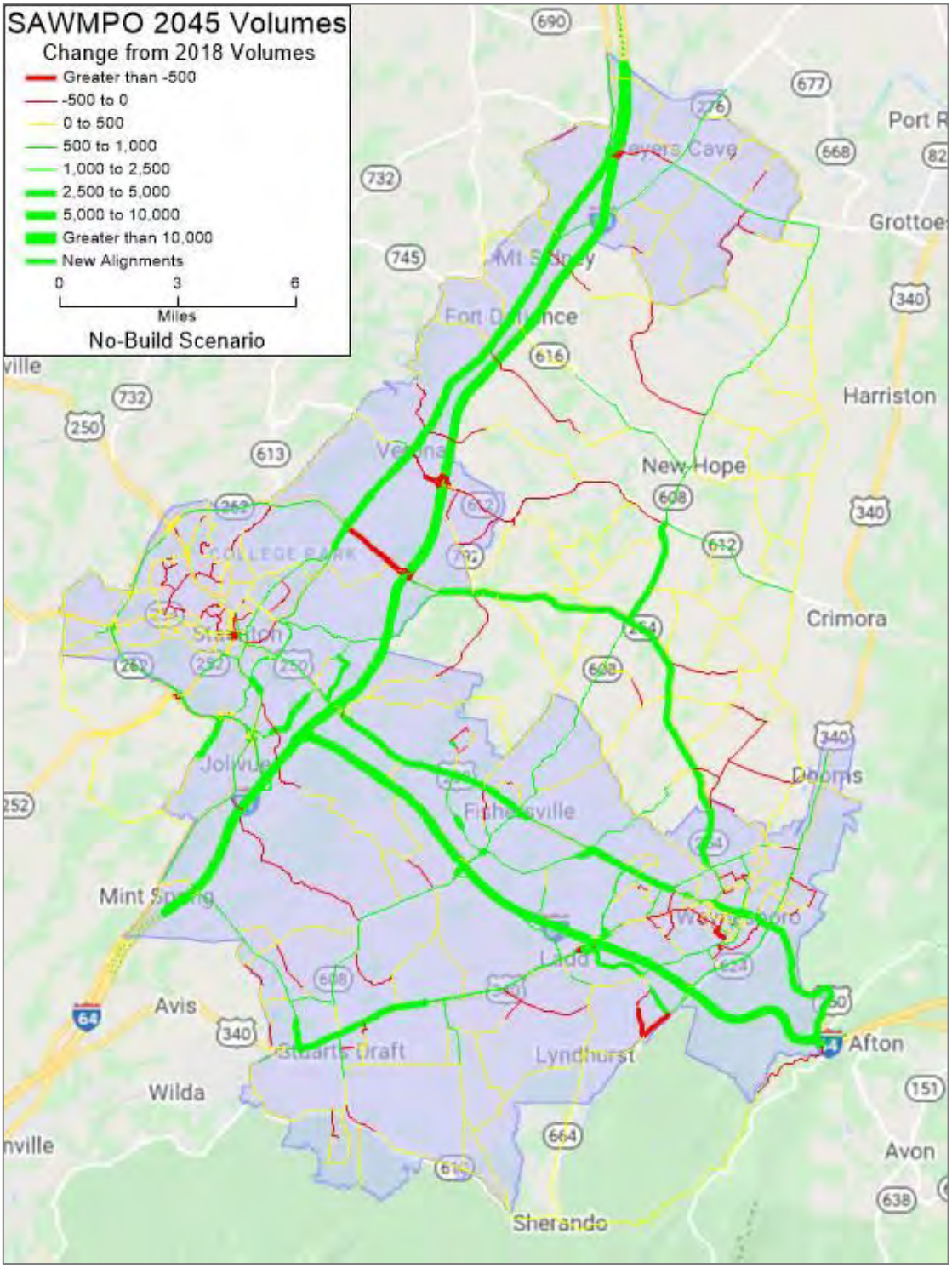
Map 19 shows the region's traffic volume from 2018 to 2045. The 2018 volumes are a result of running the existing year model utilizing direct inputs from the VDOT count program to calibrate the model, while the 2045 volumes are an output of running the future No-Build model, and utilizing the population and employment forecast assignments without considering additional transportation improvements.

[3] The SAWMPO TAZ border includes areas outside of the MPO due to modeling constrains.

Map 18: SAWMPO TAZs



Map 19: SAMWPO 2045 Traffic Volumes



4–5 Summary

The most notable updates to the 2040 Preferred Growth Scenario for population growth are Weldon Cooper Center's revised projection for population growth in the County, and the MPO's revised assumption for the percentage of that growth that will occur within the MPO's planning area. The 2040 Plan assumed that 75% of the County's growth between 2015 and 2040 would occur within the MPO planning area.

Based on trends from the ensuing five years, the MPO has revised its assumptions for concentrating population growth in the County and shifted to more of a trend development pattern with just less than 50% of the County's population and household growth occurring in the MPO area. The County continues to focus on directing new growth in the Verona, Fishersville and Stuarts Draft urban service areas within the MPO, but it also continues to see by-right subdivisions of larger parcels for low-density residential development occurring in the rural areas.

This adjustment to the Preferred Growth scenario does/does not shift how the MPO evaluates investments in the regional transportation network.

Chapter 5: Multi-Modal Transportation Needs

Transportation needs are defined as the gap between existing transportation network deficiencies and the 2045 vision for the region. Needs were identified by the general public; local stakeholders across all transportation modes and industries; and staff from local, regional, state and federal agencies. The LRTP Working Group applied their professional knowledge and reviewed data from the 2018 and 2045 travel demand model..

The SAWMPO travel demand model estimated travel behavior and travel demand on the transportation network from a set of regional land-use and transportation related assumptions. The SAWMPO model inputs were calibrated to local traffic data, sociodemographic factors, travel behavior (such as the amount of travel and mode of transportation chosen), and other variables for the 2018 base year. Future conditions were based on 2045 population and employment projections and the most likely areas of growth were identified.

The 2045 estimates from the travel demand model assisted planners in understanding where deficiencies may exist in the transportation network, and the effects of different improvement scenarios. While outputs from travel demand modeling are a useful planning tool, the results are only a general guide in understanding travel changes.

This chapter covers:
5 – 1 Network Operation Conditions
5 – 2 Transit, TDM, and Bicycle and Pedestrian

5 – 1 Network Operating Conditions

Capacity Needs for Roads and Freight

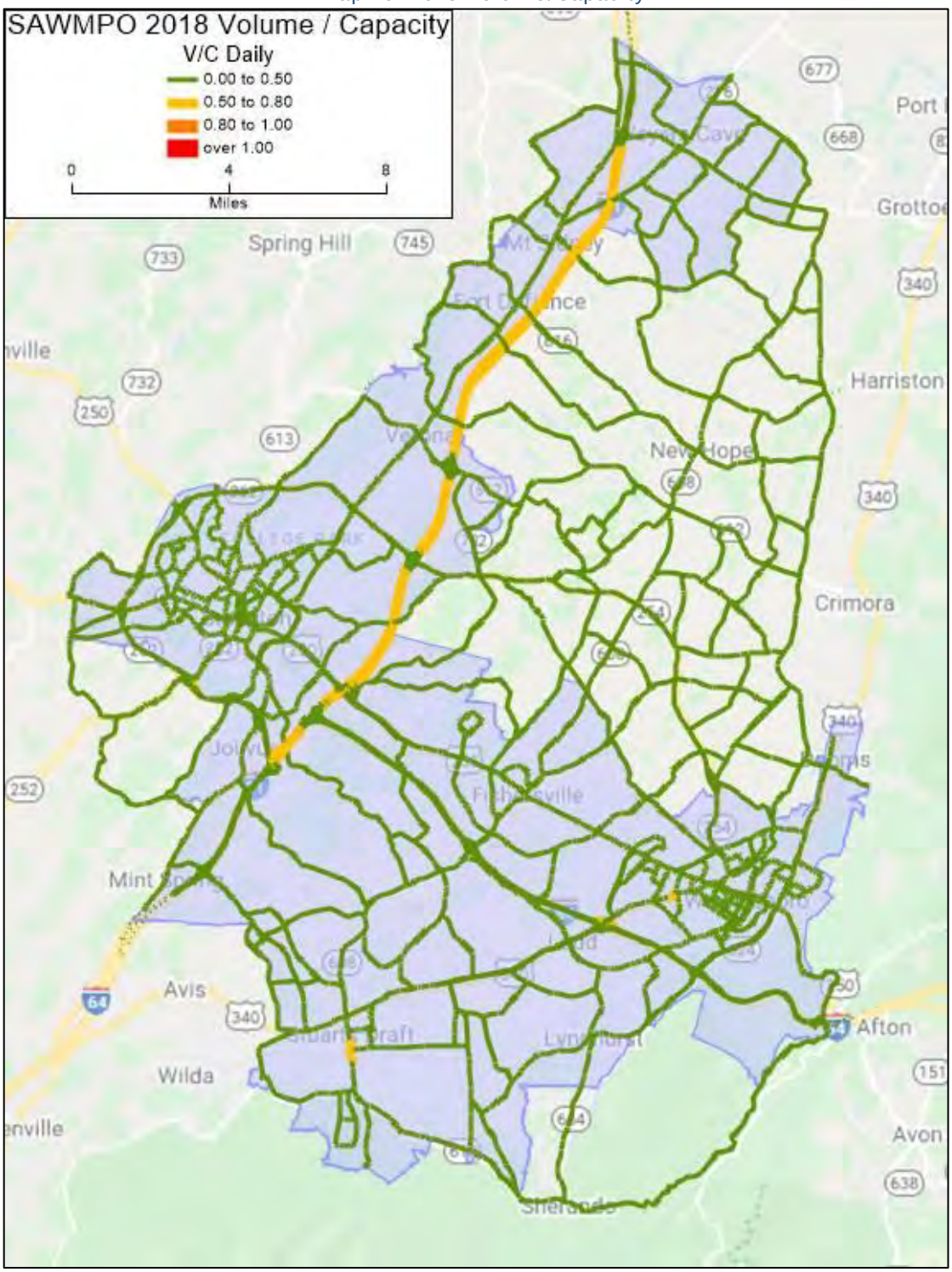
2018 Network

The 2018 base year scenario results derived from the SAWMPO travel demand model were used to determine deficient roadway segments. Deficient segments are reflected by a Volume to Capacity (V/C) ratio, which is a method to measure congestion and performance of a roadway by comparing vehicle volumes at a given time with the carrying capacity of the roadway.

A V/C ratio of less than 0.3 indicates minimal to no congestion. A roadway at capacity has a V/C ratio of 1.0 The busiest roads in the SAWMPO – US 250, US 11, US 340, VA 254, and portions of I-64, and I-81 – have V/C ratios of .50 - .80. The V/C measures and identified busiest roads have changed little since the 2009 data included in the 2040 LRTP.

Map 20 illustrates the Volume to Capacity ratio for the 2018 network.

Map 20: 2018 Volume/Capacity



2045 Existing + Committed Network

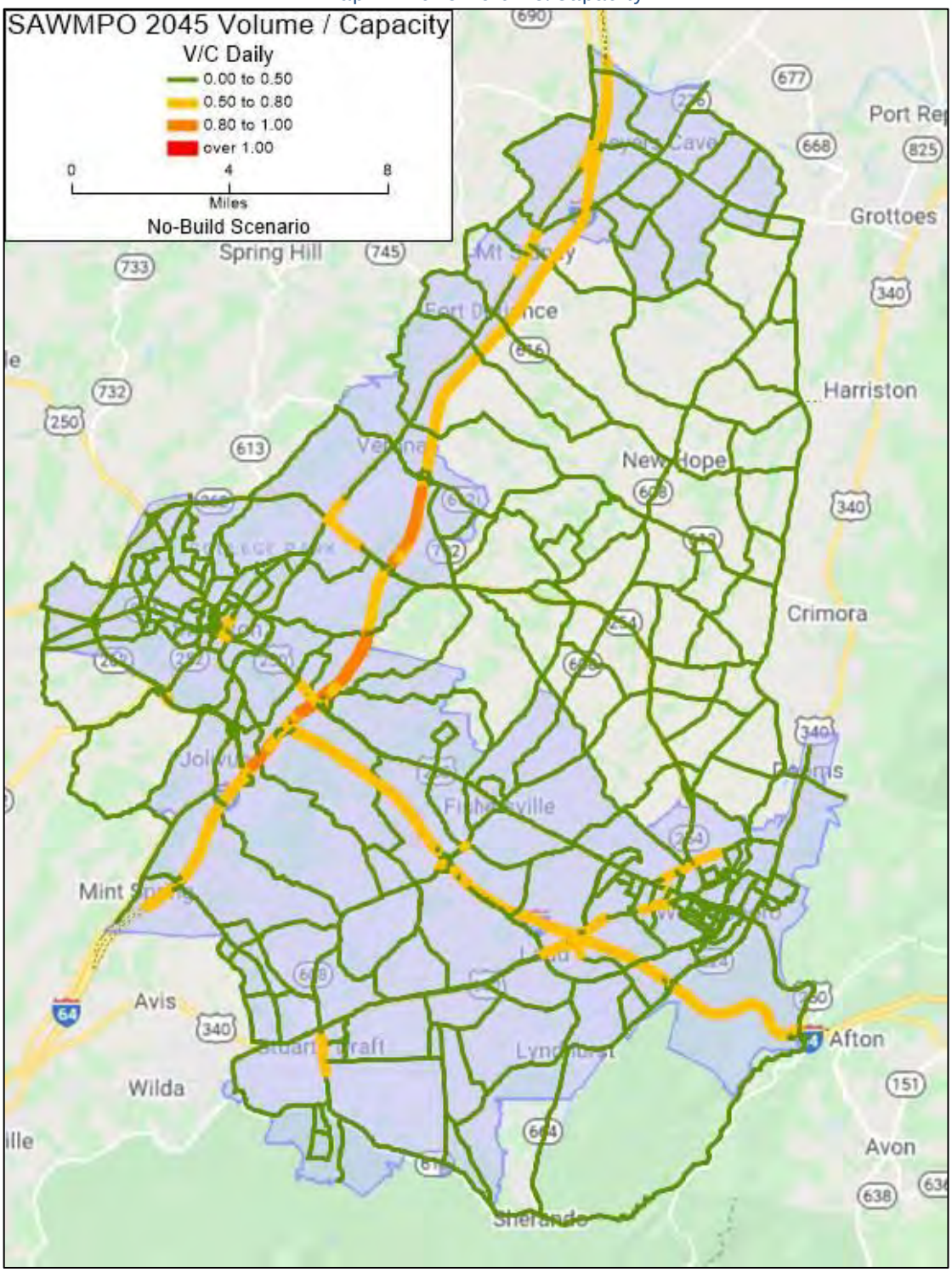
The LRTP working group developed 2045 socio-economic data projections to anticipate growth and network capacity needs. The projected growth data was assigned to specific areas of the SAWMPO based on where growth is expected to occur. The travel demand model used the 2045 data to project population density and employment location to daily trip generation.

The 2045 transportation network includes both existing facilities and future projects that have committed funding and a tentative start date. This future year "Existing + Committed" scenario identifies system-wide capacity issues and specific over-capacity corridors where population and job growth continue as projected; however, the scenario does not account for any additional capacity-adding projects that could potentially be built in the next 25 years.

The 2045 V/C No Build and Committed scenario identifies several segments along I-81 increasing in congestion from .50 – .80 V/C to .80 – 1.00 V/C; however, the map does not consider future I-81 project improvements are being funded through the I-81 Improvement Plan, which address the greatest future congestion needs in the SAWMPO.

Map 21 illustrates peak hour Volume to Capacity for the 2045 No Build Existing and Committed scenario.

Map 21: 2045 Volume/Capacity



Public and stakeholder input indicates that congestion is a concern along the I-81 and I-64 corridors, with other congestion concerns including:

- *Improve existing interstate exists.* Evaluate existing interstate interchanges for long-term improvements, especially at Exit 235 at the Blue Ridge Community College, Exit 222 in Staunton, and Exit 94 in Waynesboro.
- *Plan for population growth and associated traffic volume increases.* Anticipate increased congestion along routes as the population continues to increase along Route 250 in Staunton and Waynesboro, Rosser Avenue and Lew Dewitt in Waynesboro, in and around Fishersville, and the corridor between Stuarts Draft and Waynesboro
- *Address areas most susceptible to peak congestion.* Prioritize congestion mitigation improvements near schools, and high-concentration employment and retail areas during peak hours in the morning and evening commutes.

Safety Needs for Roads and Bridges

Road intersections and segments

Safety deficiencies were identified by reviewing VDOT's 2014 – 2018 Potential for Safety Improvement (PSI) top 100 ranked intersections and segments data. PSI is a highway safety method that compares the average predicted number of crashes to the observed number of crashes at an intersection or along a segment over a five-year period.

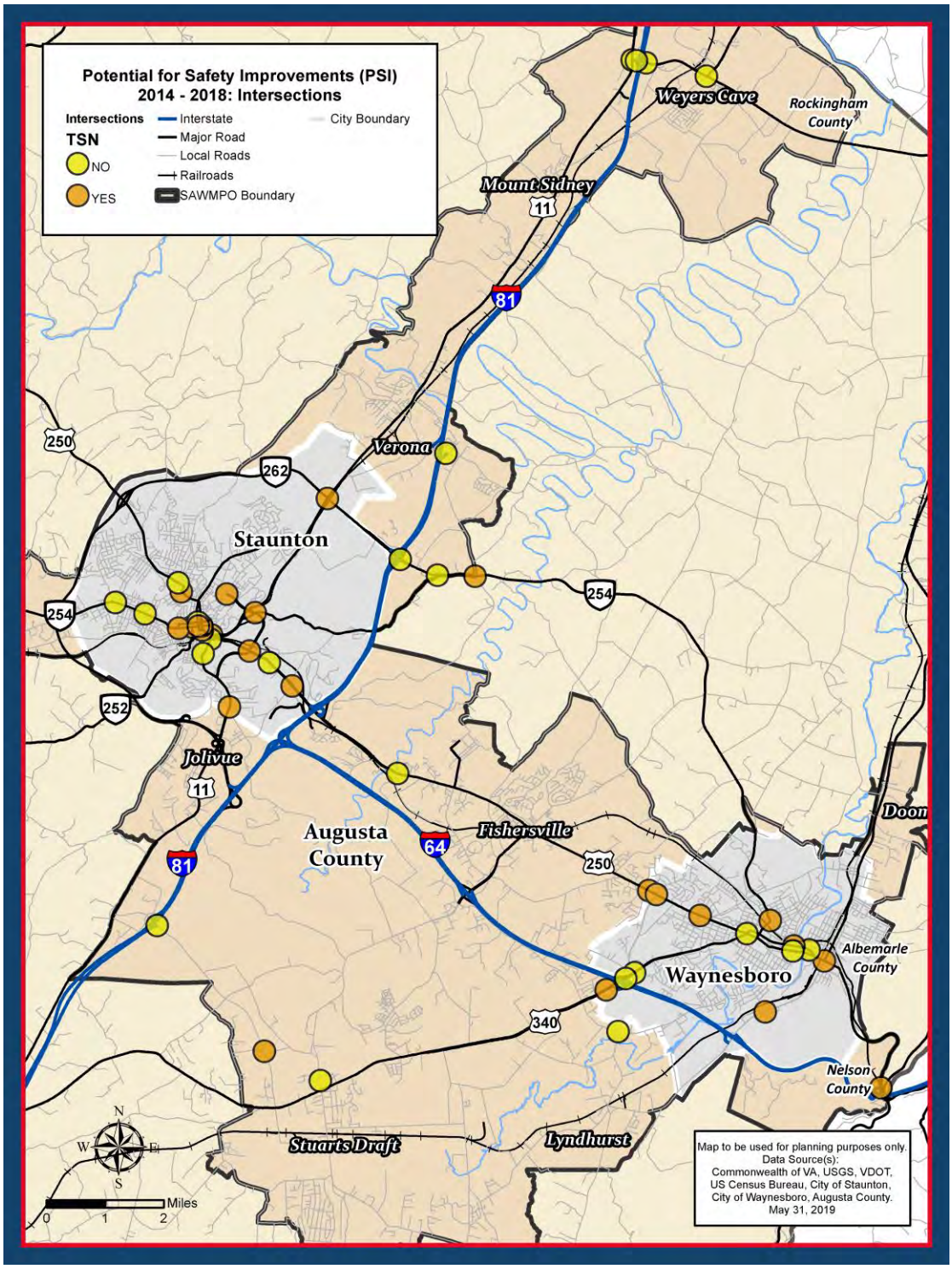
These areas are placed on the District Priority List of Intersections or Corridors due to frequency or potential for safety improvements and the number of fatal crashes and incapacitating injuries. Sites with high value in at least two years for both total and fatal and injury PSIs were selected for consideration for Virginia's Highway Safety Improvement Program (HSIP), which are referred to as Target Safety Need (TSN) sites.

Of the top 100 crash intersections and segments in the VDOT Staunton Construction District, 17 intersections and 10 segments are located in the SAWMPO. The highest-ranked intersection in the SAWMPO is the intersection of Richmond Road and Statler Boulevard intersection in Staunton[4], which is the 1st ranked overall intersection in the Staunton District. The segment with the highest PSI score in the SAWMPO is westbound along Richmond Road from the Staunton City limit to Frontier Drive, which is the 18h ranked overall segment in the Staunton District.

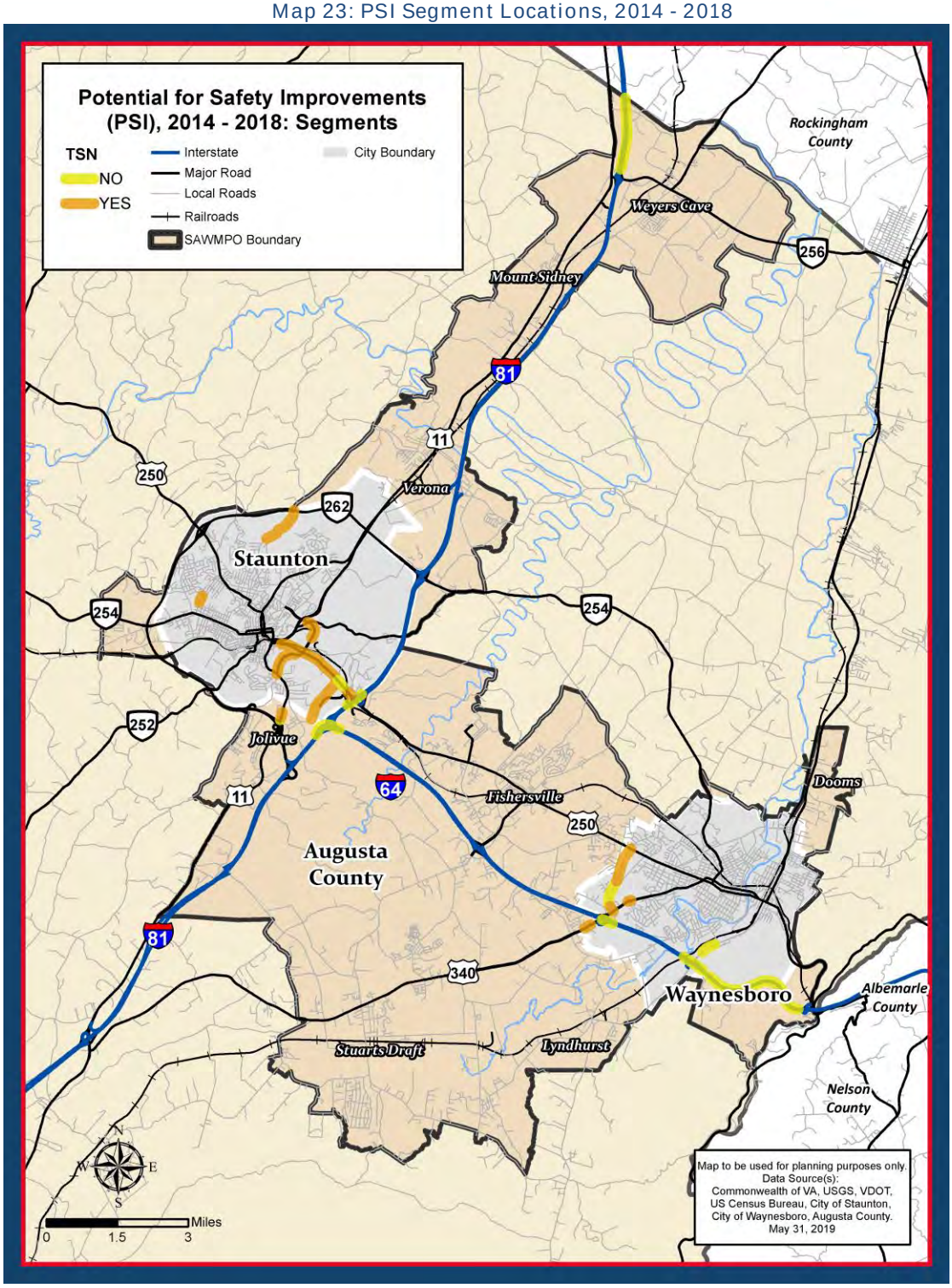
Maps 22 and 23 illustrate the PSI intersections and segments by TSN for the SAWMPO region.

[4] This intersection was part of a Smart Scale Application project.

Map 22: PSI Intersection Locations, 2014 - 2018



Map 23: PSI Segment Locations, 2014 - 2018



Bridges

Bridge sufficiency ratings are based on the Federal Highway Administration (FHWA) rating system, with condition ratings ranging from 0 (failed condition) to 9 (excellent). Factors in the ratings system include structural adequacy, whether the bridge is functionally obsolete, and the level of service provided to the public. Bridges with a sufficiency rating of less than 50 percent are eligible for federal replacement funds and bridges with a rating between 50 percent and 80 percent are eligible for repairs.

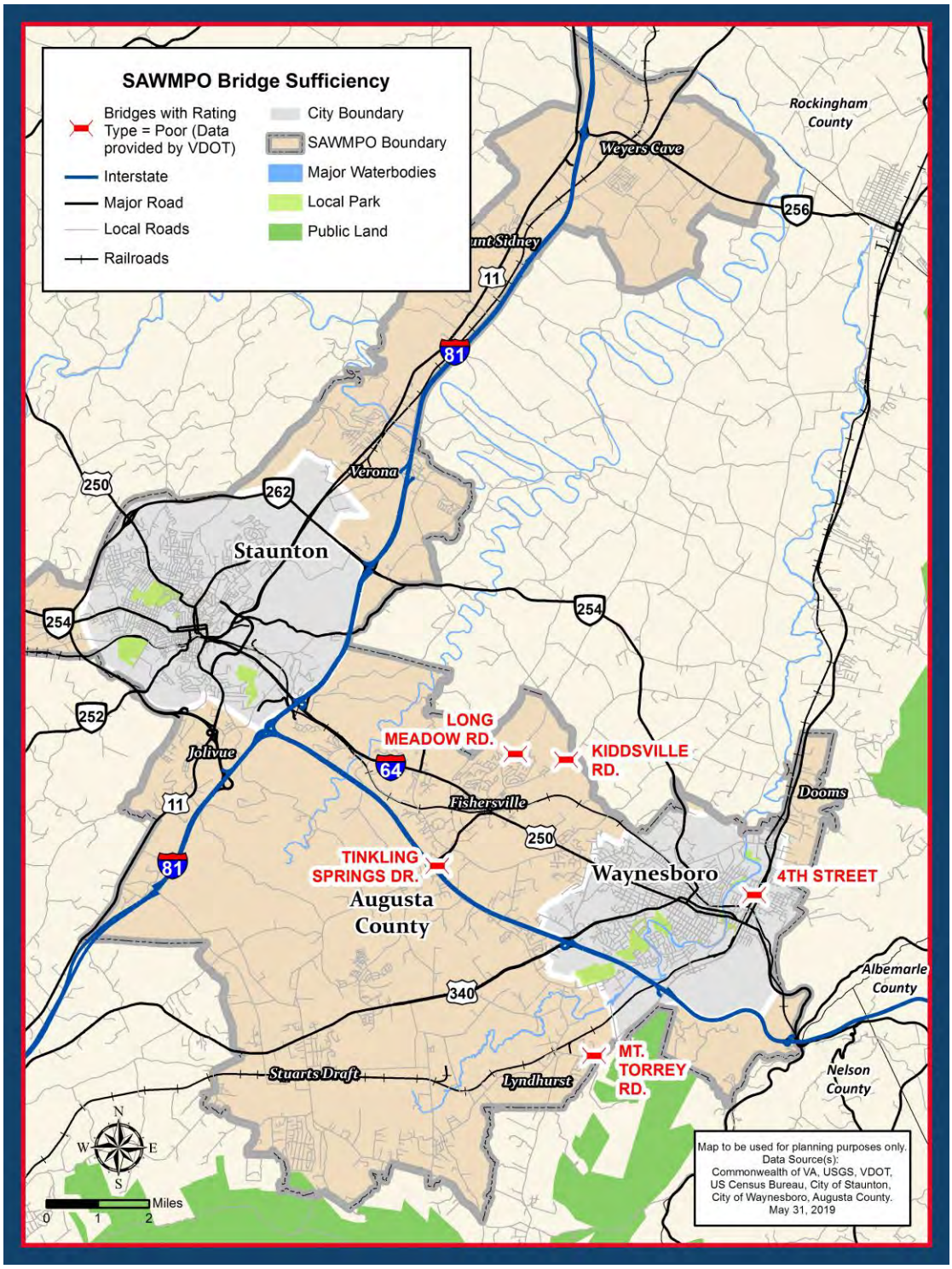
According to 2018 VDOT data, five bridges within the SAWMPO were rated "poor" and are eligible for repair, with four bridges in Augusta County and with one bridge in Waynesboro (see Table 5 and Map 24).

Bridges are inspected and maintained by the Bridge Division of VDOT. Repair and reconstruction is funded with dedicated State of Good Repair (SGR) maintenance dollars and capital programs. Bridge sufficiency is included in the SAWMPO LRTP for informational purposes, or if a bridge project is included in the SYIP, but bridge projects are not included in the LRTP's potential transportation projects.

Table 5: Bridges Rated Poor in the SAWMPO Region, 2018

Jurisdiction	Route/Street Name	Crossing
Augusta County	Kiddsville Road	Unnamed stream
Augusta County	Long Meadow Road	Meadow Run
Augusta County	Mt. Torrey Road	Back Creek
Augusta County	Tinkling Springs Road	Goose Creek
Waynesboro	4th Street	CSX railroad

Map 24: SAWMPO Bridge Sufficiency



5 – 2 Transit, TDM, and Bicycle and Pedestrian

Planning for a multimodal transportation system requires consideration of needs related to public transit; Transportation Demand Management (TDM) programs like park and ride lots, ridesharing, and other commuter transportation services; and bicycle and pedestrian facilities. Each of these transportation modes are addressed comprehensively in other planning documents. A needs summary for each is below.

5 – 3 Identified Needs

Transit Needs

The BRITE Transit Development Plan (TDP) identifies regional transit needs for a ten-year period, and functions as the transit portion of the SAWMPO LRTP. The document was approved in 2015 and updated in 2019. A new TDP is scheduled to be completed in 2021. In the interim, BRITE Transit, stakeholders, and public input identified the following SAWMPO transit needs beyond what has been achieved in the 2015 TDP:

- *Continue to prioritize the needs of transit-dependent populations.* Demographic trends show that the region's ageing population will continue to increase by 2045, which may also increase transit demand. Future transit service should consider the needs of the elderly and other populations reliant upon transit.
- *Plan for increased demand in paratransit service.* Demand for paratransit service will continue to grow as the area's population ages. The transit system could see negative impacts to fixed-route on-time performance if buses deviate more often to accommodate paratransit customers. BRITE may need to expand paratransit service in a way that will maintain the reliability and frequency of its primary route service.
- *Improved bus stop infrastructure for safety and accessibility.* There continues to be a need for safety, security and accessibility improvements at the bus stops in the service area. Many of these stops lack landing pads, lighting, or connecting pedestrian infrastructure.
- *Develop ITS to improve schedule management.* There are currently no Information Technology Systems (ITS) in use by BRITE. As ridership grows, many technologies such as mobile data collection systems, updated paratransit scheduling software, real-time data feeds, and bus arrival text message services would increase operational reliability and performance as well as customer access and convenience.
- *Improve Route 250 Service.* Delays continue along BRITE's 250 Connector route, which is the backbone of the transit system. In response, a 2019 Route 250 Connector study recommended several improvements, and the first improvements from the plan were complete in September 2019. Longer-term improvements focused on route reliability and frequency will need to be implemented as the demand for transit between Waynesboro and Staunton grows.
- *Plan for making transit connections to employment centers to enhance workforce mobility.* Factories around Stuarts Draft serving major employers such as Hershey Foods, Hollister Incorporated, and McKee Foods Corporation do not have transit service. The next TDP should consider the feasibility of making connections to employment centers not currently served by BRITE.

- *Consider Sunday service options*. There is currently no Sunday service in the area. As development continues in the designated growth areas of Fishersville, Stuarts Draft, Verona, Weyers Cave, and Staunton south and west, a minimum limited Sunday service may need to be introduced to connect people in Augusta County to jobs that have non-traditional working hours.

Transportation Demand Management Needs

Travel Demand Management in the SAWMPO focuses on providing longer distance commuters with the facilities and services to make carpooling, vanpooling, or transit trips feasible. In addition to the CSPDC's RideShare program, which provides TDM services such as Guaranteed Ride Home and carpool matching, an important aspect of regional TDM management is the improvement and expansion of the area's park and ride facilities. The CSPDC monitors two park and ride facilities in the SAWMPO in Verona and Waynesboro:

- Verona – The 35-space location on Laurel Hill Road has over 70% occupancy rate, which is the highest average in the CSPDC's five-county region.
- Waynesboro Town Center – The 120-space location is the largest park and ride facility in the CSPDC's five-county region.

Improving the amenities and functionality of each park and ride lot is a priority. The Waynesboro Town Center lot received Smart Scale funding for improvements to paving, lighting, and a dedicated bus lane beginning in 2020. Additionally, the City of Staunton is working on road improvements and a park and ride near the interchange of U.S. 250 and I-81 adjacent to the Staunton Crossing development. The need for a Park and Ride lot adjacent to I-81 within the City is critical both for carpoolers, as well as for future inter-regional bus service between the metro Harrisonburg, Staunton, Waynesboro and Charlottesville areas as detailed in the 2016 Inter-regional Transit Study published by the CSPDC.

A 2013 VDOT Park and Ride Investment Strategy study identified a need for a park and ride facility in Weyers Cave adjacent to I-81. Other options could include the businesses adjacent to the intersection of Weyers Cave Road and Route 11, or Blue Ridge Community College.

Bicycle and Pedestrian Needs

Public and stakeholder input and the needs identified in local plans acknowledge that bicycle and pedestrian infrastructure improvements should be a priority to address safety, multi-modal access, and improve quality of life. The CSPDC's 2005 Bicycle Plan was the first region-wide plan to articulate the barriers to multi-modal infrastructure and evaluate the potential for new routes and facilities along roadways. Since then, other area plans continue to identify similar infrastructure gaps.

The City of Staunton's 2019 Comprehensive Plan includes the 2018 Bicycle and Pedestrian Plan and a list of multi-modal priorities, and the City of Waynesboro's 2018 Comprehensive Plan amendment includes prioritizing greenway and trail construction projects that are also in the City of Waynesboro's 2012 Bicycle Plan. In Augusta County, bicycle and pedestrian improvements are detailed in the county's small area plans. Specific goals and

objectives for multi-modal improvements are included in the 2009 Fishersville Small Area Plan, as well as the 2020 Stuarts Draft Small Area Plan.

A summary of bicycle and pedestrian needs from area plans is below:

- *Continue to increase awareness and public support for bicycle and pedestrian infrastructure*. Several plans, and public comments, note the importance of establishing new bike/ped initiatives and plans to augment the future development of multi-modal facilities, to include sidewalk networks, crosswalks, and multi-use trails.
- *Address the lack of sidewalk and multi-use trail connectivity in downtown areas to periphery areas around towns*. The current sidewalk system is fragmented and there is a need to fill gaps in the pedestrian network to enhance safety, especially in areas with disadvantaged populations such as low-income populations and the elderly.
- *Encourage non-motorized travel options for existing and new development.* Support and encourage a variety of transportation options to enhance mobility, including pedestrian and bicycle facilities for activities centers and residential areas. New developments should include sidewalks along proposed roadways and connecting into adjacent pedestrian facilities of neighboring properties. Sidewalks should also provide connectivity within the development to encourage their use.
- *Develop shared-use path systems for non-motorized transport and seek opportunities to establish a region-wide multi-use path network connect cities to the county.* Stakeholder and public comment repeatedly mention the importance of connecting Staunton and Waynesboro path networks to destinations in Augusta County such as Fishersville, Stuarts Draft, Verona, and along existing and new arterial and collector roads and riparian corridors.
- *Use the "complete streets" concept to connect to local destinations.* Several area plans emphasize including sidewalks, bike lanes, and multi-use paths, and street trees along existing or planned roadway development where opportunities exist to enhance bike and pedestrian connection to civic centers such as schools, parks, and government centers. Waynesboro in particular is seeking to complete a multi-phased greenway project.
- *Evaluate retrofitting opportunities along "overbuilt" roads.* Consider repurposing segments along US 11, 250, and 340 for bicycle and pedestrian improvements.

Small Area Study Needs

Since 2017, the MPO has conducted three Small Area Studies to address safety and congestion concerns, and VDOT has conducted two Strategically Targeted Affordable Roadway Solutions (STARS) studies, which address similar issues. Study areas included: Greenville Avenue in Staunton, the Wilson Workforce Complex in Fishersville, Rosser Avenue, Richmond Road in Staunton, and US 250 in Augusta County and Waynesboro. The studies consistently identified the following regional transportation needs:

- Safety concerns due to entrance spacing and access management
- Undivided four-lane roadways
- Left-turn movements and conflict points

- Lack of pedestrian and bicycle facilities
- Lack of crosswalks

5 –4 Summary

Many of the needs identified in the 2040 LRTP have remained the same, and improvements continue to be focused on addressing the congestion, safety, multi-modal, and transit needs along the interstate corridors, in the cities of Staunton and Waynesboro, and Augusta County's designated growth areas in Fishersville, Stuarts Draft, and Verona. Stakeholder and public input indicate that addressing congestion on I-81, improving multi-modal connections and transit service, and continuing to maintain existing roadways are the highest regional priorities.

Chapter 6: Performance-Based Programming and Project Evaluation

The SAWMPO is dedicated to improving the region's transportation network by working with its member agencies, VDOT, DRPT, FHWA, and FTA to implement regional performance-based programming measures that support and advance regional, state, and national transportation performance goals. With the passage of Moving Ahead for Progress in the 21st Century (MAP-21) in 2012, and the subsequent Fixing America's Surface Transportation (FAST) Act in 2016, the FHWA and FTA mandated that States and MPOs establish performance measures to integrate system-performance management into the transportation and transit planning process.

The MPO's Travel Demand Model outputs and project evaluation matrix address a range of performance measures that align with the federal and state requirements identified in MAP-21 and VTrans 2045, as well as input from the SAWMPO Working Group and local jurisdictions.

This chapter addresses:

6 — 1 Performance-Based Programming
6 — 2 SAWMPO LRTP Goals
6 — 3 2045 Travel Demand Model Scenarios
6 — 4 Project Evaluation

6 – 1 Performance-Based Planning

Performance-based planning is a data-driven approach that ensures transportation investment decisions meet established goals. Performance measures involve evaluating progress toward meeting goals and using information on past and anticipated future performance trends to inform investment decisions. In order to guide the integration of system performance measures into the planning process, the FHWA and FTA identified the following seven national performance measures outlined in MAP-21:

1. Safety - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
2. Infrastructure Condition - To maintain the highway infrastructure asset system in a state of good repair
3. Congestion Reduction - To achieve a significant reduction in congestion on the National Highway System
4. System Reliability - To improve the efficiency of the surface transportation system
5. Freight Movement and Economic Vitality - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development

6. Environmental Sustainability - To enhance the performance of the transportation system while protecting and enhancing the natural environment
7. Reduce Project Delivery Delays - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

The national performance measures inform the plan's goals and project evaluation metrics. Additionally, as mentioned in Chapter 4, the MPO's Travel Demand Model is a tool that tests the outcomes of individual projects in reference to the policy goals and objectives identified by federal and state measures.

Consistency with Other Planning Documents

Advancing the seven national performance goals ensures that transportation networks continue to develop and operate in a safe and efficient manner. To ensure the implementation of these measures in the SAWMPO region, the 2045 LRTP should also be consistent with other state and local plans, such as local comprehensive plans and regional policy plans.

Federal regulations require that the LRTP is consistent with the performance measures and implementation schedule included in the SAWMPO's short-range planning document, the Transportation Improvement Plan (TIP). The SAWMPO adopts a set of performance measures in coordination with VDOT and DRPT and documents the measures in the TIP appendix. The measures ensure that the MPO meets the federal performance-based planning requirements.

6 – 2 SAWMPO LRTP Goals

Goals are essential components of the long-range planning process and are used to guide the development of projects in the transportation area. The LRTP goals, which were first established for the 2040 LRTP, provide a basis for evaluating transportation projects and reflect the priorities of the SAWMPO jurisdictions. SAWMPO staff and the LRTP Working Group reviewed the 2040 goals to ensure that they align with current federal MAP-21 goals, statewide VTrans 2045 goals, and SMART SCALE factors (see Table 6).

Table 6: 2045 LRTP Goals in relation to federal and state program goals

SAWMPO 2045 LRTP Goal	MAP-21	VTrans 2045	SMART SCALE
Goal 1 – Economy Support and improve the economic vitality of the region by encouraging a transportation system that provides access to jobs, and education, and attracts businesses and entrepreneurs to the region.	Freight Movement and Economic Vitality	Economic Competitiveness and Prosperity	Economic Development

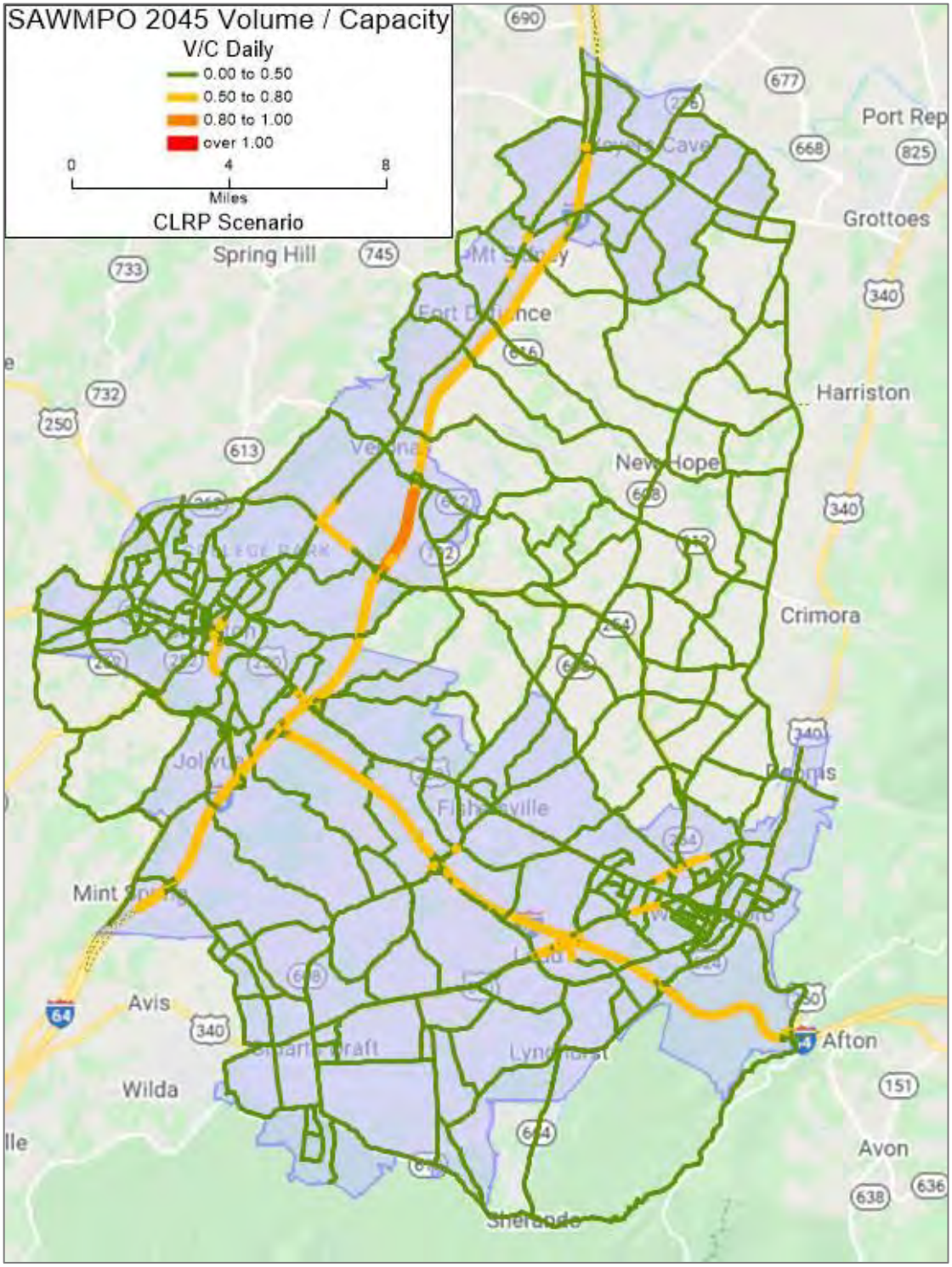
SAWMPO 2045 LRTP Goal	MAP-21	VTrans 2045	SMART SCALE
Goal 2 – Efficient system management Maintain existing transportation systems and facilities and promote efficient system management	Infrastructure Condition, System Reliability, and Congestion	Proactive System Management	Congestion
Goal 3 – Safety Increase the safety and security of the transportation system for all users.	Safety	Safety for all users	Safety
Goal 4 – Land use coordination Encourage the coordination of land use and transportation planning for transportation improvements to support future growth.	Reduce Project Delivery Delays	Proactive System Management	Land Use
Goal 5 – Connectivity Ensure connectivity of the transportation system across modes for the transport of both people and goods.	-	Accessible and Connected Places	-
Goal 6 – Accessibility Provide an efficient, reliable transportation system for pedestrians, bicyclists and transit users, including traditionally underserved populations.	-	Accessible and Connected Places	Accessibility
Goal 7 – Quality of life Improve quality of life by protecting and enhancing historic and natural resources, promoting energy conservation, maintaining air quality, and expanding regional recreation networks.	Environmental Sustainability	Healthy Communities and Sustainable Transportation Communities	Environment

VTrans 2045, which was outlined in Chapter 4, establishes goals to guide long-term statewide transportation planning and policy. The VTrans 2045 Mid-term Needs, which are organized around the VTrans goals, were released in 2019 and identify transportation needs over a 10-year period. Any potential transportation projects submitted to SMART SCALE must first meet a need identified in VTrans 2045.

6 – 3 2045 Travel Demand Model Scenarios

SAWMPO's performance-based planning program uses a regional Travel Demand Model and project evaluation based on the LRTP goals to program projects in the CLRP. 2045 Travel Demand Model scenarios evaluated the congestion mitigation of future projects. The first scenario, the Existing + Committed scenario, also referred to as the "No Build" scenario, is described in Chapter 5. The second 2045 scenario includes the additional construction projects in the CLRP for which funding has not yet been identified, but which the MPO and localities intend to fund in the coming 25 years. Map 25 displays the 2045 CLRP scenario Volume to Capacity ratios for the peak hour. This map corresponds to Maps 20 and 21 in Chapter 5, which illustrate the same information for the 2018 base year scenario and the 2045 Existing + Committed scenario.

Map 25: 2045 CLRP Volume / Capacity



6 – 4 Project Evaluation

A central requirement of the LRTP is identifying future transportation projects that address the region's needs. Two project lists — the Constrained Long Range Plan (CLRP) and the Vision List – documents 67 different transportation projects in the SAW region (see Chapter 8 and Appendix A). New projects are added to the CLRP based on a project evaluation methodology that includes the Plan's goals, analysis from the Travel Demand Model (Chapter 5), and VDOT planning-level project cost estimates. The output is a scored list of projects that help determine how projects address the region's transportation needs and priorities.

Project Scoring Methodology

The SAWMPO Working Group established the project evaluation methodology to meet the performance-based planning requirements of MAP-21 and the FAST Act, and the Plan's goal. Each goal was ranked to reflect the region's transportation needs and priorities. The rankings were used to establish percentage weights for the goals in project scoring.

Each goal is similar to the factors used to score SMART SCALE projects to better understand how projects might score in the program, which is now the main source of funding for transportation projects in the State. As a result, projects are evaluated by the following six goal areas and percentage weights: Congestion Mitigation (15%), Safety (24%), Accessibility (14%), Economic Development (20%), Environment (12%), and Land Use (7%).

A total of 39 projects were evaluated using the methodology in Table 7. The full Project Scoring table is in Appendix C.

Table 7: Project Performance Evaluation Methodology

SMART SCALE GOAL AREA & WEIGHT	SAWMPO LRTP GOAL AREA & WEIGHT	SMART SCALE Measure	SAWMPO Measure	Application of Measures	Notes
Congestion Mitigation (15%)	Maintain existing transportation systems and facilities and promote efficient system management (15%)	Decrease in person hours of delay (50%)	Reduction in vehicle hours traveled (VHT) per capita (50%)	Before and After project change in VHT/Capita in 2045 Travel Demand Model.	Does project reduce Vehicle Hours Traveled/ Capita? Limited number of projects were applicable to model in TDM (new alignments, widenings, road diets only). However, no project locations are indicated as approaching capacity (V/C > 0.8) in 2045 TDM. Therefore, all projects that are unable to be modeled are assumed to have no change to VHT/capita in 2045 TDM (project score is 0).
		Increase in person throughput (50%)	Increase in person throughput (50%)	Apply Smart Scale locality pedestrian and bicycle factors to the Peak Hour Volume (PHV) of the project location to estimate future non-motorized person throughput.	Since no project locations are indicated as approaching capacity (V/C > 0.8) in 2045 TDM, there is no increase in vehicular person throughput for any project. Therefore, only an increase in non-motorized person throughput is considered

SMART SCALE GOAL AREA & WEIGHT	SAWMPO LRTP GOAL AREA & WEIGHT	SMART SCALE Measure	SAWMPO Measure	Application of Measures	Notes
					in scoring (pedestrians and cyclist).
Safety (25%)	Increase the safety and security of the transportation system for all users. (24%)	Equivalent property damage only (EPDO) of fatal and injury crashes expected to be reduced (50%)	Equivalent property damage only (EPDO) of fatal and injury crashes expected to be reduced (50%)	Apply appropriate Crash Modification Factor (CMF) to 5-year EPDO crash totals of project location. See Pg 54-57 in Smart Scale FY 2022 Technical Guide.	Does project reduce number of Fatal and injury crashes? Smart Scale Round 4 methodology utilized that includes revised CMFs with pedestrian, bicycle, and widening projects being targeted (only certain crash types considered in scoring).
		Equivalent property damage only (EPDO) of fatal and injury crash rate expected to be reduced (50%)	Equivalent property damage only (EPDO) of fatal and injury crash rate expected to be reduced (50%)	Apply appropriate Crash Modification Factor (CMF) to 5-year EPDO crash rate (based on 100 million Vehicle Miles Traveled (VMT)) of project location. See Pg 58-59 in Smart Scale FY 2022 Technical Guide.	Does project reduce rate of fatal and injury crashes per 100 million Vehicle Miles Traveled (VMT)? Smart Scale Round 4 methodology utilized that includes revised CMFs with pedestrian, bicycle, and widening projects being targeted (only certain crash types considered in scoring).
Accessibility (25%)	Provide an efficient, reliable transportation system for pedestrians, bicyclists and transit users, including traditionally underserved populations. (14%)	Increase access to jobs (60%)	Evaluation of roadway characteristics in terms of importance in the regional network	Equation considers functional classification (numerical scale), AADT, and employment density from ED.1 output. See Pg 69 in Smart Scale FY 2022 Technical Guide.	Functional Classification is an existing nationally accepted qualifier for roadway hierarchy (with local input). This was used as a simplified approach for considering accessibility improvements.
		Increase access to jobs for disadvantaged populations (20%)	Move into Access to Multimodal Travel Choices	Equation considers improvement type (point scale based on project elements - Table 8.2 (Pg 73) in Smart Scale FY 2022 Technical Guide) and Smart Scale pedestrian and bicycle locality factors, which includes transit system, and park and ride lot improvements.	Other scoring considerations could include distance, person throughput score, and disadvantage populations and HH income of adjacent TAZs.
		Increase access to multimodal travel choices (20%)	Project includes transit, bicycle and/or pedestrian improvements (becomes 40%)		
Economic Development (25%)	Support and improve the economic vitality of the region by encouraging a transportation system that provides access to jobs, and education, and attracts businesses and entrepreneurs to the region. (20%)	Project support for Economic Development (70%)	Decay weighted job growth next to project (70%)	Points are based on the distance decay weighted quantity of 2018-2045 job growth adjacent to the project by multiple project buffers (.5, 1, or 3 miles). Growth areas were predicted by the localities for travel demand model. See pg. 79 in FY 2020 Smart Scale Technical Guide.	Multiple buffers were applied to each project depending on project improvement type to address the question of does project support job growth areas?
	Ensure connectivity of the transportation system across modes for the transport of	Intermodal Access and Efficiency/ Tons of goods impacted (30%)	Intermodal access and efficiency/tons of goods impacted (30%)	See Table 10.8 (Pg. 88) in Smart Scale FY 2022 Technical Guide.	Does project enhance freight movement, access, efficiency?

SMART SCALE GOAL AREA & WEIGHT	SAWMPO LRTP GOAL AREA & WEIGHT	SMART SCALE Measure	SAWMPO Measure	Application of Measures	Notes
	both people and goods. (8%)				
Environment (10%)	Improve quality of life by protecting and enhancing historic and natural resources, promoting energy conservation, maintaining air quality, and expanding regional recreation networks. (12%)	Air Quality and Environmental Effect (50%)	Air quality and environmental effect (50%)	See Pg 74-75 in Smart Scale FY 2022 Technical Guide. Using Table 9.2. *Not scaling the measure by # of non-SOV peak users.	Does project have the potential to improve air quality or reduce greenhouse gas emissions?
		Impact to Natural and Cultural Resources (50%)	Amount of potentially impacted natural and cultural resource acres by the total 1/4-mile buffer area in acres (50%)	See Pg 76-78 in Smart Scale FY 2022 Technical Guide. *Not scaling based on benefits in other categories as explained on page 78.	Does project minimize impact on natural and cultural resources within a 1/4-mile boundary?
Land Use (0%)	Encourage the coordination of land use and transportation planning in order for transportation improvements to support future growth. (7%)	Support of transportation-efficient land development (100%)	EPA Guide to Sustainable Transportation Performance Measures Employment to Dwelling Ratio	1-Absolute Value = ((MPO pop/MPO jobs) x TAZ project buffer pop)-TAZ project buffer jobs/((MPO pop/MPO jobs) x TAZ project buffer pop)+TAZ project buffer jobs.	Equation results closer to 1 represent the TAZ mirrors the region in terms of population and jobs balance. A .5-mile project buffer was applied to all projects.

6 – 5 Summary

The 2045 LRTP updates the 2040 LRTP's goals to meet current federal and state performance-based planning requirements. The region's goals are informed by MAP-21 goals, the FAST Act, and VTrans 2045 goals, and regional priorities. The MPO's Travel Demand Model outputs measure specific projects to further ensure goals are addressed.

The LRTP Working Group developed a project scoring methodology that reflects the needs of each locality and provides an objective scoring framework to evaluate projects in the region. The methodology includes the Plan's goals, Travel Demand Model outputs, SMART SCALE project factors weighted to reflect the region's priorities, and planning-level cost estimates.

The subsequent chapters outline the final project list development process. The next step is evaluating how the cost estimates of the highest scoring projects relate to the projected transportation revenues for the region over the 25-year period (see Chapter 7). The final CLRP list of projects is provided in Chapter 8.

Chapter 7: Revenue and Cost Analysis

This chapter explains the methodology for developing project cost estimates and revenue projections. Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, MPOs have been required to demonstrate that estimated project costs do not exceed projected revenues. This federal requirement is complicated by Virginia's shift from the traditional formula-based approach to allocating federal transportation funds to a performance-based evaluation through the SMART SCALE project funding program. Despite this challenge, the LRTP includes a financial plan that estimates revenues for identified transportation improvements.

The SAWMPO region has transportation needs that exceed revenue projections. If additional funding becomes available during the life of the LRTP, projects included on the Vision (unfunded) List could be added to the fiscally-constrained project list. The Vision List is shown in Appendix A.

This chapter addresses:
7-1 Project Cost Estimate Development
7-2 Funding Sources
7-3 Anticipated Revenues

7 – 1 Project Cost Estimates

Planning level cost estimates were developed for projects identified in the SAWMPO Constrained and Vision Lists. Draft estimates came from the following sources, and were then validated and adjusted by VDOT Staunton District staff if necessary:

- VDOT Six Year Improvement Plan
- 2040 SAWMPO Long Range Transportation Plan
- Augusta County, City of Staunton, and City of Waynesboro Comprehensive Plans
- Recent MPO- and VDOT-led studies

For projects that did not have a cost estimate developed in any public planning document, the project team used VDOT's Statewide Planning Level Cost Estimating System to develop estimates. The program has year 2020 project costs that are inflated annually by 3% to reflect a future Year of Expenditure (YOE). This tool provides a high-level estimate based on the type of facility being constructed/reconstructed, and includes an overall percentage for Preliminary Engineering (PE) costs. Right of way (RW) costs are also included based upon an overall percentage of project cost.

7 – 2 Funding Sources

Transportation funding is available through federal, state, and local government entities for roadway, bike and pedestrian, and transit projects. The Commonwealth administers federal funds for roadway construction, bicycle/pedestrian facilities, transit operations and facilities, and major planning and/or environmental studies through a variety of programs. The 2015 federal transportation funding and authorization bill, Fixing America's Surface Transportation (FAST) Act funds the following four major core programs for surface transportation projects pertinent to the SAWMPO.

Surface Transportation: Federal Funds

National Highway Performance Program (NHPP)

The prior federal transportation legislation - MAP-21 – and the FAST Act expanded the National Highway System (NHS) to include principal arterial roadways that were not originally part of the NHS. The Enhanced National Highway System is now comprised of the interstate system, all principal arterials, and bridges on the NHS. The NHPP provides funding for construction, reconstruction, or operational improvement of portions of the highway; inspection costs for NHS infrastructure including bridges; bicycle and pedestrian infrastructure; safety improvements on the NHS; environmental restoration within NHS corridors; intelligent transportation system (ITS) improvements; and the construction of bus terminals servicing the NHS.

Surface Transportation Program (STP)

Projects eligible for funding include construction, reconstruction, or operational improvement for highways and local access roads; bridge projects on public roads and construction of bridges on federal-aid highways; highway and transit safety infrastructure improvements; bicycle and pedestrian infrastructure including recreational trails; and environmental restoration.

Highway Safety Improvement Program (HSIP)

The HSIP allocates funds to reduce traffic fatalities and injuries on public roads. Eligible projects for this funding include public surface transportation projects or projects that align with the State Strategic Highway Safety Plan (SHSP) to mitigate hazardous roads or resolve highway safety challenges.

Transportation Alternatives (TAP) Program

MAP-21 created and the FAST Act maintained the Transportation Alternatives Program to encompass preceding programs including Transportation Enhancements, Safe Routes to School, and Recreational Trails. Projects eligible for this funding include, but are not limited to, the planning, design, and construction of on- and off-road trails for non-motorized transportation; converting abandoned railroad corridors for non-motorized trails; and environmental mitigation activities.

Surface Transportation: State Funding

Virginia matches federally funded programs with state gas tax revenues along with maintenance programs received by urban localities by means of a formula-based system. The Commonwealth also supports a Revenue Sharing program where local funds are matched dollar for dollar with state funds. Eligible projects must be identified in local Capital Improvement Programs (CIPs) or adopted Comprehensive Plans to be eligible to receive Revenue Sharing funds.

Surface Transportation: Local Funding

Localities fund transportation projects primarily through general obligation bonds and general funds. Bond funds dedicate funding for long-term capital roadway projects. Local funding is also used to match federal and state funding sources. Local funding commitments are not accounted for in the fiscally constrained LRTP.

Public Transportation: Federal Funding

Urbanized Area Formula Program (FTA Section 5307)

The United States Congress establishes funding for the FTA Programs and funds are apportioned based on each state's share of the targeted populations. FTA allocates Section 5307 funding using a population-based formula to be dispensed by the Governor. This Governor's Apportionment of Section 5307 funds is administered by the Virginia Department of Rail and Public Transportation (DRPT).

DRPT allocates the FTA Section 5307 program as the designated recipient, to Direct Recipients in the Small Urbanized Areas / UZAs with a (population between 50,000 and 200,000 people. Section 5307 is a formula-based grant program allocated for transit capital improvements, operating, and planning assistance for public transit services.

Eligible activities include planning, engineering design and evaluation of transit projects and other technical transportation-related studies; capital investments in bus and bus-related activities such as replacement of buses, overhaul of buses, rebuilding of buses, crime prevention and security equipment and construction of maintenance and passenger facilities; and capital investments in new and existing fixed guideway systems including rolling stock, overhaul and rebuilding of vehicles, track, signals, communications, and computer hardware and software. All preventive maintenance and some Americans with Disabilities Act complementary paratransit service costs are considered capital costs.

For urbanized areas with populations less than 200,000, operating assistance is an eligible expense. In these areas, at least one percent of the funding apportioned to each area must be used for associated transit improvements such as preservation of historic structures and facilities intended for use in public transportation service; bus shelters; transit service related landscaping and streetscaping including benches, trash receptacles and street lights; pedestrian access and walkways; bicycle access including storage facilities and equipment for transporting bicycles on public transit vehicles; signage; or enhanced access to public transportation for people with disabilities.

Rural Area Formula Program (FTA Section 5311)

Section 5311 is an FTA Formula Grants for Rural Areas program that provides capital and operating assistance to states to support public transportation in rural areas with populations of less than 50,000, where many residents often rely on public transit to reach their destinations. DRPT is the designated recipient for Virginia's FTA Section 5311 program. Federal guidelines allow DRPT to offer FTA 5311 funds to eligible subrecipients. Eligible subrecipients submit applications to DRPT for evaluation and selection.

State and federal grant funds administered by DRPT provide financial assitance to support Public Transportation Servies through a competitive funding program is referred to as "MERIT" – Making Efficient and Responsible Investments in Transit. The MERIT program includes eight individually administered grant programs that provide funding for capital purchases and operations, TDM projects and operations, and planning processes and studies.

The capital assistance program provides funding for transit assets such as vehicles, transit facilities, maintenance equipment, machinery, and heavy equipment. The operating assistance program provides funding for transit operations, maintenance services, repairs and administrative costs, and TDM/commuter assistance program and project operations.

Transportation for Elderly Persons and Persons with Disabilities (Section 5310)

This program provides formula funding to States and other eligible recipients including non-profit organizations and governmental authorities for the purpose of assisting private nonprofit groups in meeting the transportation needs of the elderly and persons with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. Funds are obligated based on the annual program of projects included in a statewide grant application.

The State agency ensures that local applicants and project activities are eligible and in compliance with Federal requirements, that private not-for-profit transportation providers have an opportunity to participate as feasible, and that the program provides for coordination of federally assisted transportation services assisted by other Federal sources. Once the FTA approves the application, funds are available for state administration of its program and for allocation to individual sub-recipients within the state. Funding is apportioned by formula based upon the number of elderly persons and persons with disabilities in each state according to the latest U.S. Census data.

Local Transit Funds

Local funding partners contribute financially to the transit system. A unique regional partnership has developed with local governments and private service entities that recognize the value of public transportation for their client base. The following agencies/entities have chosen to contribute financially to the public transportation system which significantly decreases the impact to local government budgets.

- Augusta Health
- Wilson Workforce and Rehabilitation Center
- Blue Ridge Community College
- Shenandoah Valley Social Services
- Staunton Downtown Development Association

7 – 3 Projected Revenues

Highway Revenue

VDOT receives revenues from state and federal sources referred to as Highway Revenue. State sources of funding are derived from four primary sources: sales tax on motor fuels, motor vehicles sales and use tax, motor vehicle license fee, and state sales and use tax. A large portion of the state's annual budget is dedicated to the Highway Maintenance and Operating Fund (HMOF) which comprises approximately 38% of the annual budget. Approximately 37% of the annual operating fund is dedicated to the state's construction program.

Transportation projects are sometimes financed using a combination of public and private funds. Financing from private entities is generally received through legally binding commitments made during the local property rezoning process to facilitate land development, known as proffers - voluntary cash or capital improvement payments from developers to local government to offset development impact - or as part of a Public Private Partnership (P3). The MPO defers to the respective jurisdictions to work with the development community, and VDOT, to determine the rational nexus of need proportional to mitigate the impact of any specific development.

Projected revenues are a requirement of the federal transportation planning process to ensure that investments are based on realistically anticipated revenues. Historically, surface transportation revenues were tied to network facility type and distributed to localities through the original construction formula, 40% to the Primary System, 30% to the Secondary System, and 30% to the Urban System. Virginia's SMART SCALE program replaces formula-based project funding with a competitive, project performance and outcome-based analysis to facilitate objective transportation decision making by the Commonwealth Transportation Board (CTB).

As a result, the MPO can no longer assume that dedicated transportation funding will reach the SAWMPO by formula. Based on revenue trends from the past several years, it is projected that the SAWMPO region will receive $359,089,907 million for surface transportation projects between 2021 and 2045. Prior SYIP allocations from 2021 - 2025 on active projects are also included in Table 8 below to reflect the total value of investments being

made in the SAWMPO during the planning period, with initial I-81 Improvement program funding allocated in years 2021 – 2027 (see Appendix B).

Table 8: Projected Total Highway Revenues 2021 - 2045

Anticipated Revenues Category	Prior SYIP Allocations (2021 – 2027)*	Projected Revenues	Totals
Interstate 81 Improvement Program*	$279,068,371	$0.00	$279,068,371
District Grant Program	$24,327,000	$18,780,655	$43,107,655
High Priority Projects	$6,756,000	$18,780,655	$25,536,655
Transportation Alternatives	$1,589,499	$6,719,826	$8,309,325
Revenue Sharing	$200,000	$1,073,674	$1,273,674
Highway Safety Improvement Program	$0.00	$1,578,869	$1,578,869
State of Good Repair	$436,659	$651,069	$1,087,728
Private Development	$0.00	$26,194,106	$26,194,106
		Total	$359,089,907

*I-81 Improvement Program Funding allocated for years 2021-2027

Transit Revenues

Based on BRITE's FY21 allocations of FTA 5307 and 5311, and a projected 3% increase in the allocation each year, it is estimated that BRITE will receive $90.5 million in total funding over the life of the LRTP. The BRITE system offsets its requests for federal and state operating funds with fare revenues. Fares for the BRITE system are a modest $0.50 each way, and cover approximately 4% of operating expenses each year.

Table 9 summarizes estimated annual non-fare revenues for BRITE.

Table 9: Estimated Annual Transit Revenues 2021-2045

Estimated Annual Transit Revenues			
	5307	5311	Total
FY 2021	$1,680,950	$803,069	$2,484,019
FY 2022	$1,731,379	$827,161	$2,558,540
FY 2023	$1,783,320	$851,976	$2,635,296

Estimated Annual Transit Revenues (cont.)			
	5307	5311	Total
FY 2024	$1,836,819	$877,535	$2,714,355
FY 2025	$1,891,924	$903,861	$2,795,785
FY 2026	$1,948,682	$930,977	$2,879,659
FY 2027	$2,007,142	$958,906	$2,966,049
FY 2028	$2,067,356	$987,674	$3,055,030
FY 2029	$2,129,377	$1,017,304	$3,146,681
FY 2030	$2,193,258	$1,047,823	$3,241,081
FY 2031	$2,259,056	$1,079,258	$3,338,314
FY 2032	$2,326,828	$1,111,635	$3,438,463
FY 2033	$2,396,633	$1,144,984	$3,541,617
FY 2034	$2,468,532	$1,179,334	$3,647,866
FY 2035	$2,542,588	$1,214,714	$3,757,302
FY 2036	$2,618,865	$1,251,155	$3,870,021
FY 2037	$2,697,431	$1,288,690	$3,986,121
FY 2038	$2,778,354	$1,327,351	$4,105,705
FY 2039	$2,861,705	$1,367,171	$4,228,876
FY 2040	$2,947,556	$1,408,186	$4,355,742
FY 2041	$3,035,983	$1,450,432	$4,486,415
FY 2042	$3,127,062	$1,493,945	$4,621,007
FY 2043	$3,220,874	$1,538,763	$4,759,637
FY 2044	$3,317,500	$1,584,926	$4,902,426
FY 2045	$3,417,025	$1,632,474	$5,049,499
TOTAL	$61,286,200	$29,279,305	$90,565,505

In fiscal years 2021 and 2022, BRITE will also use CARES Act funding for operating expenses. The CARES Act funding supports transit operations and agency response to the COVID-19 pandemic. BRITE received $3,027,140 via the CARES Act.

5310 Revenues

Valley Program for Aging Services (VPAS) is currently the only 5310 recipient serving the SAWMPO region. VPAS uses 5310 funding for new vehicles and operating assistance. Based on the past ten years of 5310 awards to VPAS, and its vehicle replacement schedule, it is projected that VPAS will receive $2,763,953.36 between 2020 and 2045.

Chapter 8: Constrained Long-Range Plan

The LRTP must include a fiscally-constrained list of projects referred to as the Constrained Long Range Plan (CLRP). The CLRP includes projects with funding committed through the State's Six Year Improvement Program (SYIP), and projects not yet funded, but which the MPO and its members intend to fund between 2020 and 2045 with projected available funds. The Plan's fiscal constraint is based on projected available revenue over the 25-year period. Projects not included in the CLRP are identified as Vision List Projects, which address important needs, but for which projected funding may not be available (see Appendix A).

In the spirit of full compliance with Title VI, CLRP projects should neither unduly burden, nor underserve the region's minority and underserved populations identified in Chapter 3: Existing Conditions.

This chapter addresses:
8 – 1 The Constrained Long Range Plan
8 – 2 Social Equity and Environmental Justice Benefits and Burdens Analysis
8 – 3 Environmental Mitigation Measures

8 – 1 Performance-Based Planning

The 2045 LRTP includes 68 transportation projects. Of those, 49 projects are included in the CLRP, with 22 of those projects added for the 2045 update. The remaining 20 projects are documented in the Vision List. Of the 49 projects in the CLRP, 26 are funded in the current VDOT Six Year Improvement Program (SYIP). In total, these projects represent $348,567,761 in committed and projected funding. The balance to finance for the I-81 projects is already committed, but fall outside of the current SYIP. The CLRP projects are listed in Table 10 and Table 11.[5]

Bicycle and Pedestrian Projects

Bicycle and pedestrian facilities are included in many of the corridor improvement and new location projects in the CLRP. The CLRP also includes stand-alone bicycle and pedestrian projects, which are listed together.

Transit Projects

Transit revenues are formula funds for capital and operating costs. The revenues are included in the Revenues Summary in Chapter 7. Future transit operating and capital needs are addressed in Chapters 6 and reflected in the TDP. When BRITE Transit approves an updated TDP in FY22, that document will be included in the 2045 LRTP by reference as the transit plan for the SAWMPO.

[5] CLRP Table: VDOT assigns each committed project a UPC number. The UPC number can be used to search projects on VDOT's Six-Year Improvement Program (SYIP) website: http://syip.virginiadot.org/Pages/allProjects.aspx

Table 10: CLRP Projects Previously Committed

CLRP Projects Previously Committed										
PROJECT ID	UPC	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	Funding Source	COST ESTIMATE	YOE ESTIMATE	PRIOR ALLOCATIONS	BALANCE TO FINANCE (CLRP COST)
Interstate										
MPO-5	116277	Augusta	I-81 Weyers Cave Area Truck Climbing Lane Northbound	Add a northbound truck climbing lane between MM 233 and 237; Weyers Cave TCL	Interstate	I-81 Program	$100,798,170	-	$95,798,170	$5,000,000
MPO-6	116278	Augusta	I-81 Weyers Cave Area Truck Climbing Lane Southbound	Add a southbound truck climbing lane between MM 234 and 236; Weyers Cave TCL	Interstate	I-81 Program	$29,581,960	-	$10,765,797	$18,816,163
MPO-7	116279	Staunton/Augusta	I-81 Southbound Auxiliary Lane	Add a southbound auxiliary lane between Exits 220 and 221	Interstate	I-81 Program	$14,326,755	-	$14,326,755	$0
MPO-8	116269	Staunton/Augusta	I-81 Widening	Widen to three lanes north and southbound between MM 221 and 225	Interstate	I-81 Program	$140,209,650	-	$122,060,585	$18,149,065
MPO-9	116271	Augusta	I-81 Mt. Sidney Rest Area Northbound Acceleration Lane Extension	Extend northbound acceleration lane from MM 232.4 to 232.8	Interstate	I-81 Program	$4,985,000	-	$4,985,000	$0
MPO-10	116276	Augusta	I-81 Mt Sidney Rest Area Southbound Acceleration Lane Extension	Extend southbound acceleration lane from MM 232.5 to 231.9	Interstate	I-81 Program	$1,285,000	-	$1,285,000	$0
MPO-11	116275	Augusta	I-81 Mt Sidney Rest Area Southbound Deceleration Lane Extension	Extend southbound deceleration lane from MM 232.9-232.7	Interstate	I-81 Program	$4,985,000	-	$4,985,000	$0
Secondary System										
J-2	88663	Augusta	VA Route 262 Improvements	Option to extend southbound Middlebrook Road on-ramp to tie into the 2-lane section to the south and there is a second alternative to extend the northbound 2-lane section to the Middlebrook Road interchange and have the outside line become the current off-ramp.	Interchange	Legacy CN	$5,133,676	-	$5,133,676	$0
F-6	111229	Augusta	WWRC Roundabout	Single lane roundabout at the intersection of Woodrow Wilson Avenue / VO Tech Road / Hornet Road	Corridor	DG; Legacy CN	$1,727,222	-	$1,727,222	$0
F-1	115715	Augusta	WWRC Short-term Access Improvement	Addition of turn lanes and signal timing improvements at the intersection of US 250 and SR 358	Intersection	DG	$4,294,032	-		
V-1	111058	Augusta	Mill Place Parkway Access Improvements	Addition of a dual left on westbound Route 612 into the commerce park and widening a short section of Mill Place Parkway to accommodate the additional receiving lane for the dual lefts	Intersection	DG; Legacy CN	$1,789,041	-	$1,789,041	$0
WC-1	111055	Augusta	I-81 Exit 235 Improvements	Addition of right turn lanes on Route 256, serving the I-81 Exit 235 on-ramps	Intersection	DG; Legacy CN	$1,787,244	-	$1,787,244	$0
Urban System										
W-1	105907	Waynesboro	Shenandoah Drive/Southern Corridor	A 1.6-mile construction/reconstruction of a 2-lane limited access road linking US 340 (Rosser Ave) (Exit 94) to Delphine Ave (Exit 96); will add Bike and Sidewalk facilities	New Location	DG; Legacy CN; RS	$17,371,000	-	$17,371,000	$0

CLRP Projects Previously Committed										
PROJECT ID	UPC	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	Funding Source	COST ESTIMATE	YOE ESTIMATE	PRIOR ALLOCATIONS	BALANCE TO FINANCE (CLRP COST)
ST-12	111048	Staunton	Staunton Crossing Way Extension	Realign and upgrade street section to serve commercial and residential use; to include sharrows and sidewalks.; from end of Phase I (ST-11) to N. Frontier Drive via the existing access road	New Location	HPP; Legacy CN; HSIP	$8,765,000	-	$8,749,000	$16,000
ST-19	111051	Staunton	US 250 (Richmond Road) at the Villages at Staunton	Road diet, including curb/gutter, sidewalk and bike lanes	Corridor	DG	$2,246,000	-	$2,246,000	$0
ST-4	111047	Staunton	Richmond Avenue and Statler Boulevard Improvements	Add a second left turn lane for the southbound Statler approach. Apply access management at intersection, provide medians to eliminate left turns into/out of businesses at intersection.	Intersection	HSIP	$579,000	-	$579,000	$0
W-6	111049	Waynesboro	Waynesboro Town Center Park and Ride	Expansion and access improvements to the existing park and ride	TDM	HPP	$2,197,261	-	$2,197,261	$0
W-12	115136	Waynesboro	13th Street and Rosser Avenue Roundabout	Install Roundabout to replace removed traffic signal	Intersection	DG	$579,000	-	$579,000	$0
W-19	115133	Waynesboro	East Main Street Streetscape	FROM: Main Street Bridge TO: ECL Waynesboro	Corridor	DG	$2,250,000	-	$2,250,000	$0
Bike & Pedestrian										
ST-20	80485	Staunton	Central Avenue Streetscape	From Frederick Street to Pump Street. Add streetscaping elements including lighting, brick sidewalk with pervious pavers, and landscaping. Sharrows from Pump St. to Baldwin St.	Streetscape	TAP	$2,269,114	-	$2,269,114	$0
V-2	113687	Augusta	Verona Pedestrian Improvements	Installation of pedestrian facilities on the north side of Laurel Hill Road (VA 612) from approximately .67 miles from the Shenandoah Valley Railroad crossing to the Park & Ride on Lodge Lane (Rt 1906) and 2) on the eastern side of US 11 from Dick Huff Lane into the City of Staunton to approximately 400' south of the Augusta County/City of Staunton line;	Pedestrian	TAP	$1,968,374	-	$1,248,548	$719,826
W-8	113684	Waynesboro	South River Greenway Phase 2B	Runs from the current terminus at Shiloh Baptist Church up to North Park.	Greenway	TAP	$593,699	-	$593,699	$0
W-9	108879	Waynesboro	Rosser Avenue Sidewalk	Install new sidewalk along Rosser Avenue between Lucy Lane and Tiffany Drive on the west side of the street	Pedestrian	RS	$92,000	-	$92,000	$0
W-10	111425	Waynesboro	South River Greenway Trail Phase 3	Runs along the current trailhead at Loth Springs to Ridgeview Park	Greenway	TAP	$1,091,563	-	$1,091,563	$0
ST-21	115135	Staunton	Edgewood Road Sidewalk Improvements	FROM: North Coalter Street TO: North Augusta Street on north side of street	Pedestrian	DGP	$1,098,000	-	$1,098,000	$0
ST-22	115137	Staunton	North Augusta Sidewalk	FROM: Intersection of Lambert Street TO: Intersection of Terry Street on the west side of the street	Pedestrian	DGP	$1,477,000	-	$1,477,000	$0
ST-23	115140	Staunton	North Augusta Sidewalk - Terry Street to Meadowbrook	From Terry Street TO: Meadowbrook Road on the west side of the street	Pedestrian	DGP	$1,058,000	-	$1,058,000	$0

Table 11: CLRP Projects Newly Committed

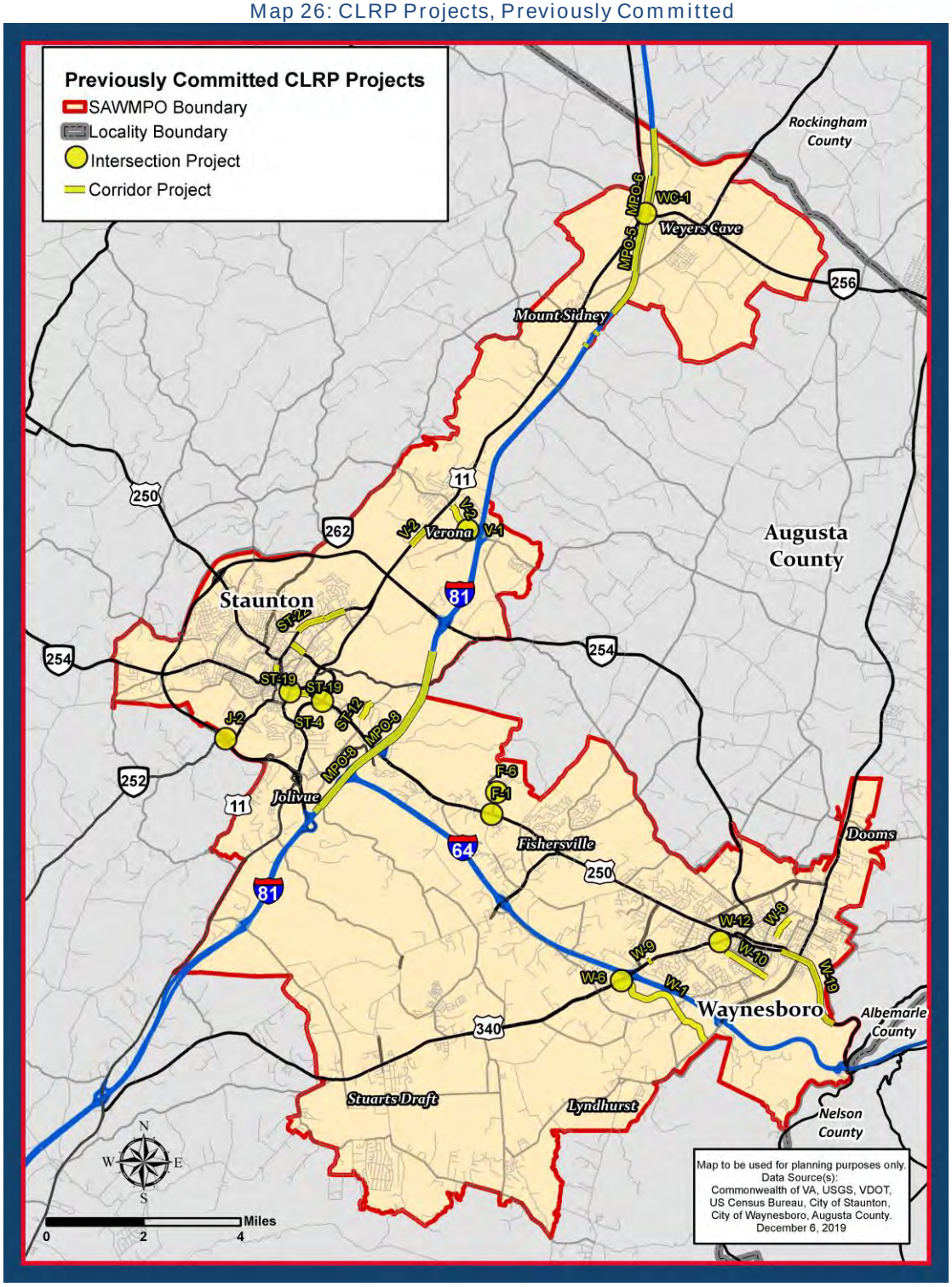
CLRP Projects Newly Committed										
PROJECT ID	UPC	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	Funding Source	COST ESTIMATE	YOE ESTIMATE	PRIOR ALLOCATIONS	BALANCE TO FINANCE (CLRP COST)
INTERSTATE										
No projects identified due to I-81 Improvement Plan										
PRIMARY										
MPO-2		Augusta	US 250 / I-81 Exit 222 Interchange Ramp Improvements	Richmond Road Corridor Study North and Southbound Ramp Improvements	Intersection	HPP	$3,411,000	$6,731,904	$0	$6,731,904
F-4		Augusta	Augusta/F-4 US 250 (Jefferson Highway) at VA 792 (Sangers Lane/Brand Station Road)	Intersection improvements to add pedestrian signal heads, crosswalks, and formalized transit stops with supporting sidewalks to the existing signalized intersection.	Intersection	HPP	$1,442,000	$2,246,589	$0	$2,246,589
F-7		Augusta	US 250 (Jefferson Highway) STARS Study Improvements	Addition of a raised median, sidewalk (one side), revision of signal phasing and systemic signal safety and operational improvements from the western corporate limits to Goose Creek Rd/Old White Bridge Rd	Corridor	DGP	$1,900,000	$2,960,138	$0	$2,960,138
J-3		Augusta	US 11 improvements from Christian's Creek Road to Staunton Corporate Limits	Shoulder widening from Christian's Creek Road to Rolling Thunder Ln. (with maintenance $$) Convert Rolling Thunder Ln. to right in and right out. Install an overhead sign in advance of the Rt. 262 northbound on-ramp. Extend median and install straight through green arrow on the NB approach at intersection with Frontier Drive. Directional median opening at Payne Lane. Add median with directional opening from Orchard Hill Road to city limits. Add sidewalk on east side of US 11 from city limits to Rt. 262.	Corridor	DGP, Maintenance Funds	$2,277,975	$3,549,011	$0	$3,549,011
WC-2		Augusta	VA 256 (Weyers Cave Road) from I-81 NB ramp and Triangle Drive	Improve Weyers Cave Road (Rt. 256) from the northbound I-81 ramps to Triangle Drive by adding a median, turn lanes and a shared use path. Project includes the construction of a new park and ride facility.	Corridor	DGP	$4,950,000	$7,711,939	$0	$7,711,939
SECONDARY										
SD-12		Augusta	Augusta/SD-12 VA 909 (Johnson Rd) from current southern terminus to VA 608 (Cold Springs Rd)	Upgrade to 2-lane urban secondary road standards with turn lanes and a shared use path	Corridor	HPP, TA, Maintenance	$9,229,545	$14,379,330	$0	$14,379,330
URBAN										
W-5		Waynesboro	Rosser Ave Corridor Improvements	Implement 2017 corridor study recommendations for the corridor from Shenandoah Village Drive to Tiffany Drive	Corridor	HPP	$845,775	$1,317,690	$0	$1,317,690
ST-22		Staunton	Greenville Avenue / Statler Road / Ritchie Blvd Intersection Safety Improvements	At Statler: Extend existing island and signalize westbound right turn. Replace span wire with mast arms. Install crosswalks with pedestrian phasing. Install a sidewalk on the east side of US 11 between Amherst Road	Intersection	RS	$645,360	$1,273,674	$0	$1,273,674

CLRP Projects Newly Committed

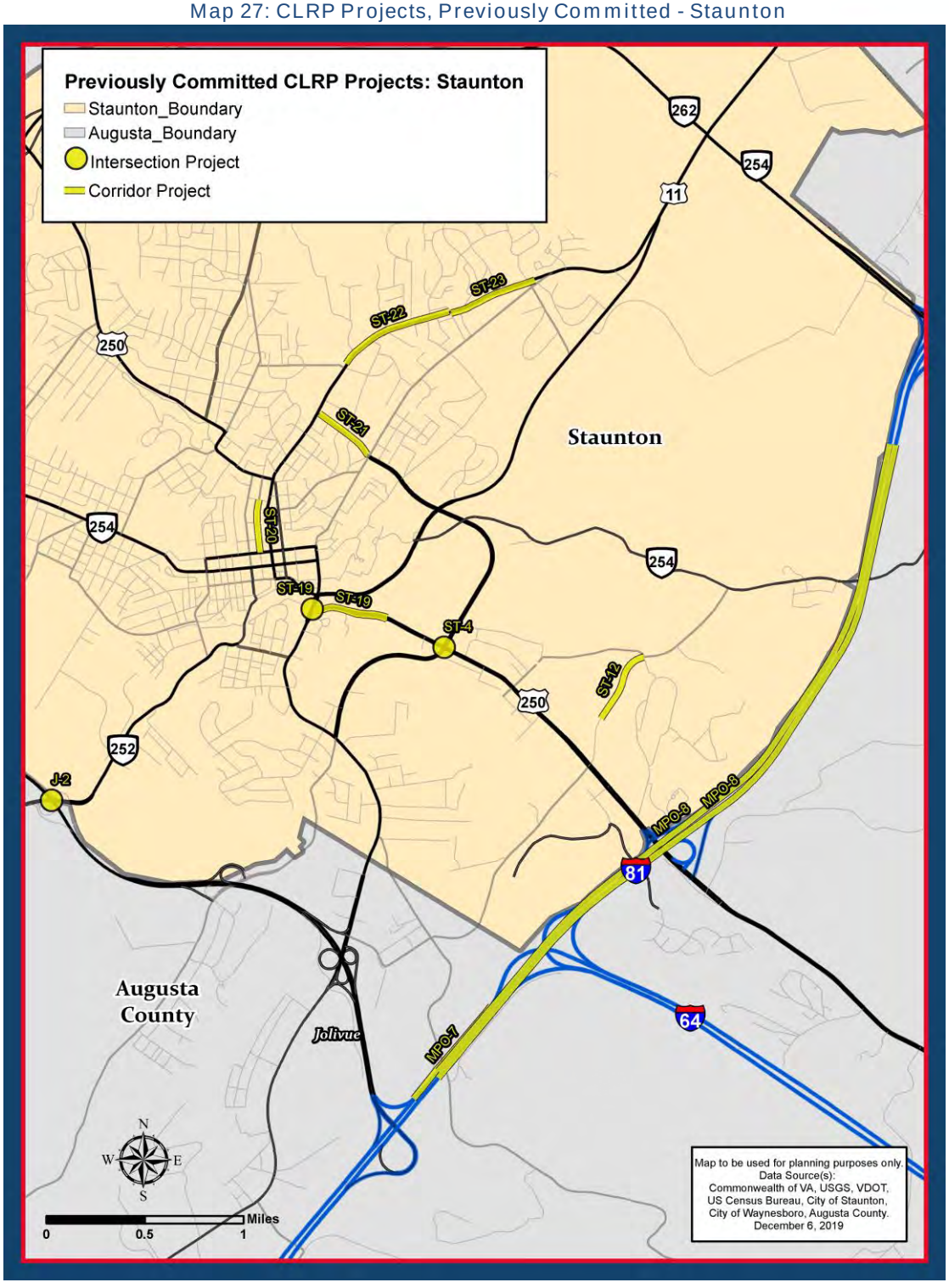
PROJECT ID	UPC	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	Funding Source	COST ESTIMATE	YOE ESTIMATE	PRIOR ALLOCATIONS	BALANCE TO FINANCE (CLRP COST)
				and Statler Boulevard. Install a raised median and extend to Ritchie Boulevard. At Ritchie Blvd: Install median to restrict left turns out of Ritchie Boulevard onto US 11. Improves access management and reduces potential of angle crashes						
ST-21		Staunton	Greenville Avenue / Coalter Street / Commerce Road Intersection Improvements	Short Term: Eliminate eastbound left turn/through movement and allow right turns only. Signalize right turns. The eastbound through and left turning vehicles will make a right onto US 11 southbound and then a U-turn at Richmond Avenue intersection	Intersection	HSIP	$800,000	$1,578,869	$0	$1,578,869
ST-24		Staunton	Greenville Avenue Safety / Multimodal Access Improvements (Barterbrook Road to Amherst Road)	Orchard Hill Road: Close north driveway to Hertz on the west side of Greenville Avenue. Directional median opening. Install median at Orchard Hill Road to restrict left turns from auto dealership. Barterbrook Road: Restrict right turns from the CVS Pharmacy to Greenville Avenue. Dedicated right turn lane and extend it to the intersection approach. Change side streets' split phase to concurrent phase. Improve signal timings. Install median along US 11 from Orchard Hill Road to Barterbrook Road	Corridor	SHPP	$1,168,935	$2,306,994	$0	$2,306,994
ST-23		Staunton	Greenville Avenue Safety / Multimodal Access Improvements (Ritchie Blvd to Richmond Road)	Road diet with Intermittent median closures. Provide bike lanes on both sides of US 11. Install pedestrian refuge for crossing at Gay St.	Corridor	SHPP	$1,540,220	$2,399,613	$0	$2,399,613
ST-20		Staunton	Richmond Road / Frontier Drive Operational / Safety / Access Management Improvements	Additional southbound and eastbound left turn lanes at Richmond Road and Frontier Drive. Close driveways, relocate crosswalks and implement access management on Frontier Drive at Lowes and Sheetz entrances	Intersection	DGP	$1,733,000	$3,420,225	$0	$3,420,225
W-3		Waynesboro	W-3 Delphine Ave (VA 340) at Hopeman Pkwy	Realign eastbound and westbound approaches and incorporate westbound approach into the signal control. Will add sidewalk facilities.	Intersection	DGP	$1,504,200	$2,968,669	$0	$2,968,669
W-20		Waynesboro	West Broad Corridor Improvements	Access management and pedestrian improvements along the full length of Broad Street from East Main Street to Rosser Avenue/West Main Street. This project will include installation of medians, sidewalk repair, filling sidewalk gaps, and improving pedestrian crossings.	Corridor	DGP	$3,500,000	$5,452,886	$0	$5,452,886
W-17		Waynesboro	West Main Corridor Improvements	Access management and pedestrian improvements along West Main Street from Hopeman Parkway to Lew Dewitt Boulevard. This project will include medians, restriping, and sidewalk repair and installation to increase safety and accessibility on West Main Street.	Corridor	DGP	$5,200,000	$8,101,431	$0	$8,101,431
ST-8		Staunton	George Cochran Parkway Extension	Construct new two-lane curb and gutter facility from current terminus of George Cochran Parkway at the	New Location	Developer	$5,313,000	$8,277,481	$0	$8,277,481

CLRP Projects Newly Committed										
PROJECT ID	UPC	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	Funding Source	COST ESTIMATE	YOE ESTIMATE	PRIOR ALLOCATIONS	BALANCE TO FINANCE (CLRP COST)
				roundabout to S. Frontier Drive. Will include shared use path per Greenway and Bike Ped Plans						
W-7		Waynesboro	Lew Dewitt/Rosser Connector	New roadway construction for road to connect to Rosser Ave (via Tiffany Drive) and Lew Dewitt Blvd near Bookerdale Road. Will add Bike, Sidewalk, and greenway facilities.	New Location	Developer	$11,500,000	$17,916,625	$0	$17,916,625
BIKE/PEDESTRIAN										
ST-19		Staunton	Richmond Road / Crossing Way Shared Use Path Project	Shared use path on US 250 (Richmond Road) from Frontier Drive to Crossing Way with supporting crossing improvements at signalized intersections. Add shared use way along Crossing Way to roundabout.	Bike/Ped	HPP	$1,719,000	-	$0	$2,678,146
SD-19		Augusta	Howardsville Turnpike/Hodge Street Pedestrian improvements	Install sidewalk along Howardsville Turnpike and Hodge Street with upgrades signal head	Ped	TA	$1,700,000	$3,355,097	$0	$3,355,097
ST-25		Staunton	Commerce Road Diet and Shared Use Path	Reduce Commerce Road to 2-lane section between Greenville Ave and Statler Boulevard. Construct 10-ft wide shared use path on north side of the road as part of planned Greenway network	Bike/Ped	HPP	$2,332,428	$3,633,847	$0	$3,633,847
SD-18		Augusta	Cold Springs Road Pedestrian Improvements	Installation of sidewalk along Cold Springs from Draft Avenue to Horseshoe Circle	Bike/Ped	DGP	$2,440,000	$4,815,551	$0	$4,815,551
SD-16		Augusta	Wayne Avenue Pedestrian Improvements - Draft Avenue to Patton Farm Road	New and upgraded sidewalk from Draft Ave to Crestview Drive, and installation of a greenway or multi-use path from Crestview Drive to Patton Farm Road	Bike/Ped	DGP/TA	$3,730,000	$5,811,218	$0	$5,811,218

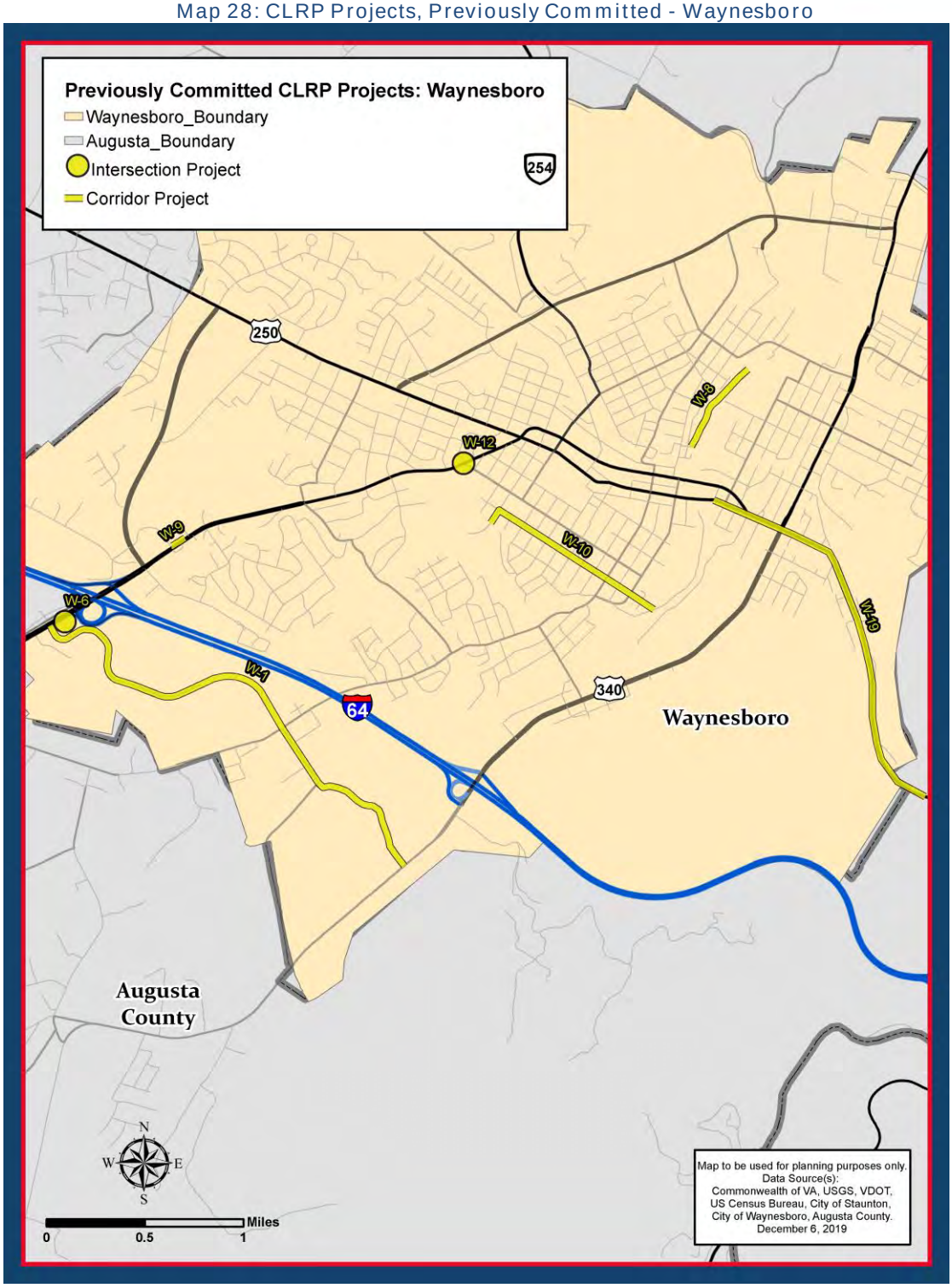
Map 26: CLRP Projects, Previously Committed



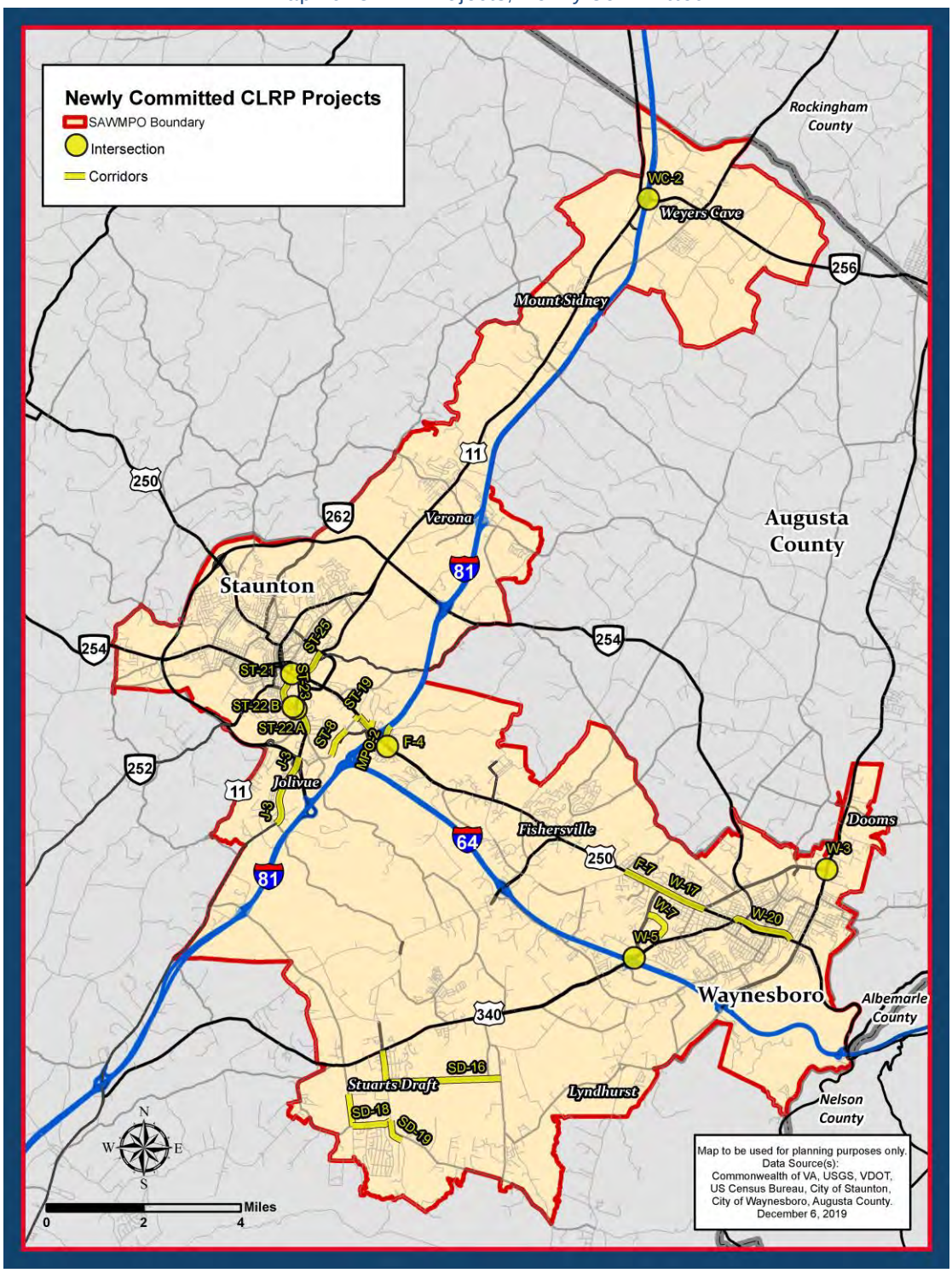
Map 27: CLRP Projects, Previously Committed - Staunton



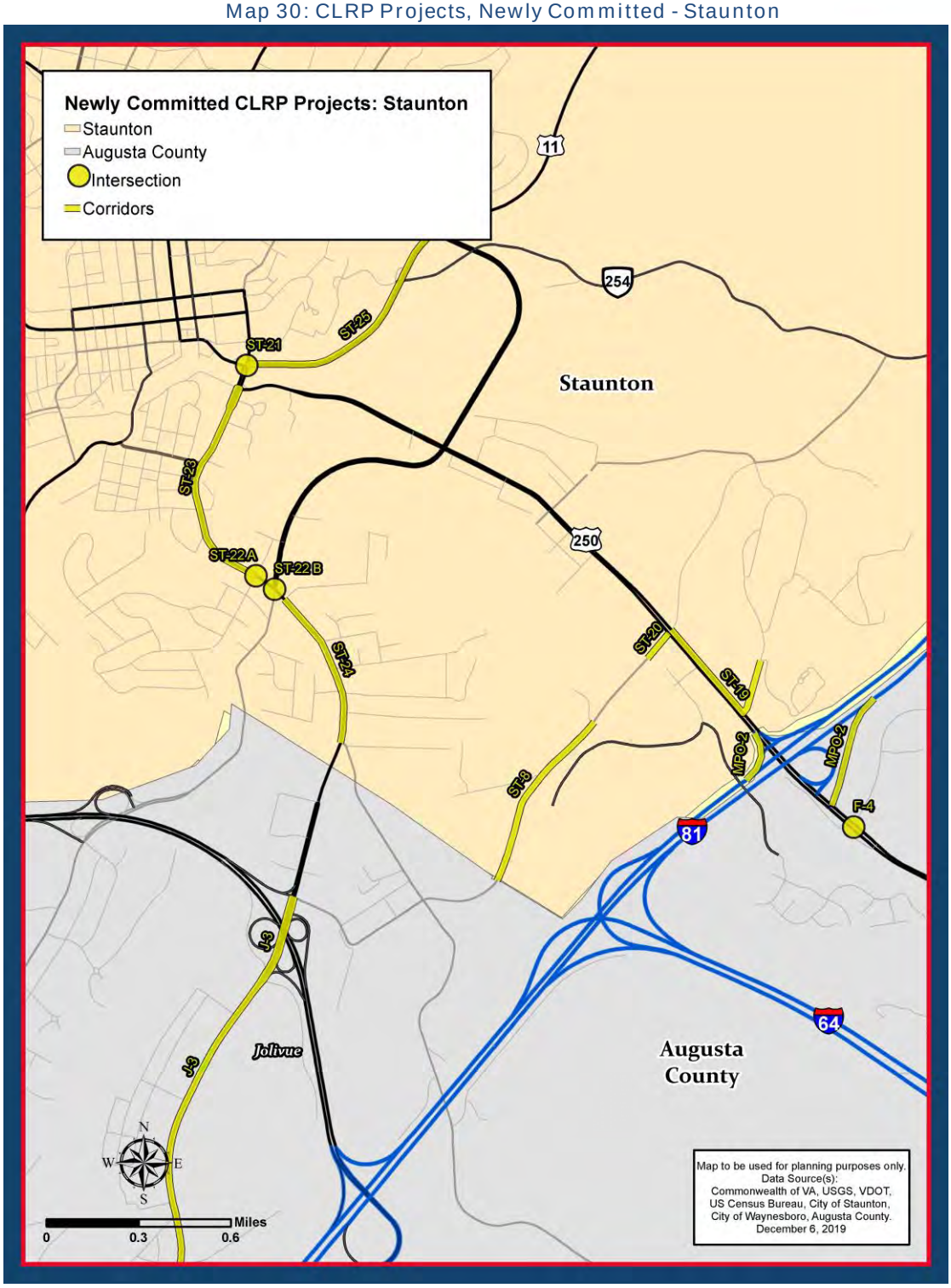
Map 28: CLRP Projects, Previously Committed - Waynesboro



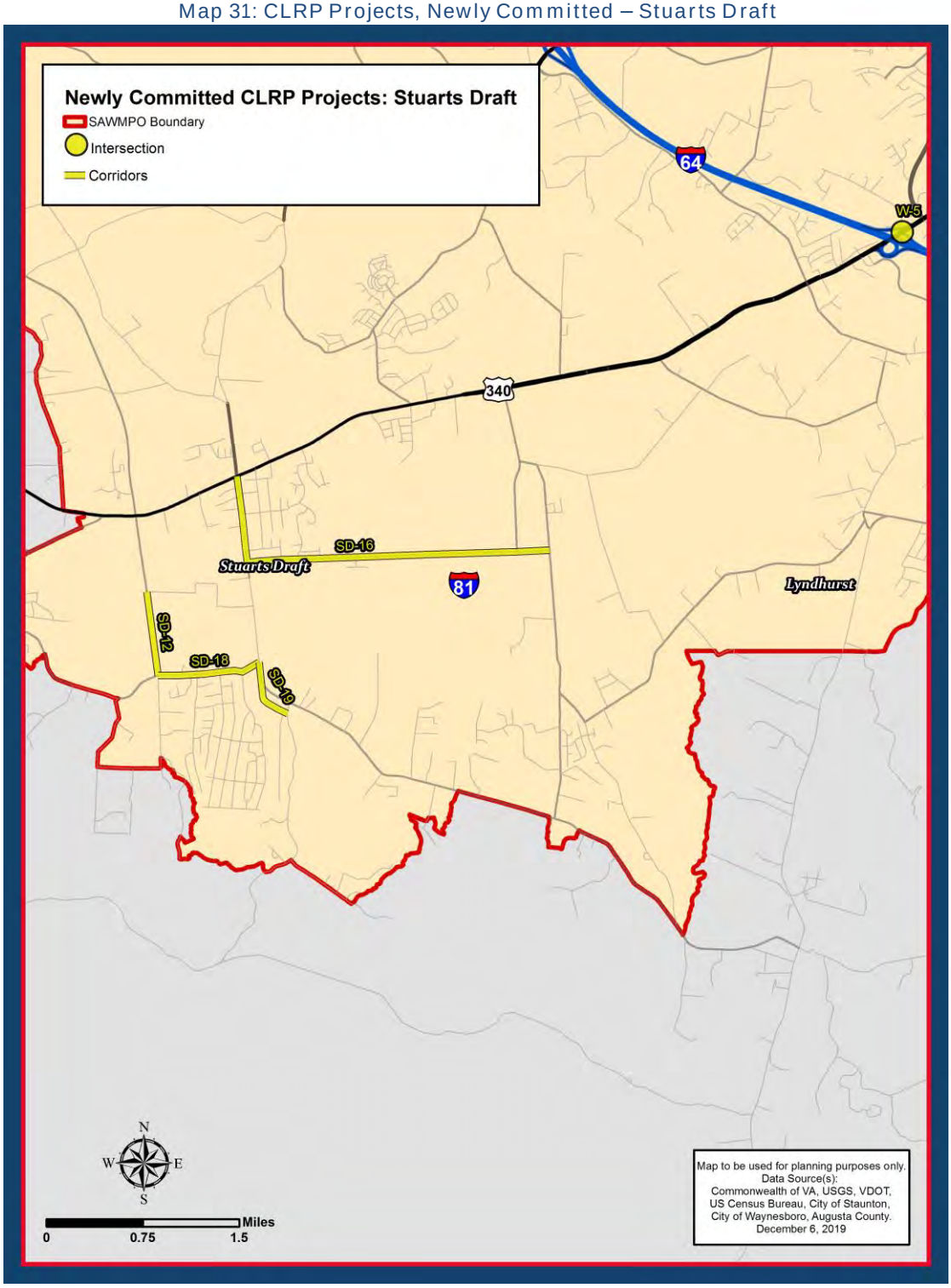
Map 29: CLRP Projects, Newly Committed



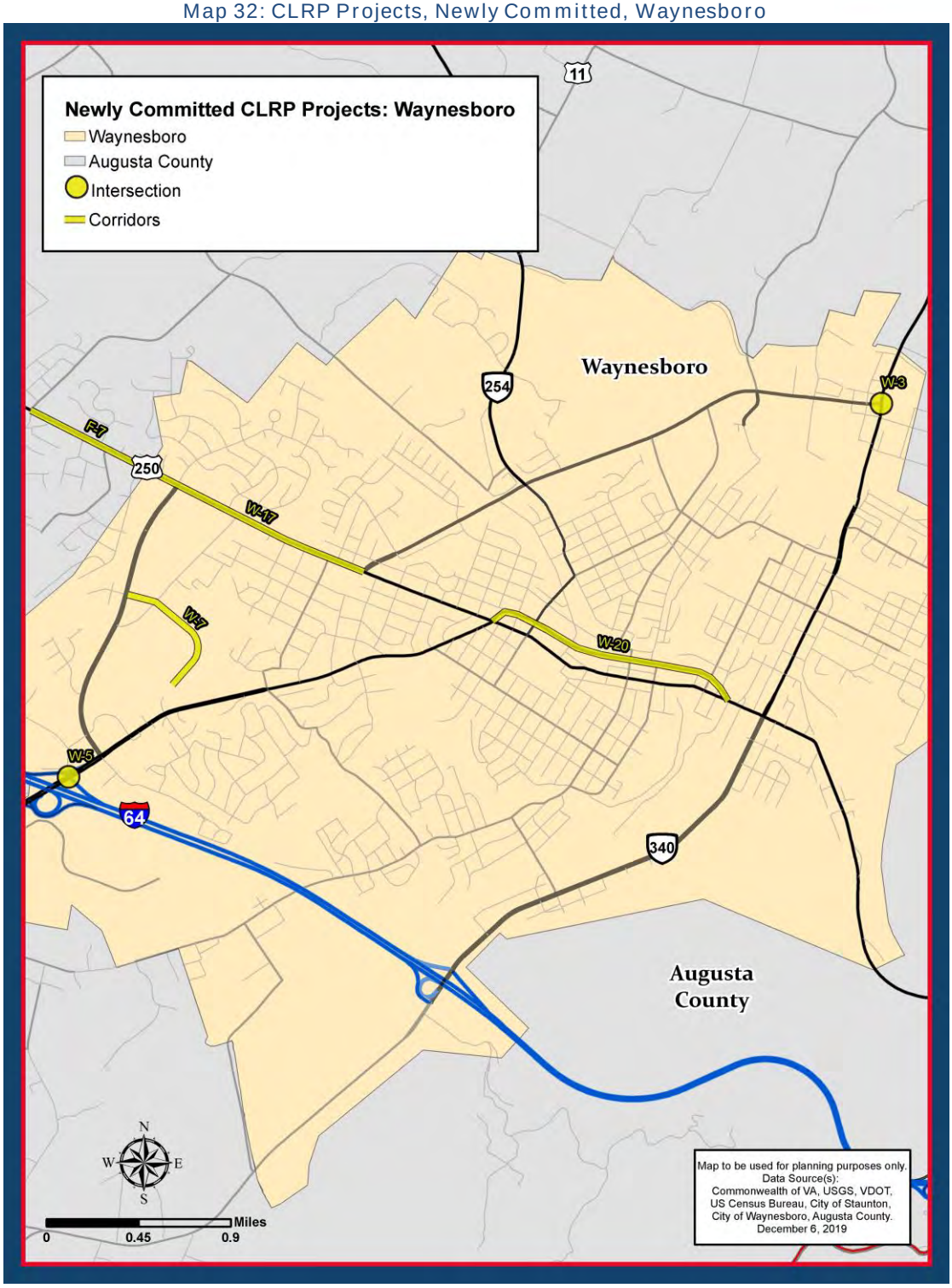
Map 30: CLRP Projects, Newly Committed - Staunton



Map 31: CLRP Projects, Newly Committed – Stuarts Draft



Map 32: CLRP Projects, Newly Committed, Waynesboro



8 – 2 Social Equity and Environmental Justice Benefits and Burdens Analysis

A benefits and burdens analysis is a tool in the long-range transportation planning process that provides information on the social equity or environmental justice of a transportation investment plan or program. The analysis, which is applied to data on disadvantaged populations or groups, examines the potential for positive or negative impact (benefits and burdens) that a given transportation investment program could have on certain persons, demographic groups, or geographic locations. The analysis can also address environmental justice concerns by identifying the potential for disproportionate impacts on the population or groups of concern.

Benefits are the positive impacts from transportation investment such as enhancements in transportation services, increases in public safety, congestion relief, and increased economic vitality. Burdens are the adverse effects of investment such as pollution, displacement of persons or businesses, diminution of economic vitality, congestion, or the denial, delay, or reduction of receipt of benefits.

No standardized methodology or set of criteria has been established for assessing the benefits and burdens of transportation investments. The FHWA/FTA certification review process seeks evidence that MPOs have established a thoughtful process for assessing the regional benefits and burdens of transportation system investments, with specific consideration as to how these effects are distributed among different demographic and socio-economic groups. This includes evidence that there is a data collection process, and that the analytical process seeks to assess the benefit and impact distributions of the transportation investments.

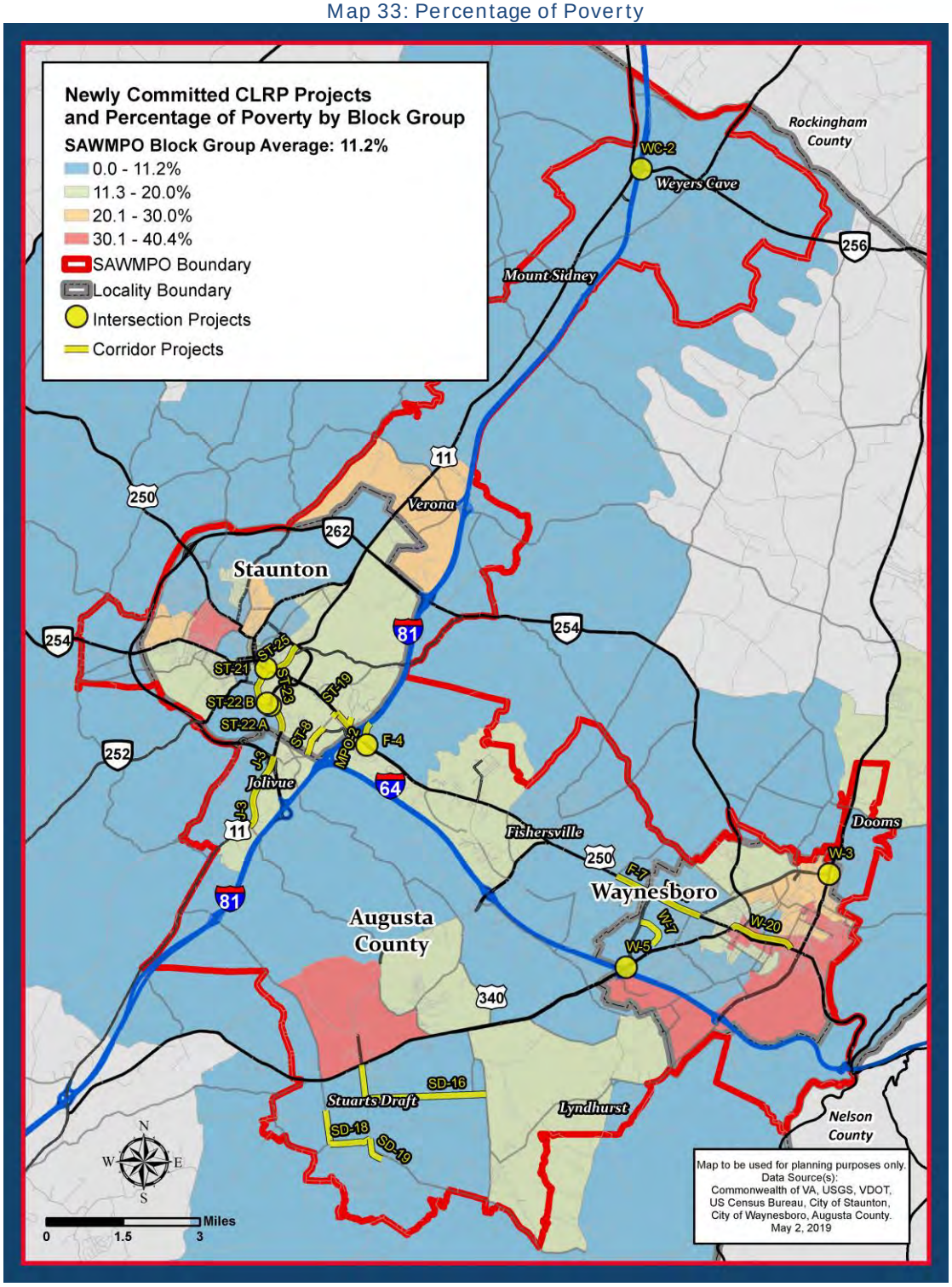
Newly Committed CLRP Projects In Relation to Disadvantaged Populations

The newly committed CLRP projects were mapped in relation to the six disadvantaged population categories detailed in Chapter 3 to provide insight about the potential for positive and negative impacts on each population group. Table 12 summarizes the six demographic subsets, and Maps 3 - 8 show each project's location compared to the geographic distribution of each demographic group. Based on the geographic analysis, the newly committed CLRP projects are not expected to result in a disproportionate impact on any disadvantaged population.

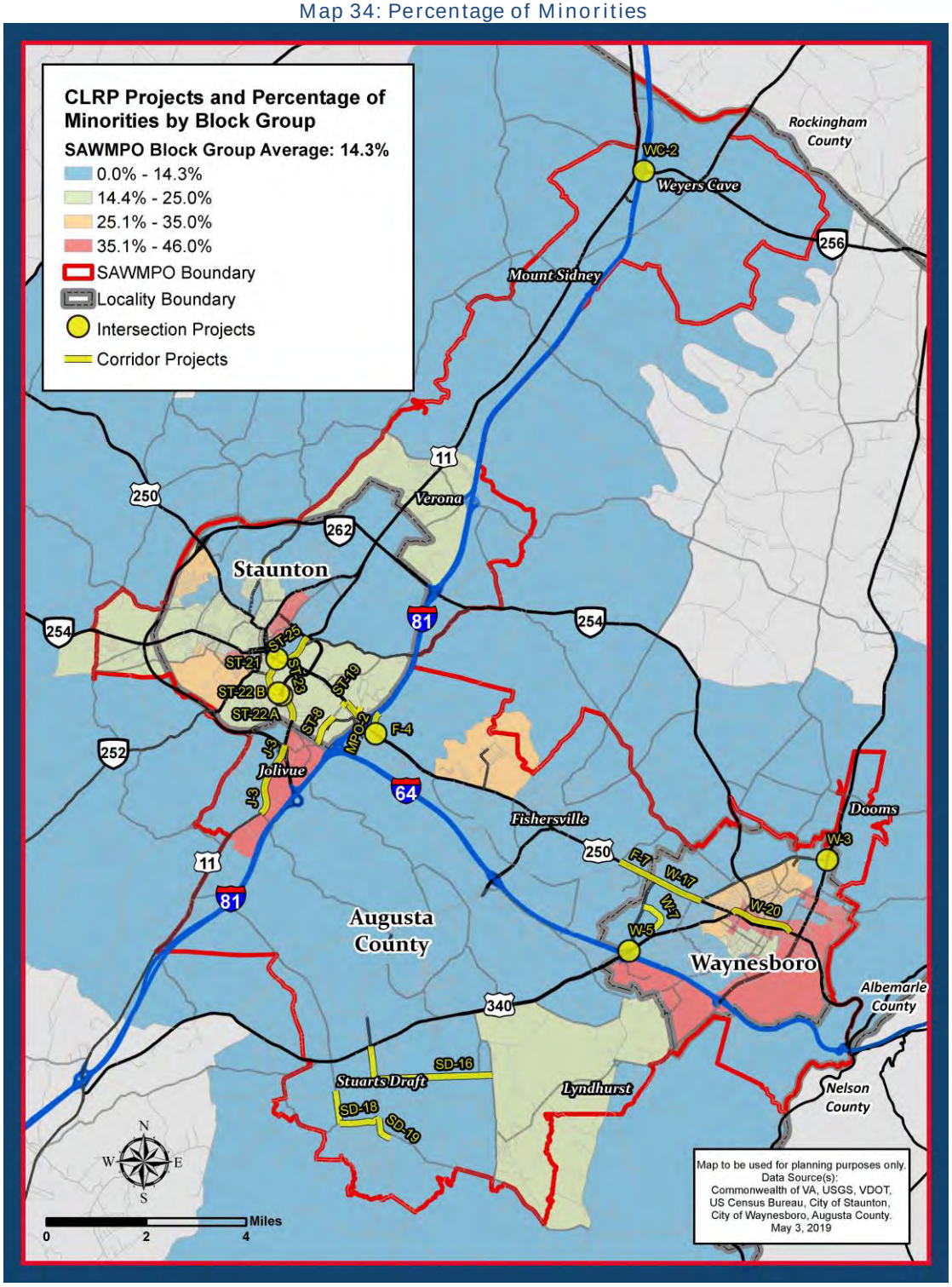
Table 12: Disadvantaged Population Comparison

	National	State	Augusta County	Staunton	Waynesboro
Poverty	14.1%	10.9%	9.2%	13.7%	17.4%
Minority	27%	32%	6.9%	16.4%	18.5%
Senior	15.6%	15%	20.7%	20.3%	18.6%
Disability	12.6%	11.5%	12.8%	15%	16.2%
Limited English	4.5%	2.6%	0.4%	0.4%	2.4%
Zero Car	8.7%	6.2%	4.2%	6.6%	8.4%

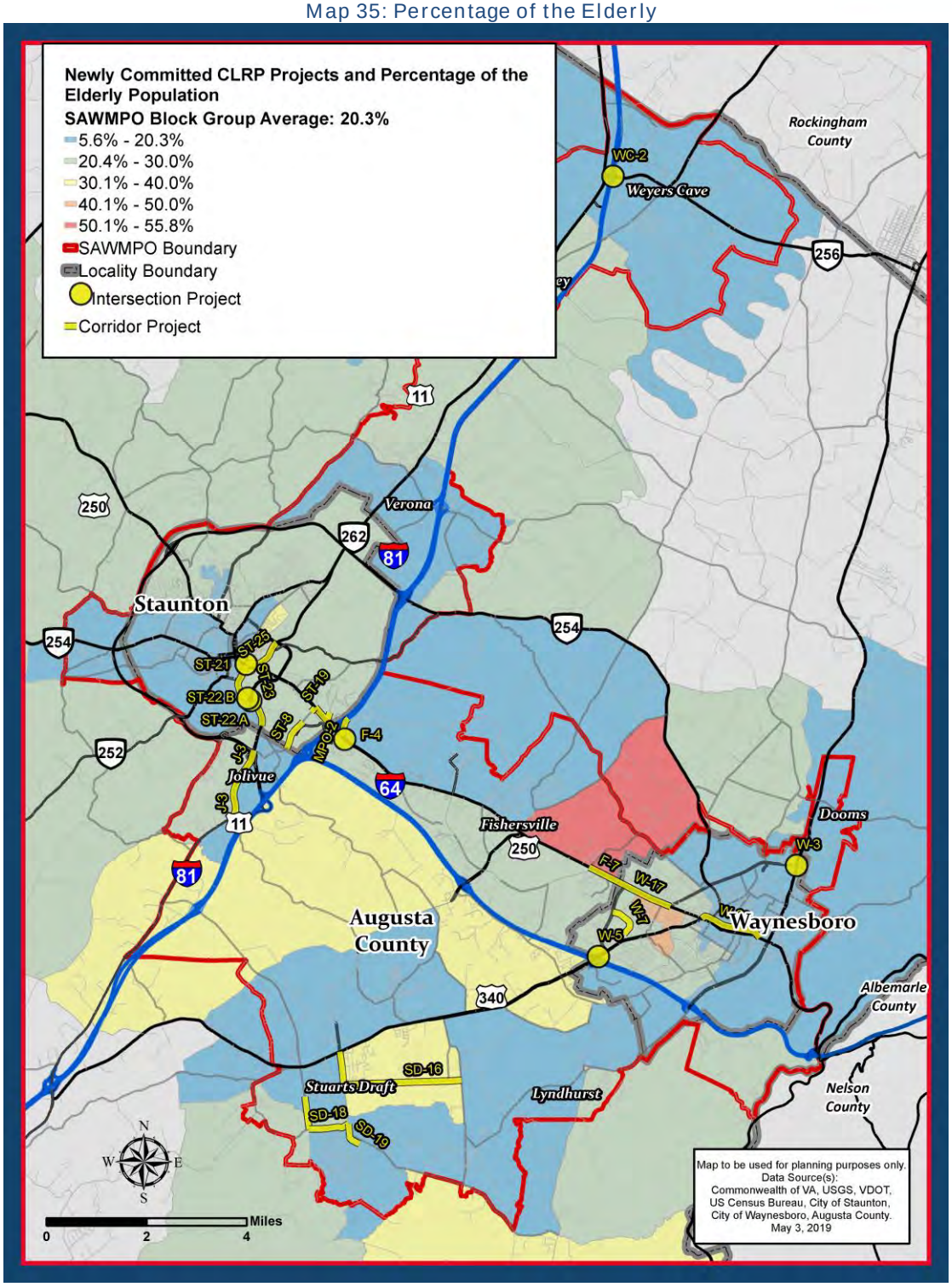
Map 33: Percentage of Poverty



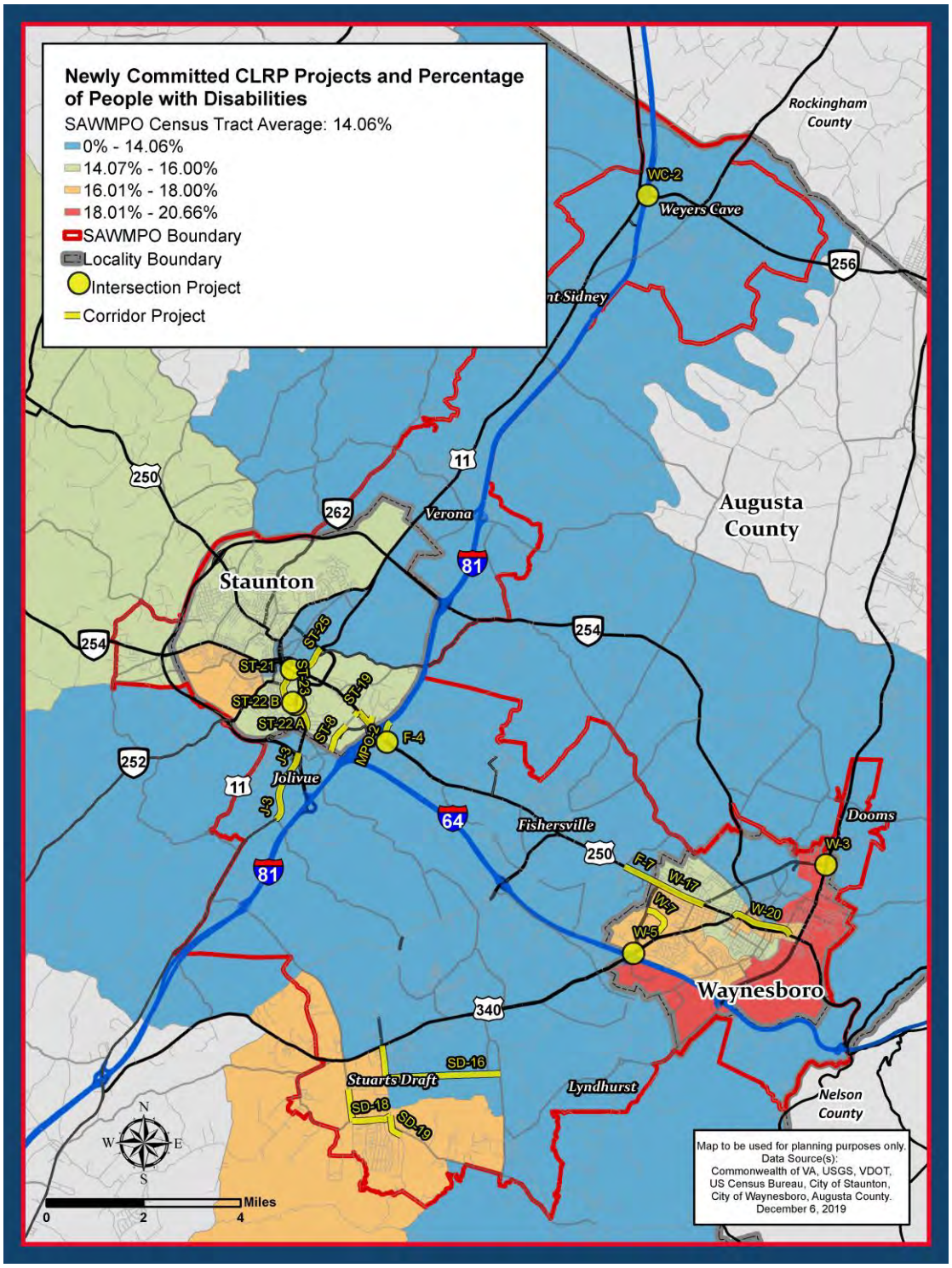
Map 34: Percentage of Minorities



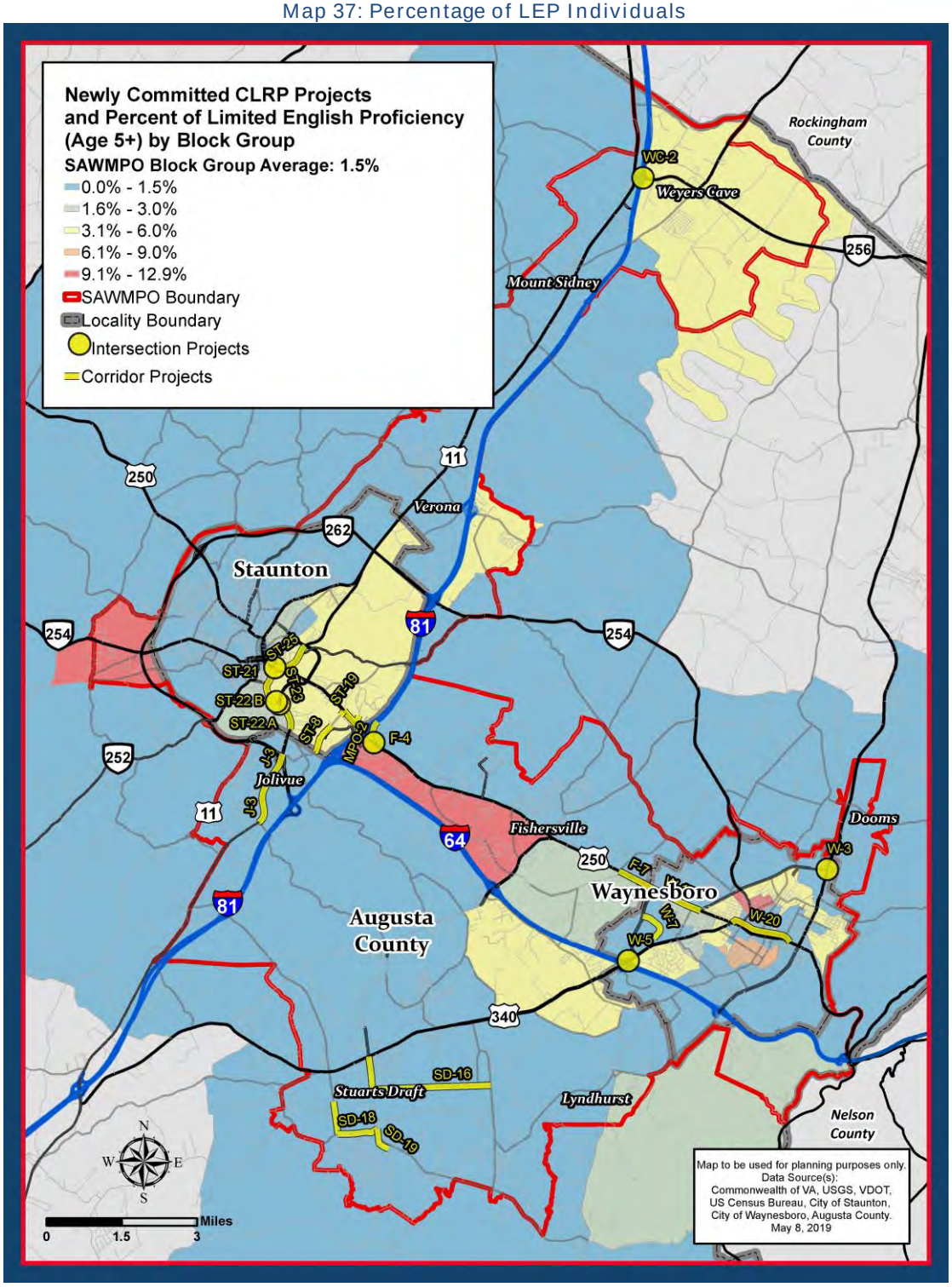
Map 35: Percentage of the Elderly



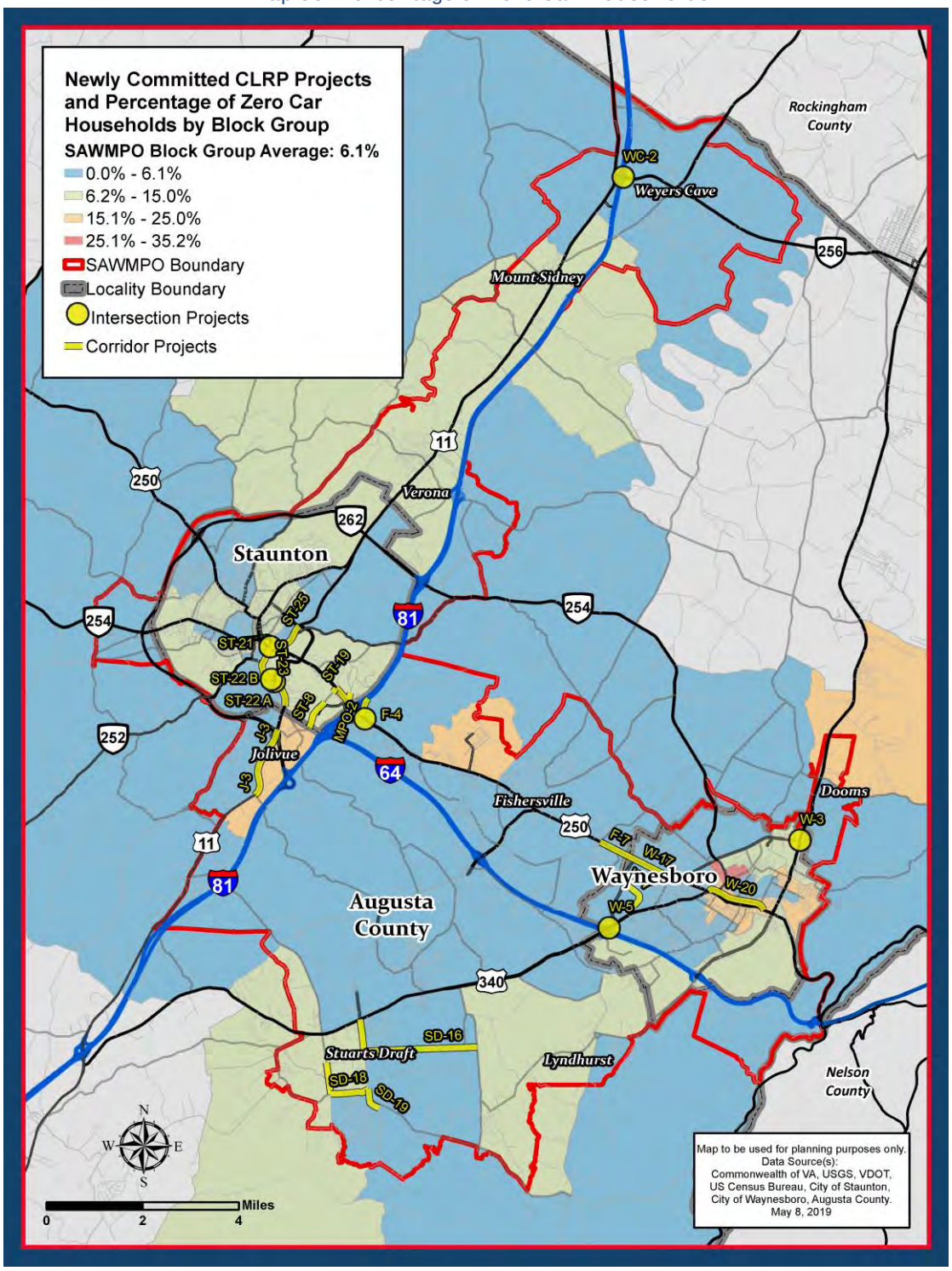
Map 36: Percentage of People with Disabilities



Map 37: Percentage of LEP Individuals



Map 38: Percentage of Zero Car Households



8 – 3 Environmental Mitigation Measures

Mitigation measures are required where the potential for adverse impacts may result with a transportation project. Mitigation measures can include limiting project scope, rehabilitating/restoring the affected environmental/cultural feature, or avoidance entirely. The LRTP considered the proximity of proposed transportation projects to the presence of cultural and environmental resources. During the preliminary planning stage, all projects are evaluated for the potential to impact private property, historic/archaeological resources, threatened and endangered species, farmland, public recreational facilities, jurisdictional waters, land use, contaminated sites, and noise levels as required by federal, state and local laws/regulations.

Programmatic mitigation measures include the following elements:

- Historic/Archaeologic Resources: mitigation for impacts is accomplished through avoidance or scientific excavation and documentation. Surveys, including deep testing and evaluations on a case-by-case basis are developed in consultation with key stakeholders.

- Wetlands: where unavoidable, consultation occurs with various resource agencies to develop replacement wetlands within the affected watershed. There are also wetland banking programs where projects commit funding to offset impacts.
- Floodplains: transportation projects must accommodate impacted floodplains through either avoidance, or designing highway elements (e.g., bridge/culvert openings, etc.) that allow water to flow without increasing the regulated floodplain level. Any adjustments to the floodplain level must conform to requirements set forth by the Army Corps of Engineers that may result in requiring adjustments to FEMA-regulated flood maps.

- Threatened & Endangered (T&E) Species: transportation projects must review and consider the presence of T&E species in consultation with the US Fish and Wildlife Service (FWS), Virginia Department of Game and Inland Fisheries (DGIF), and the Division of Natural Heritage (DNH) within the Virginia Department of Conservation and Recreation (DCR). Biological and habitat assessments must be conducted to determine if T&E species are present. The project must either avoid the impact or consider mitigation to include relocation of species, time of year restrictions for construction, etc.

- Marine Resources: when impacts to fish and aquatic resources cannot be avoided, transportation projects are required to protect resources by effectively managing storm water runoff, incorporating design features that minimize impacts to fisheries or minimize disruption to natural cycles such as not working within waters during periods of spawning activities.

- Surface and Ground Water: projects that impact waters are required to obtain all necessary regulatory approvals, permits, and licenses for each project. Where avoidance is not available, mitigation measures are required to be addressed through design and construction. VDOT requires completion of the Natural Resources Due Diligence Checklist (Form EQ-555) early in the design process.

- Noise: federal regulations require that VDOT determine and analyze anticipated noise impacts and alternative noise abatement measures for those impacts for specific types of highway construction projects. Noise impact studies are conducted to consider options for reducing noise levels along proposed federally funded highway improvement projects. FHWA has set forth project types that require noise abatement studies, but typically, these are projects where a new highway is constructed on a new location, or an existing highway's alignment is adjusted substantially either horizontally or vertically.

- Air Quality: the Clean Air Act requires that transportation projects not result in or contribute to violation of the National Ambient Air Quality Standards, or delay timely attainment of them. NEPA requires that each federally funded transportation project be evaluated for its potential impact on air quality in the immediate vicinity of the project, known as a "hot spot" analysis. Each applicable project must demonstrate that sensitive populations will not be exposed to pollutant concentrations above an applicable air quality standard.

- Hazardous Materials: due diligence must be performed to determine any "recognized environmental conditions" (REC's) on properties that will be acquired for the transportation project. REC's can indicate a continuing release, past release, or a material threat of a release of a hazardous substance into the soil, groundwater, or surface water. When REC's are determined to be present, the project is responsible for coordinating with appropriate environmental agencies to determine what regulatory requirements must be met or followed ahead of or during construction.

- Public Recreational Resources (Section 4(f) properties): the Department of Transportation Act of 1966 included a special provision stipulating that the FHWA and state DOTs cannot approve the use of land from publicly owned parks, recreational areas, wildlife refuges or public/private historical sites unless there is no feasible and prudent alternative to the use of the land and the action includes all possible planning to minimize harm to the property resulting from the use.

- Right of Way Acquisition: mitigation measures for impacted property owners, including minority and low-income populations should be considered, which may include avoidance, minimizing project scope, compensation and/or relocation. The Uniform Act must be adhered to for all federally-funded transportation projects.

Depending on complexity, size, and potential impacts, transportation projects with federal funding must be evaluated to determine three "classes of action" to determine how compliance with NEPA is implemented and documented. These include:

- Categorical Exclusions (CEs), which are issued for transportation project actions that do not individually or cumulatively have a significant impact on the environment.

- Environmental Assessments (EA), which are prepared for transportation project actions in which the environmental impact is not clearly understood or established. Should environmental analysis at the interagency review process result in a finding of no significant impact to the quality of the environment, a Finding of No Significant Impact (FONSI) is issued.

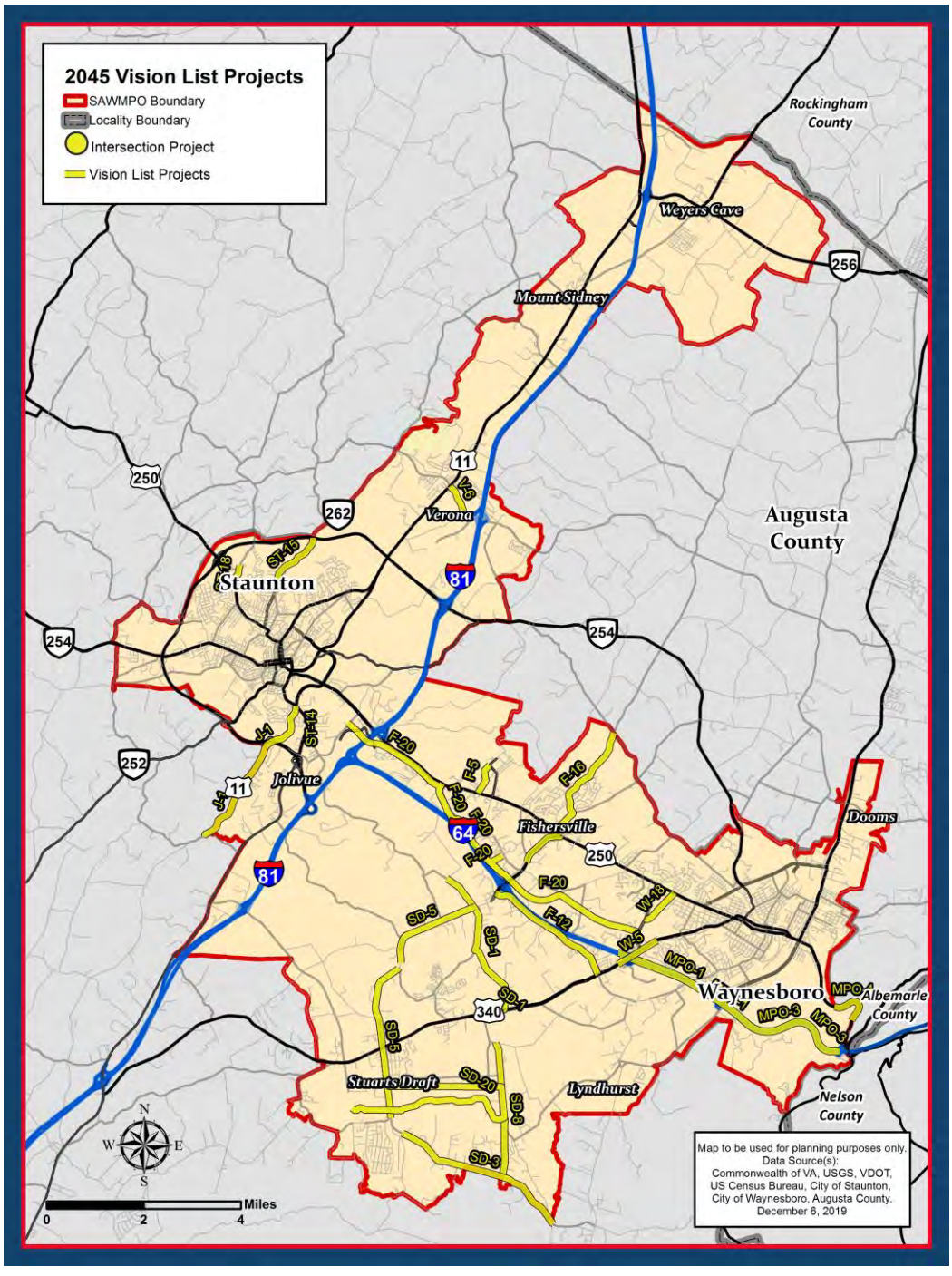
- Environmental Impact Statements (EIS), which are prepared for projects where it is known and evident that a transportation project action will have a significant impact to the environment.

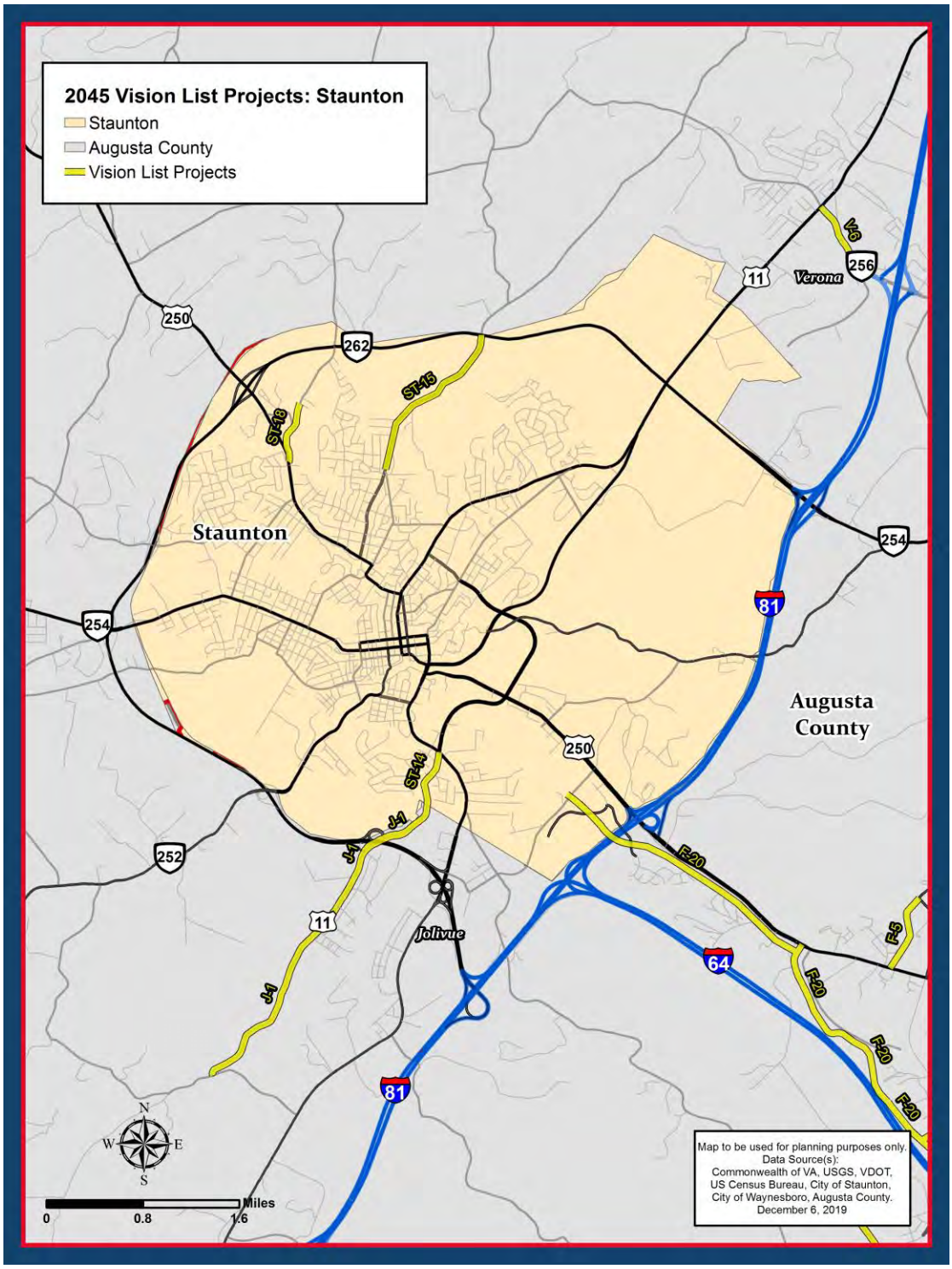
Appendix A: 2045 Vision List Projects

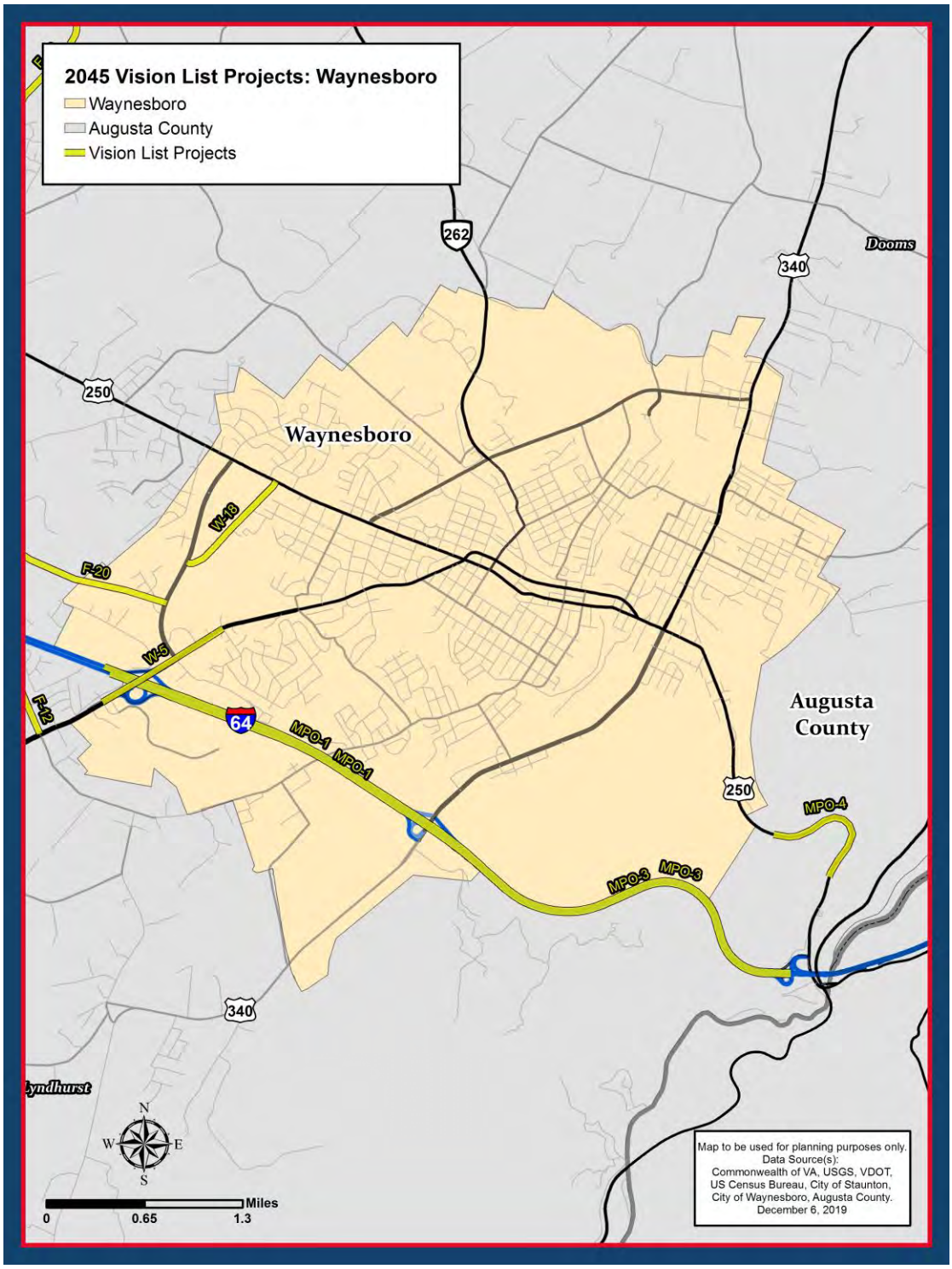
PROJECT ID	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	COST ESTIMATE (2020)
Augusta County					
F-5	Augusta	WWRC Long-term Access Improvements	3,700 feet of new alignment, 2-lane roadway with a shared use path to connect US 250 to the WWRC Campus	New Location	$16,115,700
F-12	Augusta	Augusta/F-12 VA 631 (Ladd Rd) from VA 608 (Tinkling Spring Rd) to US 340 (Stuarts Draft Highway)	Upgrade to 2-lane rural secondary road standards, including bike and pedestrian facilities from Rt 608 to US 340. Includes a shared use path.	Corridor	$29,881,375
F-16	Augusta	VA 608 (Long Meadow Rd) from US 250 to the northern boundary of MPO	Upgrade to 2-lane urban secondary road standards including bike and pedestrian facilities.	Corridor	$24,832,000
F-18	Augusta	Augusta/F-18 VA 285 (Tinkling Spring Rd) from Wilson Blvd (VA 625) to US 250 (Jefferson Hwy)	Upgrade to a 3-lane arterial (center left turn lane), with 12-foot travel lanes, curb and gutter, sidewalks, and multi-use paths provided.	Corridor	$14,450,100
F-20	Augusta	Augusta/F-20 Goose Creek Greenway from Staunton to Waynesboro	Construct a multi-use path along Goose Creek and connect to Waynesboro greenway system	Bicycle Pedestrian	$15,248,125
J-1	Augusta	Augusta/J-1 VA 613 (Old Greenville Rd) from Southern Corporate Limits of Staunton to VA 871 (Cochrans Mill Rd)	Upgrade to 2-lane urban secondary road standards with turn lanes	Corridor	$28,518,000

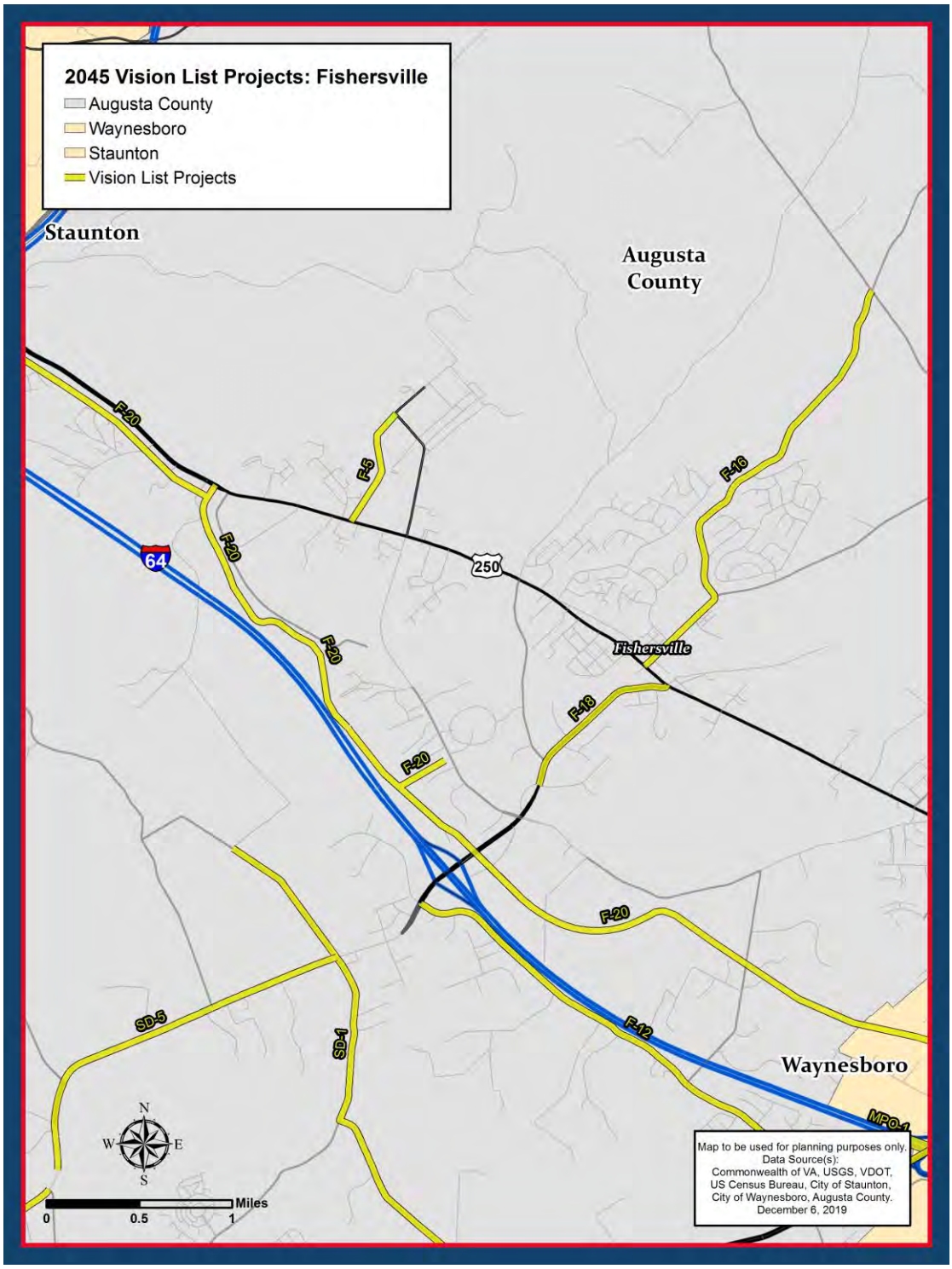
PROJECT ID	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	COST ESTIMATE (2020)
SD-1	Augusta	Augusta/SD-1VA 635 (Kindig Road/Augusta Farms/Ramsey Rd) from US 340 (Stuarts Draft Hwy) to VA 637 North (Jericho Road)	Upgrade to 2-lane rural secondary road standards including bike and pedestrian facilities.	Corridor	$34,735,750
SD-3	Augusta	Augusta/SD-3 SR 610 (Howardsville Turnpike) from SR 660 (Lake Road) to SR 855 (Mill Creek Lane)	Upgrade to 2-lane rural secondary road standards including reconstruction to improve horizontal and vertical alignment.	Corridor	$398,560
SD-5	Augusta	Augusta/SD-5 VA 608 (Tinkling Spring Rd/Draft Avenue) from SR 610 (Howardsville Turnpike) to SR 635 (Augusta Farms Road/Ramsey Rd)	Upgrade to 2-lane urban secondary road standards with turn lanes, shared use path	Corridor	$101,300,000
SD-8	Augusta	Augusta/SD-8 VA 633 (Patton Farm Rd) from VA 610 (Howardsville Turnpike) to VA 970 (Hall School Rd)	Upgrade to 2-lane rural secondary road standards including bike and pedestrian facilities.	Corridor	$29,989,250
SD-14	Augusta	Draft Avenue Pedestrian Improvements - Stuarts Draft Highway to Cold Springs Road	Infill missing sections of sidewalk, provide ADA-compliant crossings, provide pavement markings to delineate bicycle lanes/sharrows, pedestrian crossings and designated parking spaces, and construction of approximately 3,700 feet of sidewalk from the RR crossing south to Cold Springs Rd	Bicycle Pedestrian	$4,055,000
SD-20	Augusta	Stuarts Draft - South River Greenway	Install approximately a 7.5-mile greenway that connects Johnson Drive to Patton Farm Road along the South River and Wayne Avenue	Bicycle Pedestrian	$8,060,000
V-6	Augusta	VA 612 (Quicks Mill/Laurel Hill Rd) from US 11 to West Amber Rd	Add a raised median with directional openings from US 11 to Adams Dr. Add turn lane improvements east of I-81 to W. Amber Rd.	Corridor	$320,000
Staunton					

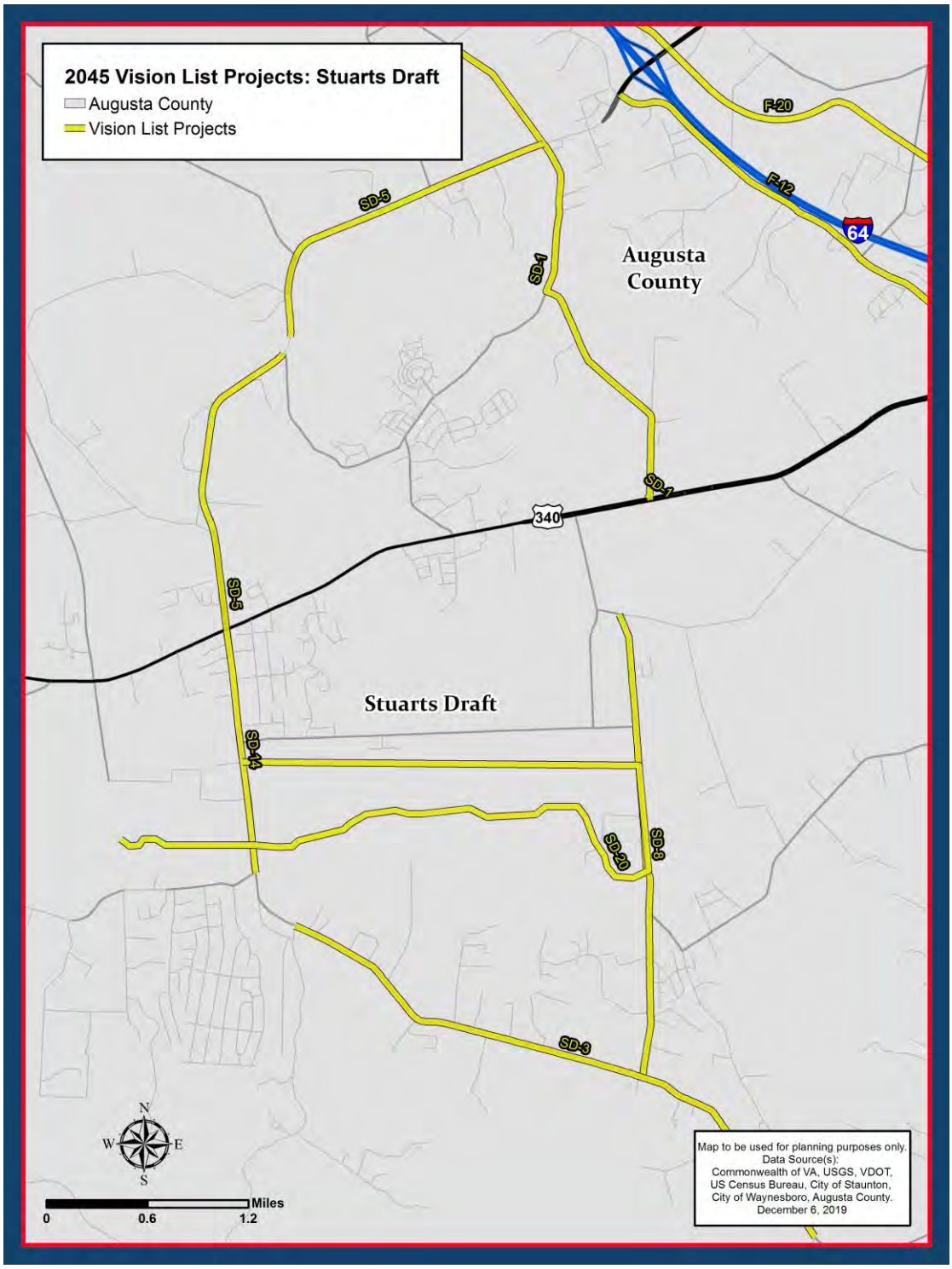
PROJECT ID	JURISDICTION	PROJECT NAME	PROJECT DESCRIPTION	TYPE	COST ESTIMATE (2020)
ST-14	Staunton	VA 613 (Old Greenville Rd) from Southern Corporate limits of Staunton to US 11 (Greenville Ave)	Reconstruct to current urban 2-lane design standards	Corridor	$5,505,720
ST-15	Staunton	ST-15 Spring Hill Rd from Donoghue St to NCL of Staunton	Reconstruct to current urban 2-lane design standards	Corridor	$16,296,000
ST-18	Staunton	ST-18 Englewood / Shutterlee Mill Road	Construct sidewalks, curb and gutter, improve geometry at Englewood / Churchville and Englewood/Shutterlee Mills intersections	Corridor	$1,030,000
Waynesboro					
W-18	Waynesboro	Bookerdale Rd from Main St to Lew Dewitt Blvd	Reconstruct culvert and widen roadway to two lanes to match existing section to the north and south. Will add sidewalks.	Corridor	$1,691,500
MPO					
MPO-1	Waynesboro	I-64 from West Corporate limits of Waynesboro to East Corporate Limits of Waynesboro	Implement recommendations from 2020 I-64 Corridor Study for interstate and Exit 94 (scoring assumes widening in both directions to 3-lanes between Exits 94 and 96). Includes Exit 94 WB ramp widening.	Interstate	$102,000,360
MPO-3	Augusta	I-64 from ECL of Waynesboro to US 250 (Exit 99)	Implement recommendations from 2020 I-64 Corridor Study for interstate and Exit 99 (scoring assumes eastbound TCL from Exit 96 to 99).	Interstate	$50,470,613
MPO-4	Augusta	Crozet Tunnel Shared Use Path	Paved 10 ft path from Waynesboro City Limits to Tunnel western portal	Bike/Ped	$5,000,000


2045 Vision List Projects
SAWMPO Boundary
Locality Boundary
Intersection Project
Vision List Projects
Rockingham County
Weyers Cave
Mount Sidney
Verona
Augusta County
Staunton
Jolivue
Fishersville
Dooms
Waynesboro
Albemarle County
Nelson County
Stuarts Draft
Lyndhurst
250
262
256
254
252
11
81
64
340
Miles
0
2
4
Map to be used for planning purposes only.
Data Source(s):
Commonwealth of VA, USGS, VDOT,
US Census Bureau, City of Staunton,
City of Waynesboro, Augusta County.
December 6, 2019


2045 Vision List Projects: Staunton
Staunton
Augusta County
Vision List Projects
Staunton
Augusta County
Verona
Jolivue
250
262
ST-15
ST-18
254
81
11
256
V6
ST-14
J-1
252
F-20
64
F-5
N
W
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S
0
0.8
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Miles
Map to be used for planning purposes only.
Data Source(s):
Commonwealth of VA, USGS, VDOT,
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City of Waynesboro, Augusta County.
December 6, 2019


2045 Vision List Projects: Waynesboro
Waynesboro
Augusta County
Vision List Projects
262
340
Dooms
250
Waynesboro
W-18
F-20
W-5
F-42
64
MPO-1
MPO-1
Augusta County
250
MPO-4
MPO-3
MPO-3
340
Lyndhurst
N
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E
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Miles
0
0.65
1.3
Map to be used for planning purposes only.
Data Source(s):
Commonwealth of VA, USGS, VDOT,
US Census Bureau, City of Staunton,
City of Waynesboro, Augusta County.
December 6, 2019


2045 Vision List Projects: Fishersville
Augusta County
Waynesboro
Staunton
Vision List Projects
Staunton
Augusta County
F-20
F-5
F-16
64
250
F-18
Fishersville
F-12
SD-5
SD-1
Waynesboro
MPO-1
N
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1
Miles
Map to be used for planning purposes only.
Data Source(s):
Commonwealth of VA, USGS, VDOT,
US Census Bureau, City of Staunton,
City of Waynesboro, Augusta County.
December 6, 2019


2045 Vision List Projects: Stuarts Draft
Augusta County
Vision List Projects
F-20
F-12
64
SD-5
SD-1
Augusta County
340
SD-7
SD-5
Stuarts Draft
SD-14
SD-20
SD-9
SD-3
N
W
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Miles
0
0.6
1.2
Map to be used for planning purposes only.
Data Source(s):
Commonwealth of VA, USGS, VDOT,
US Census Bureau, City of Staunton,
City of Waynesboro, Augusta County.
December 6, 2019

Appendix B: Projected Revenues by Funding Program

The Plan's fiscal constraint is based on projected available revenues that reflect assumptions about funding programs such as SMART SCALE, TAP, Revenue Sharing, and the Phase 1 I-81 Improvement Program projects. Revenues for FY21 – FY25 (columns highlighted in green) are funds that have already been allocated in the SYIP, and represent actual funding available, while the Phase 1 I-81 Improvement funds have been allocated through FY27.

SAWMPO 2045 LRTP Projected Revenues													
Funding Program	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033
Interstate 81 Improvement Program	$22,753	$37,752	$39,865	$51,298	$52,820	$37,290	$37,290	$ -	$ -	$ -	$ -	$ -	$ -
District Grant Program	694	2,266	11,697	5,302	4,368	1,831	1,677	1,594	1,555	1,455	1,333	1,273	1,188
High Priority Projects	2,153	3,016	1,587	0	0	1,831	1,677	1,594	1,555	1,455	1,333	1,273	1,188
Transportation Alternatives	478	256	256	300	300	300	300	300	300	300	300	300	300
Revenue Sharing	0	0	100	0	100	0	100	0	100	0	100	0	100
Highway Safety Improvement Program	0	0	0	0	0	150	0	150	0	150	0	150	0
State of Good Repair	300	0	0	71	66	61	56	53	52	49	45	43	41
	$26,378	$43,290	$53,505	$56,970	$57,654	$41,465	$41,101	$3,691	$3,561	$3,409	$3,112	$3,040	$2,816

Funding Program	FY2034	FY2035	FY2036	FY2037	FY2038	FY2039	FY2040	FY2041	FY2042	FY2043	FY2044	FY2045	Total
Interstate 81 Improvement Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$279,068
District Grant Program	1,086	973	865	755	622	485	348	348	348	348	348	348	43,108
High Priority Projects	1,086	973	865	755	622	485	348	348	348	348	348	348	25,537
Transportation Alternatives	300	300	300	300	300	300	300	300	300	300	300	300	7,589
Revenue Sharing	0	100	0	100	0	100	0	100	0	100	0	100	1,200
Highway Safety Improvement Program	150	0	150	0	150	0	150	0	150	0	150	0	1,500
State of Good Repair	37	34	30	27	22	18	14	14	14	14	14	14	1,088
	$2,659	$2,381	$2,211	$1,937	$1,716	$1,388	$1,159	$1,109	$1,159	$1,109	$1,159	$1,109	$359,090

Appendix C: Project Evaluation Scoring

Description				Overall Project Scoring				Congestion Mitigation (15%)	Safety (24%)	Accessibility (14%)	Economic Development (28%)	Environment (12%)	Land Use (7%)
PROJECT ID	LOCALITY	PROJECT NAME	PROJECT DESCRIPTION	Rank	Project Benefit	Estimated Cost (2020)	Project Score	Weighted Factor Value	Weighted Factor Value	Weighted Factor Value	Weighted Factor Value	Weighted Factor Value	Weighted Factor Value
W-5	Waynesboro	Rosser Ave Corridor Improvements	Implement 2017 corridor study recommendations for the corridor from Shenandoah Village Drive to Tiffany Drive	1.0	53.2	$845,775	628.8	3.9	21.0	5.7	9.5	8.3	4.8
ST-22	Staunton	Greenville Avenue / Statler Road / Ritchie Blvd Intersection Safety Improvements	At Statler: Extend existing island and signalize westbound right turn. Replace span wire with mast arms. Install crosswalks with pedestrian phasing. Install a sidewalk on the east side of US 11 between Amherst Road and Statler Boulevard. Install a raised median and extend to Ritchie Boulevard. At Ritchie Blvd: Install median to restrict left turns out of Ritchie Boulevard onto US 11.	2.0	37.1	$645,360	574.4	1.2	12.2	3.8	8.3	7.4	4.2
ST-21	Staunton	Greenville Avenue / Coalter Street / Commerce Road Intersection Improvements	Short Term: eliminate eastbound left turn/through movement and allow right turns only. Signalize right turns. The eastbound through and left turning vehicles will make a right onto US 11 southbound and then a U-turn at Richmond Avenue intersection	3.0	34.2	$800,000	427.0	0.0	13.7	3.0	7.0	6.4	4.1
ST-24	Staunton	Greenville Avenue Safety / Multimodal Access Improvements (Barterbrook Road to Amherst Road)	Orchard Hill Road: Close north driveway to Hertz on the west side of Greenville Avenue. Directional median opening. Install median at Orchard Hill Road to restrict left turns from auto dealership. Barterbrook Road: Restrict right turns from the CVS Pharmacy to Greenville Avenue. Dedicated right turn lane and extend it to the intersection approach. Change side streets' split phase to concurrent phase.	4.0	38.3	$1,168,935	327.4	1.0	6.8	6.3	11.9	8.3	3.9

Description				Overall Project Scoring				Congestion Mitigation (15%)	Safety (24%)	Accessibility (14%)	Economic Development (28%)	Environment (12%)	Land Use (7%)
ST-23	Staunton	Greenville Avenue Safety / Multimodal Access Improvements (Ritchie Blvd to Richmond Road)	Road diet with Intermittent median closures. Provide bike lanes on both sides of US 11. Install pedestrian refuge for crossing at Gay St.	5.0	42.1	$1,540,220	273.3	1.3	13.5	4.3	8.3	10.4	4.1
ST-20	Staunton	Richmond Road / Frontier Drive Operational / Safety / Access Management Improvements	Additional southbound and eastbound left turn lanes at Richmond Road and Frontier Drive. Close driveways, relocate crosswalks and implement access management on Frontier Drive at Lowes and Sheetz entrances	6.0	25.8	$1,733,000	148.9	0.0	13.0	3.0	3.8	3.0	3.2
F-4	Augusta	Augusta/F-4 US 250 (Jefferson Highway) at VA 792 (Sangers Lane/Brand Station Road)	Intersection improvements to add pedestrian signal heads, crosswalks, and formalized transit stops with supporting sidewalks to the existing signalized intersection.	7.0	20.6	$1,442,000	142.7	1.0	0.7	3.4	0.7	9.9	4.9
F-7	Augusta	US 250 (Jefferson Highway) STARS Study Improvements	Addition of a raised median, sidewalk (one side), revision of signal phasing and systemic signal safety and operational improvements from the western corporate limits to Goose Creek Rd/Old White Bridge Rd	8.0	27.0	$1,900,000	142.1	1.3	3.4	2.3	3.5	10.0	6.6
W-3	Waynesboro	W-3 Delphine Ave (VA 340) at Hopeman Pkwy	Realign eastbound and westbound approaches and incorporate westbound approach into the signal control. Will add sidewalk facilities.	9.0	21.2	$1,504,200	141.0	1.0	3.5	1.8	1.9	7.1	5.9
W-20	Waynesboro	West Broad Corridor Improvements	Access management and pedestrian improvements along the full length of Broad Street from East Main Street to Rosser Avenue/West Main Street. This project will include installation of medians, sidewalk repair, filling sidewalk gaps, and improving crossings.	10.0	46.6	$3,500,000	133.3	2.4	11.5	6.9	10.6	9.3	6.0
MPO-2	Augusta	US 250 / I-81 Exit 222 Interchange Ramp Improvements	Richmond Road Corridor Study North and Southbound Ramp Improvements	11.0	40.0	$3,411,000	117.3	0.0	1.1	8.4	20.4	8.2	2.0

Description				Overall Project Scoring				Congestion Mitigation (15%)	Safety (24%)	Accessibility (14%)	Economic Development (28%)	Environment (12%)	Land Use (7%)
J-3	Augusta	US 11 improvements from Christian's Creek Road to Staunton Corporate Limits	Shoulder widening from Christian's Creek Road to Rolling Thunder Ln. Convert Rolling Thunder Ln. to right in and right out. Install an overhead sign in advance of the Rt. 262 northbound on-ramp. Extend median and install straight through green arrow on the NB approach at intersection with Frontier Drive. Directional median opening at Payne Lane.	12.0	35.8	$3,117,975	114.8	1.9	10.4	1.5	8.0	7.4	6.6
ST-19	Staunton	Richmond Road / Crossing Way Shared Use Path Project	Shared use path on US 250 (Richmond Road) from Frontier Drive to Crossing Way with supporting crossing improvements at signalized intersections. Add shared use way along Crossing Way to roundabout.	13.0	19.3	$1,719,000	112.3	1.6	0.0	3.2	4.5	7.3	2.7
W-17	Waynesboro	West Main Corridor Improvements	Access management and pedestrian improvements along West Main Street from Hopeman Parkway to Lew Dewitt Boulevard. This project will include medians, restriping, and sidewalk repair and installation to increase safety and accessibility on West Main Street.	14.0	49.0	$5,200,000	94.3	3.5	17.5	6.7	5.5	10.0	5.8
SD-19	Augusta	Howardsville Turnpike/Hodge Street Pedestrian improvements	Install sidewalk along Howardsville Turnpike and Hodge Street with upgrades signal head	15.0	14.6	$1,700,000	86.1	0.1	0.0	0.5	0.8	7.3	6.0
ST-8	Staunton	George Cochran Parkway Extension	Construct new two-lane curb and gutter facility from current terminus of George Cochran Parkway at the roundabout to S. Frontier Drive. Will include shared use path per Greenway and Bike Ped Plans	16.0	45.0	$5,313,000	84.7	3.8	8.4	2.4	16.1	9.1	5.0
ST-25	Staunton	Commerce Road Road Diet and Shared Use Path	Reduce Commerce Road to 2-lane section between Greenville Ave and Statler Boulevard. Construct 10-ft wide shared use path on north side of the road as part of planned Greenway network	17.0	15.8	$2,332,428	67.7	0.4	3.5	1.3	2.7	3.4	4.5
SD-18	Augusta	Cold Springs Road Pedestrian Improvements	Installation of sidewalk along Cold Springs from Draft Avenue to Horseshoe Circle	18.0	16.3	$2,440,000	66.8	0.2	0.0	0.5	1.5	7.3	6.8

Description				Overall Project Scoring				Congestion Mitigation (15%)	Safety (24%)	Accessibility (14%)	Economic Development (28%)	Environment (12%)	Land Use (7%)
WC-2	Augusta	VA 256 (Weyers Cave Road) from I-81 NB ramp and Triangle Drive	Improve Weyers Cave Road (Rt. 256) from the northbound I-81 ramps to Triangle Drive by adding a median, turn lanes and a shared use path. Project includes the construction of a new park and ride facility.	19.0	30.3	$4,950,000	61.3	2.5	4.5	4.4	6.1	10.8	2.0
SD-16	Augusta	Wayne Avenue Pedestrian Improvements - Draft Avenue to Patton Farm Road	New and upgraded sidewalk from Draft Ave to Crestview Drive, and installation of a greenway or multi-use path from Crestview Drive to Patton Farm Road	20.0	21.2	$3,730,000	56.7	0.5	2.3	1.0	5.3	9.1	2.9
SD-14	Augusta	Draft Avenue Pedestrian Improvements - Stuarts Draft Highway to Cold Springs Road	Infill missing sections of sidewalk, provide ADA-compliant crossings, provide pavement markings to delineate bicycle lanes/sharrows, pedestrian crossings and designated parking spaces, and construction of approximately 3,700 feet of sidewalk from the RR crossing south to Cold Springs Rd	21.0	20.7	$4,055,000	51.1	1.5	1.9	2.4	2.3	8.9	3.8
W-7	Waynesboro	Lew Dewitt/Rosser Connector	New roadway construction for road to connect to Rosser Ave (via Tiffany Drive) and Lew Dewitt Blvd near Bookerdale Road. Will add Bike, Sidewalk, and greenway facilities.	22.0	55.3	$11,500,000	48.1	6.0	5.3	11.9	14.7	11.7	5.8
SD-12	Augusta	Augusta/SD-12 VA 909 (Johnson Rd) from current southern terminus to VA 608 (Cold Springs Rd)	Upgrade to 2-lane urban secondary road standards with turn lanes and a shared use path	23.0	43.6	$9,229,545	47.3	8.7	9.4	2.6	11.7	8.7	2.6
ST-14	Staunton	ST-14 VA 613 (Old Greenville Rd) from Southern Corporate limits of Staunton to US 11 (Greenville Ave)	Reconstruct to current urban 2-lane design standards	24.0	22.3	$5,505,720	40.5	0.0	2.8	2.0	7.8	5.7	4.0
V-6	Augusta	VA 612 (Quicks Mill/Laurel Hill Rd) from US 11 to West Amber Rd	Add a raised median with directional openings from US 11 to Adams Dr. Add turn lane improvements east of I-81 to W. Amber Rd.	25.0	37.2	$9,243,930	40.2	0.0	9.5	2.5	16.4	5.7	3.2
SD-20	Augusta	Stuarts Draft - South River Greenway	Install approximately a 7.5-mile greenway that connects Johnson Drive to Patton Farm Road along the South River and Wayne Avenue	26.0	29.4	$8,060,000	36.5	0.7	2.3	1.7	14.2	7.3	3.3

Description				Overall Project Scoring				Congestion Mitigation (15%)	Safety (24%)	Accessibility (14%)	Economic Development (28%)	Environment (12%)	Land Use (7%)
F-20	Augusta	Augusta/F-20 Goose Creek Greenway from Staunton to Waynesboro	Construct a multi-use path along Goose Creek and connect to Waynesboro greenway system	27.0	47.1	$15,248,125	30.9	7.5	0.6	10.7	15.3	9.0	4.1
MPO-4	Augusta	Crozet Tunnel Shared Use Path	Paved 10 ft path from Waynesboro City Limits to Tunnel western portal	28.0	17.1	$5,574,492	30.7	2.6	0.3	2.0	0.4	9.1	2.7
F-5	Augusta	WWRC Long-term Access Improvements	3,700 feet of new alignment, 2-lane roadway with a shared use path to connect US 250 to the WWRC Campus	29.0	41.6	$14,200,000	29.3	2.8	1.7	5.8	15.2	11.7	4.5
F-18	Augusta	Augusta/F-18 VA 285 (Tinkling Spring Rd) from Wilson Blvd (VA 625) to US 250 (Jefferson Hwy)	Upgrade to a 3-lane arterial (center left turn lane), with 12-foot travel lanes, curb and gutter, sidewalks, and multi-use paths provided.	30.0	31.2	$14,450,100	21.6	1.9	0.5	4.7	11.1	9.1	3.9
F-12	Augusta	Augusta/F-12 VA 631 (Ladd Rd) from VA 608 (Tinkling Spring Rd) to US 340 (Stuarts Draft Highway)	Upgrade to 2-lane rural secondary road standards, including bike and pedestrian facilities from Rt 608 to US 340. Includes a shared use path.	31.0	38.8	$29,881,375	13.0	1.4	2.5	3.6	15.3	9.0	7.0
F-16	Augusta	Augusta/F-16 (includes old F-10) VA 608 (Long Meadow Rd) from US 250 to the northern boundary of MPO	Upgrade to 2-lane urban secondary road standards including bike and pedestrian facilities.	32.0	30.9	$24,832,000	12.4	0.8	13.4	1.4	2.8	8.9	3.6
SD-1	Augusta	Augusta/SD-1VA 635 (Kindig Road/Augusta Farms/Ramsey Rd) from US 340 (Stuarts Draft Hwy) to VA 637 North (Jericho Road)	Upgrade to 2-lane rural secondary road standards including bike and pedestrian facilities.	33.0	37.9	$34,735,750	10.9	1.0	12.1	1.5	7.3	9.0	7.0
SD-8	Augusta	Augusta/SD-8 VA 633 (Patton Farm Rd) from VA 610 (Howardsville Turnpike) to VA 970 (Hall School Rd)	Upgrade to 2-lane rural secondary road standards including bike and pedestrian facilities.	34.0	27.5	$29,989,250	9.2	0.9	6.6	2.4	5.5	7.9	4.1
ST-18	Staunton	ST-18 Englewood / Shutterlee Mill Road	Construct sidewalks, curb and gutter, improve geometry at Englewood / Churchville and Englewood/Shutterlee Mills intersections	35.0	7.7	$10,567,087	7.3	0.3	0.3	0.6	0.0	4.1	2.4
J-1	Augusta	Augusta/J-1 VA 613 (Old Greenville Rd) from Southern Corporate Limits of Staunton to VA 871 (Cochrans Mill Rd)	Upgrade to 2-lane urban secondary road standards with turn lanes	36.0	20.3	$28,518,000	7.1	0.0	3.8	0.5	4.5	4.6	6.9

Description				Overall Project Scoring				Congestion Mitigation (15%)	Safety (24%)	Accessibility (14%)	Economic Development (28%)	Environment (12%)	Land Use (7%)
SD-3	Augusta	Augusta/SD-3 SR 610 (Howardsville Turnpike) from SR 660 (Lake Road) to SR 855 (Mill Creek Lane)	Upgrade to 2-lane rural secondary road standards including reconstruction to improve horizontal and vertical alignment.	37.0	12.0	$19,655,400	6.1	0.0	0.2	1.0	3.8	5.3	1.7
SD-5	Augusta	Augusta/SD-5 VA 608 (Tinkling Spring Rd/Draft Avenue) from SR 610 (Howardsville Turnpike) to SR 635 (Augusta Farms Road/Ramsey Rd)	Upgrade to 2-lane urban secondary road standards with turn lanes, shared use path	38.0	58.3	$101,300,000	5.8	5.7	8.7	8.8	20.4	9.0	5.6
ST-15	Staunton	ST-15 Spring Hill Rd from Donoghue St to NCL of Staunton	Reconstruct to current urban 2-lane design standards	39.0	7.0	$16,296,000	4.3	0.0	2.1	1.2	1.5	0.5	1.8

Appendix D: Public Comment

August 23, 2019 Stakeholder Session

Group 1

Safety

- 250 Waynesboro
- Urban centers in general
- Water can in Staunton
- West Beverly Street, 262, Grubert Avenue
- Shelburne Middle School safety and circulation concerns
- Frontier and 250, Statler and 250 exclusive right turn
- Demand at 250 and 81 will go up and safety will go down
- Staunton access management and bike-ped improvements need to increase
- At grade rail crossing safety near Hal, Bulling Street; Buckingham Branch recommends closure and the city is open to the idea; trucks get struck on crossing (2 fatalities on B&B railroads could perhaps warrant more ped restrictions?)

Congestion

- 250 and 64 exit, restrict trucks?
- No Afton Mountain downhill passing lane, problems at intersection of 250 and Route 6
- Need signals at Greenville Avenue or Gypsy Hill Park
- Would a new interchange between 254 and 81 make sense?

Access and Mobility

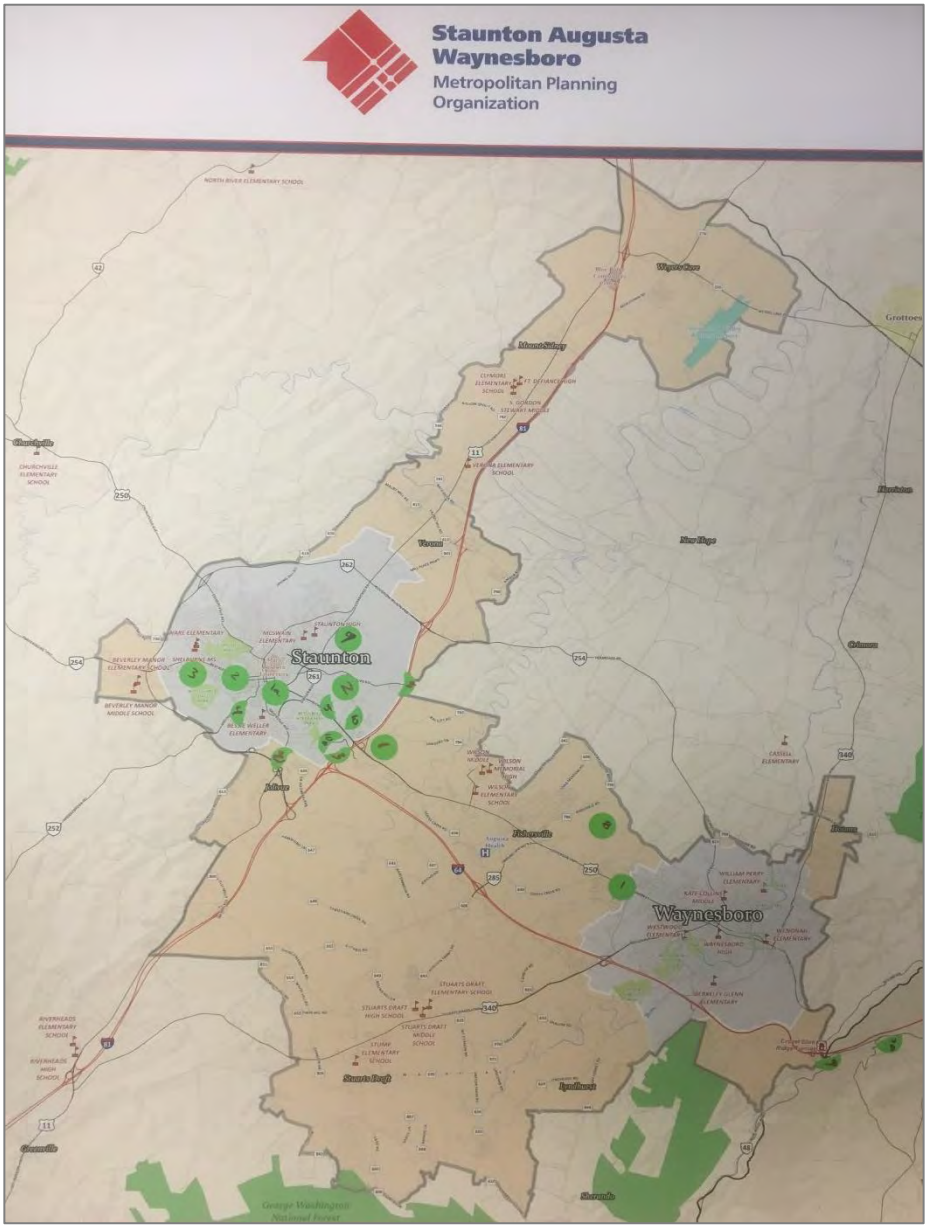
- Ride hailing in rural areas as alternative to paratransit
- General need for bike-ped in Staunton, witness increased demand

Economic Development

- Crossing Way Extension to National Road
- Look at peds crossing railroad
- Development at Staunton Crossing is key to area growth – this is in B&B master plan
- Staunton Crossing jobs are increasing and will need better access and circulation, the only B&B railroad opportunity for industrial growth or RR spur

Group 2

Map from Group 2 at the August 23 Stakeholder Meeting



Safety

- PED connections at BRCC
- Lack of multimodal facilities on most major roads
- Substandard shoulders for bike/traffic mix (Spring Hill)
- Improved pavement marking and signage (see Harrisonburg)
- Lane drops
- Wayfinding and lighting
- Look at SRTS coordinators for Augusta and Staunton (see Waynesboro)

- Overbuilt infrastructure opportunities for repurpose on US 11, 250, 340 for Bike/ped and for gateways
- Incomplete sidewalk network in urban areas (Mary Baldwin) and to public schools (ped crossings/gaps in network)

Congestion

- Local pinch points and bottlenecks are:
- Entering Staunton (11 and 250/railroad tunnel; exit 222 as development occurs)
- Kate Collins Middle (school rush and trucks)
- Exit 235 BRCC
- Exit 94 Waynesboro (backs up on mainline and there are inadequate bridges)
- 81/64 operations following 81 improvement plan

Access/mobility

- School access set up for auto access only
- Transit improvement/routing/schedule/ getting to BRCC and looking for efficiency improvements
- There's a similar safety need for bike/ped
- Airport connection to BRITE
- BRITE stop improvements (pullouts, amenities) and connections to sidewalks
- Connection local bike/walk with greenway network with Crozet tunnel (access and tourism)
- Intercity service from C'ville to Harrisonburg (SRTS Coordinators)
- Explore rail passenger improvements from the Valley to DC (tourism, teleworking)
- Improved outer access around Waynesboro and 262

Economic Development

- PnR Fishersville
- Impacts on autonomous vehicles and trucking
- More rail and trucking opportunities
- Impacts on airport growth and economic access boost for region, but minimize risk of sprawl
- Using bike/ped infrastructure to increase economic development (health and lifestyle; expand routes into rural areas)
- Address bottlenecks: exit 235/access to airport; exit 94/access to Stuarts Draft (secondary route from Exit 96
- Better access and mode choice west Staunton and East Waynesboro (elderly, regional activity centers)

Group 3

Safety

- Heal on collisions
- Distracted driving
- Passing lanes
- US 250 and W Main in Waynesboro closing TWLTLS
- I-81 incidents and constructions traffic diversion
- Bus stops out of travel lanes on higher-speed roadways

- Bike/ped accessibility
- Peds on Frontier Avenue

Congestion

- Lew Dewitt/Rosser
- WWRC/250 exit 94
- US 340 built out to Waynesboro and Stuarts Draft
- Exit 99/US250 East with commuters and tourists
- Exist 235 if mega site develops

Accessibility and Mobility

- Fill SW gaps in Waynesboro and Staunton
- Connect Fishersville to Stuarts Draft with SUP
- Bring 250 Connector to downtown Waynesboro
- Crozet Tunnel Trail
- Ped connectivity to expand those who can access transit
- Staunton to Fishersville to Waynesboro Greenway Path (connect all activity nodes in the MPO for bike/ped)

Economic Development

- Crozet Tunnel trail
- Capacity at 235 to save new large-scale industrial

Group 4

Safety

- Pedestrian connectivity and safety (Beverly street and to Augusta County Library)
- Safety for transit stops
- Public awareness and education
- Gypsy Hill Park no light or bike/ped
- Having enforcement areas
- 340/250 in Waynesboro and Staunton
- Wilson Complex 1 road in and out need secondary access road
- Emergency vehicles in rural areas and woodlands
- No connection between community plans such as comp plans, emergency, and transit plans

August 23, 2019 Stakeholder Session

Safety and Congestion

Bike/Ped Crossings and bike/ped infrastructure

- Downtown Staunton sidewalk network is fragmented
- Downtown Waynesboro, especially the western side of the city, and along Lew Dewitt/Rosser Avenue corridor are areas where bike/ped infrastructure is lacking
- There are funding challenges to address this issue everywhere in the region
- Overall, the region needs a strategy to not only improve bike/ped infrastructure, but also at the same time reduce reliability on automobiles

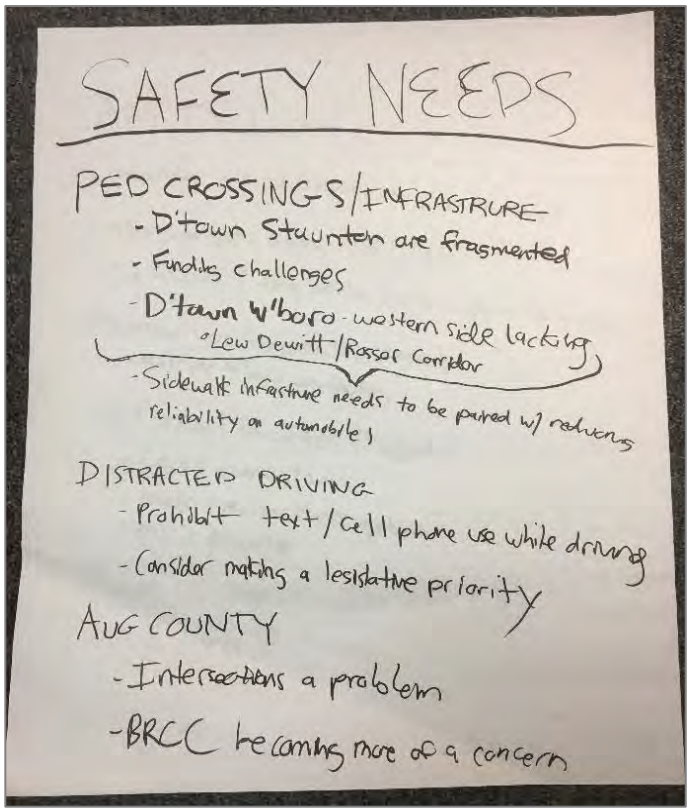
Distracted driving

- Prohibit text and cell phone use while driving
- Consider making this a legislative priority

Augusta County

- Intersections a problem for safety
- BRCC and the exit are a growing concern
- Commuting on backroads is becoming more of a safety concern as the population increases

Notes from the September 4, 2019 Policy Board Work



I-81

- Interchanges along both interstates will likely need to be addressed in the future for safety and congestion concerns
- Specific example: I-64: 250 and I-64 along Afton
- Waynesboro needs improved wayfinding coming off of I-64 exits
- Lack momentum in creating a rail network parallel to 81 to increase freight movement and take pressure off the interstate
- Need a multi-state option as rail is private and across state lines
- Route 11 will likely need to be improved as traffic on I-81 continues to increase in volume, although it is unlikely the road could be expanded to four lanes

Access and Mobility

- Road diets may be a viable solution to improve bike/ped connections

- As the population continues to age, a key emphasis should be placed on enhanced transit for the elderly
- Transit infrastructure improvements are needed for stops and sidewalk connections
- Must consider the implications of autonomous vehicles on transit
- The Fishersville/life core area is experience a growth in senior housing and should be a focus for future transit options that tie into the hospital

Economic Development

- Better connectivity to the airport via transit and other modes should be a priority
- Interchanges along the interstates, specifically 235, need to be improved as both corridors grow
- Passenger rail connections to east-west, specifically to Charlottesville and points east, and connections north-south, specifically to DC and points north, could help attract employers and employees to settle in the area
- There is a need to increase reliability of passenger connections, with the Lynchburg/Roanoke connection cited as an example

Phase 2 Public Engagement Responses: ArcGIS Online Questionnaire, October 1 – 31, 2020

ID	Proposed Projects	Problem Projects	Missing Projects	Proposed Projects
1	None of the proposed projects affect the West end of Staunton and are therefore of no use to me		A very specific issue that needs to be addressed is widening Rt. 262 from 2 to 4 lanes throughout, which should have been done in the first place, it was shortsighted not to	disagree
2			The bridge at exit 235 is a bottleneck. It seems that's going to be addressed if there is the addition of turn lanes for the interstate ramps, but that wasn't fully clear. Otherwise, that bottleneck is going to get worse with the addition of a park and ride. Additionally, if the park and ride's entrance aligns with Triangle Drive, a traffic light really needs to go in there. It is already difficult to get out of Triangle Drive at peak times.	neutral
3			The entrance ramp on I-64 (west-bound) at Exit 96 in Waynesboro has a very short merge lane into traffic. On a monthly basis I cannot get into traffic and end up over the rumble strips off the road before I can merge into traffic. It would be nice to extend the merge lane a hundred feet or so.	agree
4	The sidewalk system in Waynesboro is horrendous and should be examined by city officials using a stroller or mobility device. Attempt to go anywhere that you might need on wheels and you will quickly see the challenges. Sidewalks stop, there are not adequate ramps on existing sidewalks, there are large swaths connecting important areas with no sidewalks or pedestrian access. Even a paved area well off the road would be wonderful in connecting major shopping areas such as Walmart and Sharp Shopper. Why were these roads designed with no thought for pedestrians? The Greenway is wonderful, but not practical, as it can only really be used for recreation, and not actually getting anywhere. I lived for over 5 years in Europe, where practically every small town was accessible by some form of public transportation and where footpaths are common connecting major cities 30 miles apart. There is a lot of work to be done and I am excited that these issues are at least being addressed here.		Please see above.	neutral
5	I would like to see continued focus on sidewalk construction and making our area more pedestrian-friendly		I would like to see the development of a Rail to Trail system here in the SAW area	agree
6			I think that many of them are fine and good projects. Personally, I would be a HUGE fan of either widening the streets around Gypsy Hill park (and Montgomery) or putting in sidewalks. I live on Third St, and I would LOVE to feel safe enough to walk with my child to the park, or run	neutral

Phase 2 Public Engagement Responses: ArcGIS Online Questionnaire, October 1 – 31, 2020

ID	Proposed Projects	Problem Projects	Missing Projects	Proposed Projects
			on the roads, but with the blind curves, big hills and cars breaking the speed limit regularly, that's just not safe. But, I know that funds are limited and other areas also need work.	
7	Plans seem to address primary issues in major development areas. Need to enhance plan and funding for regional greenway system, which would improve community health and increase tourism opportunities.		Access and congestion along Fort Defiance Road at Fort Defiance School complex area. Additional improvements needed along Route 11 corridor, primarily from Staunton to Weyers Cave.	agree
8		F-7 I don't want the raised median from Aero drive to the motel. That would interfere with access to businesses along that corridor. The raised medians would also result in numerous U-turns by residents and patrons coming out of side roads.		strongly_disagree
9	Frontier dr between rt 1 and walmart is a disgrace, and a speedway between. Even most ofthe police do not observe the 25 mph speed limit between rt11 and bartgerbrook. We've been promised for over 30 years ti would be fixed...when?	Frontier dr between rt11 and barterbrook rd is a nightmare!		strongly_disagree
10			Please consider resurfacing routes 695, 694, 693, and 697 in Augusta County. The wear and tear on vehicles is ridiculous and even more so when you think that there are still miles of unpaved roads in Augusta County in 2020.	disagree
11	The proposed projects are a very good start, but they are not adequate for a 25 year plan.	Springhill Road improvements in Staunton. This is a good concept, but the price tag is too high. See comments below about several smaller projects that could have been included instead.	Staunton has an approved Bicycle and Pedestrian Plan as well as a draft Greenways Plan. Other than currently funded projects none of the concepts or projects are included in this 2045 vision. Adding even simple things like shoulder improvements necessary for bike lanes or the hundreds of intersections throughout the MPO area that need safety improvements for pedestrians would be worthwhile.	neutral
12		Would like to see more traffic circles used.	Would like to see a greenway from Staunton to the crozet tunnel.	agree
13		Unsure if the projects identified near the interstate interchanges are comprehensive enough. Especially around Weyers Cave, which experiences significant back-up in the morning and evening.		agree
14	For me, and many area residents, as well as for tourists to our area, more pedestrian walkways and paths and bicycling lanes would be the most useful. We are NOT a pedestrian and bicycle friendly place.		In Staunton, we have long needed, and long advocated for, a walking route with signage between Gypsy Hill Park and Betty Bell Mountain and/or the Frontier Culture Museum. This pedestrian bicycle-friendly route would serve both exercise and as a social artery for Staunton. This route, approximately seven miles would also be a big draw for tourists, especially younger ones with kids to entertain and	agree

Phase 2 Public Engagement Responses: ArcGIS Online Questionnaire, October 1 – 31, 2020

ID	Proposed Projects	Problem Projects	Missing Projects	Proposed Projects
			bicycle. We don't have anything like this in Staunton, and we lose out to other towns because of this.	
15	The focus is on widening and adding roads. I'd like to see more public transportation within the city limits of Staunton & Waynesboro and BETWEEN them. Bike lanes and sidewalks are more important to me than new roads		Staunton needs to be more 'walkable' - and one area is the 11 bypass on the east side of the city - it's almost dangerous to bike and impossible to walk - despite the fact that Bell's Lane is accessed by many walkers/bikers from it.	disagree
16	Need more transit options in and around Waynesboro, Waynesboro to Staunton, and Waynesboro to Charlottesville. Need to slow traffic's on 250 coming into Waynesboro.	Public transit, sidewalks were among the top identified. Bicycle paths were moderate level, however if you are improving sidewalks then bicycle paths would be equally valuable. Where there is limited public transit people generally use bicycles. So bicycle paths serve both a necessity need and and recreational need.	Public transit, sidewalks were among the top identified. Bicycle paths were moderate level, however if you are improving sidewalks then bicycle paths would be equally valuable. Where there is limited public transit people generally use bicycles. So bicycle paths serve both a necessity need and and recreational need. comment above	neutral
17	All of the projects that would meet my transportation needs for improved bicycle and pedestrian safety are in the Vision List category.	Adding the connector between Tiffany Drive and Bookerdale Road is going to make that stupid arrangement of parking lots and "roads" around Wal-Mart and Martin's a disaster area. It's already difficult to figure out when you're in a parking lot vs. a road and there are always cars stopped with flashers on, abandoned buggies, pedestrians everywhere, etc. Drivers blow through stop signs and the number of crashes in that area is just ridiculous. Adding a connector (and the recently approved development that it will reach) is just going to overwhelm an already congested and hazardous area.		disagree
18			I"m requesting that consideration be given to the long-range possibility of separate highways for eighteen-wheelers, semi-trucks and the like, that deliver food, gas, products and materials across the U.S., including Virginia, of course. Separate highways could provide safer driving experiences for truckers and passenger vehicles. Trucks carrying essential items could travel at a higher rate of speed to deliver their goods impacting delivery of items where time is of the essence. As the number of long-haul trucks increase due to population increase, it seems to be the right time to start planning. I'm hoping this suggestion fits in with the long-range planning.	agree
19	They're fine	No	Lots of traffic lights in the Staunton area do not function properly. Examples would be the one at N. Central and Churchville Ave. or the one at W. Beverley and Hays Ave. More side walks on West Beverley would also be key since many people walk from the Mission downtown.	neutral
20	I was excited to see the plans for sidewalks along Edgewood and Augusta in Staunton. These areas are in desperate need			agree

Phase 2 Public Engagement Responses: ArcGIS Online Questionnaire, October 1 – 31, 2020

ID	Proposed Projects	Problem Projects	Missing Projects	Proposed Projects
	of sidewalks. I would like to see more plans for bike lanes across the area.			
21	commuter options to Charlottesville would be an excellent addition. I would take it 3-5 days a week, if I could.			strongly_agree
22	There isn't enough information presented here for me to really understand what the projects are.		I saw better sidewalks mentioned but didn't see any specific plans. I live in Staunton and there are lots of residential areas and areas along main corridors, such as Augusta St, that really need more complete sidewalks. In some areas sidewalks simply end and then pick back up again. In others they simply don't exist. There are too many to list them all. A really thorough evaluation of sidewalks and improvements are needed. Staunton could be a very walkable city if residential areas within 20-30 minutes of downtown and parks had complete sidewalks to those areas.	neutral
23	These projects look helpful. But gosh, the price tags! Are there not federal funds, grants?	Beside improvements to highway 81, the projects seem fairly scattered. More information about how you selected these priorities might help. As a Staunton resident, I'd argue system improvements/changes must also consider FLOOD ABATEMENT, especially considering what happened in recent months. I worry about any increase in impermeable surface areas in and around Staunton.	You mention Brite transit. But this is the real need: more extensive public transit options. As a commuter to JMU in Harrisonburg (from Staunton), pre-pandemic, I used the BRCC north and south shuttles. But more direct and quick linkages would really help, and likely reduce traffic on 81 and 11. Light rail is probably too much to hope for, right? But at least a regional bus system that runs more direct, limited stop, longer-distance routes between Staunton and Harrisonburg, Staunton and SHD airport, Staunton and Waynesboro, Staunton and Charlottesville. I'd also like to see expanded Amtrak rail service connecting from Staunton.	agree
24	Please provide transit for WWRC clients and staff. Also, please provide transit to Charlottesville and Staunton.		Please provide transit to Cha	neutral
25	I think the projects listed address most current needs well. It's not too ambitious and spendthrift, and its grounded in current needs and future trends. Greenville avenue is a terror to traverse as a pedestrian. I wish I could take my toddler for ice cream at Kline's restaurant, but it's just too dangerous. I would love to see a future trail network in Staunton; that would be great for families. I think transportation decision makers in our region are keen on needs and trends, and will continue to address issues in growth areas, while also balancing the needs of older established and disadvantaged areas.	I have been a resident here for only a short time, and the needs I hear about in the media and community are addressed by the proposed projects, especially in regards to I-81and US-250. The needs not addressed are Staunton's West-end Connectivity, but that has been an issue for some time that seems to be out of the hands of transportation decision makers.	No, I like that vision projects are focused on growth areas and connectivity between locales. Great Job!	agree
26	There needs to be a traffic light at the end of King St and Hopeman Pkwy in Waynesboro and a marked crosswalk for all the people that live on the north side of Hopeman.		There needs to be a traffic light at the end of King St and Hopeman Pkwy in Waynesboro and a marked crosswalk for all the people that live on the north side of Hopeman.	neutral

Phase 2 Public Engagement Responses: ArcGIS Online Questionnaire, October 1 – 31, 2020

ID	Proposed Projects	Problem Projects	Missing Projects	Proposed Projects
	Cars should not be allowed to park on the west side of South Wayne Avenue Between Main Street and Federal, it impedes vision when trying to cross. If not that, then there needs to be a light if they are going to allow people to continue to park there. I've almost been hit several times creeping out to cross, and everyone is going faster than they should be and the police don't seem to care. The underground culvert at Misty Hill Lane and Rockfish Road that empties into the South River has been clogged for several years now, causing a large depression on Rockfish Road that ices over in the winter causing several accidents. Also speed limit signs need to be put up because there are too many cars going over 30 which is the posted limit from Hopeman to Baynes because of the narrow road and curves.		Cars should not be allowed to park on the west side of South Wayne Avenue Between Main Street and Federal, it impedes vision when trying to cross. If not that, then there needs to be a light if they are going to allow people to continue to park there. I've almost been hit several times creeping out to cross, and everyone is going faster than they should be and the police don't seem to care. The underground culvert at Misty Hill Lane and Rockfish Road that empties into the South River has been clogged for several years now, causing a large depression on Rockfish Road that ices over in the winter causing several accidents. Also speed limit signs need to be put up because there are too many cars going over 30 which is the posted limit from Hopeman to Baynes because of the narrow road and curves.	
27	they won't solve all of our present and likely future traffic problems but they certainly will help.	none	given a fixed amount of projected funds, suggestions would be robbing peter to pay paul.	strongly agree
28	88663 - extension of the on-ramp from Middlebrook Road onto 262 is very important to improve visibility and flow. In its current state, it is very precarious and difficult to merge (especially at certain times of the day), sometimes requiring a complete stop to wait for traffic. I agree with all the I-81 projects - lane widening, truck climbing lanes, etc. They will be great improvements. Also look forward to seeing the improvements along Richmond Road at Frontier Dr. and in that general area. In general, I support mixed use trails (like the Lifecore Drive path), to connect various areas for pedestrians and bicyclists. I support the trail (ST-25) along Commerce in Staunton except would not like to see the road narrowed down to two lanes; it is such a beautiful, scenic, relaxing stretch of road to drive. Is there another alternative?	ST-23 - I do not support a road diet on Greenville Avenue to make bike lanes in both directions. That area has consistent and heavy traffic and it is unclear what other paths, routes or areas the bike lanes would connect. It seems like a random addition with no obvious purpose. I have seen many pedestrians along that route, but never bicyclists, so more information on the modes of transportation and access this would address is needed.	It may be time to look at a sidewalk along Middlebrook Avenue to connect downtown with the development in the Lacy B. King Way area. There has been an increased number of pedestrians walking on that corridor and there are many bicyclists. Another place where a shared use path might be beneficial is connecting Middlebrook Ave with Montgomery Ave along Lacy B. King Way. Have improvements to the railroad crossing on Montgomery Avenue been considered? Although ST-8 adds a better exit from the businesses along Richmond Road to Frontier Drive (rather than having to drive through the Sheetz lot), improvements are also needed to Frontier Drive between Sheetz and Barterbrook Road, maybe even extending to Greenville Avenue (at the Mall). It is a heavily traveled road and connects major retail centers. Recently, the shoulders were improved, but the road is very curvy, somewhat narrow and with steep drop-offs to one side.	agree

Appendix E: Resource Agency Consultation

Letter Sent to Resource Agencies

On Wed, Sep 23, 2020 at 5:18 PM Zach Beard <Zach@cspdc.org> wrote:

Good afternoon,

The Staunton-Augusta-Waynesboro Metropolitan Planning Organization (SAWMPO) – the regional transportation planning organization for the cities of Staunton and Waynesboro and the urbanized portion of Augusta County – is updating the 25-year Long Range Transportation Plan (LRTP) for all surface transportation investments in the region.

An important part of the update is identifying transportation projects that meet the region's travel needs, and consulting with state and federal resource agencies on the draft project lists. We invite you to review and share your comments on the following in regards to the planning process and proposed projects in general, and also the potential impacts on other transportation modes, and natural and cultural resources as well:

• Chapter 8 of the 2045 LRTP – Provides an overview of all of the funded and projects intended to be funded over a 25-year period
• Project Lists and Maps – Provides a list and map for the projects
• Vision Project List and Maps -- Provides a reference for projects that have been identified, but may not receive funding

The attached letter provides further detail, and hard copies of each linked document are attached. Please submit your comments no later than November 25, 2020 to ensure your input is included in the final draft of the plan, and let me know if you have any questions.

Best,

Zach Beard

Responses Received from Resource Agencies

From: Brian Freeman <brian.freeman@buckinghambranch.com>
Sent: Monday, September 28, 2020 12:45 PM
To: Zach Beard <Zach@cspdc.org>
Cc: Ann Cundy <ann@cspdc.org>; Jim VanDerzee <jim.vanderzee@buckinghambranch.com>
Subject: Re: Your Input Wanted for Long Range Transportation Plan

Zach,

Two weeks ago we were awarded a $13.7 million CRISI grant from the federal government for rail corridor improvements that will primarily be in your district. The infrastructure improvements will help us improve rail service, capacity, and safety. As you may recall, Buckingham Branch, CSXT, and Amtrak operate trains through this corridor so it's important for both freight and passenger service. Here's a link to the news release. https://www.nbc29.com/2020/09/21/warner-kaine-announce-more-than-m-funding-rail-infrastructure-improvement/

Once we include VA DRPT funds, and BB matching funds, the total budget will be closer to $20 Million.

We reviewed the information you provided and here's what we show as it relates to Augusta County:

We plan to install roughly 10 miles of new welded rail (CWR) in Augusta County between MP 208-220 (this is our proposed Segment 2 section, Waynesboro to Staunton). This will include the installation of around 5,000
new ties as well. CWR will continue through to the end of the line so it may be a bit more than 10 miles in the Augusta area where it meets Rockbridge County; however, it would be a mile or so and I do not have the exact MP breakdown as it pertains to where the county lines are drawn.

Four road crossings are proposed for renewal within Augusta as well:

- 1 located in Waynesboro at MP 208.99 (Poplar Avenue)
- 1 located in Fishersville at MP 214.4 (Mule Academy Road)
- 1 located in Staunton at MP 216.57 (Jericho Road), and
- 1 located in Craigsville at MP 246.52 (Railroad Avenue/Via's)

Additionally, one of the proposed bridge re-deck projects falls within your jurisdiction - Bridge 243.8 is a 39' bridge that will be re-decked. The walkway and handrail will be replaced and the bridge approaches surfaced.

Right now this is in the very early stages. We still have to execute agreements with the Federal Gov't and State before work can begin. Our estimated start-up for these projects is late summer 2021. We can't provide a budget for each project at this time.

I hope that this is helpful for the Central Shenandoah Planning Commission. Please let me know if you need any additional information.

Thanks,

Brian Freeman
Manager, Sales & Marketing
Buckingham Branch Railroad
(434) 209-5500
brian.freeman@buckinghambranch.com

From: Greg Campbell <gcampbell@flyshd.com>
Sent: Thursday, October 08, 2020 2:43 PM
To: Zach Beard
Subject: RE: Your Input Wanted for Long Range Transportation Plan

Zach,

Thank you for the opportunity to review this information and provide comment.

I respectfully provide the following observations, comment and suggestions, all of which are related to the Weyers Cave area, the I-81 interchange and route 256 both east and the west termination at route 11.

There are significant traffic issues that currently exist and will only be made worse in the future as this area continues to see growth and increased traffic over time. This interchange and route 256 provide primary access to Blue Ridge Community College, and the Shenandoah Valley Regional Airport. There are also multiple trucking/transportation companies along with manufacturers and some residential developments which create commuter patterns to and from I-81 in this area. The County's comprehensive plan proposes continued expansion of future commercial and industrial development in this area, east of I-81 including an adjacent large track of zoned industrial land adjacent to the Airport. Both BRCC and SHD have experienced growth and are expected to continue to do so. Route 256 is also a primary corridor that connects route 340 traffic from Elkton and Waynesboro and the town of Grottoes to I-81.

During peak times, westbound traffic on route 256 backs up to the to the east stretching almost to the Shenandoah Valley Railroad, creating delays accessing I-81. The same can be observed on the west of side of the I-81 bridge as BRCC and the Criminal Justice academy exit toward the interstate during certain times of the day. The current traffic volumes in the area already impedes access to the Airport and BRCC, which are both critical public facilities that provide important services to the citizens of the entire central Shenandoah Valley and visitors to the region. Unimpeded access to and from the Airport and BRCC is essential as it relates to our communities' economic development efforts and quality of life. Specifically I would offer the following;

- The I-81, exit 235 interchange area is currently inadequate to handle the traffic at many times throughout the day. The two lane bridge over 81 restricts the flow of traffic and with the installation of traffic lights a few years ago, traffic backs up considerably in both directions and it is difficult to move

- across the bridge and access 81.
- Route 256 from I-81 to the east is inadequate and while project W-2 proposes improvements to a short stretch of this corridor, more comprehensive improvements, further to the east should be considered.
- Access to I-81 from route 11 is problematic, from both north and southbound traffic on route 11 that is attempting to access I-81.
- The off-ramps at exit 235 also experience back-ups. The Southbound 81 off ramp was improved and it is better, but still experiences issues created by the two lane bridge over I-81 and the intersection or 256 and route 11. The Northbound off ramp has alignment and width issues.

In summary, I feel a more comprehensive solution to this entire interchange and the elements that feed traffic into it, should be considered.

Please let me know if you prefer these comments in a separate format. Thank you again for the opportunity to provide input and for your consideration of these comments.

Gregory W. Campbell
Executive Director
Shenandoah Valley Regional Airport Commission

From: Long, Ryan (FTA) <ryan.long@dot.gov>
Sent: Tuesday, October 06, 2020 11:09 AM
To: Zach Beard
Cc: DeAngelis, Michele (FTA); Koenig, Daniel (FTA)
Subject: RE: Your Input Wanted for Long Range Transportation Plan

Hi Zach – Thanks for sharing the draft LRTP for Central Shenandoah. If we have any comments, we will share with the MPO.

Thanks,

Ryan Long, AICP | Community Planner
U.S. Department of Transportation
Federal Transit Administration, Region III
1835 Market Street, Suite 1910, Philadelphia, PA 19103
P: 215-656-7051 | F: 215-656-7260 | ryan.long@dot.gov

From: John Downey <DowneyJ@brcc.edu>
Sent: Wednesday, October 14, 2020 1:51 PM
To: Zach Beard
Cc: Greg Campbell; Cynthia Page
Subject: RE: Your Input Wanted for Long Range Transportation Plan

Zach:

I am aware that Greg Campbell sent you some thoughts regarding the Long Range Transportation Plan. I would like to join him in expressing concerns that the Route 256 bridge over Interstate 81 is not wide enough to accommodate the expected traffic increases in the next decade and beyond. Access to both the regional airport and the regional community college are both vital components of the region's economic development long term. I hope these concerns can be addressed in the long range plan!

Thanks,

John

Dr. John A. Downey, President
Blue Ridge Community College
Post Office Box 80
Weyers Cave, VA 24486
(540) 453-2200

Appendix F: Performance-Based Planning and Programming

The Federal Highway Administration (FHWA) established Performance-based Planning as a part of the Moving Ahead for Progress in the 21st Century (MAP- 21) Act and the Fixing America's Surface Transportation (FAST) Act to measure progress toward achieving national transportation goals and uses performance outcomes to inform transportation decision making. State departments of transportation and MPOs are required to establish performance-based targets related to safety, bridge and pavement condition, air quality, freight movement, and performance of the National Highway System, and to use performance measures to track their progress toward meeting those targets.

SAWMPO has implemented performance-based planning systems across multiple phases of the transportation planning process: project evaluation and scoring for the CLRP, through application to the statewide competitive funding programs, and in the programming of projects in the SAWMPO Transportation Improvement Program (TIP). At each of these phases, the MPO's process aligns with the federal performance measures in MAP-21, and with VTrans, the statewide long range plan.

Federal Performance Measures and Targets

Virginia and its MPOs recognize the following federal performance measures implemented as of the adoption of this Plan:

- System Performance
- Pavement and Bridge Condition
- Safety
- Public Transit Safety
- Public Transit Asset Management

The SAWMPO concurs with and follows VDOT's targets for System Performance, Asset Management, and Safety Targets. Transit in the SAWMPO is provided by BRITE, a small urban system included in the statewide Public Transit Safety Asset Plan and the statewide Transit Asset Management Plan.

Pavement Condition

In accordance with the requirements of MAP-21 and the FAST Act, Virginia has established pavement and bridge condition performance targets as reported in Virginia's Baseline Performance Period Report for 2018-2021[6]. This report, submitted to FHWA in October 2018, satisfies the federal requirement that State DOTs submit a Baseline Performance Period Report to FHWA by October 1st of the first year in a performance period. Performance measures for pavement condition are required for the National Highway System (NHS), while bridge condition requirements relate to structures identified as part of the National Bridge Inventory on the NHS. The pavement condition measures and established performance targets for the 2018- 2021 performance period are indicated in Table 1 below

[6] Virginia's Baseline Performance Period Report data is through December 2017.

Table 1: Pavement Condition Measures and Performance Targets

Interstate Pavement Condition Measures[7]	CY 2018-2019 Two Year Target	CY 2018-2021 Four Year Target
Percentage of Pavements in Good Condition	N/A[8]	45.0%
Percentage of Pavements in Poor Condition	N/A	3.0%
Non-Interstate NHS Pavement Condition Measures[9]	**CY 2018-2019 Two Year Target**	**CY 2018-2021 Four Year Target**
Percentage of Non-Interstate Pavements in Good Condition	25.0%	25.0%
Percentage of Non-Interstate Pavements in Poor Condition	5%	5.0%

Bridge condition measures and established performance targets for the 2018-2021 performance period are indicated in Table 2 below.

Table 2: NHS Bridge Condition Measures and Performance Targets

NHS Bridge Condition Measures	CY 2018-2019 Two Year Target	CY 2018-2021 Four Year Target
Percentage of Deck Area of NBI Bridges on the NHS in Good Condition	33.5%	33.0%
Percentage of Deck Area of NBI Bridges on the NHS in Poor Condition	3.5%	3.0%

Background/History

Virginia's history of monitoring asset conditions and utilizing performance information to determine investment strategies based on available funding levels spans over 10 years for pavements and bridges. VDOT maintains a comprehensive inventory of all pavement and bridges on the state-maintained network. This inventory, which includes location, maintenance responsibility, ownership, and current condition or inspection information, serves as the foundation for life cycle planning, performance forecasting, maintenance and rehabilitation needs estimation, as well as prioritization of work to maximize asset life given available funding. Condition information is also important for communicating with external stakeholders, including the general public.

[7] Interstate condition measures are based on four distresses: International Roughness Index (IRI), cracking, rutting, and faulting.

[8] During this first performance period, States are not required to establish 2-year targets for interstate pavements; however, Virginia has chosen to establish performance targets and are 45.0% and 3.0% for percentage of pavements in good and poor condition, respectively.

[9] During this first performance period, Federal requirements for Non-Interstate NHS pavement condition and performance targets are based on a single distress, IRI. However, Federal guidance outlined in a September 27, 2018 Memorandum on State DOT Targets for Non-Interstate NHS Pavement Measures allows for the use of full distress data when reporting Non-Interstate NHS performance targets. Given the availability of full distress data, Virginia has chosen this approach and reported performance targets for Non-Interstate NHS pavements based on all four distresses. This allows for consistency in assessing the condition and setting performance targets for both Interstate and Non-Interstate NHS pavements.

VDOT's commitment to responsible Transportation Asset Management (TAM) practice is demonstrated through VDOT's annual condition data collection programs and its establishment and publication of network level pavement and bridge performance goals. VDOT's current condition measures and performance goals have been in place for many years and are fully integrated into VDOT's budgeting process and investment strategies.

The federal pavement and bridge performance measures apply to a limited portion of the network for which VDOT is responsible (less than 15% of all lane miles and 18% of the bridge inventory).

Connection to Other Performance Based Planning Documents

VTrans, the state's long-range multimodal plan, provides the overarching vision and goals for transportation in the Commonwealth. The long-range plan provides a vision for Virginia's future transportation system and defines goals, objectives, and guiding principles to achieve the vision. It also provides direction to state and regional transportation agencies on strategies and policies to be incorporated into their plans and programs. The most recent approved long-range multimodal plan is VTrans2040.

Performance management, specifically as it relates to pavements and bridges, is included in the VTrans2040Vision, Goals & Objectives, and Guiding Principles as noted below:

Guiding Principle 5:
Ensure Transparency and Accountability, and Promote Performance Management - Work openly with partners and engage stakeholders in project development and implementation, and establish performance targets that consider the needs of all communities, measure progress towards targets, and to adjust programs and policies as necessary to achieve the established targets.

- Goal D: Proactive System Management - maintain the transportation system in good condition and leverage technology to optimize existing and new infrastructure.
    - Objectives:
        - Improve the condition of all bridges based on deck area.
        - Increase the lane miles of pavement in good or fair condition.

Virginia's federally required Transportation Asset Management Plan (TAMP) presents pavement and bridge inventory and conditions, along with the Commonwealth's performance objectives, measures, and associated risks as they relate to the federal requirements. Asset funding, investment strategies, forecasts, goals, and gaps are also included. The TAMP is specific to the NHS and provides the Commonwealth's Transportation Asset Management (TAM) processes and methodology to meet federal requirements. Pavement and bridge projects included in the STIP are consistent with Virginia's reported TAM processes and methodology.

The program of projects in the STIP are directly linked to the pavement and bridge objectives outlined in VTrans2040 and the TAMP through the strategies and actions that are priorities in Virginia.

System Performance

In accordance with the requirements of MAP-21 and the FAST Act, Virginia has established performance targets for three reliability performance measures to assess the Highway System Performance. All three measures are included in Virginia's Baseline Performance Period Report for 2018-2021 which was submitted to FHWA in October 2018. This report satisfies the federal requirement that State DOTs submit a Baseline Performance Period Report to FHWA by October 1st of the first year in a performance period and establishes baseline performance as of December 31, 2017.

Performance of the NHS is measured by the level of travel time reliability. The travel time reliability performance measures and performance targets for the 2018-2021 performance period are indicated in Table 3 below.

Table 3: National Highway System Travel Time Reliability Performance Measures and Targets

NHS Travel Time Reliability Performance	CY 2018-2019 Two Year Target	CY 2018-2021 Four Year Target
Percent of Person Miles Traveled on the Interstate That Are Reliable	82.2%	82.0%
Percent of Person Miles Traveled on the Non-Interstate NHS That Are Reliable	N/A[10]	82.5%

The assessment for freight reliability is based on the truck travel time reliability index. The truck travel time reliability performance measure and performance targets for the 2018-2021 performance period are indicated in Table 4 below.

Table 4: Freight Reliability Performance Measure and Targets

Truck Travel Time Reliability Performance	CY 2018-2019 Two Year Target	CY 2018-2021 Four Year Target
Truck Travel Time Reliability Index	1.53	1.56

The Commonwealth Transportation Board (CTB) approves the performance measures and targets developed for Virginia's surface transportation network. Such targets, including those for Highway System Performance, are linked to the goals and objectives in Virginia's long-range transportation plan, or VTrans.

Connection to Other Performance Based Planning Documents

VTrans provides the overarching vision and goals for transportation in the Commonwealth. The long-range plan provides a vision for Virginia's future transportation system and defines goals, objectives, and guiding principles to achieve the vision. It also provides direction to state and regional transportation agencies on strategies and policies to be incorporated into their plans and programs. The most recent approved long range multimodal plan is VTrans2040.

VTrans2040 identifies the most critical transportation needs in Virginia to ensure the overarching

[10] During this first performance period, States are not required to establish 2-year targets for the Non-Interstate NHS reliability measure.

transportation goals in the long-range plan are achieved. The screening process was informed by a data-driven approach that considers highway system performance measures and targets in addition to other performance indicators.

Performance management, as it relates to the reliability of the NHS and freight, is included in the VTrans2040Vision, Goals & Objectives, and Guiding Principles as noted below:

- Guiding Principle 4: Consider Operational Improvements and Demand Management First – Maximize capacity of the transportation network through increased use of technology and operational improvements as well as managing demand for the system before investing in major capacity expansions.
- Goal A – Economic Competitiveness and Prosperity: invest in a transportation system that supports a robust, diverse, and competitive economy.
    - Objectives:
        - Reduce the amount of travel that takes place in severe congestion.
        - Reduce the number and severity of freight bottlenecks.
        - Improve reliability on key corridors for all modes.
- Goal B – Accessible and Connected Places: increase the opportunities for people and businesses to efficiently access jobs, services, activity centers, and distribution hubs.
    - Objectives:
        - Reduce average peak-period travel times in metropolitan areas.
        - Reduce average daily trip lengths in metropolitan areas.
        - Increase the accessibility to jobs via transit, walking and driving in metropolitan areas.

Additionally, the Virginia Freight Element (VFE), a component of VTrans2040, discusses freight system trends, needs, and issues. The VFE also includes freight policies, strategies, and performance measures that guide Virginia's freight-related investment decisions.

Projects included in the STIP are directly linked to the Highway System Performance objectives outlined in VTrans2040 and associated needs analysis, and the VFE through the strategies and actions that are priorities in Virginia.

Safety

In accordance with the requirements of MAP-21 and the FAST Act, Virginia has established safety performance objectives as published in Virginia's 2017 – 2021 Strategic Highway Safety Plan (SHSP), and starting in 2017, annual targets in the Highway Safety Improvement Program (HSIP) Annual Report. The SHSP performance measure objectives are indicated in Table 5 below.

Table 5: 2021 - 2025 SHSP Safety Performance Objectives

	Performance Target	2020 Reduction Per Year
1	Number of Fatalities	-4.29%
2	Rate of Fatalities per 100-Million Vehicle Miles Traveled	0.58%
3	Number of Serious Injuries	0.84%
4	Rate Serious Injury Million Vehicle Miles Traveled	-1.70%
5	Number of Non-Motorized Fatalities & Non-Motorized Serious Injuries	-4.29%

For safety performance measures 1, 2 and 3, annual targets are developed collaboratively by the Department of Motor Vehicles (DMV) Highway Safety Office (HSO) and VDOT HSIP staff. The DMV HSO includes these measures in their Highway Traffic Safety Administration (NHTSA) every June.

The Commonwealth Transportation Board (CTB) approves all five annual targets and VDOT includes these in the HISP Annual Report submitted to FHWA each August. Within 180 days of VDOT's annual report submission to FHWA, MPOs must indicate their support of the state targets or submit their own regional targets for one or more of the safety measures.

Connection to Other Performance Based Planning Documents

The federally required SHSP, a five-year multi-agency comprehensive plan focused on reducing fatalities and serious injuries on all public roads serves as the coordinating document for other plans and programs that involve traffic safety. This coordination involves the long-range statewide transportation plan (LRSTP), the metropolitan transportation plans (MTP), and three plans that implement parts of the SHSP- the Highway Safety Plan (HSP), and the Commercial Vehicle Safety Plan (CVSP). This integration is important for improving overall safety coordination amongst various partners and leads to more comprehensive transportation safety planning.

The LRSTP, VTrans 2045, guides the state's investment decisions for transportation improvements. Safety and performance management is included in the VTrans 2040 Vision, Goals & Objectives, and Guiding Principles:

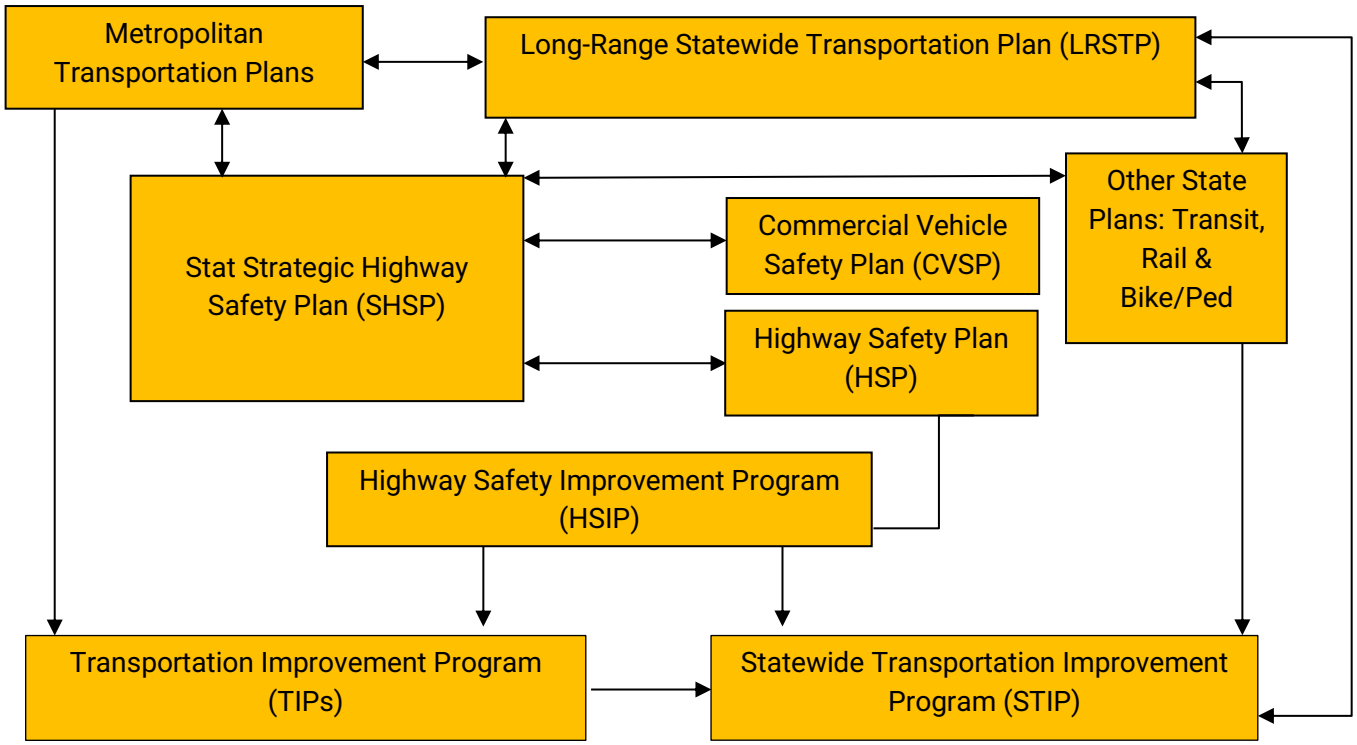
- Guiding Principle 2: Ensure Safety, Security, and Resiliency – Provide a transportation system that is safe for all users, responds immediately to short-term shocks such as weather events or security emergencies, and adapts effectively to long-term stressors such as sea level rise.
- Guiding Principle 5: Ensure Transparency and Accountability and Promote Performance Management – work openly with partners and engage stakeholders in project development and implementation; and establish performance targets that consider the needs of all communities, measure progress towards targets, and to adjust programs and policies as necessary to achieve the established targets.
- Goal C: Safety of All Users – Provide a safe transportation system for passengers and goods on all travel mode.

- Objectives:
  - Reduce the number and rate of motorized fatalities and serious injuries.
  - Reduce the number of non-motorized fatalities and injuries.

MTPs are similar to the LRSTP, however an MTP covers a specific metropolitan planning area. MTPs include goas and objectives for their respective areas/regions and identify strategies for advancing long-term transportation investments in a specific region. The HSIP is an annual plan to address highway user behaviors that will improve safety through education and enforcement campaigns. The HSP and associated NHTSA grant are administered through the DMV's HSO.

Furthermore, each year the Virginia State Police (VSP) submits a Commercial Vehicles Safety Plan (CVSP) to the Federal Motor Carrier Safety Administration as a requirement of obtaining related enforcement grants. The relationship between the various plans and programs is shown in Figure 1:

Figure 1: Relationship of MPO-Related Plans



Projects in the STIP are directly linked to the safety objectives outlined in the SHSP through the strategies and actions that are priorities in Virginia.

Public Transit Asset Management

The two most recent federal transportation laws, MAP-21 and the FAST Act, establish performance measure requirements to ensure states and MPOs are investing transportation funds in projects that collectively will contribute towards the achievement of national goals. The USDOT recently published new rules for states and MPOs to collect data and establish performance targets that will support performance and outcome-based investment decisions.

The new federal performance measurement requirement for transit agencies focuses on one area: transit asset management (TAM). The measures look specifically at the percentage of revenue vehicles that have exceeded their Useful Life Benchmark (ULB), the percentage of non-revenue and service vehicles that have exceeded their ULB, and percentage of facilities with a condition below 3.0 on the Federal Transit Administrator's TERM Scale. All transit agencies receiving grants from the FTA are required to complete a TAM plan. The FTA has established two tiers of agencies based on size parameters.

A Tier I agency operates rail, or has 101 vehicles or more all fixed route modes, or has 101 vehicles or more in one non-fixed route mode. A Tier II agency is a subrecipient of FTA 5311 funds, or is an American Indian Tribe, OR has 100 or less vehicles across all fixed route modes, or has 100 vehicles or less in one non-fixed route mode.

The first completed TAM plan must be sent to the National Transit Database (NTD) by October 1, 2018. Other required deadlines are found in the table below.

Table 6: Transit agency deadlines for TAM Rulemaking for June-July fiscal year

Reporting Activity	Reporting Deadline
Complete compliant TAM Plan	October 2018
Report FY18 asset data to NTD Submit FY19 targets to NTD	October 2018
Report FY19 asset data to NTD Submit FY20 targets to NTD Submit narrative report to NTD	October 2019
Report FY20 asset data to NTD Submit FY21 targets to NTD	October 2020

Submit narrative report to NTD	
Complete updated TAM Plan	October 2022

The Department of Rail and Public Transportation (DRPT) has opted to sponsor a group TAM plan for Tier II providers. Tier I providers are not eligible for group plans.

For Tier II providers under the DRPT Group Plan, any Transportation Improvement Program (TIP) document or Metropolitan Transportation Plan (MTP) adopted after October 1, 2018 will be in compliance with the TAM Plans developed by DRPT and adopted by the Tier II transit providers within the MPO as well as the regional performance measures adopted by the MPO as a whole.

The SAWMPO programs federal transportation funds for BRITE Transit Service. BRITE is a Tier II agency participating in the DRPT sponsored group TAM Plan. The MPO has integrated the goals measures and targets described in the Federal Fiscal Year 2018 Group Transit Asset Management Plan and 2020 plan Addendum into the MPO's planning and programming process specific targets for the Tier II Group TAM Plan are included in the table below.

Table 7: TAM Targets for rolling stock and facilities: Percentage of Revenue Vehicles that have met or exceeded their ULB by Asset Type.

Asset Category - Performance Measure	Asset Class	2020 Target*
Revenue Vehicles		
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	AB - Articulated Bus	15%
	BU - Bus	10%
	CU - Cutaway	10%
	MB - Minibus	20%
	BR - Over-the-Road Bus	15%
	TB - Trolley Bus	10%
	VN - Van	25%
Equipment		
Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non-Revenue/Service Automobile	25%
	Trucks and other Rubber Tire Vehicles	25%
Facilities		
Condition - % of facilities with a condition rating below 3.0 on the FTA TERM Scale	Administrative and Maintenance Facility	10%
	Administrative Office	10%
	Maintenance Facility	10%
	Passenger Facilities	10%

Public Transit Safety

The Department of Rail and Public Transportation (DRPT) is the sponsor for the Statewide Tier II Group Public Transportation Agency Safety Plan (PTASP). The SAWMPO programs federal transportation funds for BRITE Transit. BRITE is a Tier II agency participating in the DRPT sponsored group PTASP. The MPO has adopted the Tier II PTASP into its TIP by reference and integrated the goals measures and targets described in the 2020 Commonwealth of Virginia Tier II Group Transit Asset Management Plan, August 11,

2020 into the MPO's planning and programming process. Specific targets for the Tier II Group PTASP are below.

Table 8: Tier II Transit Agency PTASP Performance Targets by Mode

Performance Measures	Targets by Mode	
	Fixed Route	Paratransit/ Demand Response
Fatalities (total number of reportable fatalities per year)	0	0
Fatalities (rate per total vehicle revenue miles by mode)	0	0
Injuries (total number of reportable injuries per year)	3	0
Injuries (rate per total vehicle revenue miles by mode)	Less than .5 injuries per 100,000 vehicle revenue miles	Less than .5 injuries per 100,000 vehicle revenue miles
Safety events (total number of safety events per year)	5	1
Safety events (rate per total vehicle revenue miles by mode)	Less than 1 reportable event per 100,000 vehicle revenue miles	Less than 1 reportable event per 100,000 vehicle revenue miles
Distance between Major Failures	10,000 miles	10,000 miles
Distance between Minor Failures	3,200 miles	3,200 miles

System Performance Report

System Performance, Pavement, and Bridges

Transportation system performance and asset management on the National Highway System (NHS), and funding for many safety projects are largely overseen by VDOT. The MPO's CLRP does not address pavement preservation and bridge projects, and documents – rather than prioritizes – the state's own projects like those on I-81, which improve system performance on the NHS. The SAWMPO maintains current system performance and asset management targets in the SAWMPO TIP.

Safety Targets

At the level of the MPO CLRP, the MPO can prioritize projects that address safety targets for reducing the number and rate of fatal, serious injury, and bicycle and pedestrian crashes. In accordance with MAP-21, the FHWA established final rulemakings for National Performance Measures for Safety Performance in 2016. The annual statewide safety targets, which were established in 2018, must be updated every year by the State and MPOs. Based on the crash trends, VDOT uses percent reductions for the number and rate of

fatal crashes, serious injury crashes, and bicycle and pedestrian crashes. The targets for future years are based on the most recent five-year averages, goal percent reductions, and changes to vehicle miles traveled (VMT).

Since 2017, the SAWMPO must set its own safety targets, or concur with the State's targets. The SAWMPO has concurred with the statewide targets every year. While the SAWMPO's five-year average fatality and severe injury rate is lower than the statewide targets – with rates for both decreasing since 2017 – the number of non-motorized fatal and severe injuries is slightly higher. The average increase in non-motorize crashes is mostly due to an increase in 2019; previously, the MPO was below the annual statewide targets (see Table 4).

Table 9: Projected Safety Targets and Actual Numbers, 2018 – 2020

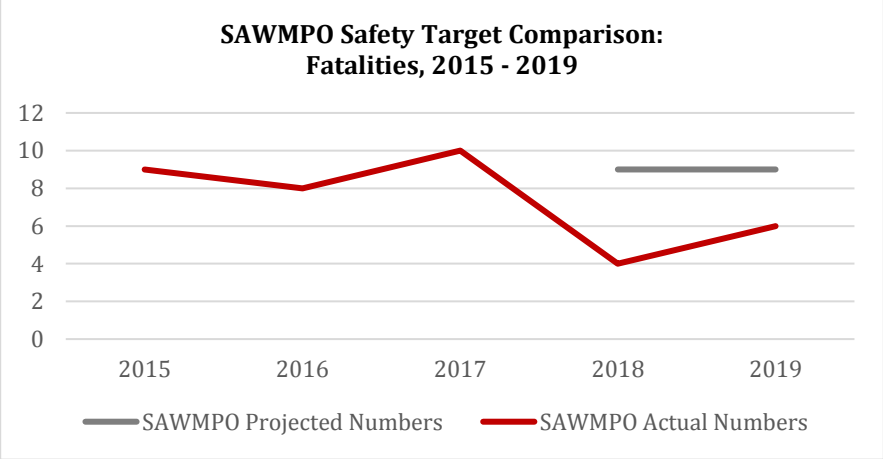
	2018 Target	2018 Actual	2019 Target	2019 Actual	2020* Target
Fatalities	9	4	9	6	10
Rate of Fatalities per 100M VMT	.88	.40	.90	.59	.93
Serious Injuries	121	111	120	79	119
Rate Serious Injury Per 100M VMT	12.12	11.16	11.85	7.81	11.58
Non-Motorized Fatalities & Serious Injuries	10	6	10	13	10

*Note: 2020 Actual data not available

The following five-year crash data numbers from 2015 – 2019, compared to the safety targets established in 2018, provide further context for each safety performance measure.

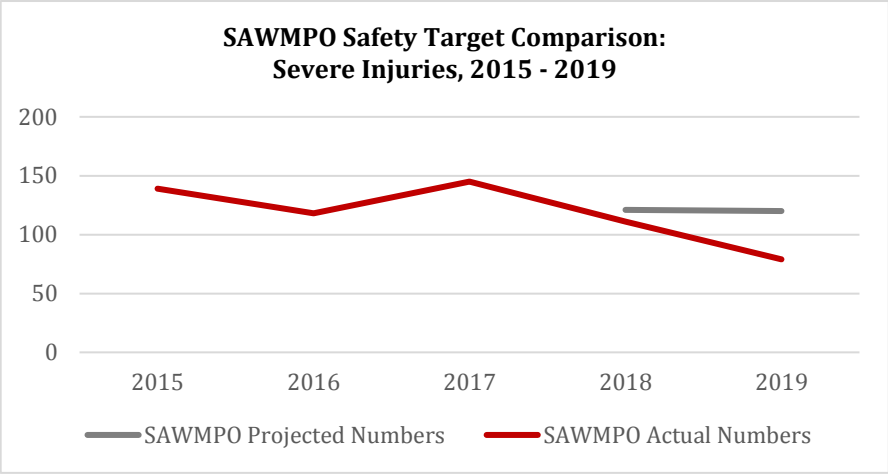
Fatalities

From 2015 – 2019, there were on average 8 fatal crashes annually, which is below the three-year annual target average of 9 fatalities per year. Over the five-year period, fatal crashes have declined 7.1%.



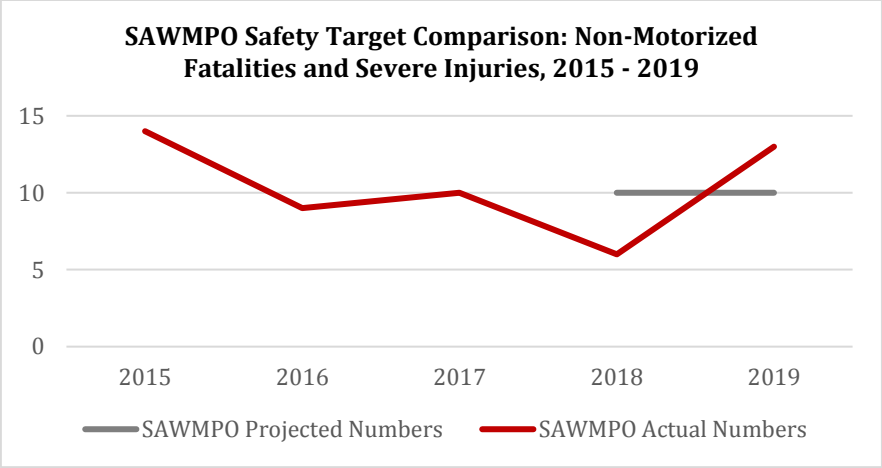
Severe Injuries

From 2015 – 2019, there were on average 118.4 serious injury crashes annually, which is below the three-year severe crash annual target average of 120.5 crashes per year. Since 2017, severe injuries have been decreasing in the MPO.



Non-Motorized Fatalities and Severe Injuries (Bicycle and Pedestrian)

From 2015 – 2019, there were on average 10.4 serious injury crashes, which is slightly higher than the three-year 10.0 fatality and severe injuries annual target average. This is mostly due to an increase in 2019.



Appendix G: Port of Virginia

The Port of Virginia is an asset of the Commonwealth that promotes economic growth within the SAWMPO and across the state. The region's freight transportation system is dependent on an interconnected system of rail, highways, and local roads for the movement of goods.

The Port of Virginia is the third largest port on the east coast. The construction projects at Virginia International Gateway and Norfolk International Terminals will add an additional 1 million annual twenty-foot equivalent unit (TEU) – a general unit of cargo capacity measurement for containers – capacity to the terminals, and therefore, on the transportation system across the Commonwealth. Expansions at the Virginia Inland Port in Front Royal and projected growth of Richmond Marine Terminal will also add more freight to the transportation system. The freight fluidity within the transportation system is crucial for the economic growth of the region as well as the projected growth of The Port of Virginia and other private terminals in the Commonwealth.

It is important to consider the growth of freight within the SAWMPO for long-range planning of the region due to the positive contribution to the region. Addressing externalities of freight movements, including consideration of the health impacts of air pollution, noise, and vibration impacts of heavy trucks and trains must be part of the planning process as well.

Table 1 includes Volumes, Tonnage, and Value of all the cargo for the SAWMPO region from 2015 to 2019.

Table 1: Amount and Value of Cargo from the SAWMPO, 2015 - 2019

Year	TEU*	Ston*	Value	Number of Companies
2015	9,021	103,267	$233,710,887	188
2016	11,145	133,019	$266,152,059	230
2017	11,360	150,350	$282,426,399	224
2018	9,195	131,632	$238,602,759	202
2019	5,697	80,355	$173,863,392	158
Total	46,419	598,623	$1,194,755,496	1,002

*Value in millions

Source: Virginia Inland Port; data is not comprehensive and is intended to only provide an overview of the region's cargo.