Salisbury/Wicomico
Metropolitan Planning Organization
2019 Long Range Transportation Plan

Financial Assistance Provided By:

Maryland Department of Transportation

Delaware Department of Transportation

U.S. Department of Transportation
Federal Transit Administration

U.S. Department of Transportation
Federal Highway Administration

MPO Adopted:
December 17, 2019

Federal Concurrence:
May 13, 2020

MPO Amended:
September 22, 2020

MPO Amended:
December 10, 2020

MPO Amended:
May 21, 2021

MPO Amended:
August 2, 2021

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Resolution to Approve Plan

RESOLUTION BY THE
SALISBURY/WICOMICO METROPOLITAN PLANNING ORGANIZATION COUNCIL
ADOPTING THE 2019 LONG RANGE TRANSPORTATION PLAN, *CONNECT 2050*
RESOLUTION 05-2019

WHEREAS, the Salisbury/Wicomico Metropolitan Planning Organization ("S/WMPO") was established to conduct regional transportation planning for the S/WMPO area in accordance with Federal requirements;

WHEREAS, the S/WMPO Council is the governing body for the S/WMPO;

WHEREAS, Federal regulations require the endorsement by the S/WMPO (Technical Advisory Committee and Council) of a Long Range Transportation Plan ("LRTP"), which serves as a guide for transportation improvements in the S/WMPO region over the next 30-year period extending from 2019 – 2050. This financially constrained LRTP is multi-modal in nature and developed in conjunction with the Maryland and Delaware Departments of Transportation and in accordance to applicable Federal guidelines governing the development of transportation plans by metropolitan planning organizations;

WHEREAS, on December 12, 2019, the 2019 Long Range Transportation Plan, *Connect 2050* was reviewed by the S/WMPO TAC, which made a favorable recommendation to forward the LRTP to the S/WMPO Council for their review and action;

WHEREAS, the 2019 Long Range Transportation Plan, *Connect 2050,* was presented at a public hearing of the S/WMPO Council on December 17, 2019, and consistent with the requirements of the Organization's Adopted Public Participation Plan a 30-day public comment period was instituted prior to the public hearing; and

NOW, THEREFORE, BE IT RESOLVED the S/WMPO Council does hereby adopt the 2019 Long Range Transportation Plan, *Connect 2050.*

12/17/2019
Date

Matthew E. Creamer, Chairman, S/W MPO Council

RESOLUTION BY THE
SALISBURY/WICOMICO METROPOLITAN PLANNING ORGANIZATION COUNCIL
APPROVING AMENDMENTS TO APPENDIX F OF THE
2019 *LONG RANGE TRANSPORTATION PLAN, CONNECT 2050*
RESOLUTION 06-2020

WHEREAS, the Salisbury/Wicomico Metropolitan Planning Organization (S/WMPO) was established to conduct regional transportation planning activities for the S/WMPO area in accordance with Federal requirements;

WHEREAS, the S/WMPO Council is the governing body for the S/WMPO;

WHEREAS, Federal regulations require the endorsement by the S/WMPO (Technical Advisory Committee and Council) of a Long Range Transportation Plan, (LRTP) which serves as a guide for transportation improvements in the S/WMPO region over the next 30-year period extending from 2020 – 2050. This fiscally constrained LRTP is multi-modal and developed in conjunction with the Maryland and Delaware Departments of Transportation and in accordance with applicable Federal guidelines governing the development of regional transportation plans by metropolitan planning organizations;

WHEREAS, on December 17, 2019, the S/WMPO Council adopted the 2019 *LRTP*, *Connect 2050,* via Resolution 05-2019;

WHEREAS, the proposed amendments to Appendix F of the 2019 *LRTP*, *Connect 2050*, were reviewed by the S/WMPO Technical Advisory Committee (TAC), at which time the TAC voted to forward a favorable recommendation on the proposed amendments to the S/WMPO Council for their review and action;

WHEREAS, the proposed amendments to Appendix F of the 2019 *LRTP*, *Connect 2050*, were available for public review and comment for a period of no less than 30 days prior to an action of the S/WMPO Council for review and action, which no comments were received;

WHEREAS, the proposed amendments to Appendix F of the 2019 *LRTP*, *Connect 2050*, are consistent with the 2021 – FY 2024 Transportation Improvement Program;

WHEREAS, on September 22, 2020, a Public Hearing was held to hear from proponents and opponents about the proposed amendments to Appendix F of the 2019 *LRTP*, *Connect 2050,* which no public comments occurred at the Public Hearing; and

NOW, THEREFORE, BE IT RESOLVED, on September 22, 2020**,** the S/WMPO Council does hereby approve the amendments to Appendix F of the 2019 *LRTP*, *Connect 2050.*

9/22/2020
Date

Matthew E. Creamer, Chairman, S/WMPO Council

RESOLUTION BY THE
SALISBURY/WICOMICO METROPOLITAN PLANNING ORGANIZATION COUNCIL
APPROVING AN AMENDMENT TO APPENDIX F OF THE
2019 *LONG RANGE TRANSPORTATION PLAN, CONNECT 2050*
RESOLUTION 08-2020

WHEREAS, the Salisbury/Wicomico Metropolitan Planning Organization ("S/WMPO") was established to conduct regional transportation planning activities for the S/WMPO area in accordance with Federal requirements;

WHEREAS, the S/WMPO Council is the governing body for the S/WMPO;

WHEREAS, Federal regulations require the endorsement by the S/WMPO (Technical Advisory Committee and Council) of a Long Range Transportation Plan, ("LRTP") which serves as a guide for transportation improvements in the S/WMPO region over the next 30-year period extending from 2020 – 2050. This fiscally constrained LRTP is multi-modal and developed in conjunction with the Maryland and Delaware Departments of Transportation and in accordance with applicable Federal guidelines governing the development of regional transportation plans by metropolitan planning organizations;

WHEREAS, on December 17, 2019, the S/WMPO Council adopted the 2019 *LRTP*, *Connect 2050,* via Resolution 05-2019;

WHEREAS, on September 22, 2020, the S/WMPO Council amended the 2019 *LRTP, Connect 2050*, via Resolution 06-2020;

WHEREAS, the proposed amendment adding the Three Bridges Road bridge replacement to page F-2 of Appendix F of the 2019 *LRTP* (Maryland portion), *Connect 2050*, was reviewed by the S/WMPO Technical Advisory Committee ("TAC") on December 2, 2020, at which time the TAC voted to forward a favorable recommendation on the proposed amendment to the S/WMPO Council for their review and action;

WHEREAS, the proposed amendment was available for public review and comment for a period of no less than 30 days prior to an action of the S/WMPO Council for review and action, which no comments were received;

WHEREAS, the proposed amendment is consistent with the 2021 – FY 2024 Transportation Improvement Program;

WHEREAS, on December 10, 2020, a Public Hearing was held to hear from proponents and opponents about the proposed amendment, which no public comments occurred at the Public Hearing; and

NOW, THEREFORE, BE IT RESOLVED, on December 10, 2020, the S/WMPO Council does hereby approve the amendment adding the Three Bridges Road bridge replacement to page F-2 of Appendix F of the 2019 *LRTP*, *Connect 2050*.

12.10.2020
Date

Charles Anderson, Vice-Chair, S/WMPO Council

RESOLUTION BY THE
SALISBURY/WICOMICO METROPOLITAN PLANNING ORGANIZATION COUNCIL
APPROVING AN AMENDMENT TO APPENDIX F OF THE
2019 *LONG RANGE TRANSPORTATION PLAN, CONNECT 2050*
RESOLUTION 01-2021

WHEREAS, the Salisbury/Wicomico Metropolitan Planning Organization ("S/WMPO") was established to conduct regional transportation planning activities for the S/WMPO area in accordance with Federal requirements;

WHEREAS, the S/WMPO Council is the governing body for the S/WMPO;

WHEREAS, Federal regulations require the endorsement by the S/WMPO (Technical Advisory Committee and Council) of a Long Range Transportation Plan, ("LRTP") which serves as a guide for transportation improvements in the S/WMPO region over the next 30-year period extending from 2020 – 2050. This fiscally constrained LRTP is multi-modal and developed in conjunction with the Maryland and Delaware Departments of Transportation and in accordance with applicable Federal guidelines governing the development of regional transportation plans by metropolitan planning organizations;

WHEREAS, on December 17, 2019, the S/WMPO Council adopted the 2019 *LRTP, Connect 2050,* via Resolution 05-2019;

WHEREAS, on September 22, 2020, the S/WMPO Council amended the 2019 *LRTP, Connect 2050*, via Resolution 06-2020;

WHEREAS, on December 10, 2020, the S/WMPO Council amended the 2019 *LRTP, Connect 2050*, via Resolution 08-2020;

WHEREAS, the proposed amendment adding the Naylor Mill Road bridge replacement project to page F-2 of Appendix F of the 2019 *LRTP* (Maryland portion), *Connect 2050*, was reviewed by the S/WMPO Technical Advisory Committee ("TAC") on April 14, 2021, at which time the TAC voted to forward a favorable recommendation on the proposed amendment to the S/WMPO Council for their review and action;

WHEREAS, the proposed amendment was available for public review and comment for a period of no less than 30 days prior to an action of the S/WMPO Council for review and action, which no comments were received;

WHEREAS, the proposed amendment is consistent with the FY 2021 – FY 2024 Transportation Improvement Program;

WHEREAS, on May 21, 2021, a Public Hearing was held to hear from proponents and opponents about the proposed amendment, which no public comments occurred at the Public Hearing; and

NOW, THEREFORE, BE IT RESOLVED, on May 21, 2021, the S/WMPO Council does hereby approve the amendment adding the Naylor Mill Road bridge replacement project to page F-2 of Appendix F of the 2019 *LRTP, Connect 2050*.

5/21/2021
Date

John A Heath
Jack Heath, Chairperson Pro Tempore, S/WMPO Council

RESOLUTION BY THE
SALISBURY/WICOMICO METROPOLITAN PLANNING ORGANIZATION COUNCIL
APPROVING AN AMENDMENT TO APPENDIX F OF THE
2019 *LONG RANGE TRANSPORTATION PLAN, CONNECT 2050*
RESOLUTION 04-2021

WHEREAS, the Salisbury/Wicomico Metropolitan Planning Organization ("S/WMPO") was established to conduct regional transportation planning activities for the S/WMPO area in accordance with Federal requirements;

WHEREAS, the S/WMPO Council is the governing body for the S/WMPO;

WHEREAS, Federal regulations require the endorsement by the S/WMPO (Technical Advisory Committee and Council) of a Long Range Transportation Plan, ("LRTP") which serves as a guide for transportation improvements in the S/WMPO region over the next 30-year period extending from 2020 – 2050. This fiscally constrained LRTP is multi-modal and developed in conjunction with the Maryland and Delaware Departments of Transportation and in accordance with applicable Federal guidelines governing the development of regional transportation plans by metropolitan planning organizations;

WHEREAS, on December 17, 2019, the S/WMPO Council adopted the 2019 *LRTP, Connect 2050,* via Resolution 05-2019;

WHEREAS, on September 22, 2020, the S/WMPO Council amended the 2019 *LRTP, Connect 2050*, via Resolution 06-2020;

WHEREAS, on December 10, 2020, the S/WMPO Council amended the 2019 *LRTP, Connect 2050*, via Resolution 08-2020;

WHEREAS, on May 21, 2021, the S/WMPO Council amended the 2019 *LRTP, Connect 2050,* via Resolution 01-2021;

WHEREAS, the proposed amendment adding the Upper Ferry – ferry rehabilitation project to page F-2 of Appendix F of the 2019 *LRTP* (Maryland portion), *Connect 2050*, was reviewed by the S/WMPO Technical Advisory Committee ("TAC") on July 13, 2021, at which time the TAC voted to forward a favorable recommendation on the proposed amendment to the S/WMPO Council for their review and action;

WHEREAS, the proposed amendment was available for public review and comment for a period of no less than 30 days prior to the S/WMPO Council review and action, which no comments were received;

WHEREAS, the proposed amendment is consistent with the FY 2021 – FY 2024 Transportation Improvement Program;

WHEREAS, on August 2, 2021, a Public Hearing was held to hear from proponents and opponents about the proposed amendment, which no public comments occurred at the Public Hearing; and

NOW, THEREFORE, BE IT RESOLVED, on August 2, 2021, the S/WMPO Council does hereby approve the amendment adding the Upper Ferry – ferry rehabilitation project to page F-2 of Appendix F of the 2019 *LRTP, Connect 2050.*

8/2/21
Date

Matthew E. Creamer
Matthew E. Creamer, Chairman, S/WMPO Council

SALISBURY/WICOMICO Metropolitan Planning Organization

S/WMPO Council

Matthew E. Creamer, Wicomico County, S/WMPO Council Chair

Charles Anderson, City of Seaford, DE, City Administrator, S/WMPO Council Vice-Chair

Drew Boyce, Delaware Department of Transportation, Director of Planning

Tyson Byrne, Maryland Department of Transportation, Regional Planning Manager

Sara Bynum-King, Town of Delmar, Town Administrator

Julia Glanz, City of Salisbury, City Administrator

Josh Hastings, Wicomico County, County Council District 4

Jack Heath, City of Salisbury, City Council President

Greg Padgham, Tri-County Council of the Lower Eastern Shore, Executive Director

John Psota, City of Fruitland, City Administrator

John Rieley, Sussex County, County Council District 5

S/WMPO Techncial Advisory Committee

Eric Berkheimer, Salisbury University, Associate Vice President of Facilities and Capital Management

Tracey Gordy, Maryland Department of Planning, Director Lower Eastern Shore Regional Office

Ian Beam, Maryland Department of Transportation, Rural Area Regional Planner

Julie Bellamy, Town of Hebron, Town Administrator

Brad Bellacicco, Shore Transit, Director

Jenn Cinelli-Miller, Delaware Department of Transportation, Transportation Planner

Tremica Cherry-Wall, Delaware Transit Corporation, Planner

Mike Gibbons, City of Fruitland, Director of Public Works and Utilities

Marvina Cephas, Delaware Department of Nature Resources and Environmental Control, Planning Supervisor

William Hardin, Town of Delmar, Community Development Coordinator

Berley Mears, City of Seaford, Director of Public Works

Dorothy Morris, Delaware Office of State Planning Coordination, Principal Planner

Amanda Pollack, City of Salisbury, Department of Infrastructure and Development, Director

Becky Robinson, Delmarva Water Transport Committee

Jim Thomas, Salisbury-Wicomico County Planning and Zoning Commission

Jamie Whitehouse, Sussex County Planning Department, Manager

Keith D. Hall, Wicomico Co. Dept. of Planning, Zoning, and Community Development, Deputy Director

S/WMPO Staff

Keith D. Hall, AICP, S/WMPO Executive Director

Table of Contents

How to Read this Plan

Connect 2050 is the 30-year Long Range Transportation Plan for the Salisbury Wicomico Metropolitan Planning Organization (S/WMPO). It identifies and details the transportation plans, projects, and programs that will be carried out by the S/WMPO during the next thirty years, from 2020 to 2050. Area transportation projects must be included within ***Connect 2050*** to qualify for Federal funding. Project inclusion reflecting new or evolving needs shall be updated at regular intervals and published in supplemental reports or attachments.

This document is organized around a series of topics and questions to assist the reader in finding the sections of the plan most relevant to his or her interests.

- **Use summary pages:** Each chapter begins with a summary page about how to "Connect With" the key points in that chapter.
- **Ask questions:** The section headers for each chapter are in the form of a question to guide the reader in understanding why the elements in the plan are important to the work of the S/W MPO and to the overall transportation landscape in the region.
- **Highlight key concepts:** Within each chapter, key terms and documents are highlighted with blue font and blue call-out boxes.

Chapter 1: The Plan, Process, and Purpose

This chapter provides an overview of the metropolitan transportation planning process and Federal requirements, discusses background information related to the establishment and organizational structure of the S/WMPO, and explains ***Connect 2050's*** development, use, and goals.

Chapter 2: The Metropolitan Region

A detailed description of current and future demographic characteristics of the S/WMPO region is included in this chapter. Understanding who lives in the region, how the region is changing, and the importance of considering environmental justice populations is critical to the metropolitan planning process. Additionally, this chapter includes a discussion of policy and planning for the natural environment.

Chapter 3: The Roadway System

The roadway system accounts for the vast majority of trips and of projects in the fiscally constrained plan in this region. Existing and forecast traffic conditions and recommendations from local plans inform the roadway needs in ***Connect 2050***.

Chapter 4: The Bicycle and Pedestrian System

A variety of infrastructure that supports access and mobility for bicyclists and pedestrians exists in the S/WMPO region. Local plans and priorities seek to expand this system.

Chapter 5: The Transit System

Shore Transit in Maryland and DART in Delaware comprise the transit system in the S/WMPO region. This chapter discusses the local plans and funding programs to expand these systems.

Chapter 6: The Freight System

This chapter discusses goods movement within Wicomico County, Sussex County, and in the combined region for current and projected tonnage, mode split, and the mix of commodities that are moved by each freight mode, as well as top trading partners.

Chapter 7: Safety and Security

Roadway safety statistics as well as policies and plans for a secure and resilient transportation system give a clearer picture of the long range priorities for the S/WMPO region.

Chapter 8: Long Range Plan Projects

Finally, this chapter presents the roadway, bicycle and pedestrian, freight system, and transit projects that accomplish system preservation and capacity expansion goals and that compose the fiscally constrained plan. Additional unfunded local priority projects and some opportunities for additional study are also included in this chapter.

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Chapter 1
Connect with… The Plan, Process, and Purpose

Chapter 1: Plan, Process, and Purpose

This chapter provides a general introduction to the Salisbury/Wicomico Metropolitan Planning Organization's role in regional transportation planning and describes the purpose and plan development process of *Long Range Transportation Plan - **Connect 2050***.

1.1 What is Transportation Planning?

The transportation system affects all aspects of daily life – commuting to work or school, movement of goods and freight, and ensuring national networks of highways, railroads, and airports connect people all over the world. Transportation planning is a continuing, cooperative, and comprehensive process. The goal of the 3C planning process is to identify improvements to facilities and operations in an effort to achieve a well-maintained, multimodal transportation system.

A transportation system must provide for the safe, convenient, affordable, and efficient movement of people, goods, and services within and between population and business centers. The transportation planning process involves a variety of governmental agencies, including, but not limited to local planning and public works departments, regional and state agencies, and the federal government. In addition, it involves all users of the system, including the business community, environmental organizations, public, freight operators, and community groups.

This process comprehensively considers strategies, evaluates diverse viewpoints and data sources, facilitates transportation-related agency and organization participation, and involves the public in an open, timely, and meaningful way. MPOs were created in order to ensure that existing and future expenditures on transportation projects and programs were based on a continuing, cooperative, and comprehensive planning process.

1.2 What is the Role of a MPO in Regional Transportation Planning?

Metropolitan Planning Organizations ("MPOs") assist with regional transportation decision-making and provide a critical link for coordinating transportation planning and programming between federal, state, and local governments, as well as the public. Regional transportation planning addresses shared challenges and financial investments of projects relating to transportation mobility, safety, and security over long time spans.

An MPO carries out five (5) core functions:

1. **Establish a setting:** Establish and manage a fair and impartial setting for effective regional decision making in the metropolitan area;
2. **Identify and evaluate alternative transportation improvement options:** Use data and planning methods to generate and evaluate alternatives. The Unified Planning Work Program ("UPWP") includes these planning studies and evaluations;

What is a Metropolitan Planning Organization?

An MPO is a federally mandated and federally funded transportation policy-making organization comprised of representative from local government and governmental transportation authorities.

The purpose of a MPO is designed to carry out the metropolitan transportation planning process for Urbanized Areas with populations greater than 50,000, and designated by local officials and the Governor of the state.

3. **Prepare and maintain a Long Range Transportation Plan ("LRTP" or the "Plan"):** Develop and update a Long Range Transportation Plan (i.e., a planning horizon of at least 20 years) for the metropolitan area that fosters mobility and access for people and goods, efficient system performance and preservation, and good quality of life;
4. **Develop a Transportation Improvement Program ("TIP"):** In conjuction with a state Department of Transportation, assist with the development of a short-range (four-year) program of transportation improvements based on the LRTP. The TIP should use spending, regulating, operating, management, and financial tools to target the area's goals; and
5. **Involve the public:** Involve the general public and other affected constituencies in the four essential functions listed above.

What is a Long Range Transportation Plan?
A document resulting from regional or statewide collaboration and consensus on a region or state's transportation system, and serving as the defining vision for the region or state's transportation systems and services.

What is a Transportation Improvement Program?
A prioritized listing/program of transportation projects covering a period of four (4) years that is developed by an MPO as part of the metropolitan transportation planning process, consistent with the LRTP, and required for projects to be eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53.

1.3 Why are MPOs Required?

The Federal Aid Highway Act of 1962 established the federal requirement for urban transportation planning in response to the construction of the Interstate Highway System and the planning of routes through, in between, and around urban areas. As a condition attached to the federal transportation financial assistance, the Act required transportation projects in urbanized areas of 50,000 persons or more to be based on a 3C transportation planning process (continuing, comprehensive, and cooperative). Federal surface transportation funding bills provide the foundation for MPO requirements.

While MPOs have existed in some parts of the country since the 1960s, MPOs gained new prominence and authority in 1991 with the passage of the Intermodal Surface Transportation Efficiency Act ("ISTEA"). The 1998 Federal transportation reauthorization, Transportation Equity Act for the 21st Century ("TEA-21"), and the 2005 reauthorization, Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users ("SAFETEA-LU"), each guaranteed over $200 billion in funding for highway and public transportation projects. SAFETEA-LU increased the focus of Federal transportation priorities on safety, equity, innovative finance, congestion relief, mobility and productivity, efficiency, environmental stewardship, and environmental streamlining. The 2012 reauthorization, Moving Ahead for Progress in the 21st Century ("MAP-21"), brought further modifications to the metropolitan planning process. On December 4, 2015, President Obama signed the Fixing America's Surface Transportation ("FAST") Act was the 2017 authorization. The FAST Act provides long-term funding certainty for surface transportation planning activities and infrastructure improvements and enhancements. Moreover, the FAST Act maintains a focus on safety and the established structure of various highway-related programs.

TEA-21 and SAFETEA-LU identified a set of federal metropolitan transportation planning factors to ensure that the transportation planning process is carried out in a manner consistent with federal regulations. These factors are the basis for goal-setting, project recommendations, and financial prioritization in MPO plans. See **Figure 1.1**.

Figure 1.1: Federal Metropolitan Transportation Planning Factors
1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility of people and for freight
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system

1.4 What is the Salisbury/Wicomico Metropolitan Planning Organization (S/WMPO)?

The Salisbury/Wicomico Metropolitan Planning Organization is a federally-mandated and federally-funded MPO. At the time of this publication, approximately 384 MPOs exist nationwide, seven (7) of which include a portion of Maryland.

Based on the 2000 U.S. Decennial Census, an **Urbanized Area ("UA")** consisting of the City of Salisbury, City of Fruitland, Town of Delmar, Maryland, and Town of Delmar, Delaware, as well as adjacent unincorporated areas of Wicomico County, Maryland, and Sussex County, Delaware met federal criteria requiring these jurisdictions establish an MPO.

What is a Census-designated Urbanized Area?

An UA consists of a densely developed territory containing 50,000 or more people. The Census Bureau delineates UAs to provide a better separation of urban and rural territory, population, and housing in the vicinity of large places.

A Memorandum of Understanding ("MOU") formally establishing the S/WMPO was executed by the following member jurisdictions and entities on January 21, 2004: Maryland Department of Transportation ("MDOT"); Delaware Department of Transportation ("DelDOT"); Wicomico County; City of Salisbury; City of Fruitland; Town of Delmar, Maryland; Town of Delmar, Delaware; and the Tri-County Council of the Lower Eastern Shore of Maryland. The MOU established the framework for the creation of the Salisbury/Wicomico Metropolitan Planning Organization, mandated the creation and adoption of bylaws and a prospectus, and recognized Wicomico County, acting through its Department of Planning, Zoning, and Community Development, as the lead local government. On February 19, 2004, Maryland Governor Robert L. Ehrlich, Jr. designated the S/WMPO to serve as the Federally-designated MPO for the region.

The primary mission of the S/WMPO is to perform transportation planning by establishing regional consensus on transportation planning, projects, and programs following prevailing federal transportation guidelines. The S/WMPO coordinates with appropriate authorities and departments of all impacted state and local governments in an effort to assist with solving regional problems and implement regional goals and policies.

As the S/WMPO works to fulfill its mission, its major goals include:

1. Facilitating efficient movement of people and goods;
2. Using existing facilities to the fullest extent practical;
3. Allocating limited financial resources to generate maximum benefit to the transportation system;
4. Limiting impacts on air quality, the built environment, as well as historic, cultural, and natural resources; and
5. Ensuring public involvement throughout the transportation planning and project development process.

Wicomico River in downtown Salisbury

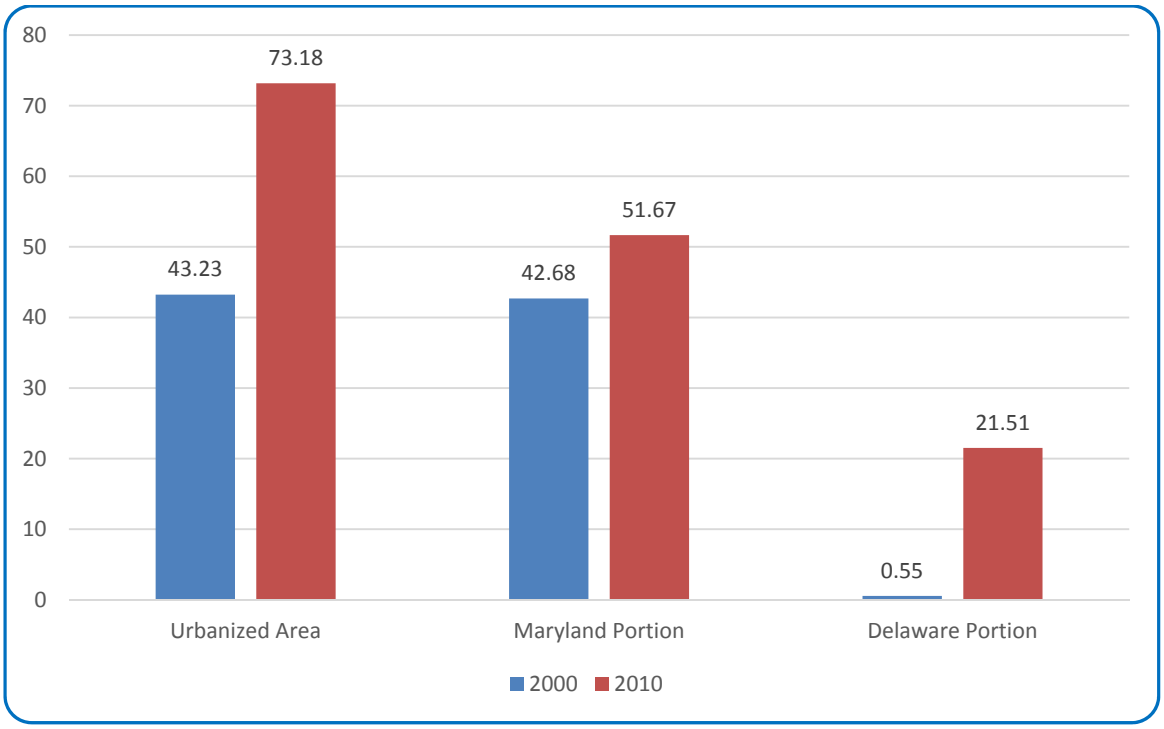
While several other agencies implement transportation projects, the S/WMPO serves in an overall coordination role, assisting with planning and programming funds for projects and operations. The S/WMPO involves local transportation providers in the planning process by including transit agencies, state and local highway departments, maritime operators, and other entities within the region.

1.5 Where is the Urbanized Area of the S/WMPO?

The 2000 Urbanized Area consisted of the City of Salisbury, the City of Fruitland, the Town of Delmar, Maryland, and the Town of Delmar, Delaware – as well as the adjacent unincorporated areas of Wicomico County, Maryland and Sussex County, Delaware. From a regional perspective, the S/WMPO area is located approximately equidistant (120 miles) from three (3) major urban areas – Philadelphia to the north, Baltimore-Washington D.C. to the west, and Norfolk-Hampton Roads area to the south.

At the time of the original designation, the multistate UA encompassed approximately 43.23 sq. miles. The Maryland portion of the UA accounted for roughly 99 percent or 42.68 sq. miles; whereas, the Delaware portion covered 0.55 sq. miles or 1 percent of the UA. Because of a change in the U.S. Census Bureau's delineation criteria of an urbanized area, the S/WMPO's 2010 Urbanized Area expanded significantly into the western portion of Sussex County, Delaware along U.S. Route 13A. The total area of the 2010 UA increased by 29.95 sq. miles or 69.3 percent compared to the 2000 UA for the S/WMPO. See **Figures 1.2 and 1.3**.

Figure 1.2: S/WMPO Urbanized Area Comparison – 2000 and 2010 (Sq. Miles)



Source: U.S. 2000 and 2010 Census, Salisbury/Wicomico Department of Planning, Zoning, & Community Development.

The boundary expanded to include the northern part of Somerset County, Maryland, the Town of Hebron, Maryland, and portions of the designated growth areas adjacent to Salisbury, Fruitland, and Delmar. Overall, the Delaware portion of the Urbanized Area expanded by 20.96 sq. miles or 3,810 percent between 2000 and 2010. For comparative purposes, the Maryland portion increased by 8.99 sq. miles or 21.1 percent. The 2010 UA encompasses 73.18 sq. miles, of which 51.67 sq. miles are in Maryland and 21.51 sq. miles are in Delaware.

For comparative purposes, **Figure 1.3** depicts the changes between the 2000 and 2010 Urbanized Area for the S/WMPO's 2010 Urbanized Area.

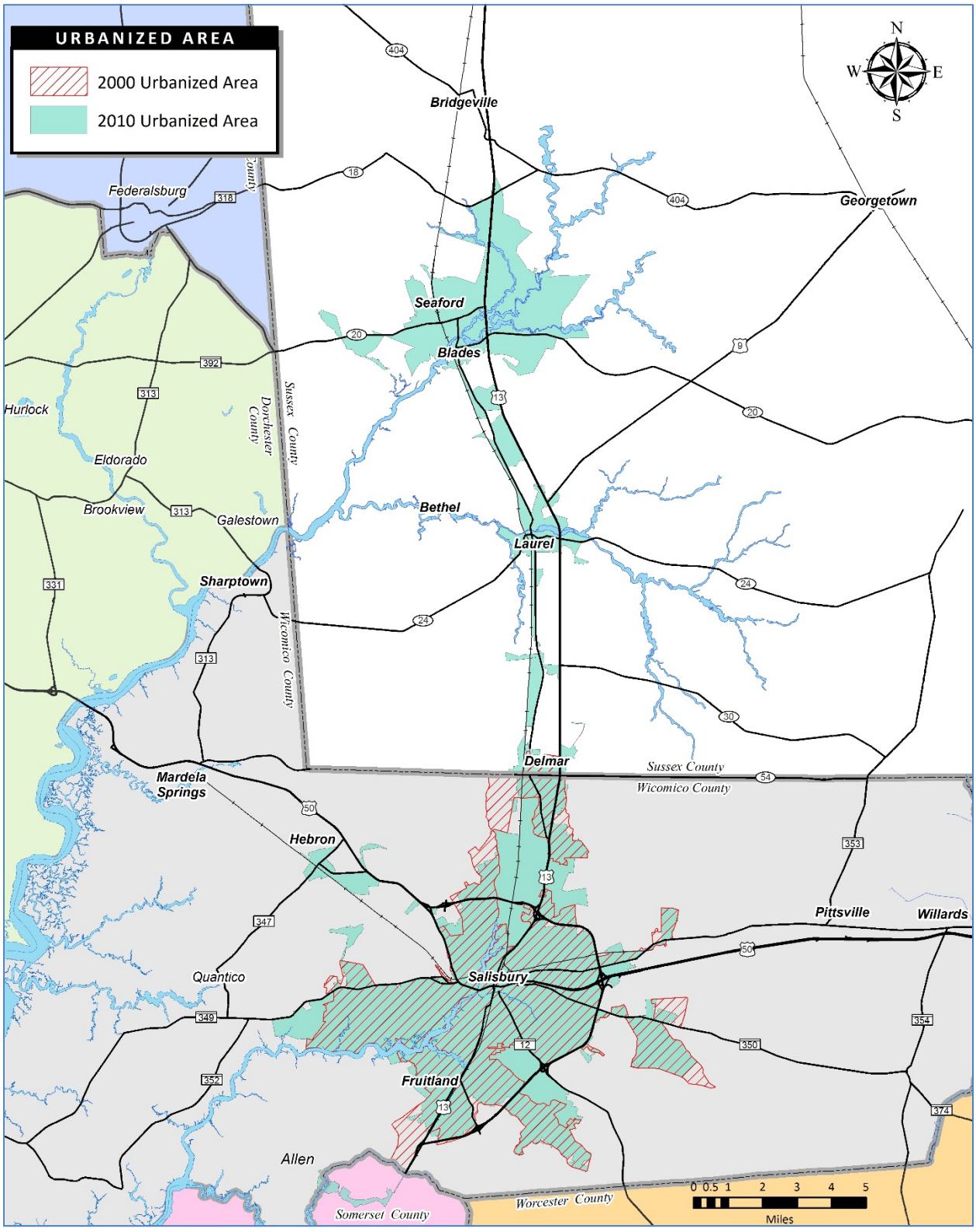


Figure 1.3: S/WMPO Urbanized Area Comparison – 2000 and 2010

Source: U.S. 2000 and 2010 Census. Salisbury/Wicomico Department of Planning, Zoning, & Community

1.6 Where is the Metropolitan Planning Area of the S/WMPO?

In accordance with federal regulations, a MPO is permitted to delineate a **Metropolitan Planning Area ("MPA")** consisting of the U.S. Census Bureau's delineated UA, and the contiguous area expected to be developed within a 20 to 30 year timeframe. The S/WMPO's MPA consists of census tracts adjacent to the 2010 UA, which are located (in whole or partially) within designated growth areas included in locally adopted comprehensive plans. See **Figure 1.4**. Upon adoption of the proposed MPA by the S/WMPO Council, the MPA for each State will be submitted to the Governors, or their appointed representatives, for approval.

Metropolitan Planning Area is the existing urbanized and contiguous area expected to become urbanized within a 20-year forecast period for the long range transportation plan and represents the area of interest for a MPO to conduct regional transportation planning activities and studies.

As of the 2010 Decennial Census, the MPA encompassed 118.66 sq. miles and has a total population of 104,103 persons. The Maryland portion accounted for 86.06 sq. miles or 72.5 percent of the total area and 77,976 persons or 75 percent of the population residing in the MPA. The remaining 32.6 sq. miles or 27.5 percent of the area and 26,127 persons or 25 percent of the population of the MPA was located in Delaware.

The MPA is centered on Salisbury and encompasses portions of Maryland and Delaware. As of 2010, the Maryland portion of the MPA includes the City of Salisbury, City of Fruitland, Town of Delmar, Town of Hebron, and unincorporated areas of Wicomico County and Somerset counties. In Delaware, the MPA includes rural southern Sussex County, City of Seaford, and the Towns of Delmar, Laurel, and Blades. Salisbury is the economic, academic, medical, and institutional hub for this region.

Wicomico County is in the center of the Delmarva Peninsula. Due to its location at the intersection of major highways (U.S. Route 13 and U.S. Route 50) on the Eastern Shore of Maryland, it is the regional economic center. The jurisdictions below are included in the MPA:

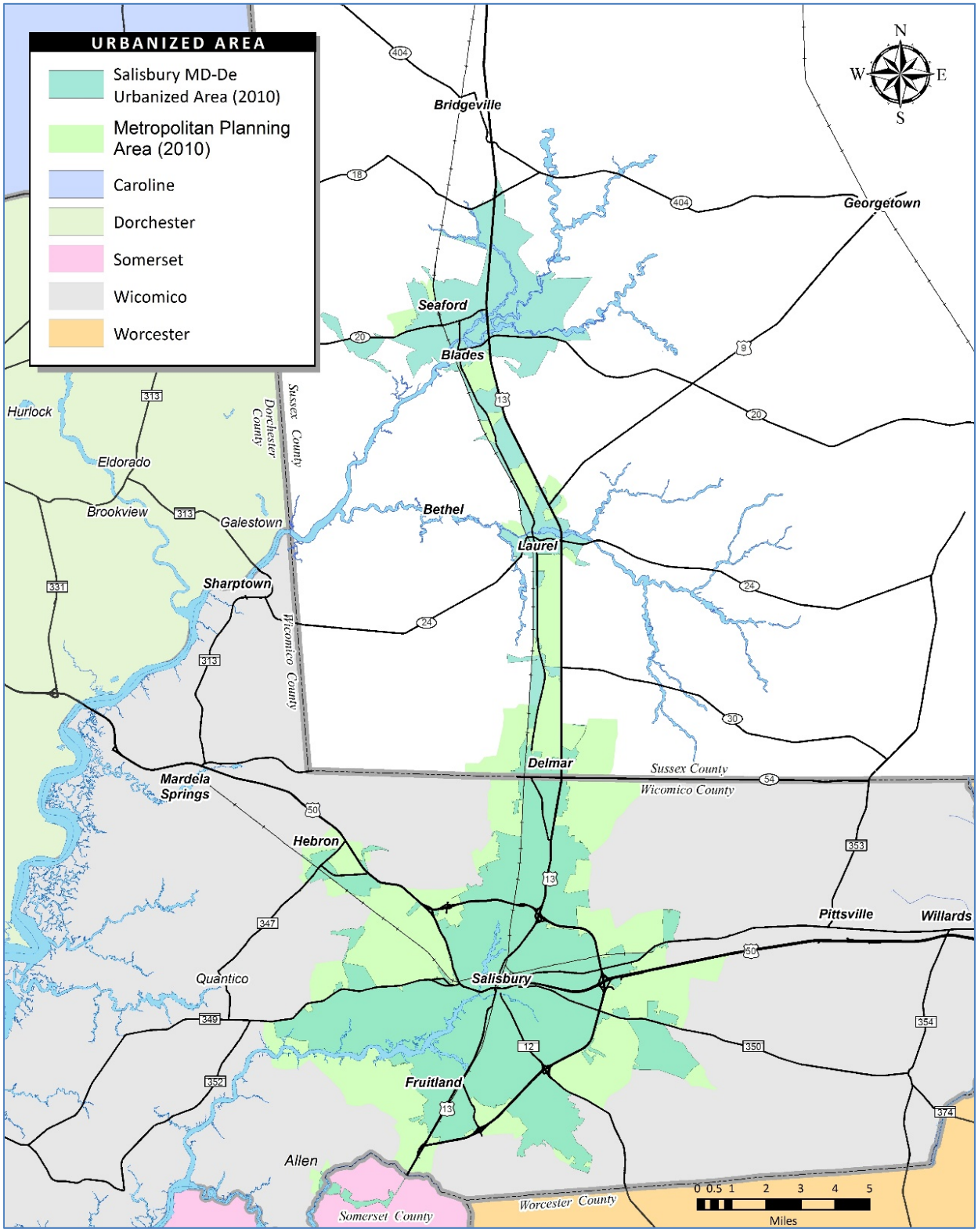
- The **City of Salisbury**, the MPA's center, is the county seat and the largest city on Maryland's Eastern Shore. Referred to as the "Capital of the Eastern Shore," the City is home to Salisbury University and the Port of Salisbury, the second largest port in Maryland after the Port of Baltimore, Peninsula Regional Medical Center, and Salisbury University.
- The **City of Fruitland** is south of Salisbury. The City is bisected from north to south by U.S. Route 13 and the Norfolk Southern freight line.
- The **Town of Hebron** is a small but growing town located northwest of Salisbury.
- The **Town of Delmar** is split by the Maryland and Delaware border, creating a Town of Delmar in each state. These small towns are situated in rural portions of southern Sussex and northern Wicomico Counties. Delmar is accessed via U.S. Route 13, and the Norfolk Southern freight line extends north-south through the towns.

Sussex County is the largest county in Delaware by land area and leads the state in agricultural production. Sussex is the fastest growing county in Delaware, due in part to a large population of retired persons. The following jurisdictions are included in the MPA, located in the southernmost portion of this county at the Maryland border:

- The **City of Seaford** is an historic City situated along the Nanticoke River. The Norfolk Southern freight rail line and U.S. Route 13 cross though Seaford in a north-south direction. The City is home to the Port of Seaford and Nanticoke Memorial Hospital.
- The **Town of Laurel** is a community and business center located along U.S. Route 13 and the freight rail line in the rapidly growing southwestern part of the county.

- The **Town of Blades** is located along the Nanticoke River, adjacent to Seaford in the western part of the county. It is located 21 miles north of Salisbury, near U.S. Route 13.

Figure 1.4: S/WMPO Metropolitan Planning Area



Source: U.S. 2010 Census. DelDOT. Salisbury/Wicomico Department of Planning, Zoning, & Community

1.7 What is the Organizational Structure of S/WMPO?

MPOs vary greatly in scale; while some are in major cities with large, full-time staffs, others are in smaller areas and rely on staff support from participating agencies. The area that an MPO serves may span several counties or multiple states. There is no standard structure for MPOs, but most have three elements: an MPO Board or Council, Technical Advisory Committee, and a MPO Staff.

The MPO Council is responsible for making regional transportation policy, planning, and programming decisions by prioritizing and choosing capital projects and operating strategies. The Council is comprised of 12-local elected officials and representatives of government agencies and serves as the governing body of the S/WMPO (See **Figure 1.5**).

Figure 1.5: S/W MPO Council

Maryland Members

- Maryland Department of Transportation (one position)
- Wicomico County, Maryland (three positions)
- City of Salisbury, Maryland (two positions)
- City of Fruitland, Maryland (one position)
- Town of Delmar, Maryland (one position)
- Tri-County Council for the Lower Eastern Shore of Maryland (one position)

Delaware Members

- Delaware Department of Transportation (one position)
- City of Seaford, Delaware (one position)
- Sussex County (one position)

The S/WMPO Council meets to act on transportation issues of regional significance within their study area. Local government entities designate representatives, while MDOT and DelDOT designate their own representatives.

The S/WMPO Council established a **Technical Advisory Committee ("TAC")** consisting of expert personnel, such as planners and engineers, from constituent agencies to provide technical expertise and develop recommendations to assist the Council's decision making. Typical duties of the TAC include reviewing and recommending revisions to the planning process, data collection, forecasts, LRTP, TIP, and the UPWP. TAC representatives are listed in **Figure 1.6.**

Figure 1.6: The S/W MPO Technical Advisory Committee

Members

State Agencies

- Maryland Department of Transportation
- Maryland Department of Planning
- Delaware Department of Transportation
- Delaware Department of Natural Resources - Air Quality Division
- Delaware Office of State Planning Coordination
- Delaware Transit Corporation

County Agencies

- Salisbury-Wicomico County Planning Commission
- Wicomico County Department of Public Works
- Wicomico County Department of Planning, Zoning, & Community Development
- Sussex County Planning Department
- SBY Airport

Municipal Agencies and Local Institutions

- City of Salisbury Public Works
- City of Fruitland
- Town of Delmar (Maryland and Delaware)
- Town of Hebron
- Delmarva Water Transportation Committee
- Salisbury University
- Shore Transit
- City of Seaford (rotating 2-year appointment Laurel, Blades, and Seaford)

Ex-Officio Members

- Federal Highway Administration ("FHWA")
- Federal Transit Administration ("FTA")
- Maryland Department of Transportation - Maryland Transit Administration ("MDOT MTA")
- Maryland Department of Transportation - Maryland State Highway Administration ("MDOT SHA")

The S/WMPO is staffed with personnel from the Wicomico County Department of Planning, Zoning, and Community Development. The S/WMPO Staff manages the daily operations of the organization as directed by the TAC and Council, and coordinates transportation planning projects and activities. In addition, the S/WMPO Staff serves as the local liaison to state and federal agencies involved in transportation planning and programming within the region.

Other issues relative to the organizational structure, including, but not limited to officers, staff structure, committees, financial organization, voting procedures, and other similar items can be found in the S/WMPO's Bylaws. The Bylaws can be viewed on the Organization's website at www.swmpo.org.

1.8 What is *Connect 2050*?

Connect 2050 is the Long Range Transportation Plan for the S/WMPO. It is the source for planning transportation investments for the region over the next 30 years. The Plan prioritizes projects and programs that have short- and long-term effects on daily commutes, transportation options, and quality of life in this region of Maryland and Delaware. ***Connect 2050*** guides future regional transportation system development and maintenance by integrating plans from different transportation modes including auto, transit, freight, waterways, biking, and walking. It presents constrained and unconstrained transportation projects for the region according to priorities and available funding through 2050.

The primary purpose of ***Connect 2050*** is to guide the S/WMPO and government agencies in the transportation decision-making process, channeling transportation investments where they will be most effective. ***Connect 2050*** can guide other municipal and state officials, local organizations, and private sector businesses to plan in concert with the region's overall transportation goals. This Plan is designed to be flexible and to reflect the unique characteristics of the Maryland and Delaware communities in the S/WMPO region. This Plan can be amended and/or updated by approval of the S/WMPO Council, following appropriate public review consistent with the Organization's adopted Public Participation Plan.

While the federal requirement provides for an updated LRTP every five (5) years, the S/WMPO is required to update the LRTP every four (4) years because a portion of the 2010 UA is in the Delaware air quality maintenance area. Federal regulations require air quality issues be considered during the preparation of the LRTP. The Maryland portion of the S/WMPO's UA meets air quality conformity criteria as identified in the 1990 Clean Air Act Amendments ("CAAA"); whereas, the Delaware portion is designated as a maintenance area. See **Appendix B**.

MAP-21 and the FAST Act establish new provisions to the metropolitan planning process that are designed to establish a transparent, accountable decision-making framework for the MPO and public transit providers to identify multimodal capital investment and project priorities. USDOT has issued its final rule regarding performance-based planning; subsequently, S/WMPO's LRTP addresses these requirements in **Appendix I**.

1.9 How was Connect 2050 Developed?

Connect 2050 closely relates to other aspects of the transportation planning process. As **Figure 1.7** illustrates, an LRTP is created by "inputs," including an understanding of a region's vision and goals, an assessment of alternative improvement strategies, and an evaluation and prioritization of strategies. Likewise, some of the immediate "outputs" from an LRTP include the S/WMPO's TIP development, projects development and implementation, and performance management.

Figure 1.7: The Transportation Planning Process

Source: The Transportation Planning Process: Key Issues: A Briefing Book for Transportation Decision makers, Officials, and Staff; Transportation Planning Capacity Building Program, Federal Highway Administration/Federal Transit Administration

The S/WMPO and/or the member jurisdictions perform the following activities, which inform the long range transportation planning process:

- Monitoring existing conditions;
- Forecasting future population and employment growth, including assessing projected land uses in the region and identifying major growth corridors;
- Identifying current and projected future transportation problems and needs and analyzing improvement strategies to address those needs;
- Developing long range plans and short-range programs of alternative capital improvement and operational strategies for moving people and goods;
- Estimating the impact of recommended future transportation system improvements on environmental features, including air quality; and
- Developing a financial plan for securing sufficient revenues to cover the costs of implementing strategies.

As illustrated in **Figure 1.8**, the ***Connect 2050*** Process involved sustained public input throughout the process of preparing technical data and analyses and identifying the available funding for the region over the 30-year plan horizon.

Figure 1.8: *Connect 2050* Process

This Plan synthesizes information and data from Federal, State, and local transportation plans, and studies summarized in **Figure 1.9**. ***Connect 2050*** utilized data from many other sources as well, including the Census Bureau, USDOT, Maryland Department of Transportation, Maryland Department of Planning, Delaware Department of Transportation, Delaware Population Consortium, Shore Transit, US Army Corps of Engineers – Navigation Data Center, and locally adopted comprehensive plans and capital improvement programs.

Figure 1.9: Plans and Studies Reviewed	
Comprehensive Plans and Capital Improvement Plans for City of Salisbury, Wicomico County, Town of Delmar (MD), City of Fruitland, Town of Hebron, Sussex County, Towns of Delmar (MD and DE), Town of Laurel, Town of Blades, City of Seaford	Local jurisdiction
S/W MPO Corridor Studies and Pedestrian/Cyclist Studies	S/W MPO
S/W MPO UPWP and TIP	S/W MPO
MDOT and DelDOT CTP	MDOT and DelDOT
Maryland Twenty-Year Bicycle & Pedestrian Master Plan	MDOT
Maryland Trails Strategic Implementation Plan	MDOT
Wicomico County Land Preservation, Parks, and Recreation Plan (LPPRP)	Wicomico County
DelDOT Long Range Transportation Plan	DelDOT
Delaware's Annual Report and Transportation Facts	DelDOT
Statewide Pedestrian Action Plan	DelDOT
Statewide Bicycle Facility Master Plan	DelDOT
Delaware State Comprehensive Outdoor Recreation Plan (SCORP)	DNREC, Division of Parks and Recreation
Shore Transit Annual Transportation Plan and Transportation Development Plan (Draft)	Shore Transit
Delmarva Freight Plan	DelDOT

1.10 What are the *Connect 2050* Goals and Objectives?

Six (6) overarching goals will guide the S/WMPO's transportation planning and policy work over the next 30 years. To create the ***Connect 2050*** goals, the S/WMPO considered the eight (8) Federal metropolitan planning factors, the States of Maryland and Delaware's guidance, the 2019 LRTP goals and objectives, local and county comprehensive planning documents, and public input. Included under each goal is a list of more specific objectives, as well as a list of thought-provoking questions targeting the relationship between these broad goals and the transportation needs of families, businesses, organizations, and governments in the S/WMPO Metropolitan Planning Area. These goals, objectives, and questions are linked to specific projects and outcomes in **Chapter 8: *Connect 2050* Long Range Planning Projects**.

Goal 1: Manage the Existing Transportation System

Objectives

- Coordinate local, State, and Federal efforts to provide an efficient transportation system that will maximize the capacity and safety of the existing transportation system.
- Encourage local jurisdictions to control the location and intensity of adjacent land development so that highway traffic load will not exceed planned design capacities.
- Provide for the short- and long-term maintenance and management of assets to maximize public investment and ensure the sustainability of transportation infrastructure.

Questions to Consider

- *How can we afford to maintain the existing roads, bridges, and transit services and also pay for future improvements?*
- *How are these projects funded and prioritized?*

Goal 2: Increase Safety and Security

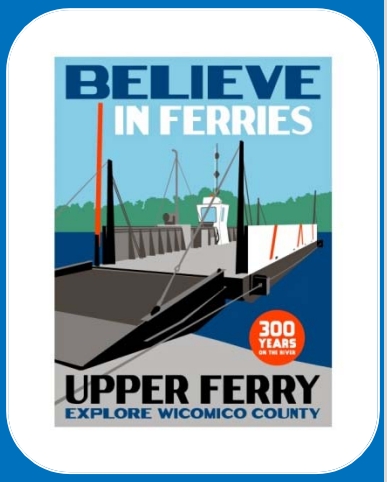
Objectives

- Establish a transportation network that optimizes the safe movement of people throughout the region.
- Provide for the safe and efficient integration of private, commercial, emergency, and seasonal traffic, including application of effective and enforceable traffic controls and restrictions.
- Ensure a resilient transportation system that emphasizes preparedness for changing environmental conditions.

Questions to Consider

- *What projects and policies will keep those who live in, visit, and do business in this region safe on the roadways?*
- *Would providing defined, safe, and convenient pedestrian crossing points make the system safer for all users?*
- *How do we plan for natural disasters, sea-level rise, security threats, and emergency evacuations?*

Goals 3: Enhance Access and Mobility



Objectives

- Improve access to and movement within the communities of the S/W MPO region, including the road network and public transit system.
- Manage access points to along highways and encourage the use of service roads to provide additional route options.

Questions to Consider

- *Does the current transportation system help you reach your destinations?*
- *Do you think it adequately serves people of all ages, abilities, and income levels?*
- *What infrastructure improvements might improve the efficiency of regional and through traffic?*
- *What infrastructure improvements might improve local traffic circulation?*

Goal 4: Provide a Connected, Multi-Modal Transportation System

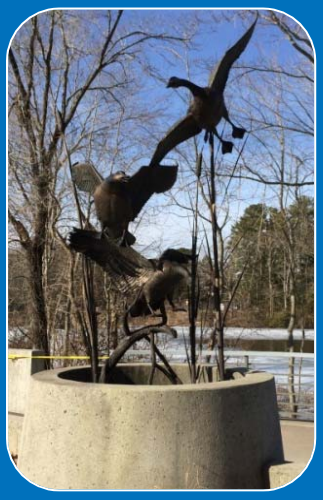
Objectives

- Coordinate modes of transportation
- Encourage the improvement of an efficient, convenient public transportation system to meet the needs of current and potential needs of transit riders.
- Encourage the development of a safe and efficient continuous bikeway system throughout the region to connect high-activity centers such as schools, parks, playgrounds, shopping areas, and employment centers with major residential neighborhoods.

Questions to Consider

- *Do you and your family, friends, or co-workers ride buses, ride bicycles, and/or drive cars?*
- *Would you like to travel by these modes for recreation or commuting?*
- *Is freight movement through the region important to your business?*
- *How can the transportation system more effectively and safely connect the Salisbury University community with downtown Salisbury?*

Goal 5: Protect the Environment and Quality of Life



Objectives

- Maximize the desired use of transportation systems while minimizing possible negative effects upon neighborhoods, the environment, and the general public.
- Provide for and preserve scenic areas and other open space areas along major highways.
- Locate and design new transportation facilities and make facility improvements in a manner that will avoid destruction of the natural environment and minimize disruption to developed urban settings.
- Improve existing transportation facilities wherever possible, if adverse environmental impacts can be avoided, rather than create new highway corridors that may compound adverse effects on the environment.

Questions to Consider

- *How can the region's roads, trails, bridges, and ports support the natural environment and quality of life in rural and urban communities on the Eastern Shore?*
- *Can the Nanticoke Heritage Byway encourage residents and visitors to explore the region?*
- *Do the impacts of seasonal traffic positively or negatively affect the year-round movement of people and goods in the region?*

Goal 6: Support Economic Development

Objectives

- Provide for the safe and efficient integration of private, commercial, emergency, and seasonal traffic, including application of effective and enforceable traffic controls and restrictions.

Questions to Consider

- *How can the region's roads, bridges, and ports enhance access to job sites and the movement of freight and goods?*
- *Does the Salisbury-Ocean City: Wicomico Airport have efficient and appropriate connections with roadways?*

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Chapter 2
Connect with… The Metropolitan Region

Chapter 2: The Metropolitan Region

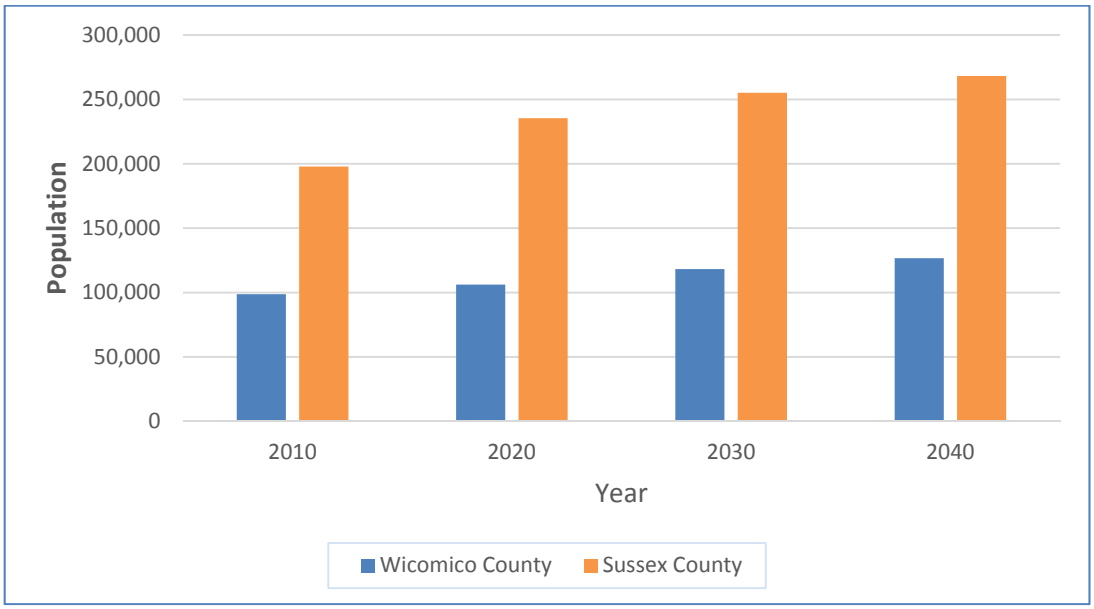
Chapter 2 discusses regional demographic, housing, employment, and commuter data. This Chapter also discusses how the plan supports environmental policies and promotes environmental justice.

2.1 Who Lives in the Region?

Population

Wicomico County's population grew by 14,089 people or 16 percent from 2000 to 2010. For the period from 2010 to 2020 the County population is expected to increase by 10 percent. For the period from 2010 to 2040 the Wicomico County population is forecasted to grow by 27,917 persons or 28 percent for a projected population of 126,650. Sussex County's population grew by 41,302 people or 26 percent from 2000 to 2010. For the period from 2010 to 2020 the Sussex population is expected to increase by 19 percent or 37,456 persons. Sussex County population is forecasted to reach 277,871 in 2050 based on a forecasted 40 percent growth rate from 2010 to 2050. (Refer to **Figures 2.1** and **2.2**).

Figure 2.1: County Population Trends (2000 - 2040)



Source: Maryland Department of Planning and Delaware Population Consortium Population Projections

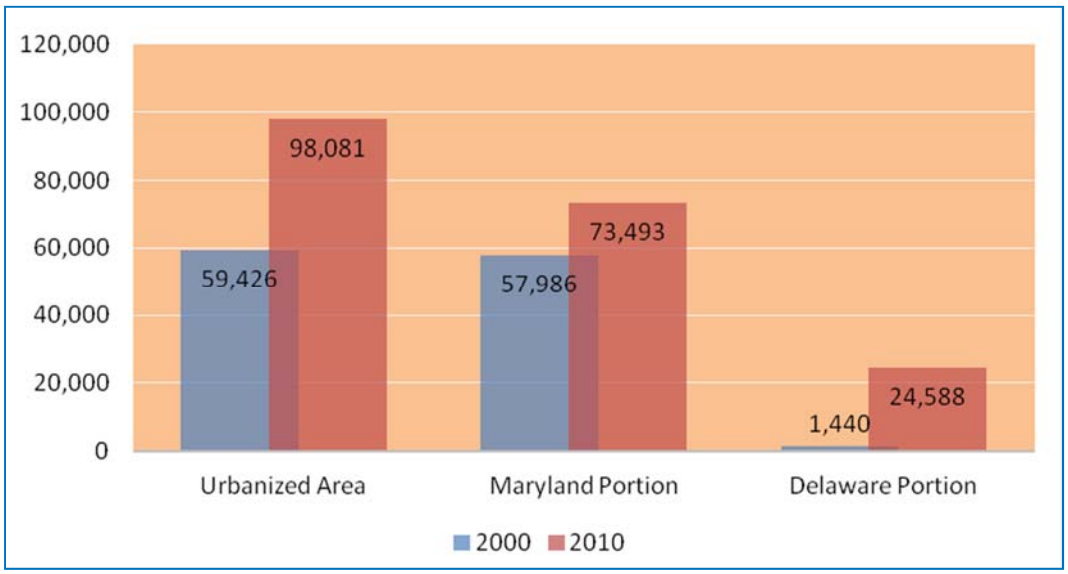
Figure 2.2: Population Trends (2000 – 2050)						
County	**2000**	**2010**	**2020**	**2030**	**2040**	**2050**
Wicomico County	84,644	98,733	106,200	118,200	126,650	N/A
Sussex County	156,638	197,940	235,396	255,143	268,180	277,871

Source: Maryland Department of Planning Population Projections and Delaware Population Consortium

As represented by the data, this is a growing region. In 2000, the Salisbury, MD-DE UA total population was 59,426 and by 2010 it increased to 98,081. **Figure 2.3** shows the total population, Maryland, and Delaware portions of the population for 2000 and 2010. It is important to note, the boundary of the UA increased as a result of the 2010 census. Therefore, the population increase between 2000 and 2010 is directly correlated to the expansion of the UA instead of significant population growth. The UA expansion primarily occurred in portions of Sussex County, Delaware, along U.S. Route 13A between Delmar and Seaford.

The UA 2010 population was comprised of 53 percent females and 47 percent males. The City of Salisbury composes approximately 30 percent of the UA population. The total 2010 Wicomico County population was nearly 100,000. Sussex County has a total population of more than 195,000 residents, but most live in the eastern portion of the county outside the UA.

Figure 2.3: Urbanized Area Population (2000 and 2010)

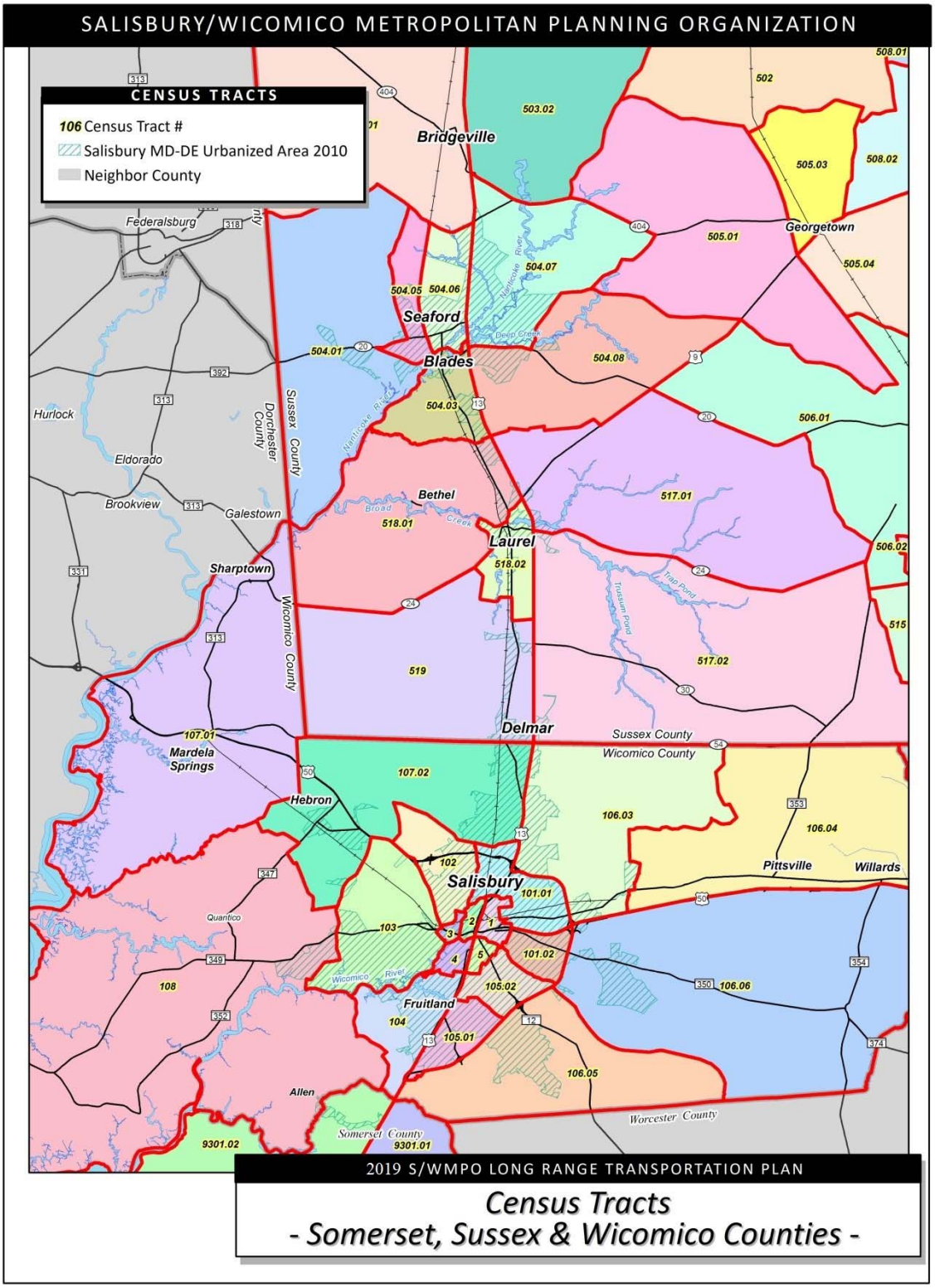


Source: 2000 and 2010 U.S. Census

Figure 2.4 illustrates the 30 census tracts within the S/WMPO region, which the entirety of a census tract may not be within the UA. Within the UA of the S/WMPO, 17 census tracts are located in Wicomico County, two (2) in Somerset County, and the remaining 11 in Sussex County, Delaware.

According to 2017 ACS data, the most populated census tracts in the Maryland portion of the UA are Census Tract 105.2 with 9,313 persons, Tract 103 with 8,480 persons, and Tract 107.02 with 8,120 persons. In the Delaware portion of the UA, Census Tract 504.07 had 5,310 persons, Tract 517.02 had 5,237 persons, and Tract 504.06 had 5,081 persons.

Figure 2.4: Census Tract Map (2010)



Source: 2010 U.S. Census

Age

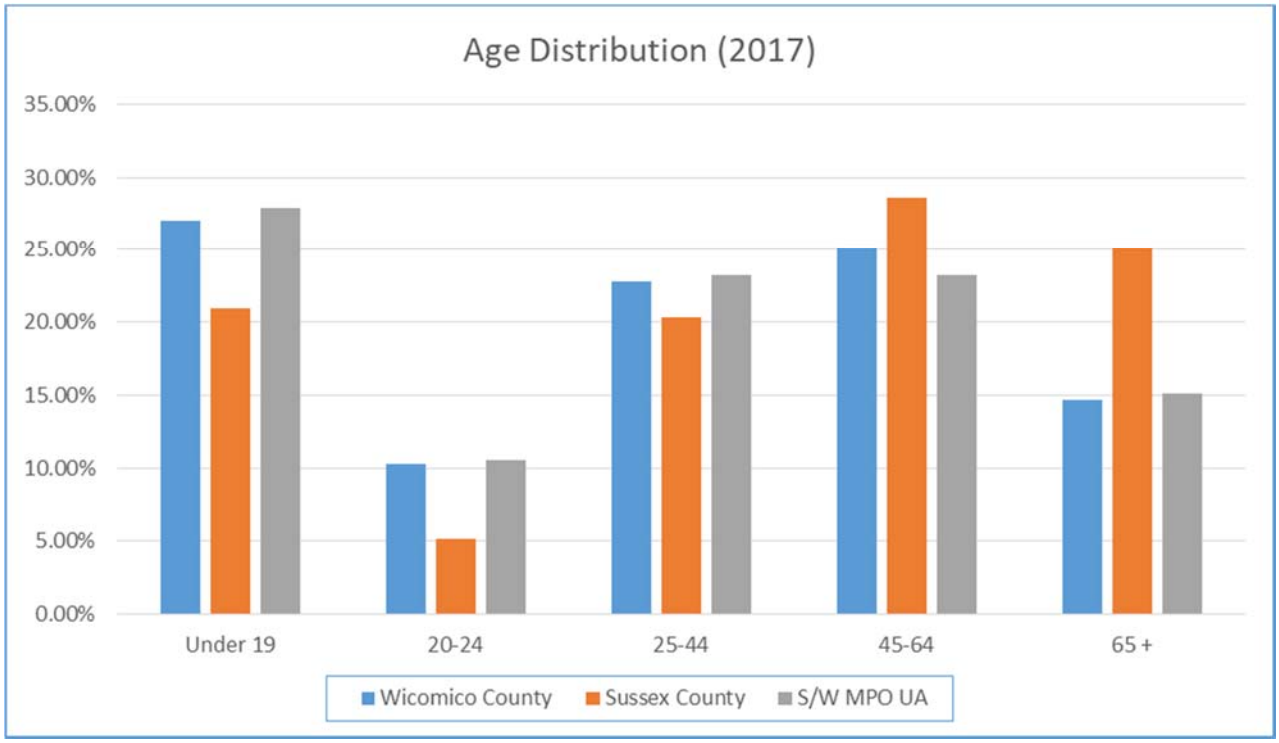
Figures 2.5 and **2.6** depict the 2017 American Community Survey ("ACS"), 5-Year Estimates, population by age group for the UA, Wicomico and Sussex Counties. The data shows the largest segment of the UA population (28 percent) was less than 19 years of age. The largest segment of the Wicomico population was under age 19 (27 percent), and the largest segment of the Sussex population (29 percent) was aged 45-64. The ACS data for 2017 indicates the median age in Wicomico County was 35.8, 48.3 in Sussex County, and 34.3 for the UA population.

Figure 2.5: Age Distribution (2017 & 2010)

Region	Under 19	20-24	25-44	45-64	65 +
Wicomico County	27.0%	10.3%	22.8%	25.1%	14.7%
Sussex County	20.9%	5.1%	20.3%	28.6%	25.1%
S/W MPO UA	27.9%	10.6%	23.2%	23.2%	15.1%

Source: American Community Survey 2017 - 5 Year Estimate

Figure 2.6: Age Distribution (2017)

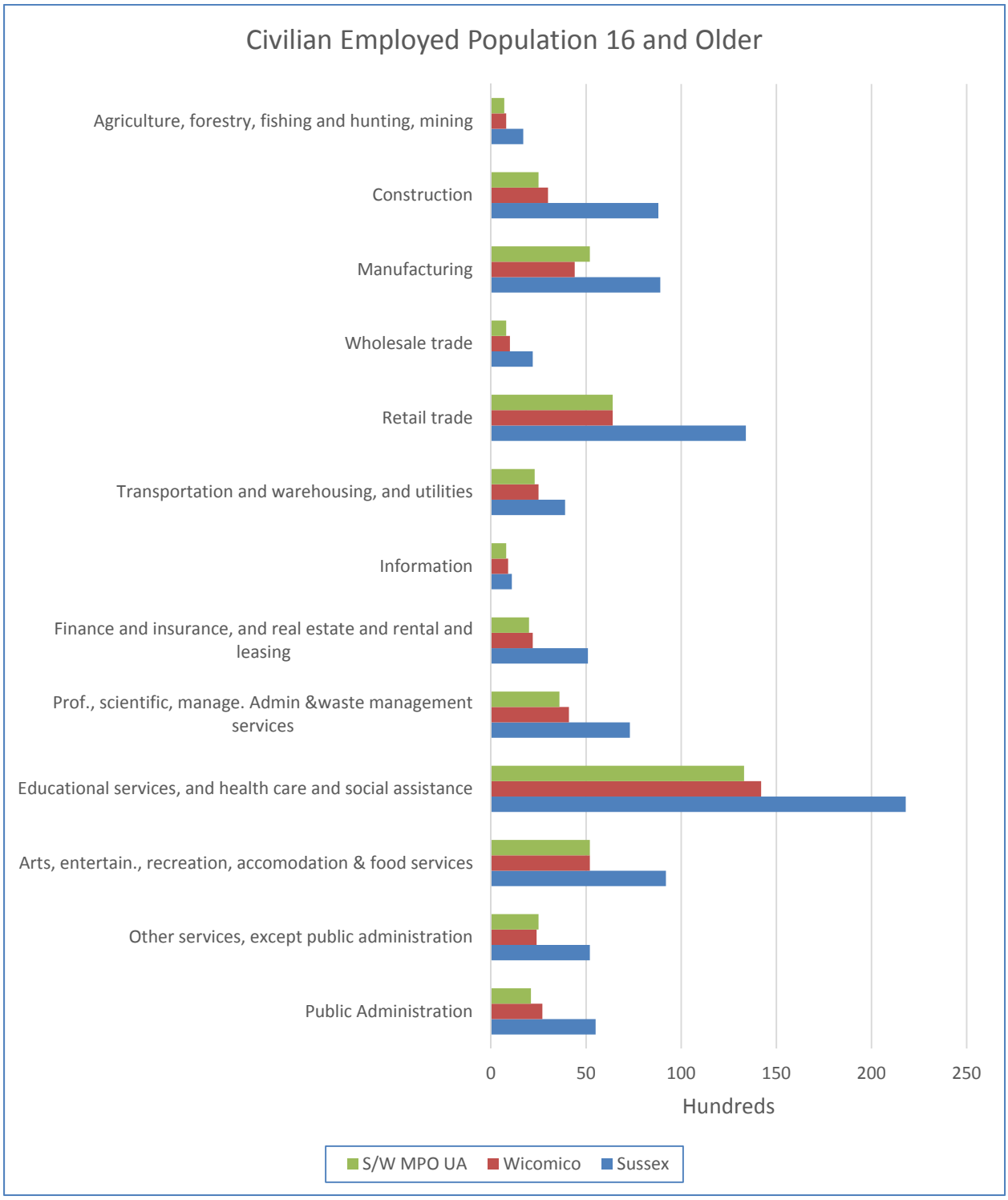


Source: American Community Survey 2017 - 5 Year Estimate

Labor Force

A review of the 2017 ACS Industry by Occupation data shows the Educational and Health Care services was the largest labor sector in Maryland, Delaware, Wicomico County, Sussex County, and the UA. In contrast, the smallest labor sector for the aforementioned jurisdictions and the UA was the agricultural, forestry, fishing and hunting, and mining jobs. The total labor force (persons 16 years of age and older) of the UA was 79,999 persons, which is approximately 64 percent of the total population (101,054). **Figure 2.7** illustrates the 2017 ACS data on the Civilian Employed Labor Force by sector; whereas, **Figure 2.8** shows the percentages within each employment sector.

Figure 2.7: Civilian Employed Population 16 and Older (2017)



Source: American Community Survey 2017 - 5 Year Estimate

Figure 2.8: Percentage of Labor Force by Sector (2017)					
Sector	**Maryland**	**Delaware**	**Wicomico**	**Sussex**	**S/W MPO UA***
Agriculture, forestry, fishing and hunting, and mining	1%	1%	2%	2%	1%
Construction	7%	6%	6%	9%	5%
Manufacturing	5%	8%	9%	10%	11%
Wholesale trade	2%	2%	2%	2%	2%
Retail trade	10%	12%	13%	14%	14%
Transportation and warehousing, and utilities	5%	5%	5%	4%	5%
Information	2%	1%	2%	1%	2%
Finance and insurance, and real estate and rental and leasing	6%	10%	5%	6%	4%
Professional, scientific, and management, and administrative and waste management services	15%	10%	8%	8%	8%
Educational services, and health care and social assistance	24%	25%	29%	23%	28%
Arts, entertainment, and recreation, and accommodation and food services	8%	9%	11%	10%	11%
Other services, except public administration	5%	4%	5%	6%	5%
Public administration	11%	6%	5%	6%	4%

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

2.2 How do People Travel to Work and How Much Time Does it Take?

Figure 2.9 shows the percentage breakdown by mode for commuters in Maryland, Delaware, Sussex and Wicomico counties, and S/WMPO UA, according to the 2017 ACS 5-Year Estimates. The data also shows the percentage workers working at home. In all jurisdictions driving alone to work is the largest share of commuting to work patterns. The State of Maryland had the highest percentage using public transportation at 8.8 percent. In contrast, 0.7 percent of persons in the UA commute to work using public transportation. The UA had 10.1 percent carpooling and 2.3 percent walking.

Figure 2.9: Commuting Modes (2017)

Mode	Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
Car, drove alone	73.8%	81.4%	83.6%	83.4%	82.2%
Carpooled	9.1%	8.0%	8.6%	7.3%	10.1%
Public Transportation	8.8%	2.8%	0.6%	0.7%	0.7%
Walked	2.4%	2.1%	2.4%	1.6%	2.3%
Other	1.4%	1.1%	1.5%	1.3%	1.8%
Worked at Home	4.5%	4.5%	3.3%	5.6%	2.9%

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

Figure 2.10 shows the average commute times for workers in each state, county, and the UA. Marylander's experienced the longest commute time at 32.7 minutes. In contrast, commuters in Wicomico County had the shortest commute time at 21.2 minutes. Both Sussex County and Delawareans had commute times of over 25 minutes.

Figure 2.10: Average Commute Time in Minutes (2017)

Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
32.7	25.7	21.2	25.3	21.3

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

By analyzing commute data at the census tract level it is possible to assess where alternative modes of commuting are utilized. As examples, the highest percentage public transit use is in Census Tract 3 (3.8%) on the west side of Salisbury. There are also four (4) census tracts in and around Salisbury with no public transit use. (Tracts 101.02, 102, 105.01, and 106).

Census tract data also shows the workers in Census Tract 108 (Quantico) had the longest average commute time at 30.3 minutes. Workers in Census Tract 107.01 (Mardela Springs) also had a long commute time at 29.7 minutes. The Census Tract with the shortest commute time was 104, which is located in the Fruitland area.

2.3 How will Connect 2045 Consider Environmental Justice?

Federal regulations require Long Range Transportation Plans to consider environmental justice. All Federal agencies and recipients of Federal aid must assure non-discrimination in their programs and activities, in accordance with Title VI of the Civil Rights Act of 1964. Furthermore, Executive Order 12898, mandated Federal agencies to identify and respond to any disproportionately high and adverse human, health, or environmental effects of their programs, policies, and activities on minority or low-income populations. In order to address environmental justice concerns, jurisdictions must identify if and where high concentrations of minority, elderly, disabled, and low-income populations exist within the S/WMPO study area.

Minority Population

The U.S. Department of Transportation's Title VI requirements define "minority" to include black or African American, Hispanic (regardless of race), Asian, and American Indian or Alaskan Native populations. For the purposes of this analysis, minority population is defined as everyone other than non-Hispanic white alone.

As illstrated in **Figure 2.11**, Maryland had 43 percent minority population; whereas, Delaware's population was comprised of 31 percent minorities. Of the five (5) geographies, Sussex County experienced the lowest percentage of minority population (18%). The minority compostion of the UA was 38 percent.

Figure 2.11: Percentage and Total Minority Population (2017)

Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
43.4%	31.0%	32.3%	18.1%	38.0%
2,600,867	291,562	32,952	39,040	38,406

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

Figure 2.12 shows the percentage minority composition by Census Tract for each county in the UA. In the Maryland portion of the UA, Census Tracts 3, 102, and 9301.01 had the largest percentage of minority population, 88 percent, 87 percent, and 76 percent, respectively. Census Tracts 518.02, 504.06, and 504.07 had the highest percentage of minority population in the Delaware portion of the UA, 50 percent, 43 percent, and 36 percent, respectively.

Figure 2.12: Percentage Minority Population by Census Tract (2017)

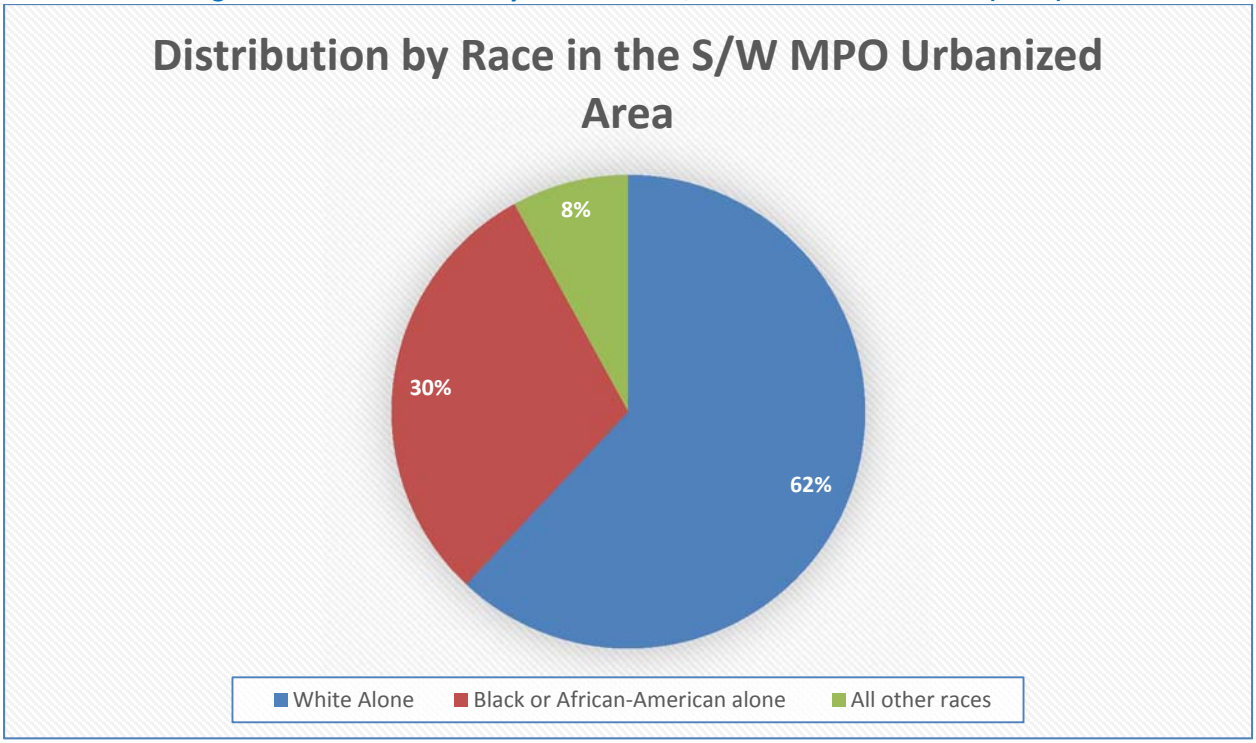
Census Tract	Minority Population [1]	Minority Population_Total[1]
Wicomico		
1	60.9%	3,784
2	34.1%	587
3	88.3%	1,279
4	35.3%	1,491
5	60.2%	1,956
101.01	34.8%	2,161
101.02	25.1%	933
102	87.1%	4,490
103	33.3%	2,828
104	18.0%	1,222
105.01	41.0%	2,316
105.02	31.9%	2,974
106.03	25.0%	1,848
106.05	8.3%	344
106.06	7.7%	345
107.02	26.7%	2,169
108	14.2%	975
Somerset		
9301.01	76.6%	5,352
9301.02	33.0%	1,349
Sussex		
504.01	13.9%	524
504.03	29.7%	1,079
504.05	20.4%	811
504.06	43.2%	2,194
504.07	35.9%	1,904
504.08	30.9%	1,386
517.01	9.4%	365
517.02	6.4%	337
518.01	11.4%	521
518.02	50.0%	2,360
519	14.7%	626

Source: 2017 American Community Survey, 5-Year Estimates

Notes: * denotes 2010 U.S. Census Decennial Census

The racial composition of the UA is 62 percent white alone, 30 percent black or African American alone, and 8 percent other races (Asian, American Indian, or Alaskan Native) or multiple races. Additionally, the Hispanic population, regardless of race, comprised 7 percent of the population. Refer to **Figure 2.13** below.

Figure 2.13: Distribution by Race in the S/WMPO Urbanized Area (2010)



Source: 2010 U.S. Census Bureau Decennial Census

Aging Population

Approximately, 14.2 percent of Maryland's population and 17 percent of Delaware's population were aged 65 or older; and 15.1 percent of the S/WMPO population falls within this demographic. **Figure 2.14** provides a comparison of the 65 and older data by jurisdiction.

Figure 2.14: Population Aged 65 and Older (2017)

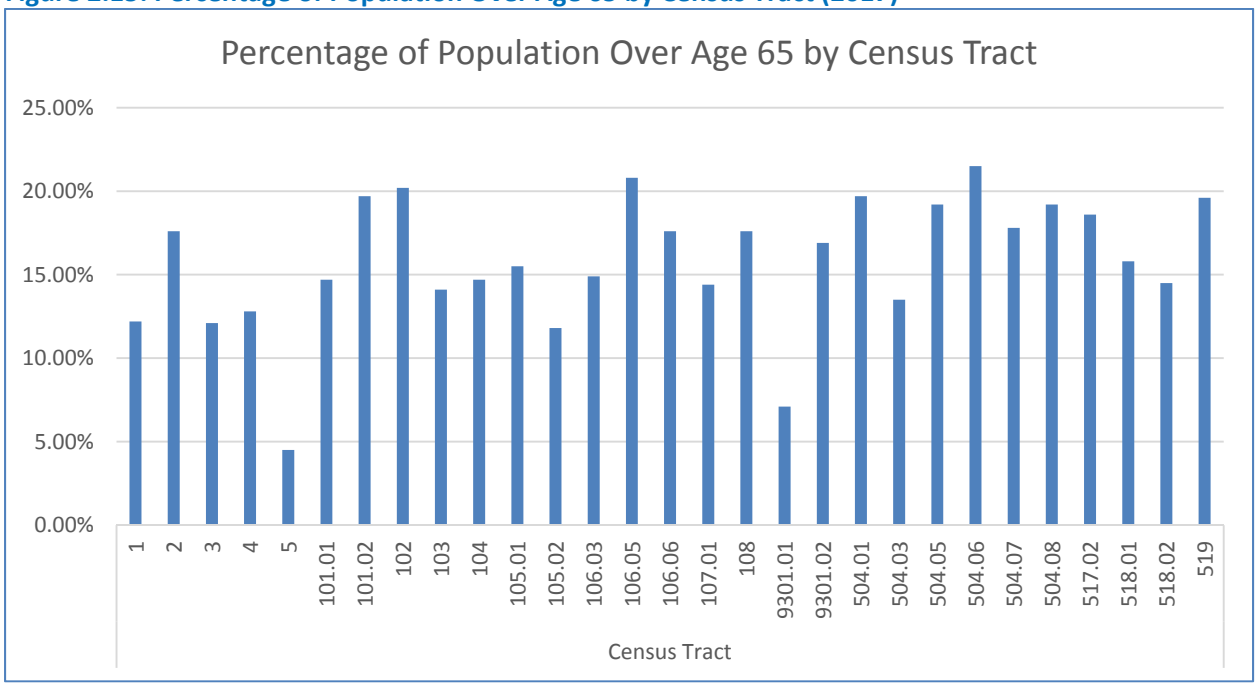
Population	Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
Percentage	14.2%	17.0%	14.7%	25.2%	15.1%
Persons	849,185	160,565	15,015	54,234	15,272

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

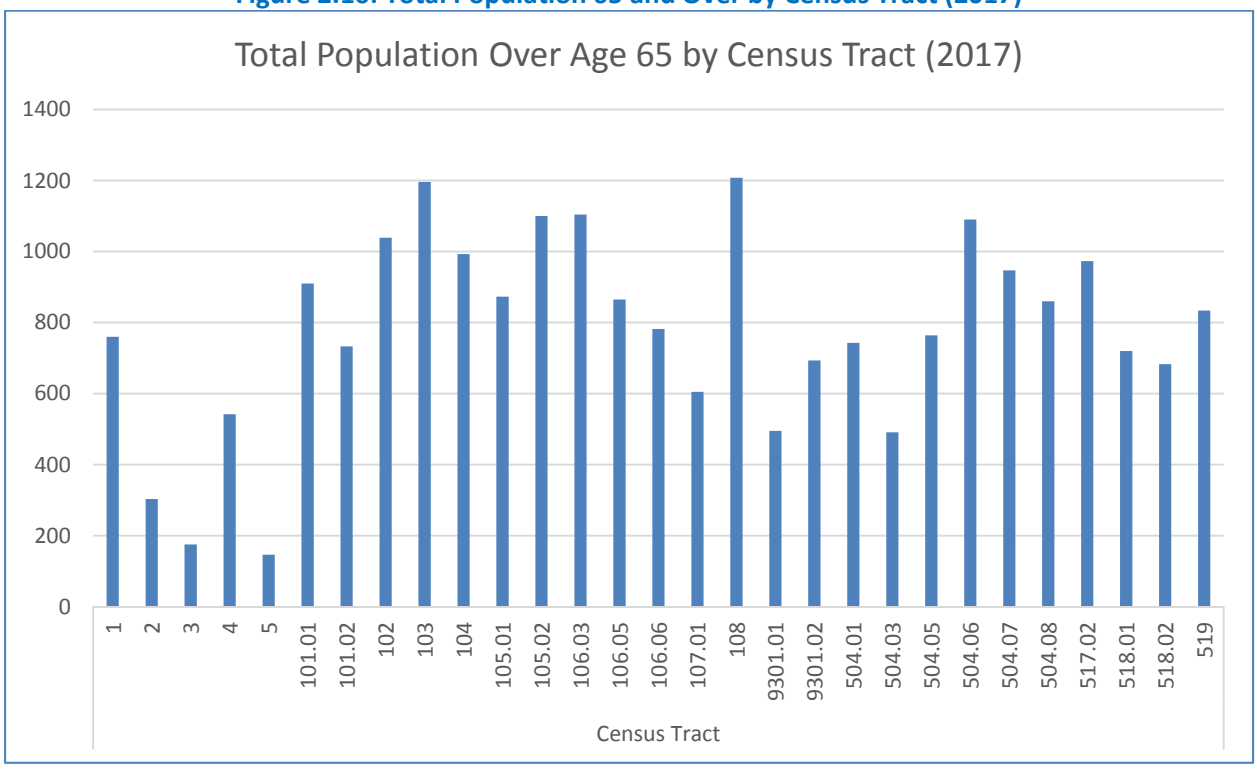
Figure 2.15 illustrates the percentage of the older adult population by Census Tract in the S/WMPO area. The data indicates people over age 65 are distributed widely throughout the UA, ranging between approximately 5 and 21 percent of the total population per Census Tract. The three (3) Census Tracts with the greatest percentage of population 65 years and over are Tract 504.06 with 21.5 percent or 1,090 persons, Tract 102 with 20.2 percent or 1,039 persons, and Tract 106.05 with 20.8 percent or 865 persons. Only two (2) Census Tracts in the UA have less than 10 percent of their total population less than 65 years old: Tracts 5 and 9301.01.

Figure 2.15: Percentage of Population Over Age 65 by Census Tract (2017)



Source: American Community Survey 2017 - 5 Year Estimate

Figure 2.16: Total Population 65 and Over by Census Tract (2017)



Source: American Community Survey 2017 - 5 Year Estimate

Disabled Population

Of particular importance in transportation planning, environmental justice considers the population of persons with limited mobility. **Figure 2.17** provides a comparison of the disabled populations among the different jurisdictions.

Figure 2.17: Percentage and Total Population with a Disability (2017)

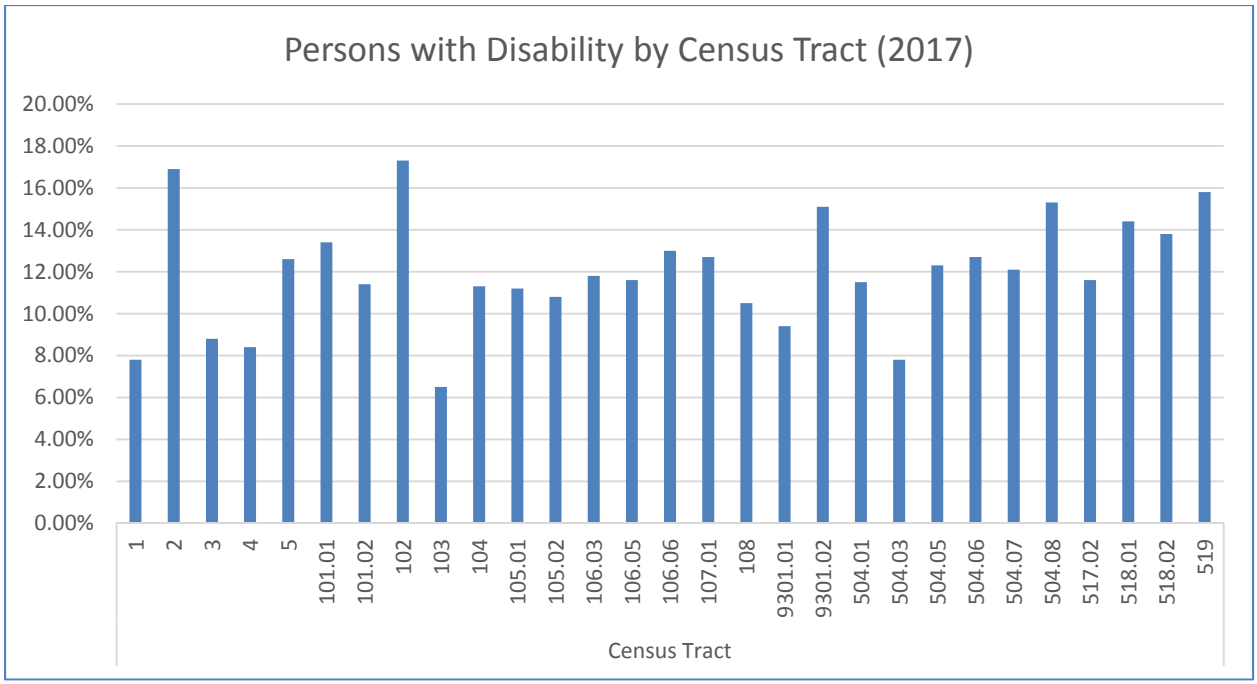
Population	Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
Percentage	10.8%	12.0%	11.2%	13.8%	11.4%
Persons	638,104	111,783	11,247	29,358	11,320

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

Figure 2.18 shows the percentage of the disabled population by Census Tract. Within the UA, the percentage of persons with a disability in a Census Tract ranged from approximately 7 to 17 percent. Census Tracts 102, 2, and 519 had the highest proportion of disabled persons. In comparison, Census Tracts 103, 1, and 504.03 had the lowest percentage of disabled population. The median percentage of disabled population of the Census Tracts within the UA is 11.8 percent or 583 persons. The availability of alternative modes of transportation is vital for limited mobility populations. Any actions worsening accessibility are even more critical for persons with limited mobility, and require evaulation prior to programmatic or policy considerations.

Figure 2.18: Persons with Disability by Census Tract (2017)



Source: American Community Survey 2017 - 5 Year Estimate

Low-Income Population

In 2017, 9.7 percent or 566,966 of Maryland's population and 12.1 percent or 111,304 of Delaware's population were living below the poverty level. See **Figure 2.19**. In comparison, 18.7 percent or 18,122 of the UA population was living below the poverty level in 2017. Both Maryland and Delaware have Census Tracts in the area with poverty levels below and above their statewide average. Concentrations where poverty rates are higher than 30 percent can be found in the area.

Figure 2.19: Percentage and Total Population Below Poverty Level (2017)

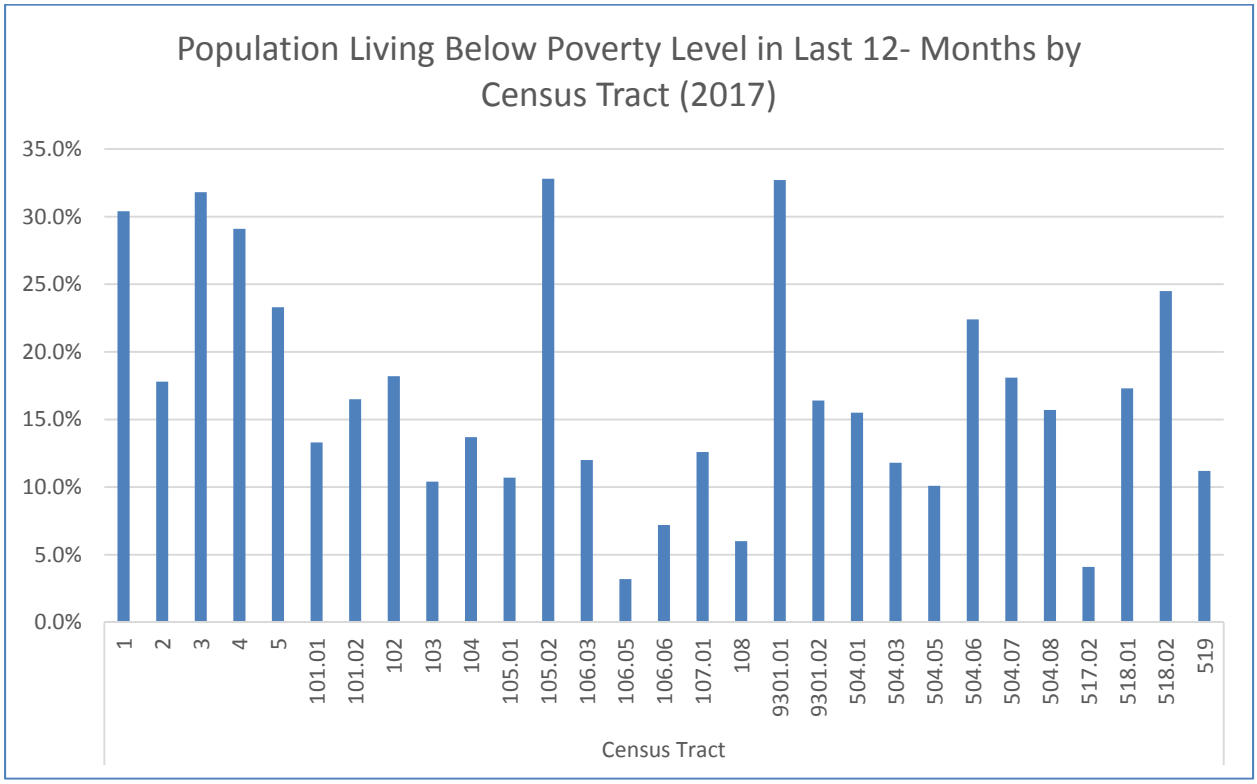
Population	Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
Percentage	9.7%	12.1%	15.9%	12.0%	18.7%
Persons	566,966	111,304	15,602	25,479	18,122

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

Figure 2.20 shows the percentage of the population living below poverty level (last 12-months) by Census Tract. Within the UA, the percentage of persons living below poverty level in a Census Tract ranged from approximately 3 to 33 percent. Census Tracts 3, 9301.01, and 105.02 had the highest proportion of persons living in poverty (all above 30 percent). In comparison, Census Tracts 106.05, 517.02, and 108 had the lowest percentage of persons living in poverty (between 3 and 6 percent). The median percentage of persons living below poverty within the Census Tracts of the UA was 15.7percent.

Figure 2.20: Population Living Below Poverty Level in Last 12-Months by Census Tract (2017)



Source: American Community Survey 2017 - 5 Year Estimate

Households Without Access to Vehicle

In 2017, 7.6 percent or 2,846 households in Wicomico County and 4.0 percent or 3,441 of Sussex County households lacked access to an automobile. The UA experienced a greater percentage of households without access to an automobile compared to the two aforementioned counties, 8.8 percent of 3,248 households. **Figure 2.21** compares data for each jurisdiction on households without access to vehicles.

In major urban areas, such as downtown Salisbury, some households may elect to forgo a car as daily needs are readily accessible by foot, bicycle, or public transit. However, a limited income has the potential to make car ownership unfeasible for some households. This can severely impact access to jobs, shopping, and schools in lower density residential areas. Often times, these amenities and services are located some distance away. In the S/WMPO area, the highest concentration of households without access to a car occurs in Census Tracts east of Seaford and Blades. See **Figure 2.22**. The median percentage of households without access to vehicles within the census tracts of the UA is 5.3 percent.

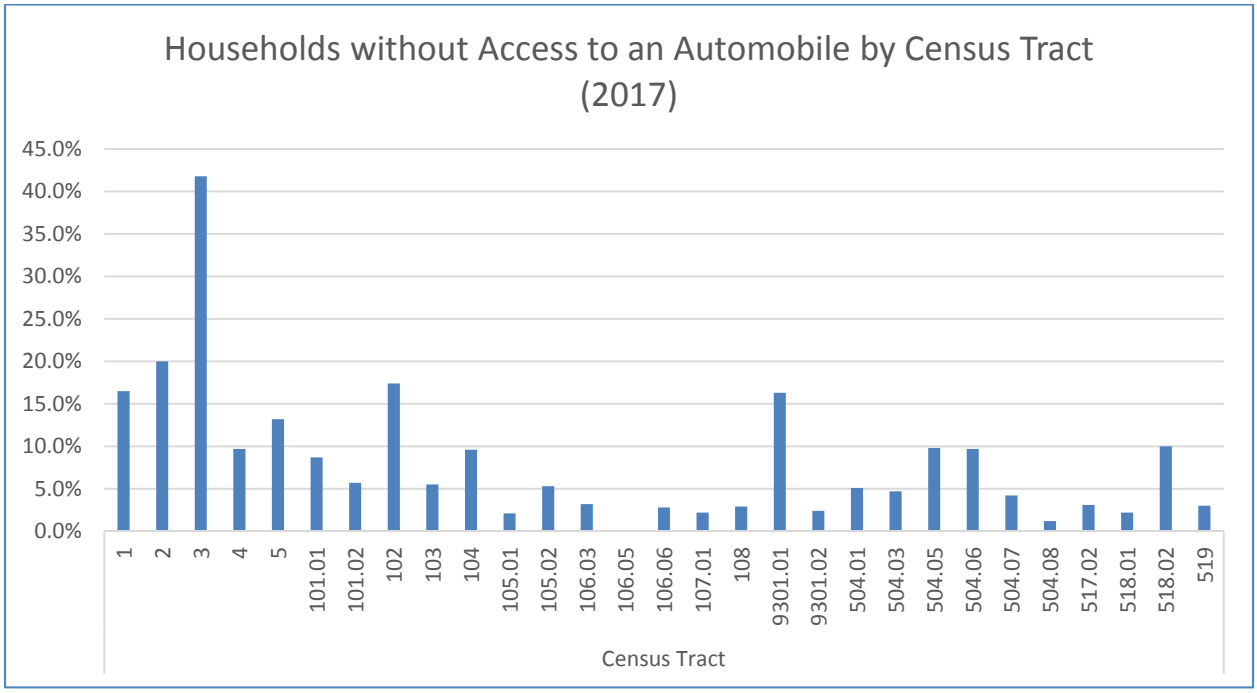
Figure 2.21: Households without Access to an Automobile (2017)

Population	Maryland	Delaware	Wicomico	Sussex	S/W MPO UA*
Percentage	9.1%	6.2%	7.6%	4.0%	8.8%
Households	197,608	21,760	2,846	3,441	3,248

Source: American Community Survey 2017 - 5 Year Estimate

Notes: * denotes 2010 U.S. Census Decennial Census

Figure 2.22: Households without Access to an Automobile by Census Tract (2017)



Source: American Community Survey 2017 - 5 Year Estimate

2.4 How will *Connect 2050* Address the Natural Environment?

It takes a long time for a transportation infrastructure project to evolve from a concept to a facility on the ground. When a transportation need is identified or a solution to a transportation problem is proposed, it must be determined whether the solution adequately addresses the problem or need and whether the solution is consistent with the local and state plans programs and policies.

How will *Connect 2050* help to protect and enhance the environment?

The impacts of proposed transportation projects on the human environment, natural environment, and cultural resources are studied during project planning. The projects identified in this Plan are reviewed by the local jurisdictions, as well as the S/WMPO to assure consistency with applicable environmental laws, regulations, and standards.

Connect 2050 cannot result in degradation in the region's air quality. To ensure air quality standards are met and maintained, the Environmental Protection Agency ("EPA") developed regulations requiring MPOs and state DOTs to provide state air agencies, local air quality agencies, and transportation agencies the opportunity for consultation regarding the development of the State Implementation Plan ("SIP"), Transportation Improvement Program ("TIP"), and associated conformity determinations. The EPA developed three (3) categories regarding the status of air quality: Non-Attainment, Maintenance, and Early Action Compact.

Federal regulations require that air quality issues be considered during the preparation of the LRTP. The Maryland portion of the S/WMPO's UA meets air quality conformity criteria as identified in the 1990 **Clean Air Act Amendments ("CAAA")**; whereas, the Delaware portion is designated as a 8-Hour Ozone nonattainment area. As part of this Plan update, the Federal Highway Administration ("FHWA") and the Federal Transit Administration ("FTA") conducted a joint review of the Sussex County, Delaware, and S/WMPO's conformity determination for the 2008 8-hour Ozone National Ambient Air Quality Standards ("NAAQS") for Sussex County. As a result of the evaluation, a positive conformity determination for Sussex County, Delaware, for the aforementioned NAAQS was rendered. See **Appendix B** to review the Air Quality Conformity Analysis.

What is CAAA?
The 1990 Clean Air Act Amendments revised the 1970 Clean Air Act, the national air pollution control program. A CAA (42 U.S.C. 7506[c]) requirement that ensures that federal funding and approval are given to transportation plans, programs, and projects that are consistent with the air quality goals established by a SIP.

If Federal funding is sought for a project, it must also be consistent with the purpose of the federal funding program and comply with a number of environmental requirements. Environmental studies must be conducted in accordance with the **National Environmental Policy Act ("NEPA")**. NEPA-based studies identify and analyze the environmental effects of projects. For large transportation projects, NEPA studies are extensive and take a long time to conduct and must involve public outreach. This means stakeholders in the S/WMPO area will have an opportunity to find out about the potential impacts and the strategies to avoid, minimize, and mitigate impacts to the environment.

What is NEPA?
The National Environmental Policy Act ("NEPA") was passed in 1969 and requires that projects be planned and designed so as to avoid environmental impacts, minimize impacts that cannot be avoided, and mitigate impacts that do occur.

Conservation, water, and air quality regulations are the most applicable environmental safeguards for transportation projects. Projects undertaken by both the Maryland and

Delaware Departments of Transportation must comply with federal and state environmental requirements. Each state has policies to guide decision making.

At the regional level, a MPO also plays a critical role in conserving the environment. The S/WMPO coordinates with appropriate state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long-range transportation plan. The purpose of this collaboration is to define and identify environmentally sensitive areas, analyze impacts associated with transportation projects, and identify ways to mitigate the impacts. MPOs are also encouraged to link their planning activities with NEPA. By collaborating with resource protection agencies early in the metropolitan planning process, the environmental reviews required under NEPA can happen simultaneously, reducing redundancy, saving time, and reducing costs.

What are the Maryland Smart Growth Initiative Goals?

- To support existing communities by targeting resources to support development in areas where infrastructure exists;
- To save the most valuable natural resources before they are forever lost;
- To save taxpayers from the high cost of building infrastructure to serve development located outside of traditional population centers; and
- To provide Marylanders with a high quality of life, whether they choose to live in a rural community, suburb, small town, or city.

The Delaware 2010 *Long Range Transportation Plan*, as well as their update *Innovation In Motion* (draft at the time of this publication) identifies an environmental stewardship goal applied to all strategic policy plans, partnering, prioritization and spending decisions. DelDOT applies strategies to planning and the NEPA process in an effort to streamline the environmental review process.

Among broader land use planning goals, the **Livable Delaware Initiative** is a State strategy for directing future growth to areas with existing or planned infrastructure. This strategy seeks to preserve open spaces and agricultural lands and to target development in and around established communities, like Seaford and Laurel. The Livable Delaware initiative calls for protecting Delaware's critical environmental resources.

What are the Livable Delaware Initiative investment levels?

Level 1: Municipalities and other higher density areas consisting of a mix of transportation opportunities;

Level 2: Less developed, rapidly growing area usually adjacent to level 1 areas;

Level 3: Areas not contiguous to existing infrastructure and may be environmentally sensitive; and

Level 4: Areas where development is not preferred and where rural character is to be preserved.

In support of this goal and other State objectives, Delaware's agencies have endeavor to identify and help preserve "green infrastructure", which the Department of Natural Resources and Environmental Control ("DNREC") describes as a network of natural areas, parks, conservation areas, and working lands with conservation value that contribute to the health and quality of life in Delaware.

Maryland's 1997 Smart Growth Initiative centered on two primary efforts, the Smart Growth Areas Act and the Rural Legacy Program. Through these measures, the State finances infrastructure development in designated Priority Funding Areas, and provides inducements for the protection of land outside of Priority Funding Areas.

Wicomico County has a Watershed Implementation Plan ("WIP") identifying specific steps to be taken to improve water quality by reducing the amount of sediment and nutrients running off into waterways.

Maryland's statewide WIP program is a coordinated effort among each of the 23 counties and Baltimore City to improve the water quality of the Chesapeake Bay and its tributaries. As improvements are planned and programmed for the regional transportation network, a coordinated approach should be utilized to identify potential opportunities to improve existing or new stormwater management practices to reduce nutrients and sediments from reaching tributaries and the bays.

Maryland DOT's 2040 *Maryland Transportation Plan* has an Environmental Stewardship goal seeking to assure that the delivery of the State's transportation infrastructure program conserves and enhances Maryland's natural, historic and cultural resources.

How is the S/WMPO monitoring climate change initiatives?

Schumaker Pond

The Maryland Commission on Climate Change was created in 2007 and consists of individuals from foundations, state and local agencies, universities, businesses, associations, and more. They were charged with creating a Climate Action Plan which creates strategies to reduce greenhouse gas emissions. According to the United States EPA, transportation sources contributed to approximately 27 percent of total U.S. greenhouse gas emissions. As a result, transportation agencies will have an important role to play in reducing greenhouse gas emissions. Linking transportation and land uses, providing commute alternatives for community members, and incorporating these principles into a regional climate action plan are among the ways the S/WMPO can take action on climate change.

What are Transportation Demand Management Programs?

Transportation Demand Management ("TDM") is a set of strategies that improve the efficiency of an existing transportation system. The goal is to reduce single occupant vehicle travel and influence an equal balance across all modes of transportation. This can reduce congestion, enhancing both air quality and quality of life. Sample TDM strategies include ridesharing programs, transit benefits, bicycle and pedestrian improvements, alternative work hours, and priced parking. Partnering with local businesses, the local MDOT office, and/or Shore Transit can provide health and environmental benefits for the S/W MPO area.

What are some of the environmental mitigation practices employed in the region?

According to MDOT SHA's Office of Environmental Design, common mitigation practices utilized throughout the State and Wicomico County during and after construction of transportation infrastructure include:

- Wetland Management – Impacted wetlands are replaced by creating new wetlands within the watershed where the impact occurs. Specific works include reforestation and removal of fish blockages;
- Stream Restoration – This measure determines an alternative flow tailoring the natural tendencies of an altered stream when road infrastructure is put in place;
- Critter Crossings – Instead of installing infrastructure on the ground, critter crossings (elevated passes) allow safe passage for woodland animals and help to prevent harm to forests and streams. The purpose is to keep existing corridors connecting ecological hubs, thus minimizing the fragmentation of ecosystems;
- Erosion Control – MDOT SHA utilizes devices such as silt fences, portable sediment tanks, sediment bags, geotextile materials, and bioengineering materials to meet and often exceed the requirements of MDE. Another measure is to rapidly establish vegetation on exposed soil during construction;
- Nutrient Management – In this mitigation practice, the use of shallow marsh ditches slows highway runoff water during storms. If left unfiltered, pollutants would be released into water streams;
- Buffers – Vegetated barriers between roadways and water resources capture impervious surface runoff (nutrient pollution) before it enters the water system; and
- Noise Barriers – Noise barriers are solid obstructions built between the highway and areas along a highway. Effective noise barriers typically may cut the loudness of traffic noise by as much as 50 percent.

What factors are involved with LRTP Projects and Environmental Impacts?

When planning for projects in a metropolitan area, there are many factors to be considered, including congestion relief, safety concerns, and growth patterns. Additionally, another important factor is the proposed projects effect the natural and human environments. Evaluating maps of critical / sensitive ecological areas, coordinating with resource agencies early in the planning process, and understanding the federal and state regulations will foster a balance between infrastructure and conservation.

Every capital transportation project, utilizing federal funds, will go through the NEPA process to determine if it is a Categorical Exclusion (excluded from the NEPA process), Environmental Assessment (enough evidence to warrant an analysis), or Environmental Impact Statement (a definite need to understand the environmental impacts of the project). All capital projects in the LRTP and CTP are included in this process to ensure the environmental impacts are identified and mitigated; however, not all projects will have a negative environmental impact. Moreover, in certain circumstances, there will be future transportation-related projects directly improving the environment.

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Chapter 3
Connect with… The Roadway System

Chapter 3: The Roadway System

The road network serves as the backbone of the S/WMPO region, accounting for the vast majority of trips. While the transportation network must be complemented by other modal options for commuting, recreation, and goods movement, the future livelihood of this region of the Delmarva Peninsula relies on a safe, efficient, well-maintained, and connected system of roads.

3.1 What does the Region's Roadway System Look Like?

The S/WMPO region is centered along **U.S. Route 13**, the north-south spine that runs the length of the Delmarva Peninsula. It links Wilmington, Delaware, to Norfolk, Virginia, and, thus, serves as a critical link in the Mid-Atlantic truck-borne freight system. **U.S. Route 50** is the primary east-west axis in Maryland's Eastern Shore and is the second most heavily traveled route in the region. This highway corridor serves as a vital link connecting the S/WMPO region to the Baltimore-Washington metropolitan area, as well as connections to the beach resort of Ocean City, Maryland.

US Route 13 approaching the City of Salisbury

Greater Salisbury Primary Radial System – A radial roadway system is formed by a network of arterials extending outward from the City of Salisbury's core and connecting to the surrounding small towns and rural areas. Most of the radial corridors are linked on the periphery of the Metro Core by the Salisbury Bypass/Ocean Gateway (U.S. Route 13 and U.S. Route 50). The radial corridors include MD 349 (Nanticoke Road), MD 12 (Snow Hill Road), MD 346 (Old Ocean City Road), MD 350 (Mt. Hermon Road), Camden Avenue/Allen Road, and Jersey Road/Lake Street. While these routes fall on different parts of the functional classification spectrum and carry different volumes and types of traffic – as shown in **Figure 3.1** – these routes are significant pieces of the regional road network.

Secondary Radial Corridors – Minor radial roadways link downtown Salisbury with residential developments and activity centers. Notable minor radials include: Eastern Shore Drive/South Division Street/Coulbourn Mill Road; Riverside Drive; Pemberton Drive; West Road; East Main Street/Glen Avenue; Zion Road; Johnson Road; Levin Dashiell Road; and Crooked Oak Lane (upon completion of Naylor Mill Road Extended).

Concentric System – Several State routes create a concentric system connecting the radial network. These routes include: MD 347 (Quantico Road); MD 352 (Whitehaven Road); MD 354 (Powellville Road); MD 353 (Gumboro Road); and MD 670 (Lillian Street). The remainder of the Salisbury area's highway system consists of a network of local roads, as well as major and minor collectors branching out from these basic radials.

Sussex County – The roadway system in the Sussex County consists of several State-maintained radial routes that provide access to U.S. Route 13 and U.S. Route 13A/Business, including: SR 30 (Whitesville / Dorothy Road), SR 24 (Laurel Road), SR 9 (County Seat Highway), SR 20 (Stein Highway), and SR 18 (Cannon Road).

The Town of Delmar's major roads include U.S. Route 13 and Delaware 13A/675 extending in a north-south direction, and Maryland and Delaware Route 54 extending in an east-west direction. MD 675 and Delaware 54 intersect at the center of Town, dividing the Town into four (4) quadrants, and serve both local and regional traffic.

Figure 3.1: Greater Salisbury Primary Radial System

Roadway and Segment	Functional Classification	Lanes	Access Control
U.S. Route 13/50 – Salisbury Bypass/ Ocean Gateway			
	Principal Arterial: freeway and expressway	4	Divided highway, fully controlled access
U.S. Route 13 Business/ US Route 13			
Within S/WMPO	Principal Arterial: other principal arterial	4	Uncontrolled access
Between south and north interchanges with U.S. 13/Salisbury Bypass and extending through Salisbury and Fruitland	Principal Arterial: other principal arterial	4	Divided highway, partially controlled
North (to Delmar) and south (to Princess Anne) of the Metro Core	Principal Arterial: other principal arterial	4	Divided highway, uncontrolled access
U.S. Route 50 Business/U.S. Route 50			
Non-urbanized portion of S/WMPO	Principal Arterial: other principal arterial	4	Divided highway, fully controlled access
Business segment, south of Naylor Mill Road to Isabella Street	Principal Arterial: other principal arterial	4	Divided highway, uncontrolled access
Isabella Street to Walston Switch Road (6-lanes Ward Street to Naylor Street)	Principal Arterial: freeway and expressway	6/4	Divided highway, partially controlled
West of the Bypass	Principal Arterial: freeway and expressway	6	Divided highway, fully controlled access
MD 349 (Nanticoke Road)			
U.S. Route 50 to south of Upper Ferry Road	Principal Arterial: other principal arterial	2	Undivided highway, uncontrolled access
Outside Urbanized Area of S/WMPO	Minor arterial	2	Undivided highway, uncontrolled access
MD 12 (Snow Hill Road)			
Inside urbanized area (E. Main Street to Nutters Cross Road)	Principal Arterial: other principal arterial	2	Undivided highway, uncontrolled access

Figure 3.1: Greater Salisbury Primary Radial System			
Roadway and Segment	**Functional Classification**	**Lanes**	**Access Control**
Outside Bypass (Nutters Cross Road to Worcester County Line)	Minor arterial	2	Undivided highway, uncontrolled access
MD 346 (Old Ocean City Road)			
Inside urbanized area (U.S. Route 50 to Walston Switch Road)	Minor arterial	2	Undivided highway, uncontrolled access
Outside urbanized area (Walston Switch Road to Worcester County Line)	Principal Arterial: other principal arterial	2	Undivided highway, uncontrolled access
MD 350 (Mt. Hermon Road)			
Inside urbanized area (Long Avenue to west of Walston Switch Road)	Minor arterial	2	Undivided highway, uncontrolled access
Outside urbanized area (west of Walston Switch to Worcester County Line)	Principal Arterial: other principal arterial	2	Undivided highway, uncontrolled access
Camden Avenue/Allen Road			
Village of Allen to Salisbury/Fruitland area, through Salisbury Univ. campus	Minor arterial	2	Undivided highway, uncontrolled access
Jersey Road/Lake Street			
Inside urbanized area (U.S. Route 50 Business to Naylor Mill Road)	Minor arterial	2	Undivided highway, uncontrolled access
Naylor Mill Road to Connelly Mill Road	Collector: major collector	2	Undivided highway, uncontrolled access
Connelly Mill Road to Sussex County Line	Collector: minor collector	2	Undivided highway, uncontrolled access

3.2 Do all Roads Serve the Same Purpose?

One of the core responsibilities of the S/WMPO is to develop and maintain the LRTP to prioritize and categorize investments based on anticipated federal funding, as well as regional goals and policies. The challenge and opportunity in regional planning lie in coordinating the competing needs of a variety of different jurisdictions while maintaining a focus on the overall needs of the region. While roadways with greater regional significance – those carrying greater volumes of local, regional, and freight traffic – may be prioritized when it comes to funding, it is critical to understand all of these roadways are part of one (1) network. **Figure 3.2** includes key facts about the state, county, and municipal jurisdictions with responsibility for design, construction, operation, and/or maintenance of the region's roadways, as well as bridges and ferries.

Figure 3.2: Key Facts about Roadway Maintenance by Jurisdiction

Did you know…

- MDOT SHA maintains 18% or 5,243 of the 29,265 center lane miles of state roads, but those roads account for approximately 70% of the total vehicles miles of travel in the state. (**Source:** MDOT SHA - 2015 Highway Needs Inventory ("HNI") – Wicomico County)
- DelDOT maintains approximately 90% of the roads in Sussex County and 89% of the roads in the State. The national average of state-maintained roads is approximately 20%. (**Source:** *Sussex County Comprehensive Plan*, 2018; *Delaware Annual Report and Transportation Facts*, 2017).
- Wicomico County Roads Division maintains 700 miles of roads, 26 bridges, 9 dams, the Whitehaven Ferry and Upper Ferry.
- City of Seaford has approximately 46 miles of streets to maintain within City limits, of which 11.37 miles are State maintained and 35.26 miles are maintained by Seaford's Public Works Department.

All levels of government face challenges in financing the construction, maintenance, and system preservation of roadways and infrastructure. To assist local governments funding of transportation services and facilities, Maryland provides qualifying jurisdictions with local highway user revenues. Prior to FY 2011, State local highway user revenues accounted for approximately 40 percent of local transportation expenditures. Since the drastic reduction of Maryland's Highway User Revenue funding to local governments in FY 2011, Wicomico County's allocation decreased from approximately $7 million to less than $1 million annually.

Highway Functional Classification System

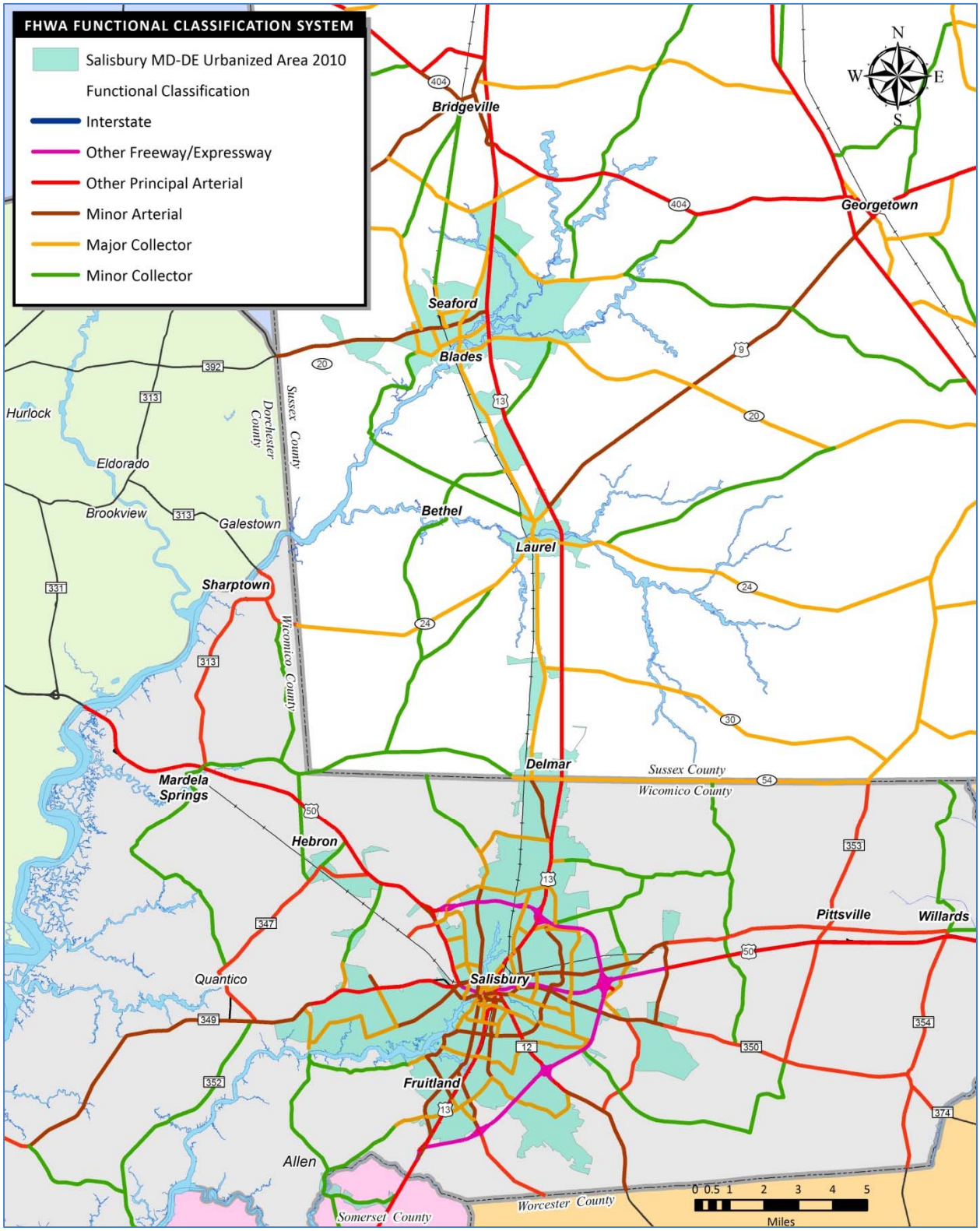
All roads are not created equal and they do not serve the same purpose in the transportation network. While wide lanes and a faster speed limit might make sense for carrying regional through traffic and long-haul trucks on U.S. Route 13; a slower speed, narrower lane width, on-street parking, bicycle accommodations, and sidewalks are a more appropriate fit for a neighborhood street. The functional classification system is a lens to help understand these distinct roles and the corresponding prioritization and level and source of investment.

The functional classification of the street and highway network is an essential step in the development of an efficient transportation network for the S/WMPO area. Functional classification is the process for grouping streets and highways into classes or systems, according to the character of service they are intended to provide. The intended function of a road or street provides a planning basis for determining appropriate system management techniques to be applied. Also, a functional classification system provides a means for prioritizing new construction or other road improvements to upgrade circulation for existing and future development. In cooperation with Wicomico County, MDOT SHA has classified roadways within the region in accordance with the Federal Highway Administration's **Highway Functional Classification** system. **Figure 3.3** and **Figure 3.4** explain the function classifications and map the classifications in the S/WMPO region.

Figure 3.3: Functional Classifications

Functional Classification	Description	S/W MPO Example
Principal Arterial: Interstate/ Expressway/Freeway	Provide continuous and efficient routes for movement of high-volume traffic; supports regional mobility; typically funded and maintained by state	 US 50 – Salisbury Bypass
Principal Arterial: Other Principal Arterial	Provide continuous and efficient routes for movement of high-volume traffic; supports regional mobility; typically funded and maintained by the state or local government	 US Route 13, north of Salisbury
Minor Arterial	Serve shorter trips; may include sidewalks, signalized intersections, or on-street parking; generally maintained by local government, but capital costs may be the responsibility of state	 Camden Avenue, Salisbury
Collector: Major Collector; Minor Collector	Support access to nearby land uses and provide connections to arterials; generally designed, constructed, and funded by local government	 Alt. 13 - Front Street, Seaford
Local Road	Provides the greatest access to adjacent land uses; serves short travel distances; generally designed, constructed, and funded by local government	 2nd Street, Delmar

Figure 3.4: Federally Classified Roadways in the S/WMPO Region



Source: Salisbury/Wicomico Department of Planning, Zoning, & Community Development; MDOT SHA; and DelDOT.

Access and Mobility

All of the different classes of roadways are part of the network providing a region with both access, helping people reach their destinations, and mobility, allowing people to travel distances. For example, a minor arterial can be described as offering a lower level of traffic mobility than a principle arterial; it has lower speeds and more intersections and driveways. These same characteristics; however, means a minor arterial provides a higher level of access than the principal arterial. **Figure 3.5** illustrates these differences across the spectrum of roadway type.

Figure 3.5: Relationship between Functional Classification and Travel Characteristics

	Arterial	Collector	Local
Distance Served and Length of Route	Longest	Medium	Shortest
Access Points	Few	Medium	Many
Speed Limit	Highest	Medium	Lowest
Distance Between Routes	Longest	Medium	Shortest
Usage (AADT, DVMT)	Highest	Medium	Lowest
Significance	Statewide	Medium	Local
Number of Travel Lanes	More	Medium	Fewer

Source: Highway Functional Classification Concepts, Criteria and Procedures, Federal Highway Administration

3.3 What are the Region's Existing and Forecasted Traffic Conditions?

There are several key metrics used to evaluate the region's traffic conditions: volume, expressed as average annual daily traffic and vehicle miles traveled; and capacity or congestion, expressed as level-of-service.

Traffic Volume

According to the Institute for Traffic Engineers ("ITE"), traffic volume is the most basic and widely used parameter in traffic engineering. While there are different definitions and methods used to collect, analyze, and describe traffic volume data, **Annual Average Daily Traffic ("AADT")** typically based on weekday travel is the most common measure. AADT is used for measuring or evaluating the present demand for service by the roadway, developing the major or arterial street system, locating areas where new facilities or improvements to existing facilities are needed, and programming capital improvements.

What is AADT?
Average daily traffic on a section of roadway for all days of the week during a period of one year, expressed in vehicles per day.

The existing AADT can be used to project a future number of trips and the volume-to-capacity ratio for segments of roadway. An analysis of existing and future highway conditions was conducted using current traffic counts and future forecast levels on the highway system, as detailed in **Appendix C**.

A trend analysis using MDOT SHA historical AADT counts and DelDOT historical AADT counts reveals high-growth segments for selected roadways in the S/WMPO area over the 2014 through 2018 period is included in **Appendix D.** Roadway segments experiencing a significant increase of AADT should be evaluated to determine existing and future LOS and recommended improvements to ensure acceptable operations.

The analysis also utilized data for future build-out forecasts of residential and commercial space in the S/WMPO area, which are listed in **Appendix E**. It is important to note, the existing and projected traffic volumes are for illustrative purposes and are not comprehensive enough to be considered an engineering or traffic impact study.

Vehicle Miles Traveled ("VMT")

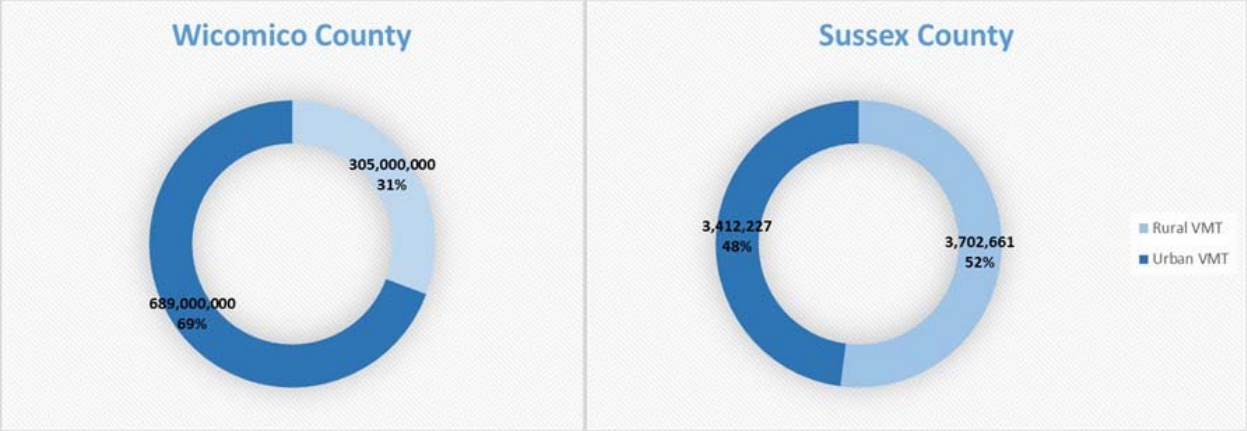
Annual data on the number of miles that vehicles travel on different types of roadways is another important metric for understanding how the roadway system changes over time. VMT is a tool to measure vehicle travel, as well as a lens into larger trends in travel patterns. For example, while personal automobile use has been on the decline in many urban parts of the United States, Delaware has seen a statewide increase in licensed drivers, registered motor vehicles, and VMT consistent with population growth (DelDOT 2017 *Annual Report and Transportation Facts*).

MDOT and DelDOT collect annual VMT data by county and functional classification as part of the Highway Performance Monitoring System ("HPMS") under the Federal Highway Administration. The 2018 VMT for Wicomico County was approximately 994,000,000, while the 2018 figure for Sussex County was 7,114,888. These figures have remained fairly consistent for the past three (3) years. As shown in **Figure 3.6**, the majority of the vehicle-miles traveled in Wicomico are on urban roads (60%), while two-thirds of VMT within Sussex County occurs on rural roads.

What is Vehicle Miles Traveled?

A measurement of the number of miles traveled by vehicles in a specified region during a specified time period. This statistic is compiled by the Federal Highway Administration and may be used to measure performance and to evaluate road pricing programs.

Figure 3.6: Vehicle Miles Traveled in Wicomico and Sussex Counties, 2018

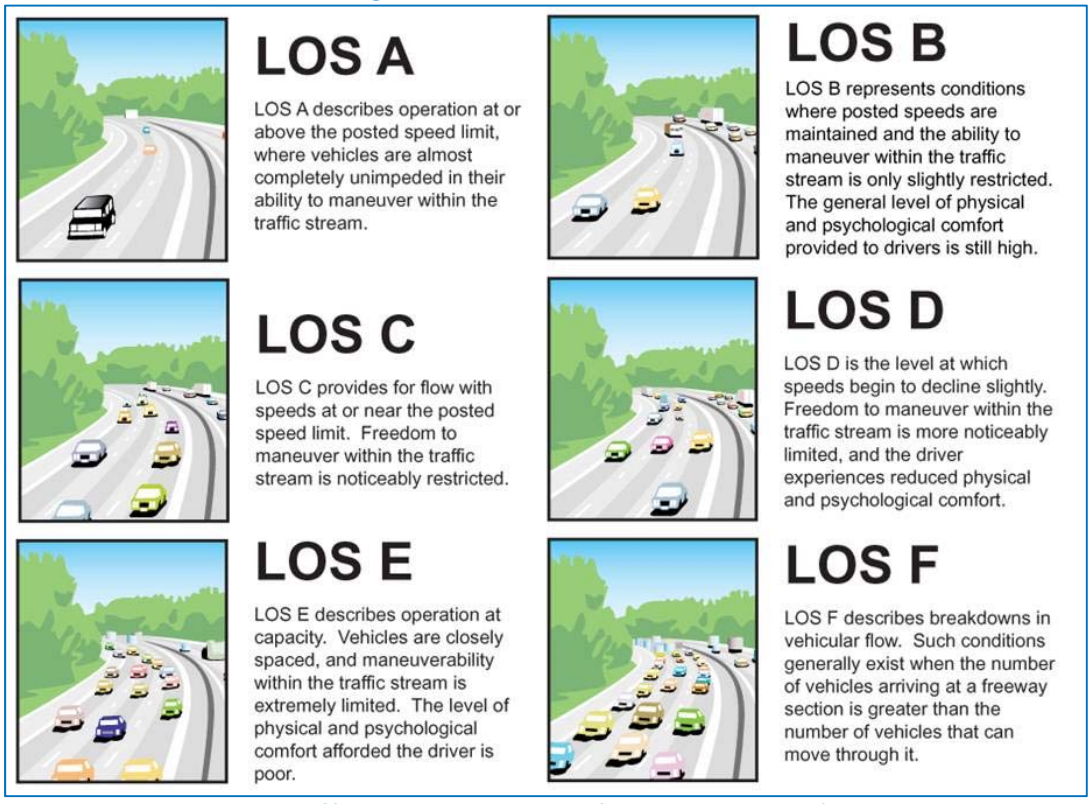


Sources: MDOT SHA, Annual Highway Mileage Reports (State, State Toll, County, and Municipal System); and Delaware Department of Transportation, Highway Performance Monitoring System

Traffic Congestion

Traffic engineers often use the **Level of Service ("LOS")** metric to analyze and compare the relative level of congestion of a stretch of road or intersection. LOS is a qualitative performance metric used by traffic engineers to compare the volume and capacity of roadways. There are six (6) standard levels of service given letter designations like school grades, as illustrated in **Figure 3.7**.

Figure 3.7: Level of Service (LOS)



Source: MDOT MTA, http://www.mdta.maryland.gov/I95section100DELETE/i95-sect100_los.html

The volume-to-capacity ratio ("v/c ratio") expresses the relationship between the actual or projected traffic volume and the actual or programmed capacity at an intersection. A v/c ratio of 1.0 or greater

means the intersection is at or exceeding capacity. When capacity is exceeded, a breakdown occurs in normal intersection operations causing traffic delays and congestion. This is usually a time of day occurrence when the roadway or intersection is most heavily used, which typically occurs on weekday morning and/evening as people commute to and from their jobs.

Segments of the following roadways have projected v/c ratios exceeding 0.90; indicating that actual traffic volume is approaching (<1.00) or exceeding (>1.00) the actual or programmed capacity:

- v/c = 0.91 on US 50 BU Ocean Gateway @ mile point 1.32;
- v/c = 0.91 on US 13 Ocean Highway @ mile point 7.66;
- v/c = 0.99 on US 50 BU W. Salisbury Parkway @ mile point 2.42;
- v/c = 1.07 on US 50 Ocean Gateway @ mile point 25.24;
- v/c = 1.12 on US 13 Ocean Highway @ mile point -1;
- v/c = 1.29 on US 13 Ocean Highway @ mile point 14.21;
- v/c = 1.55 on US 13 Ocean Highway @ mile point 13.64; and
- v/c = 1.64 on US 50 Ocean Gateway @ mile point 19.46.

According to the MDOT SHA's 2015 AM and PM Peak Hour Congestion Maps on State roads within Wicomico County, six (6) road segments are experiencing moderate or heavy congestion: U.S. Route 13 Business between the Salisbury Bypass and U.S. Route 50 Business; U.S. Route 50 between the Salisbury Bypass and Hobbs Road; Salisbury Bypass at Naylor Mill Road overpass; MD 349 – Nanticoke Road between U.S. Route 50 Business and Crooked Oak Lane; MD 349 – Nanticoke Road between MD 815 and U.S. Route 50 Business; and MD 54 – Line Road between U.S. Route 13 to east of MD 675 – Bi State Boulevard. Given these areas already experience traffic congestion, it is likely congestion on these roadways will increase over the horizon of this LRTP. Furthermore, as population and development in the study area rise, demand on existing transportation systems will increase. As a result, roadways currently experience free-flow movement may likely become mildly or moderately congested in the future.

Concerns about the impact of development on the roadway system have led the S/WMPO to prepare several corridor studies to identify future transportation needs on the major corridors in the area. Studies include: *Pemberton Drive Corridor Study*; *East Side Corridor Study*; *US Route 13 North Corridor Study*; *Riverside Drive Corridor Study*; *US Route 13 North/Naylor Mill Road Study*; and the *Eastern Shore Drive Corridor Study*. These studies analyze current and future demand to identify signalized intersections with the potential to experience congestion in the coming decades and require improvements. These intersections, as shown in **Figure 3.8**, are candidates for jurisdictions to consider as part of their engineering-level evaluation and / or capital programming efforts during the plan horizon. The S/WMPO will continue to monitor these corridors, and collected data as requested contingent upon available funding and support of the TAC and Council.

Figure 3.8: Maryland Intersections - Forecasted to have LOS D	
Corridor Study	**Intersection**
Pemberton Drive Corridor	Nanticoke Road and Rockawalkin Road
Pemberton Drive Corridor	Nanticoke Road and Parsons Road
East Side Corridor	South Division Street and East College Avenue
East Side Corridor	Business U.S. 13 and West College Avenue
East Side Corridor	East College Avenue/Beaglin Park Drive and MD 12 (Snow Hill Road);
East Side Corridor	Beaglin Park Drive and South Schumaker Drive
East Side Corridor	Beaglin Park Drive and MD 350 (Mt. Hermon Road)
East Side Corridor	Beaglin Park Drive and Business U.S. 50
East Side Corridor	Kelly Road and Outten Road
East Side Corridor	MD 12 (Snow Hill Road) and Ramps to/from NB U.S. 13
East Side Corridor	Kelly Road and Gordy Road
East Side Corridor	MD 12 (Snow Hill Road) and Toadvine Road
U.S. 13 North Corridor	U.S. 13 and Connelly Mill Road/Winner Boulevard
U.S. 13 North Corridor	U.S. 13 and Foskey Lane
U.S. 13 North Corridor	U.S. 13 and Route 54
U.S. 13 North Corridor	Bi-State Boulevard (MD 675B) and Route 54
U.S. 13 North Corridor	Bi-State Boulevard (MD 675B) and Foskey Lane
U.S. 13 North Corridor	Bi-State Boulevard (MD 675B) and Connelly Mill Road
Riverside Drive Corridor	U.S. Route 50 and Mill Street
Riverside Drive Corridor	Mill Street and W. Main Street
Riverside Drive Corridor	Mill Street and Riverside Drive
Riverside Drive Corridor	Riverside Drive and Wicomico Street
U.S. 13 North/Naylor Mill Road	Dagsboro Road at U.S. 13
U.S. 13 North/Naylor Mill Road	North Pointe Drive at U.S 13
U.S. 13 North/Naylor Mill Road	Naylor Mill Road at U.S. 13
U.S. 13 North/Naylor Mill Road	Centre Road at U.S. 13
U.S. 13 North/Naylor Mill Road	Zion Road at Naylor Mill Road
U.S. 13 North/Naylor Mill Road	Northgate Drive at Naylor Mill Road
U.S. 13 North/Naylor Mill Road	Northwood Drive at Naylor Mill Road
U.S. 13 North/Naylor Mill Road	Log Cabin Road at Naylor Mill Road
U.S. 13 North/Naylor Mill Road	U.S. 50 westbound ramp at Naylor Mill Road

Source: S/W MPO studies

3.4 How do Local Plans Address Roadway Needs?

The Transportation Chapter, sometimes referred to as the Circulation Element, of a county, city, or town's Comprehensive Plan typically addresses the existing conditions and the plans for a jurisdiction's transportation system. Sometimes these chapters include visionary statements about the area's goals for the system. The *Wicomico County Comprehensive Plan* includes such a vision, which is referenced in other local plans:

> *"The future vision for Wicomico County is of streets that are pleasant to walk along, safe and efficient bike routes, effective incentives for carpools and vanpools, and a network of roads that moves people and goods efficiently throughout the County. The goal must be to shift from moving vehicles, to strategies that will result in balancing the need for cars and trucks, transit riders, bike riders, walkers, agricultural operations, and emergency services."*

Some local plans reference conflicts between residents trying to move around within their town and prserve the character of a "main street" corridor and the through traffic from commuters, visitors, or freight truck movement. Effective transportation planning includes balancing the needs of all users and modes to ensure the appropriate roadways are provided for different purposes.

Local jurisdictions within the S/WMPO region are working on many important transportation projects to improve mobility, access and safety, and system preservation and maintenance to ensure the traveling public moves safely and efficiently through the region.

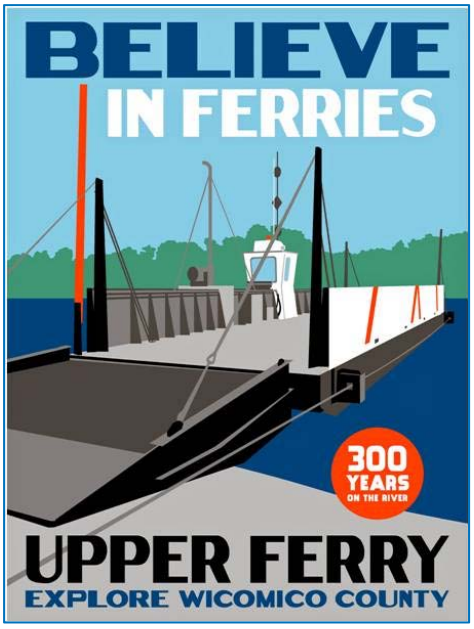
3.5 What are the Needs of the Region's Bridges and Ferries?

Bridges are an important part of the roadway system in the S/WMPO region. According to the MDOT SHA, Office of Structures' Bridge Inventory, there are 70 bridge crossings on State highways located in Wicomico County. MDOT SHA conducts in-depth, hands-on bridge inspections to determine whether any of three main elements of a bridge are structurally deficient: the deck (riding surface), superstructure (main supporting element of the deck, including beams, girders, and trusses), and the substructure (supports to hold up the superstructure and deck, including abutments and piers). If any of these elements are rated as a four (4) or lower on a nine (9) point scale, the bridge is categorized as structurally deficient and MDOT SHA may prioritize it for rehabilitation or replacement. According to the National Bridge Inventory in the 2014 National Transportation Atlas Database, which is maintained by the U.S. Department of Transportation, there is one (1) bridge within the UA in Laurel, Delaware, meeting the definition as structurally deficient. In general, bridge improvements are considered system preservation, rather than capacity expansion, projects and federal, State, and local investments are aimed at keeping infrastructure in good working order.

Adequate and efficient river crossings are critical from a strategic point of view of moving people, automobiles, and freight through the region, as well as from a public safety perspective of ensuring that emergency vehicles can quickly reach all corners of Salisbury. The Sussex County portion of the UA also has strategically important crossings of the Nanticoke River in Seaford and Blades.

The Wicomico County DPW operates and maintains the Upper Ferry and the Whitehaven Ferry, though Somerset County shares 50% of the maintenance cost for the latter. The two (2) ferries make approximately 200,000 trips annually transporting passengers and vehicles. The ferry service is free and each ferry has a capacity of six (6) passengers and a weight limit of 10,000 pounds.

Figure 3.9: Upper Ferry Poster



Source: Wicomico County Department of Public Works website, 2015.

3.6 What are some Recommendations?

The Highway Needs Inventory is a planning document which is not financially constrained – in contrast to ***Connect 2050***, which includes a list of financially constrained projects in **Chapter 8**. **Figure 3.10** reflects the 2015 Wicomico County HNI.

Figure 3.10: MDOT SHA – Highway Needs Inventory for Wicomico County (2015)		
Route and Segment	**Improvement Type**	**Cost**
U.S. 13 (South Fruitland Boulevard) from the Somerset County line to U.S. 13 Business; 0.6 miles	Divided highway reconstruct including interchanges	$34,100,000
U.S. 13 (North Salisbury Boulevard/Ocean Highway) from the Salisbury Bypass to the Delaware State line; 4.4 miles	Divided highway reconstruct	$316,900,000
U.S. 50 (Ocean Gateway) from MD 731A to White Lowe Road; 9.7 miles	Access control improvements	$214,500,000
U.S. 50 (Ocean Gateway) from Salisbury Bypass to east of Walston Switch Road; 2.6 miles	Divided highway reconstruct, including interchanges	$321,500,000
MD 12 (Snow Hill Road) from the Worcester County line to south of U.S. 13 Bypass; 4.2 miles	2 lane reconstruct	$84,800,000
MD 12 (Snow Hill Road) from U.S. 13 Bypass to Johnson Road; 1.5 miles	Multi-lane urban reconstruct	$171,300,000
MD 349 (Nanticoke Road) from N. Upper Ferry Road to US 50; 4.9 miles	Multi-lane reconstruct	$188,900,000
MD 350 (Mt. Hermon Road) from Beaglin Park Drive to Walston Switch Road; 3.3 miles	2-lane reconstruct	$72,400,000

Source: MDOT SHA 2015 Highway Needs Inventory

Delaware and Maryland counties are encouraged to submit an endorsed Priority Letter to the state Department of Transportation's identifying the county's recommended roadway improvements along State roads. These recommended improvements for consideration are based on locally adopted comprehensive plans, municipal and County requests, public input, and studies prepared by the S/WMPO for the purpose of reducing congestion and improving safety. Projects include those intended to meet both capacity expansion and system preservation goals including dualization of a state roadway, geometric and signalization improvements to existing and planned intersections, planning-level studies, restriping projects to accommodate shared use roadways between pedestrian/cyclist and motorized vehicles as well as modifying existing travel lanes.

3.7 What Roadway Needs does *Connect 2050* Address?

Roadway projects are funded by federal, state, county, and municipal governments, depending on who owns the infrastructure. Because of the magnitude of high capital cost of such projects, highway projects rely heaviliy on federal funds. As noted in FHWA guidance about MPOs:

> *"The funding for transportation plans and projects comes from a variety of sources including the federal government, state governments, special authorities, public or private tolls, local assessment districts, local government general fund contributions (such as local property and sales taxes) and impact fees. However, federal funding—transferred to the state and later distributed to metropolitan areas—is typically the primary funding source for major plans and projects."*

Roadway projects included in ***Connect 2050*** are typically targeted to solve one (1) of the following transportation challenges:

- **Mobility and Capacity Expansion –** Vehicular traffic volume is an important way to think about the region's transportation in the context of a long range transportation plan. Do the existing roadways meet the current capacity needs of the region? As land use patterns, economic development, and changes in technology and transportation habits change over the next 30 years, will the roads be able to meet projected demand? While some level of traffic volume can be a positive attribute and signal of economic strength, significant congestion can also cause drivers to alter their behavior and avoid traveling to or through a region.
- **Access and Safety** – Long range transportaiton plans no longer include only projects designed to move more traffic as fast as possible. Rather, smaller, more incremental projects and corridor studies that support multi-modalism, appropriate traffic speeds, and geometric intersection design aimed at fostering a safer system are also part of ***Connect 2050***.
- **System Preservation and Maintenance** – Maintenance and paving are significant and ongoing costs for state and local transportation departments, particularly in an era of fewer large capital projects adding significant new capacity. These projects ensure that infrastructure will remain in safe and efficient operating condition.

The Financially Constrained Projects are listed in **Chapter 8**.

Chapter 4
Connect with… The Bicycle and Pedestrian System

Chapter 4: The Bicycle and Pedestrian System

This Chapter explains the various types of bicycle and pedestrian facilities and discusses those in the S/WMPO region. It describes previous and on-going bicycle and pedestrian planning activities and initiatives, as well as reviews the locally identified needs and priorities. In addition, this Chapter discusses potential funding sources for providing pedestrian, trail, and bicycle facility improvements.

Walking and bicycling are modes of transportation, as well as leisure pursuits. Such activities are undertaken by adults and children, local residents and visitors, people seeking exercise, as well as those seeking solitude and nature's beauty. Bike and pedestrian facilities should be planned and constructed in appropriate locations to link residential areas to activity centers within the region or connect to areas beyond the region. A variety of facility types help to meet the wide range of demand. The features for trails and bike paths intended for recreational use may be different from the sidewalks and on-road bikeways sought by commuters.

There are numerous ways to implement sidewalk, trail, and bicycle network improvements. Initiatives may be undertaken by state, county, or municipal agencies and as stand-alone projects or as part of larger programs. Bikeway and pedestrian circulation improvements may be implemented as roadway construction occurs (rehabilitation or new construction) or conducted as a part of an overall pedestrian or bicycle safety program. Bicycle and off-road trail projects may be implemented in association with park improvements or recreation programs. Both bicycle and pedestrian improvements can be undertaken by private developers as a result of negotiations in the local jurisdiction development approval process. Because so many different entities could have a role in contributing to these networks, it is important to have plans to guide the initiatives and outcomes.

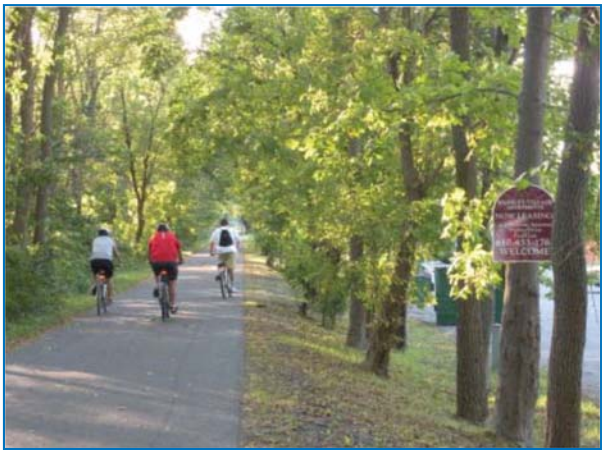
4.1 What are the Types of Bicycle and Pedestrian Facilities?

There are several types of bicycle facilities to meet different types of needs. On-street bicycle facilities can consist of marked bike lanes, side paths, paved shoulders and shared-use lanes. Off-road facilities consist of bike trails and multi-use paths intended for bicycling, as well as walking, jogging, in-line skating and potentially horseback riding. There are a number of elements that support both on-street and off-street pedestrian and bicycle facilities, described in **Figures 4.1 and 4.2.**

Figure 4.1: Pedestrian Facility Elements	
Sidewalks	The linear elements of the pedestrian facility along a street
Off-Road Path	Paved or unpaved pedestrian facility in rural or low density suburban areas
Shared Use Path	Paths developed for use by pedestrians and bicyclists (and others)
Shared Use Roadway	Shared use of a street for people walking and driving (usually streets with extremely low vehicle speeds and volumes)
Overpass/Underpass	A grade separated walkway and / or bike path

Figure 4.2: Bicycle Facility Elements	
Bikeway	The generic term for any road, street, path or way that is specifically designated for bicycle travel.
On-Road Routes	Roads that may be well-suited and/or retro-fitted for future bike routes. They include both roads with and without shoulders, as well as roads with or without delineated bike lanes.
Roads With Shoulders	On roads with shoulders, dedicated bike lanes could be designated.
Roads Without Shoulders	On roads without shoulders, dedicated bike lanes may not be possible and bikers may have to share a travel lane with vehicular traffic. Evaluation to occur on a segment-by-segment basis.
Off-Road Routes	Off-road locations where trails could be built to connect to on-road trails or greenway connections to major hubs.
Rails-to-Trails / Rails-with-Trails Routes	Off-road trails using former railroad rights of way either along the rail right-of-way adjacent to an operating railroad or on former railroad bed.
Conventional Bicycle Lanes	A bicycle lane is a portion of the roadway designated by striping, signing, and pavement markings for the preferential and exclusive use of bicyclists. Bicycle lanes are located on both sides of the road, except one way streets, and carry bicyclists in the same direction as adjacent motor vehicle traffic.
Buffered Bicycle Lanes	Buffered Bike Lanes typically have a desired width of 6' feet and minimum of 5' feet against a curb with white paint lines and bicycle symbols painted on the bikeway.

On-road bicycle route with a striped shoulder (left) and on-road bicycle route without shoulder (right).

Conventional on-road bike lane (left) and shared-use hiking and biking trail (right).

Heavily-used pedestrian underpass at Salisbury University

4.2 What are the Existing Conditions for the Region's Bicycle and Pedestrian System?

Several of the existing and planned dedicated biking trails in the Salisbury/Wicomico Metropolitan Planning area are listed below.

- Beaglin Park Drive / Northeast Collector extending from Zion Road to Hannibal Street;
- Riverside Drive extending from Mill Street to W. College Avenue;
- Waverly Drive extending from W. Carroll Street to South Boulevard;
- Eastern Shore Drive from College Avenue to E. Carroll Street;
- W. Carroll Street from U.S. Route 13 business to Mill St./Camden Ave./Riverside Drive;
- W. Isabella Street from U.S. Route 50 to Delaware Avenue;
- Salisbury Urban Greenway;
- Ocean Highway/U.S. Route 13;
- Nanticoke Road (MD 349);
- Mt. Hermon Road (MD 350) from E. Main Street to Beaglin Park Drive;
- N. Upper Ferry Road extending from Nanticoke Road to the Upper Ferry; and
- Naylor Mill Road extension extending from U.S. 50 to Crooked Oak Lane.

In coordination with Wicomico County, and the Lower Eastern Shore Heritage Council provided a grant to create the Bicycle Touring Route Project. The outcome of the project was a series of maps detailing

bicycling routes on established urban and rural roads and byways in Wicomico County. The touring routes listed in **Figure 4.3** are intended for special bicycle events and informal riding. More information can be found at the Wicomico County Tourism Department's website http://www.wicomicotourism.org/explore/explore-by-land.

Figure 4.3: Bicycle Touring Routes

Route Name	Length
Route 8 Jackson's Back	8.0 miles
Route 9 Zippity Zoo Da	9.0 miles
Route 13 Lucky 13	13.5 miles
Route 14 Ferry Loop	14.5 miles
Route 15 Shorebird	14.9 miles
Route 20 Cooper Looper	19.8 miles
Route 28 Tourist Tango	27.3 miles
Route 34 Pemberton to Whitehaven	34.0 miles
Route 36 Pemberton to Cedar Hill	36.0 miles
Route 38 Polka Pass Loop	39.3 miles
Route 40 Milburn Landing Loop	40.5 miles
Route 51 Sticky Fingers	55.9 miles
Route 62 Deals Island Express	62.8 miles

Hiking trails are largely located in the regional parks located within the Metropolitan area. These trails provide opportunities to walk along waterways, woodlands and other natural areas. The Wicomico Department of Recreation, Parks, and Tourism maintains a number of other hiking trails throughout the County which are listed in **Figure 4.4**.

Figure 4.4: Wicomico County Department. of Recreation, Parks and Tourism Hiking Trails

Route Name	Length
Adkins Mill	0.5 miles
Cedar Hill Park and Marina	0.8 miles
Leonards Mill	0.5 miles
North Lake Park	0.3 miles
Pemberton Historical Park	5.0 miles
Riverwalk Park	1.0 mile
Winter Place Park	2.0 miles

4.3 What are the State Level Plans and Initiatives?

Maryland

Maryland has a *20-Year Bicycle and Pedestrian Access Master Plan* ("BPAMP") first developed in 2002 and updated in 2014 and 2019 (now referred to as 2040 *Maryland Bicycle and Pedestrian Master Plan 2019 Update*). This Plan identifies and evaluates sidewalk and bicycling conditions along State highway corridors. The Plan's five (5) goals are shown in **Figure 4.5**.

Figure 4.5: Goals of the 2019 Maryland Bicycle and Pedestrian Access Master Plan	
Goal 1. Safety	Improve the safety of bicycle and pedestrian travel through education, enforcement, and infrastructure solutions.
Goal 2. Connected Networks	Enhance transportation choice and multimodal connectivity through linked networks.
Goal 3. Analysis and Planning	Support efficient and equitable planning and project development with data-driven tools and innovative techniques.
Goal 4. Partnerships	Build partnerships to promote active transportation and strengthen the health of our communities.
Goal 5. Economic Development	Advance biking and walking as an economic development strategy.

MDOT's integrated approach seeks consideration of bicycle and pedestrian needs, as appropriate in all projects and policies. The 2019 *BPAMP* focuses on "the benefits of active transportation and offers solutions to Maryland's current challenges, providing opportunities to better meet the needs of all of our transportation system." The BPAMP indicates State roads in Wicomico County, on average, are considered to have a Bicycle Level of Comfort ("BLOC") rating of B-minus. MDOT continues to use ADA compliance and BLOC as conditions assessment tools and has begun evaluating other tools to complement their assessment of State roadways.

The American League of Cyclist ranked Maryland 11th in their 2017 Bicycle Friendly State ranking.

Maryland has a **Bicycle and Pedestrian Advisory Committee** ("BPAC") advises State agencies on issues directly related to bicycling and funding, public awareness, safety and education. The Committee is comprised of citizens and representatives from eight (8) state agencies and a regional planning agency appointed by the Governor. The City of Salisbury recently established its own BPAC and was awarded Bicycle Friendly Community ("BFC") status designation by the League of American Bicyclists, a national bicycle advocacy group. Salisbury is the first BFC on Maryland's Eastern Shore and sixth BFC in Maryland.

The *Maryland Trails Strategic Implementation Plan* (2009) was an effort to guide the implementation of a trail network throughout the State. The Plan proposed a coordinated approach for the State's shared use trail network intended for transportation purposes. It recommended implementation of linkages and improved utilization of existing facilities. The Plan expresses MDOT's intent to collaborate with regional planning organizations to promote the use of federal Congestion Mitigation and Air Quality ("CMAQ") funds to construct "missing links" in non-attainment areas. MDOT encourages jurisdictions to incorporate trails in planning documents

2009 Maryland Trails Strategic Implementation Plan Vision

"Increase the number of people using trails for transportation by providing a system of multi-use trails that: strategically link destinations throughout the State, provide a sustainable transportation alternative, and promote physical activity and tourism in the places Maryland residents and visitors live, learn, work, and play."

including: land preservation; parks and recreation plans; local comprehensive plans; and stand-alone transportation, bikeway, and bicycle and pedestrian plans. Addressing trails in these long-range planning documents is a vital first step for Maryland jurisdictions to successfully: engage private developers in trail construction; secure trail funding in annual capital budgets; and pursue strategic, phased development of key trail links.

Maryland's Greenway Atlas identifies existing and proposed greenways and connectors. Connectors are defined as "walkways or on-road routes in heavily built environments that provide key connections between or within greenways corridors." In Wicomico County, the Atlas identifies:

- The Salisbury Urban Park Greenway extends in two (2) directions from the City of Salisbury connecting the Port of Salisbury, several other parks, and the Hospital via the Riverwalk; and
- The Salisbury/Pocomoke River Greenway Connector is a potential on-road bikeway connector that would provide a route across the eastern section of the county and link the greenways network in Salisbury to proposed corridors along Nassawango Creek and the Pocomoke River. Local parks along the corridor provide areas for public access.

Delaware

Delaware's Long Range Transportation Plan is based on seven (7) guiding principles, one (1) of which is to maximize transportation choice for residents and visitors. Among the Plan goals is to: Enhance multi-modal transportation by advancing transportation system integration and connectivity across all users including people and freight.

Delaware's Bike Council is comprised of state agency representatives and "considers, reviews and works on matters pertaining to bicycling, bicycle safety, and bicycle safety education and to make recommendations to various State agencies." The Council has two (2) goals listed in **Figure 4.6**.

Figure 4.6: Goals of the Delaware Bike Council	
Goal #1: Increase facilities and opportunities for bicycling.	The goal is supported by objectives to: develop policies and provide facilities to increase road shoulders and trails; maintain existing facilities; develop planning mechanisms for providing facilities and to work with the private sector to provide facilities.
Goal #2: Be an identifiable resource for bicyclists.	The goal is supported by objectives to represent the bicycling community in policy-making, legislative processes, and to serve as a forum for public input.

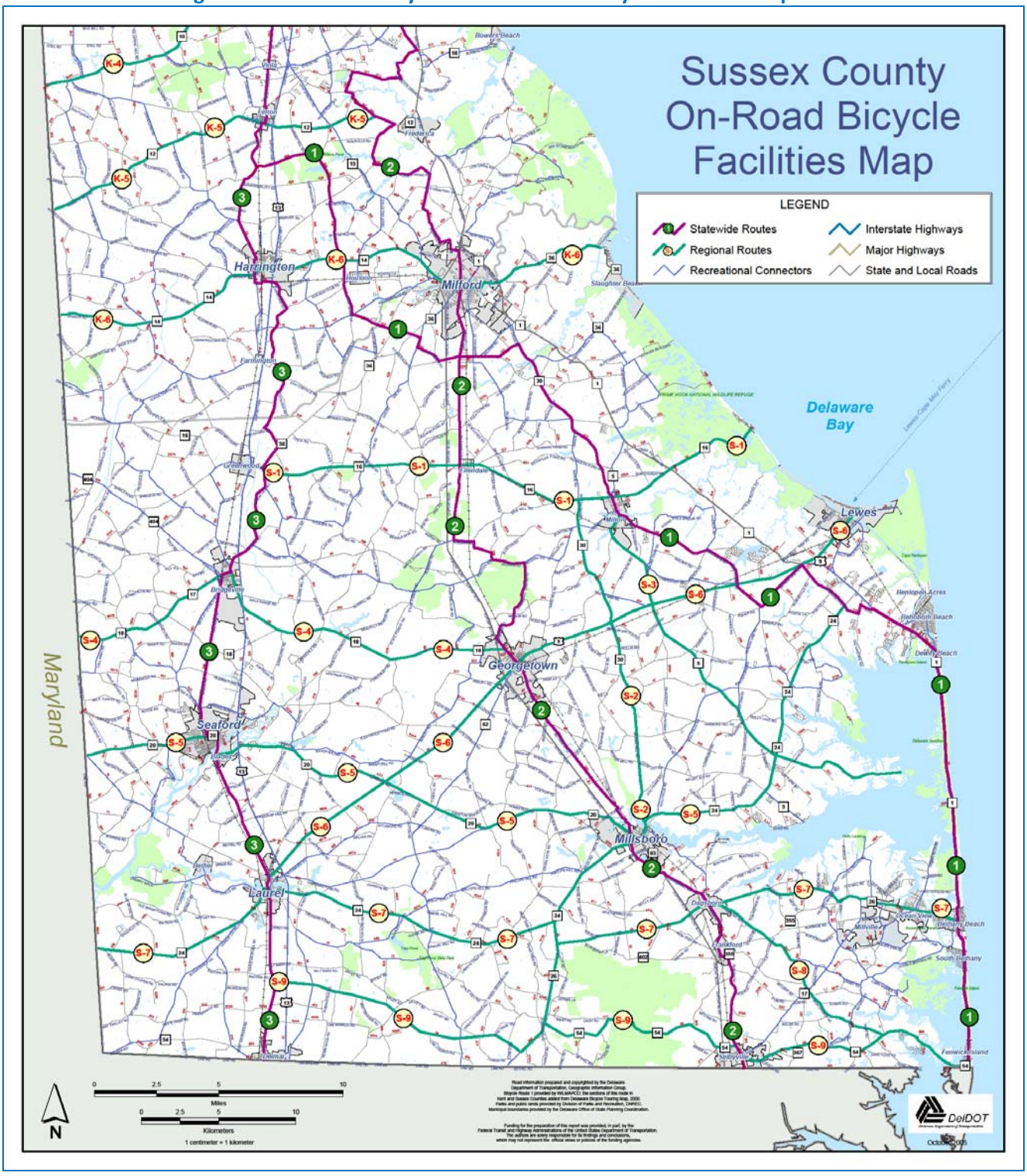
DelDOT completed a *Statewide Pedestrian Action Plan* in 2008. The purpose of the Plan was to make walking a safe, convenient, efficient and comfortable mode of transportation.

The *Delaware Statewide Bicycle Facility Master Plan* (2005) designated a network of on-road bicycle routes for utilitarian trips and touring riders. The Plan identifies statewide routes intended to connect Delaware's three (3) counties, Pennsylvania and Maryland. Also, the Plan also identifies Regional routes intended to provide direct connections between major municipalities and activity centers. There is a description of each route in the Master Plan, as well as an explanation of the specific facility improvements needed for implementation. The routes from the Plan located in Sussex County are shown in **Figure 4.7**. The following routes fall within the S/WMPO UA of Sussex County: Alternate 13 is designated as a Statewide Route; and State Routes 9, 20, 30 and 24 are designated as Regional Routes

The *Better Delaware Plan "Strategies for State Policies and Spending*" calls for complete streets in designated cities, towns, villages and suburbs, as well as intermodal connections to help close gaps in the pedestrian network. Delaware's Complete Streets Policy is intended to enhance access, safety and mobility for all modes of transportation. Under the *Strategies for State Policies and Spending Plan*, the

towns of Delmar, Laurel, and Seaford have designated areas (Level 1 or Level 2 spending areas) where these complete streets strategies would apply. Some other rural locations within the S/WMPO area are Level 3 or 4 areas (natural or farmland areas) where the complete streets policies would not apply.

Figure 4.7: Sussex County Planned On-Road Bicycle Facilities Map



Source: DelDOT Bicycle Facility Master Plan

DNREC's Division of Parks and Recreation updates the *Delaware State Comprehensive Outdoor Recreation Plan ("SCORP")* every five (5) years. The survey for the 2008 Plan indicated walking and jogging are among the most popular activities in Sussex County. Walking and jogging paths were identified as High Priority recreation needs Statewide in Delaware. In 2017, Delaware ranked 7th in the nation as a bicycle-friendly state by the League of American Bicyclists. The 2011 Outdoor Recreation Public Opinion Survey conducted for the Department of Natural Resources and Environmental Control ("DNREC") indicated many Delawareans are not walking or biking as much as they would like to, out of fear roads are too dangerous.

4.4 What are the County, Regional and Local Plans and Initiatives?

Wicomico County

The Transportation Chapter of the 2018 *Wicomico County Comprehensive Plan* recommends development of an extensive bikeway and pedestrian trail network to connect population centers to natural recreational areas, greenways and water trails. Also, it recommends the identification of needed links and elimination of sidewalk gaps, and the prioritization of sidewalk links connecting academic institutions to residential areas. Trails, hiking, biking and multimodal transportation systems are acknowledged as having a role in tourism and the economic and financial sustainability of the County.

Wicomico County Land Preservation, Parks, and Recreation Plan (2017) assesses the progress in meeting the leisure needs of Wicomico County residents. It includes a Wicomico County Bikeways, Scenic Byways and Greenways Chapter and identifies existing and proposed County facilities. The Plan discusses the role these facilities have or could have in meeting the overall open space and recreation needs of the County.

Sussex County

The 2018 *Sussex County Comprehensive Plan* identifies a number of actions to promote bicycle and pedestrian travel alternatives which are listed in **Figure 4.8.**

Figure 4.8: Actions to Promote Bicycle and Pedestrian Travel in 2018 *Sussex County Comprehensive Plan*
Encourage non-motorized transportation planning along low-speed roadways.
Incorporate bike and pedestrian facilities into community master plans where appropriate and consider allowing the use of motor-assisted bicycles along bicycle facilities and trails.
Support the development and implementation of the statewide bicycle plan, a Blueprint for a Bicycle-Friendly Delaware, and continue to support the creation of recreational trails and shared-use pathways to connect communities to employment, commercial services, recreational opportunities, and to provide safe alternatives to car travel.
Partner with Delaware's Pedestrian Coordinator to complete sidewalk connectivity projects in conjunction with new development.

Regional

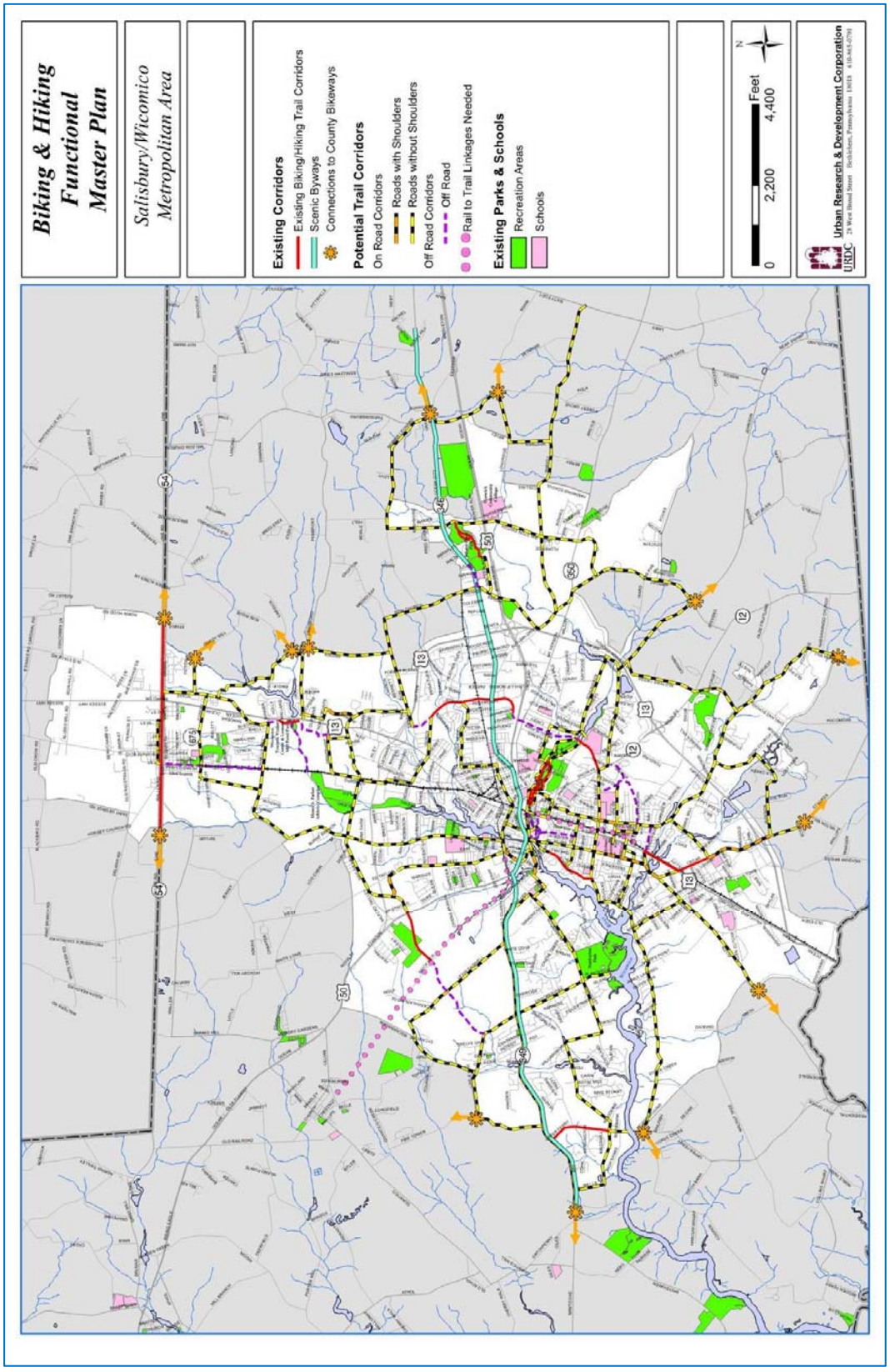
The Biking *and Hiking Functional Master Plan for the Salisbury/Wicomico Metropolitan Area* (2012) identifies the existing and potential hiking and biking corridors. See **Figure 4.9**. Both on-road and off-road facilities, as well as opportunities to connect with County bikeways are also identified. The Plan focuses on parks and schools and includes recommended conceptual routes for each section of the Metropolitan area (North, South, East, West and Downtown). Design guidelines for different types of facilities are recommended.

The following are specific goals of the 2012 *S/WMPO Biking and Hiking Functional Master Plan*:

- Enhance on-street bicycle and pedestrian connectivity throughout the metropolitan area;
- Offer trail routes to destinations and transit centers, thereby decreasing dependence on the automobile;
- Promote exercise and improve the quality of life by developing trails, pathways, sidewalks that interconnect where possible;
- Highlight the Salisbury/Wicomico metropolitan area's many water bodies, including the Nanticoke River and the Wicomico River, as ideal locations for more linear greenways; and
- Stimulate tourism by improving pedestrian and bicycle trail access throughout the Salisbury/Wicomico metropolitan and outlying areas.

The Biking and Hiking Functional Master Plan identifies a vision for a walking and bicycle network to link destinations, increase accessibility to historic, cultural and tourist destinations and improve people's health and the environment.

Figure 4.9: S/WMPO Biking & Hiking Functional Master Plan (2012)



Source: S/WMPO

In 2014, the *U.S. Route 50 Pedestrian and Bicyclist Safety and Connectivity Study* was undertaken for the S/WMPO. The Study included a facility inventory, along the eastern part of U.S. 50 and an assessment of ADA conditions and needs. Major components of this planning effort included identify barriers making bicycling and walking difficult, as well as provide planning-level recommendations to increase the safety of pedestrian and bicyclist crossings along a portion U.S. Route 50 and MD 350. The deficiencies identified included: Non-ADA compliant pedestrian facilities; missing sidewalk links; disconnected bicycle facilities; poor intersection alignment/signage; inadequate facility usage; and poor pedestrian and bicycle facility usage compliance. As a result of the study, MDOT SHA has implemented a road diet on MD 350 from Beaglin Park Drive to Long Avenue. In addition, MDOT SHA implemented the following recommendations contained in the Plan:

- Install decorative fence in the U.S. Route 50 median extending from Ward Street to Naylor Street;
- Eliminate left-turn movements on U.S. 50 at Davis Street; and
- Convert Davis Street intersections to right-in and right-out movements.

Each of the S/WMPO member jurisdictions address bicycle and pedestriand needs in their local plans. **Figure 4.10** lists the bicycle and pedestrian policies or priorities that have been identified by **local jurisdictions**.

Figure 4.10: Identified Local Jurisdiction Bicycle and Pedestrian Policies and Priorities

Jurisdiction	Policy /Priority
City of Fruitland, MD	Seeks sidewalks for all residential areas and additional bike routes.
City of Salisbury, MD	The City adopted a Complete Streets Policy in 2014 that calls for consideration of all users in design, resurfacing and construction of roadways. The City established a Bicycle and Pedestrian Advisory Committee in 2014. The Committee makes recommendations to the Mayor and Council and provides advice on regulations and policies that pertain to cyclists and pedestrians. The City Plan indicates it will continue to work toward developing a comprehensive city-wide plan for bike-paths, pedestrian walkways and urban greenways.
Town of Hebron, MD	The 2009 *Hebron Comprehensive Plan* designates a town parkway system and a separate bikeway; sidewalks and street design concepts that include bike/pedestrian standards. Also, the plan makes reference to recreational trails.
Wicomico County, MD	The *Wicomico County Comprehensive Plan* recommends an extensive bikeway and pedestrian trail network to connect population centers to natural recreational areas, greenways and water trails. It also seeks the elimination of sidewalk gaps, and the prioritization of needed sidewalk links connecting academic institutions to residential areas.

Figure 4.10: Identified Local Jurisdiction Bicycle and Pedestrian Policies and Priorities	
Jurisdiction	**Policy /Priority**
Towns of Delmar, MD and DE	The 2009 *Delmar Comprehensive Plan* seeks the provision of safe, convenient, and inviting routes and walkways. The Town seeks access between activity centers for pedestrians and bicyclists, promotes alternatives to driving, and the provision of recreational greenway corridors where viable. Future residential street upgrades are to include sidewalks.
Town of Laurel, DE	The 2017 *Comprehensive Plan* seeks an interconnected street network that extends into new growth areas, bike paths and multi-use trails along major roads and through parks and public areas. Also, consideration will be given to a Safe Routes to Schools pilot program to encourage children to ride bikes or walk to Laurel's new school campus.
City of Seaford, DE	The 2008 *Comprehensive Plan* identifies a need for sidewalk and ADA improvements because of the large volumes of vehicular and pedestrian traffic. There is a priority to install a bicycle facility and sidewalks on Alt 13 (Front Street) to accommodate children walking to school.
Town of Blades, DE	The 2008 *Comprehensive Plan* cites a need for pedestrian crossing improvements and a desire for a town-wide pedestrian and bicycle study.
Sussex County, DE	The 2018 *Comprehensive Plan* identifies a number of actions to promote bicycle and pedestrian travel. (refer to **Figure 4.8**)

4.5 How are Projects Funded?

There are various funding sources available for bicycle and pedestrian projects. (Refer to **Figures 4.11, 4.12, and 4.13**) Funding is typically provided through the local jurisdiction or state transportation capital improvement programs, or through competitive grant programs. Grant programs may focus on specific project types or geographic areas and may require a match of local funds or in-kind services. In general, projects receive grant funding must be identified priorities of the local jurisdiction, county, and / or the state; therefore, it is important to reference the needs in official planning documents.

Figure 4.11: Funding Sources – Federal Programs Administered by States		
Grant/Funding Program	**Description**	**Agency Responsible**
Transportation Alternatives Program (TAP)	Supports projects that enhance the cultural, aesthetic, historic, or environmental aspects of the intermodal transportation system. The Program funds planning, design, and construction of bicycle or pedestrian facilities that serve a transportation purpose and are located on a public right of way. Recipients of grants must be county or local jurisdictions, the MPO or similar agencies.	Maryland: MD State Highway Administration (MDOT SHA) Delaware: DelDOT Division of Planning
Safe Routes to School Program (SRTS) -Part of TAP	Focuses on five (5) elements: engineering; education; enforcement; encouragement; and evaluation. The SRTS Program funds projects, and activities in the vicinity of K-8 schools. A local match is required. Grants can generally be used for bike and pedestrian safety classes for students, traffic education, or enforcement near schools, and bike and sidewalk improvements or bike parking.	Maryland: An annual Program administered by MDOT SHA. Local jurisdictions or school districts can apply for grants. Delaware: Applications can be submitted anytime to the DelDOT Division of Planning. There is a limit of $125,000 for an individual project.
Recreational Trails Program-Part of TAP	This is a dedicated funding source that supports property acquisition, construction, maintenance and restoration of trails for hiking, bicycling, horseback riding, snowmobiling, all-terrain vehicles, and other motorized and non-motorized uses.	Maryland: MDOT SHA Delaware: Administered through DelDOT.

Figure 4.12: Funding Sources - Maryland Programs		
Grant/Funding Program	**Description**	**Agency Responsible**
Bikeways Program	Supports projects maximizing bicycle access and complete missing links in the State bicycle system. Focus on connections to shared use paths and last mile links to schools, transit, or retail areas. Local match from zero to 50% depending on size and priority status. Projects must be within a Priority Funding Area or near rail station or bus transit hub, and identified in a county's annual Priority Letter to MDOT.	Administered through the MDOT SHA
ADA Retrofit	A fund to upgrade existing sidewalks, curb ramps, and driveway entrances along State roadways for ADA compliance.	MDOT SHA-Fund 33
Community Safety and Enhancement Program	Intended for highway reconstruction and improvements promoting safety and economic development along State roads within urban centers or Priority Funding Areas. Projects are generally requested in annual transportation Priority Letters. Local jurisdictions must agree to maintain the improvements upon completion.	MDOT SHA-Fund 84
Bicycle Retrofit	Intended for bicycle improvements within 100 feet of a State roadway. A portion of the project must be funded locally and State funds vary depending on whether it's located within a Priority Funding Area.	MDOT SHA-Fund 88
Sidewalk Retrofit	Intended to fund missing sidewalk segments along State roadways. The local match varies depending on whether the project is located within a Priority Funding Area, and a designated Sustainable Community.	MDOT SHA, Office of Highway Design-Fund 79
MD Highway Safety Office Grant	Intended to help reduce the number of motor vehicle related crashes. Pedestrian safety is a top priority. Projects must be consistent with *Strategic Highway Safety Plan* and there is a 20% local match required.	MDOT SHA, Highway Safety Office
Community Legacy Program	Sidewalk and bicycle improvements within a designated Sustainable Community may be eligible for funding. The City of Salisbury is designated as a Sustainable Community.	MD Department of Housing and Community Development
Program Open Space	Intended to fund the acquisition and development of recreation land or open space areas. Local grants can be made for this purpose.	MD Department of Natural Resources

Figure 4.13: Funding Sources - Delaware Programs		
Grant/Funding Program	**Description**	**Agency Responsible**
Community Transportation Fund	Can fund bicycle and pedestrian projects. Individuals or groups seek funding for a project through each legislator who has funds for community transportation improvement projects within their district. Legislators obtain a cost estimate through DelDOT and determine whether the project can/should proceed.	DelDOT
Statewide Bicycle and Pedestrian Program	Program has access to Federal and State funds for shared-use pathways, on-road bicycle and pedestrian facilities, recreational trails, and conceptual planning studies. It is a State goal to coordinate with MPOs and local governments to complete bicycle and pedestrian connectivity projects.	DelDOT

There are challenges to be faced as a region attempts to improve bicycle and pedestrian networks. Different requirements exist for sidewalks within and outside of municipalities. Efforts should be made to reduce the amount of existing gaps in the system throughout the region. There is a desire to increase the bike mode share through provision of more on road facilities, improved connections, and convenient bike parking. However, major corridors in the region (U.S. 50 and U.S. 13) carry high volumes of through traffic creating challenging issues for bicyclists and pedestrians. Balancing the interest and safety of motorized and non-motorized vehicles is paramount.

Chapter 5
Connect with… The Transit System

Chapter 5: The Transit System

This Chapter provides an overview of the transit services provided in the Salisbury/Wicomico MPO planning region, as well as discusses the transit opportunities, challenges, and current and planned improvements to the system.

5.1 What are the Existing Services?

There are two (2) primary transit service providers in the Salisbury/Wicomico MPO study area: Shore Transit, a division of the Tri-County Council for the Lower Eastern Shore of Maryland; and Delaware Authority for Regional Transit, operated by the Delaware Transit Corporation ("DTC").

Shore Transit is the public transit agency for the Maryland Lower Eastern Shore counties of Somerset, Wicomico, and Worcester. Shore Transit offers public transportation via **Fixed Route Services** and **Demand Response Services.** The fixed routes include urban routes in the Salisbury metropolitan area and regional routes connecting major population centers. In addition, demand-response services are available for riders outside the fixed route service areas or who have difficulty accessing a fixed route service or transfer point.

What are Fixed Route Services?
Transit service in which vehicles run along an established path at pre-set times. Trains, subways, and buses are the most common examples of this type of service.

What are Demand Response Services?
Any non-fixed route system of transporting individuals that requires advanced scheduling by the customer.

It is estimated that in FY 2019, Shore Transit carried over 312,443 transit passengers: roughly 84 percent or 261,380 riders utilized fixed route service while the remaining 16 percent or 51,063 persons were demand response service passengers. At the time of this publication, fixed route fares were $3 for regular fare and half fare for elderly, persons with disabilities, and students. Shore Transit also offers a refillable Fixed Route Bus Pass valid for seven (7) consecutive days of unlimited travel for $25.00. Fares for the demand responsive services vary depending on the location and circumstances of the user; the fares can range from free to $5 per trip. ADA paratransit fares are $5 per one-way trip.

DART First State and the DTC, an operating division of the DelDOT, provide fixed route and demand response services in Sussex County and throughout Delaware. There are two (2) routes serving the portion of the S/WMPO study area located in Delaware, namely the 212, which is a traditional fixed route, and the 903, which is a flex route. DART provides year round traditional and flex routes in other parts of Sussex County, with additional resort area transit services provided in the summer months. Demand response service is provided through DART via paratransit service and Flex bus route operations.

In FY 2019, DART carried over 9,304,917 passengers system wide. Of which, 7,162,659 or 77 percent of transit riders used a fixed route service, 1,196,630 or 13 percent of ridership used rail-Septa and the remaining 945,628 or 10 percent of transit riders used paratransit services. The large majority of transit riders utilize DART in New Castle and Kent counties. As of January 2019, the fixed route fare was $2.00 with reduced fares and daily passes available for a discounted rate. The Sussex County Flex routes have the same fare structure. Paratransit fares are $4 one-way for ADA trips and $6 one-way for non-ADA trips. Some paratransit trips are subsidized through local citizen service providers.

Fixed Route Services: Shore Transit

Shore Transit operates 11 fixed routes schedules for the Tri-County region, with all routes operating multiple times per day. The S/WMPO region is served by nine (9) of the 11 fixed routes. In addition, the Downtown Salisbury Trolley operates Thursday through Sunday evenings. All routes originate from and provide service to the Shore Transit Terminal at Tri-County Council Multi-Purpose Center. Shore Transit's fixed routes are listed in **Figure 5.1** and displayed on the **Figure 5.3** map.

Figure 5.1: Shore Transit Bus Routes

Route [1]	Location(s)	Operating Days
106	SU	Monday – Friday[1]
107	SU	Monday – Friday[1]
108	SU	Monday – Friday[1]
115	Delmar and Salisbury	Monday – Friday
120	Delmar, Salisbury, and Fruitland	Saturday and Sunday
199	West and North Salisbury	Monday – Friday
253	Salisbury, Princess Anne, Pocomoke	Monday – Friday
432	Salisbury, Ocean City, Pocomoke, and SBY Airport	Monday - Saturday
532	Salisbury, Pocomoke, Ocean City, and SBY Airport	Monday – Sunday
706N	Crisfield and Princess Anne	Monday – Saturday
706S	Princess Anne and Crisfield	Monday – Saturday

Notes: 1 = match SU class schedule.
Source: Shore Transit

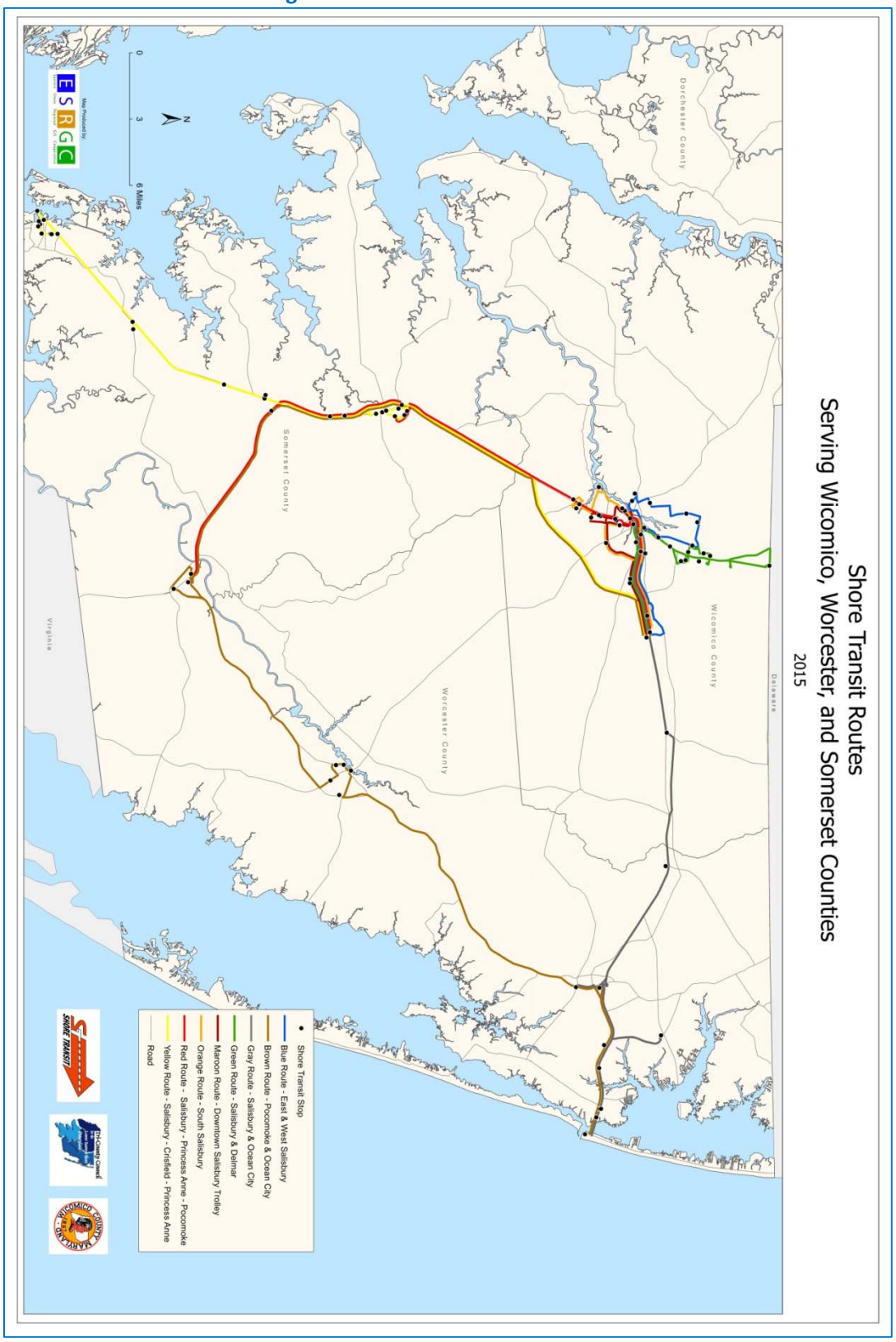
Fixed Route Services: DART

DART operates two (2) routes in the S/WMPO study area. Route 212 is a traditional fixed route, which runs from the Georgetown Transit Hub to Delmar with stops in Bridgeville, Seaford, Blades, and Laurel along U.S. Route 13. Also, DART operates the Flex Route 903 Seaford Loop serving local destinations in the Seaford vicinity. DART provides year round fixed and flex service for other parts of Sussex County. The fixed Route 206 runs from Georgetown to the Lewes Transit Center; the fixed Route 204 from Lewes Transit center, through Lewes, to the Lewes-Cape May Ferry; the fixed Route 201 runs from the Lewes Transit Center to Rehoboth; the fixed Route 215 from Millsboro to the Rehoboth Park and Ride; the Flex Route 901 circulates within Georgetown; and, the Flex Route 902 runs between Georgetown and Millsboro. In addition, DART provides a summer season operation supplementing transit service from Memorial Day through Labor Day. The seasonal service originates out of the park & ride lot located on Country Club Drive in Rehoboth. All routes traverse through the park & ride lot and offer service to Ocean City, Maryland, and the Rehoboth Boardwalk, Lewes, Georgetown, and Long Neck, Delaware. Passengers can connect with the seasonal bus routes through Georgetown Transit Hub via Route 212 from the study area. Finally, DART provides two (2) intercounty routes connecting to Dover: the 303 from Georgetown, via Milton and Milford; and, the 307 from the Lewes Transit Center via Milford. DART's Sussex County fixed and flex routes are listed in **Figure 5.2** and displayed on the **Figure 5.4** map.

Figure 5.2: DART Sussex County Fixed Routes and Flex Routes		
Route	**End Points**	**Operating Days**
201	Lewes Transit Center - Rehoboth	Monday - Saturday
203	Lewes Transit Center – Dewey Beach	Seasonal
204	Lewes Transit Center - DRBA	Monday - Saturday
206	Georgetown – Lewes Transit Center	Monday - Saturday
208	Rehoboth PNR – Ocean City	Seasonal
212	Georgetown – Seaford - Delmar	Monday - Saturday
215	Millsboro – Rehoboth PNR	Monday - Saturday
303	Georgetown – Milton – Milford - Dover	Monday - Friday
305	Wilmington – Dover – Lewes Transit Center	Seasonal
307	Lewes Transit Center – Milford - Dover	Monday - Friday
901F	Flex – Georgetown Loop	Monday - Friday
902F	Flex – Georgetown Millsboro	Monday - Friday
903F	Flex – Seaford Loop	Monday - Friday

Source: DART

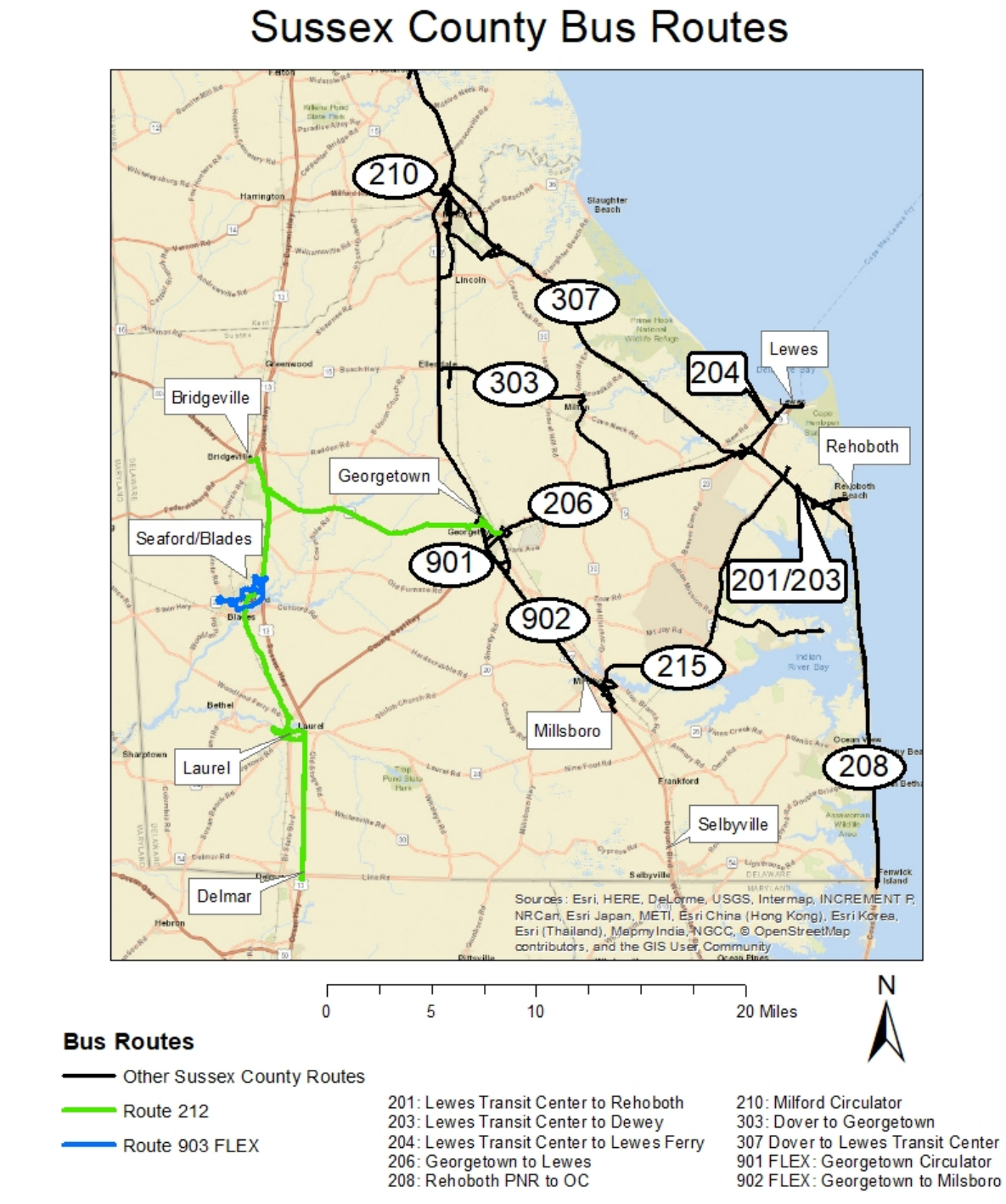
Figure 5.3: Shore Transit Bus Routes



Source: Eastern Shore Regional GIS Cooperative, Salisbury University

Figure 5.4: DART Sussex County Bus Routes

DART Moving Forward — Delaware Transit Corporation



Source: Delaware Transit Corporation (DTC)

Demand Response Services: Shore Transit

In addition to its fixed-route services, Shore Transit operates a number of different demand response services. Demand response services are reserved for people who reside more than three-quarters of a mile away from fixed-route bus stop/transfer point or who have disabilities preventing them from using the fixed route system.

The demand response services cover all of the three (3) counties. To create the region-wide service, Shore Transit has integrated demand-response services traversing Wicomico, Somerset, and Worcester counties. While counties fund the program through different sources, these services are coordinated and riders are carried on the same vehicles and at the same times to create a seamless system.

A summary of each demand responsive service is provided below.

- Shore Ride (General Public) – Shore Transit provides general public transit service for persons residing more than three-quarters of a mile away from a fixed route bus stop/ transfer point. This service is provided primarily in the more rural areas of the counties not serviced by any fixed routes. This service has replaced some of the feeder and loop services eliminated because of low ridership counts. General public riders in rural areas not served by fixed routes are picked up at their homes and taken to the closest fixed route stop / transfer point to utilize the fixed route service. Shore Ride is funded through the Federal Transit 5311 program, state funds, and local county match funds.
- Shore Ride (Special Services for Elderly/Disabled) – Shore Transit provides transit services for elderly and disabled riders under the State Specialized Transportation Assistance Program ("SSTAP"). This service is provided in Wicomico and Worcester Counties. Shore Ride offers curb-to-curb and door-to-door services. The Shore Ride services for elderly and persons with disabilities are funded through SSTAP, as well as a local match.
- Medical Assistance ("MA") Transportation – Shore Transit provides Medicaid transportation to medical appointments for persons eligible for the Medicaid services in all three (3) counties. MA clients are placed on the demand response services (Shore Ride, Shore Ride Special, and Shore Access). If this service is requested for a destination outside of the three-county area, Shore Transit requires advance notice of two (2) business days.
- Shore Access (ADA) – With the provision of regular fixed route services, Shore Transit was required to provide Federally-mandated ADA complementary paratransit service beginning in 2003. To qualify for Shore Access, customers must complete an ADA Application and submit it to the Eligibility Assistant at the Customer Service Center. Customers utilizing Shore Access are requested to call the Customer Service center by 4:00 p.m. the day before their requested ride. Shore Access ADA Origin to Destination Paratransit Service operates during the times and dates of the fixed route public transportation service in ADA service areas.

Demand Response Services: DART

ADA and Demand Response, door-to-door paratransit services operated by DART are available for senior citizens and persons with disabilities Monday through Saturday from 5:00 a.m. until 9:30 p.m. Trip requests can be submitted by phone or using an online registration form. Requests by phone must be made by 4:30 p.m. the previous day; online requests must be made two (2) business days in advance of the scheduled trip. Paratransit service can be accommodated between any two (2) locations provided they are within the State of Delaware, and by using connectors to travel between counties

Paratransit trips within Sussex County account for more than 50% of all daily transit trips, excluding seasonal fixed route trips made between May and September. Sussex County Paratransit trips peaked in FY 2016. Fixed route and paratransit trips have increased from 2001 to 2006; however, the number of paratransit trips significantly outpaces those provided by fixed route services. This is of significant concern to DART as providing a paratransit trip is much more expensive than a fixed route trip. In August 2018, DART contracted a portion of paratransit trips to First Transit in an effort to alleviate some of the demand on DART paratransit services.

In addition to DART, numerous social service agencies provide human services transportation within Sussex County. These agencies serve a variety of clients, including, but not limited to elderly and disabled. DelDOT supports these organizations by providing vehicles or some level of financial support, either directly or through reimbursement. The Department of Health and Social Services and the Division of Developmental Disabilities Services are two (2) of the main providers engaged in the provision of transportation services for their clients or qualified individuals.

Other paratransit trips are accommodated by private, non-profit operators throughout the County. Easter Seals is conducting trips on Sussex County as part of their statewide partnership with DTC. Another primary operators are Sussex Senior Services ("CHEER") and other senior centers, which mainly provide service for senior citizens to the senior centers, medical appointments, and shopping. A portion of the operating expenses of these non-profit service providers is funded by the State or Sussex County. Each of these agencies has its own area of focus and client base, but works to coordinate efforts and share information in partnership with DTC.

5.2 What are the Service Trends, Challenges, and Opportunities?

Shore Transit

The *Lower Eastern Shore Coordinated Public Transit-Human Services Transportation Plan* is one (1) tool for statewide and local planners to examine the transportation needs of individuals with disabilities, older adults, and people with low incomes, to provide strategies for meeting local needs, and to prioritize transportation services and projects for funding and implementation.

The previous Coordination Plan was completed in 2016 and a new Plan is scheduled to be completed in 2020. For the new Coordination Plan under development, the preliminary needs, strategies, activities, are being drafted. The needs and strategies were developed through a series of outreach efforts with local stakeholders.

The regional transportation needs identified in the Coordination Plan include:

- Need for expanded transportation services based on;
    - Trip purpose;
    - Operating schedules; and
    - Origins/destinations.

- Need for improved and expanded outreach, marketing, and education related to transportation and transit services;
- Need for more affordable transportation services; and
- Need for improved coordination and connectivity between:
    - Stakeholders and agencies;
    - Land use and future development;
    - Multi-Modal transportation trips; and
    - Training initiatives.

To address these needs, a preliminary list of goals and strategies was developed and presented at an August workshop with local stakeholders. Actions and projects will be developed in future phases of the Plan's development. The goals and strategies presented at the workshop are listed in **Figure 5.5**.

Figure 5.5: Lower Eastern Shore Coordinated Public Transit-Human Services Transportation Plan Goals and Strategies

Goal	Strategies
Maintain existing services through appropriate operating and capital funding.	• Continue to support capital projects that are planned, designed, and implemented to meet specific needs of seniors and individuals with disabilities. • Maintain services effectively meeting identified transportation needs in the region.
Ensure customers are aware of existing transportation options and can use these services effectively.	• Establish or expand programs to train customers, human service agency staff, medical facility personnel, and others in the use and availability of transportation services.
Expand public transportation options in the region.	• Support recommendations to improve public transportation identified through detailed transit development plans conducted in the region.
Expand specialized transportation services for people who unable to use or access public transit services.	• Use current human services transportation services to provide additional trips, especially for older adults and people with disabilities.
Consider a broader variety of transportation services targeting specific needs identified through the coordinated transportation planning process.	• Use volunteers to provide more specialized and one-to-one transportation services. • Expand access to taxi and other private transportation operators. • Consider and implement vehicle repair programs.
Secure additional funding and resources to support community transportation services.	• Develop additional partnerships and identify new funding sources to support public transit and human service transportation. • Advocate for additional funding to support public transit and human service transportation.
Provide more flexible transportation services in response to seasonal nature of the region.	• Provide flexible services to accommodate seasonal businesses and peak tourism seasons.

Shore Transit and the MDOT MTA Office of Local Transit Support ("OLTS") also work together to identify needed improvements to the transit system through the *Lower Shore Transportation Development and Service Consolidation Report* ("TDP"). The last published TDP was in April 2016.

The TDP is used to analyze transit needs within the service area, evaluate existing services, and develop strategies to match service to identified transit needs. The TDP also includes a financial plan containing a constrained list of transit projects needed to meet the demands for future growth of the system. This constrained list contains projects with reasonable likelihood of being funded at the federal, state, and / or local level.

DART

Delaware Transit Corporation ("DTC"), the State's public transit provider, operates 63 fixed bus routes statewide providing over 7.17 million trips per year. The largest concentration of service is in New Castle County ("NCC"), Delaware's most northern County, with 36 non-intercounty routes, with 6.3 million annual passenger trips. Delaware's central county, Kent, operates 10 routes; Sussex County with 6 traditional fixed routes operating year round, along with two routes and one intercounty route operating seasonal service in the resort areas from May to September. There are four-year round intercounty routes, two (2) of which operate between NCC and Kent, and the other two (2) operating between Kent and Sussex.

DTC operates paratransit service fully compliant with the Americans with Disability Act, within ¾ of a mile around fixed route services on a door to door basis during the times the respective fixed route services are operating. Outside of this ADA trip zone, DTC provides a Demand Response ("DR") service in all three (3) counties. Statewide, both of these services provide nearly 1 million trips per year with the heaviest concentration of riders in NCC with over 591,000 combined DR and ADA total trips. Kent County provides nearly 195,000 combined total trips annually and Sussex County provides nearly 209,000 annual trips. Also, it is possible to travel between counties by accessing established paratransit transfer points for an additional cost. In addition, DTC implemented three (3) flex routes to address transportation service needs in targeted, sparsely populated areas of Sussex County that could not justify fixed route services. These routes were focused on residents' needs to access corridors where retail, medical and employment centers existed and a high concentration of paratransit service was being provided by DTC. The goal of this was to fulfill the transportation need while creating a more cost effective alternative for paratransit customers who would opt for the flex service using curb to curb pick up instead of the on demand paratransit service.

DTC contracts with SEPTA for the provision of commuter rail service from Philadelphia and Delaware County communities to Claymont, Wilmington, Fairplay and Newark. The regional rail service is primarily used by commuters to the cities of Philadelphia and Wilmington, transporting well over 1 million passengers annually. DTC will continue to invest in rail services to help mitigate traffic congestion and to contribute to the economy of Delaware by efficiently moving people. Delaware based employment is increasingly making our state a destination for rail riders. Future plans include increasing SEPTA weekday service to Wilmington and Newark, as well as introducing weekend service to Newark. Also, plans are underway to extend regional services to Maryland destinations via regional rail.

DTC is renovating rail stations and building transit centers in Claymont and Newark. Along with the redevelopment of the EVRAZ steel site, New Castle County has a master plan for mixed office, industrial, and other land uses in the Claymont area. DTC is part of a collaborative effort to redevelop and expand the Newark Rail Station, as part of the economic development of the STAR campus. DTC, as a priority, will continue to serve employment markets, non- traditional shift markets and in an attempt to capture more latent demand to ensure regional connectivity.

5.3 What are the Current or Planned Improvements?

Each locally operated transit system is required to develop an Annual Transportation Plan ("ATP"), which combines request for capital and operating funding from federal or state funding programs into a single application. The ATP also contains information on current service, fleet information, and civil rights and equal employment regulations compliance.

The requests for funding are coordinated with the *Transportation Development and Service Consolidation Report* ("TDP") and with the S/WMPO's Transportation Improvement Plan. The combined and coordinated requests for funding are incorporated into MDOT's Consolidated Transportation Program or DelDOT's Capital Transportation Plan ("CTP"). The projects included in the MDOT's or DelDOT's CTP are listed in **Chapter 8.4** and **Appendix F** of this document.

Under the current funding environment in Delaware and Maryland, the large majority of funding requests and planned improvements focus on maintaining and improving current operations as opposed to new transit service alternatives or expansions.

5.4 How is Transit Funded?

Local transit services in the S/WMPO region are funded through a combination of local, state, and /or federal funding programs. In Delaware, transit revenue consists of passenger fares, federal grants, bus advertising, and State Funds. The Transportation Trust Fund ("TTF") is the main source of income covering the State funded costs of transit service.

In Maryland, the MDOT MTA OLTS manages a number of the federal funding programs available to transportation operators described below. These programs support both public transportation and specialized transportation services. The primary purpose of the OLTS is to provide a variety of technical assistance services to the Local Operating Transit Systems ("LOTS") operating in the State of Maryland. These include:

- Federal and State Regulatory Compliance;
- Operations;
- Management;
- Planning; and
- Training.

Federal Funding

Federal funding for public transportation programs is provided through the Fixing America's Surface Transportation Act ("FAST Act"), the current surface transportation authorization. The law authorized $9.9 billion in FY 2019 and $10.1 billion in FY 2020 for public transportation. The FAST Act furthered several important goals, including, safety, state of good repair, performance, and program efficiency.

Figure 5.6 summarizes the federal funding programs provided in the FAST Act.

Figure 5.6: MAP-21 Federal Funding Programs

Section	Objective/Goal
5307 - Urbanized Area Formula Grants	The largest of FTA's grant programs, this program provides grants to support public transportation in urbanized areas. Funds are distributed based on the level of transit service provision, population, and other factors.
5311 - Rural Area Formula Grants	This funding provides capital, planning, and operating assistance to support public transportation in rural areas with fewer than 50,000 residents.

Figure 5.6: MAP-21 Federal Funding Programs	
5310 - Mobility of Seniors and Individuals with Disabilities	This program provides formula based funding to increase mobility of seniors and persons with disabilities. Funds are apportioned based on each State's share of the targeted populations and are now apportioned to both States (for all areas under 200,000) and large urbanized areas (over 200,000). The former New Freedom program (5317) is folded into this program.
5329 - Safety	Establishes a comprehensive program to oversee the safety of public transportation. Requires local transit providers to develop agency safety plans with performance measures.
5337 - State of Good Repairs	Maintains public transportation systems in a state of good repair.
5326 - Asset Management	Requires transit authorities to establish asset management plans, including inventories, condition assessments, and investment prioritization.
5339 - Bus and Bus Facilities	Provides funding for capital improvements, including, replacement, rehabilitation, and purchases of buses and related equipment, as well as the construction of bus-related facilities.
5324 - Emergency Relief	Provides assistance to states and public transportation systems with emergency-related expenses when emergencies are declared by governors or the President.
5316 - Job Access and Reverse Commute Program ("JARC")	Improves access to transportation services to employment for welfare recipients and eligible low-income individuals, and to transport residents of urbanized areas and non-urbanized areas to suburban employment opportunities.
Statewide Special Transportation Assistance Program ("SSTAP")	Provides general purpose transportation to the elderly and persons with disabilities. These funds are annually apportioned to the counties and Baltimore City based on a formula. Funds can be used for operating and capital costs with a local share required.

Source: Federal Transit Administration

Capital Financing Plan

The financial plans for Shore Transit and DART are developed in a manner to ensure the reasonable likelihood funding will be available to cover the cost of proposed improvements. This Fiscally Constrained LRTP list transportation projects needed to meet the existing and future demands of the transit system and identifies anticipated resources from federal, state, and local sources to carry out the LRTP. See **Chapter 8.4** and **Appendix F**. A summary of the 25-year capital costs for Shore Transit and annual cost for DART operations is presented in **Figure 5.7**. The planning-level programming information contained in **Figure 5.7** is representative of projected funding levels consistent with Shore Transit's and DART's FY 2019 *Annual Transportation Plans*, and is apportioned by funding source and category.

Figure 5.7: Capital Financing Plan 2020 – Funding by Source (Thousands of Dollars)					
Funding Source	**Replacement and Refurbish Vehicles**	**Preventive Maintenance**	**Other Capital Items**	**Facility**	**Percentage of Total Projected Expenditures**
Shore Transit					
Federal Capital Assistance	$1,170.9	$640.0	$375.7	$0.0	80%
State Capital Assistance	$146.4	$80.0	$47.0	$0.0	10%
Local Capital Assistance	$146.4	$80.0	$47.7	$0.0	10%
Total	***$1,463.6***	***$800.0***	***$469.6***	***$0.0***	***100%***
Wicomico County Share (50 % of Local Share)					
	$73.2	*$40.0*	*$23.9*	*$0*	*0.5%*
DART (FY 2020 through FY 2026)					
Federal Capital Assistance	$80,280.0	$39,352.0	$8,458.0	$45,731.0	49%
State Capital Assistance	$76,753.0	$24,784.0	$60,497.0	$17,191.0	51%
Total	***$157,033.0***	***$64,136.0***	***$68,955.0***	***$62,922.0***	***100%***

Source: Shore Transit's FY 2019 Annual Transportation Plan, DART, and S/WMPO

Operating Financing Plan Scenarios

Public transit services in the S/WMPO region are supported by Federal Sections 5307 and 5311 public transit funding; New Freedom grant funding – 5317; State Americans with Disabilities Act funding (ADA); State Systems Technical Assistance Project funding ("SSTAP"); local county funding; and passenger fares. While the majority of a systems operating expenses are provided through federal, state, and local governmental sources, the S/WMPO calculated two (2) alternative long-range service levels for Shore Transit from 2020 through 2045. It is important to note, the operating financing plan scenarios for Shore Transit assume Wicomico County will provide approximately 50 percent portion of the local share.

Existing Level of Service

The existing level of service assumes a continuation of the current level of service and programming to 2045. Shore Transit's annual operating cost in FY 20 is approximately $7.4 million. Using a linear extrapolation calculation for the 30-year planning horizon of this LRTP, the estimated total operating cost is $221.3 million. See **Figure 5.8**. Assuming the passenger fares and other revenues cover approximately 30 percent or $2.2 million of the total annual operating expenses, the remaining 70 percent or $5.2 million will be covered by federal, state, and local contributions. At current contribution levels, Wicomico County's portion both annually and the 30-year planning horizon is $258K and $6.4 million, respectively.

Ten Percent Increase over Existing

This scenario is predicated on continuation of the current level of service and programming to 2050. The projected Shore Transit system operation cost over the next 30 years, based on a 10 percent increase, is approximately $243.4 million or $8.1 million annually (**Figure 5.8**). Assuming passenger fares and other revenues cover about 30 percent or $2.4 million, the net annual operating cost contribution of federal, state, and local governments will be roughly $5.7 million. The resulting net operating cost for the Wicomico County portion annually and over the 30-year planning period is approximately $284K and $8.5

million, respectively. **Figure 5.8** presents a summary of the two (2) scenarios by illustrating the differences between the average annual and cumulative local transit operating cost by funding source over the 2020 through 2050 planning period for both scenarios.

Figure 5.8: Operating Financing Plan Scenarios 2020 through 2050 (Thousands of Dollars)		
Annual / Total Operating Cost	**Existing Service Level (Scenario 1)**	**10 Percent Increase Over Existing Service Level (Scenario 2)**
Total Shore Transit		
Average Annual Operating Cost FY 20	**$7,375.5**	**$8,113.1**
Passenger fares and other revenue (projected to cover 30 % of total operating cost)	$2,212.7	$2,433.9
Federal, State, and Local (projected to cover 70 % of total operating cost)	$5,162.8	$5,679.2
Federal – 80 %	$4,130.2	$4,543.4
State – 10 %	$516.3	$567.9
Local – 10 %	$516.3	$567.9
Wicomico County portion (50 % of local contribution)	*$258.2*	*$284.0*
Total Operating Cost (2021 through 2050)	**$221,265.0**	**$243,391.5**
Passenger fares and other revenue (projected to cover 30 % of total operating cost)	$66,379.5	$73,017.5
Federal, State, and Local (projected to cover 70 % of total operating cost)	$154,885.5	$170,374.1
Federal – 80 %	$123,908.4	$136,299.3
State – 10 %	$15,488.6	$17,037.4
Local – 10 %	$15,488.6	$17,037.4
Wicomico County portion (50 % of local contribution)	*$7,744.3*	*$8,518.7*

Source: Shore Transit FY 2019 Annual Transportation Plan and S/WMPO.

Chapter 6
Connect with… The Freight System

Chapter 6: The Freight System

Freight movement is an essential component of a region's transportation activities. The S/WMPO area is served by various modes of transportation, including, highway, rail, aviation, and waterborne. All four (4) modes of transport play an integral role in the region's local and global economy.

This Chapter describes: existing transportation network for freight; identifies current and future tonnage of freight commodities by type, tonnage, and transport mode; and provides information about the top trading partners for the area.

6.1 Why Does Freight Matter?

In today's global economy, freight movement is crucial to a region's business and industrial development potential. A well-functioning and maintained, regional transport system brings modern quality-of-life benefits and economic stability to the region it serves. This network is the backbone for the free flow and efficient movement of goods and services within and throughout the region. This section of the LRTP identifies and addresses the freight needs and subsequent impacts to the region.

Goods movement is a common term used to describe the transport of commodities. Understanding where commodities move using each mode (highway, rail, air, pipeline, and water) and under existing and future conditions, is important to any coordinated regional freight planning effort. In March 2015, the *Delmarva Freight Plan* (Amended 2017) was prepared for DelDOT in collaboration with agencies from Delaware, Maryland, Virginia, and MPOs. The Plan includes a scenario planning model to determine economic impacts, congestion impacts, environmental impacts; analysis of the value provided by various types of freight services; and projections of freight industry growth for the region. The Plan covers the entire Delmarva Peninsula region and includes a focused study on the S/WMPO area and the character and impacts of freight movement. As the *Delmarva Freight Plan* explains:

"Wicomico County is the leading agricultural producing county in Maryland with 2,560 businesses employing 36,000 workers.Major employers include Perdue Farms, Jubilant Cadista Pharmaceuticals, Delmarva Power, and K&L Microwave. Pepsi Cola Bottling also operates a major distribution center in the county."

Agricultural operations in Delmar

"Tourism and farming are the dominant forces in Sussex County's economy. Major resort areas line the coast including Lewes, Rehoboth Beach, Dewey Beach, Bethany Beach, and Fenwick Island among others. The county is also renowned for poultry farming and soybean production. Other major employers include NRG Energy, Pats Aircraft LLC, Invista, Sussex County Industrial Airpark, Selbyville Industrial Park, Seaford Industrial Park, and Ross Business Park. Federal Express ("FED EX") also operates a major distribution center in the county."

6.2 What is the Roadway Freight Network?

A large portion of the freight moved within the S/WMPO region is moved by truck along the local and region road network. The extensive roadway network allows for the movement of goods by truck to 10 states and all major Northeast cities within a half-a-days' time. The region remains a competitor for roadway freight by maintaining a connected roadway system essential to sustaining commerce, as well as encouraging future growth of the existing network. As discussed in **Chapter 3**, the major primary radial roadways comprising the regional network include the following: U.S. Route 13/Route 13 Business; U.S. Route 50/Route 50 Business; MD 346 (Old Ocean City Road); MD 12 (Snow Hill Road); MD 350 (Mt. Hermon Road), MD 349 (Nanticoke Road), Camden Avenue /Allen Road, and Jersey Road - Lake Street.

U.S. Route 13, the major north-south corridor, provides the region with access to the Philadelphia-Wilmington region to the north and Hampton Roads, Virginia to the south. It is a four-lane highway with no access control and is the most heavily traveled route in the regional system. U.S. Route 50, the major east-west corridor, provides access to the Baltimore-Washington metropolitan area to the northwest and Ocean City, Maryland, to the east. It is a four-lane highway with uncontrolled access in downtown, fully controlled access on the bypass, and limited access along unincorporated areas outside of town limits.

The Salisbury Bypass/Ocean Gateway Bypass (U.S. Route 13/50) is one (1) of the major roads serving the local and regional need for movement of people and goods. The Bypass is a limited access, multi-lane, divided highway linking a portion of the primary roadways in the region such as U.S. Route 13, U.S. Route 50, and Snow Hill Road.

A rural road in Laurel, Delaware connects roadway and rail freight networks to move agricultural products.

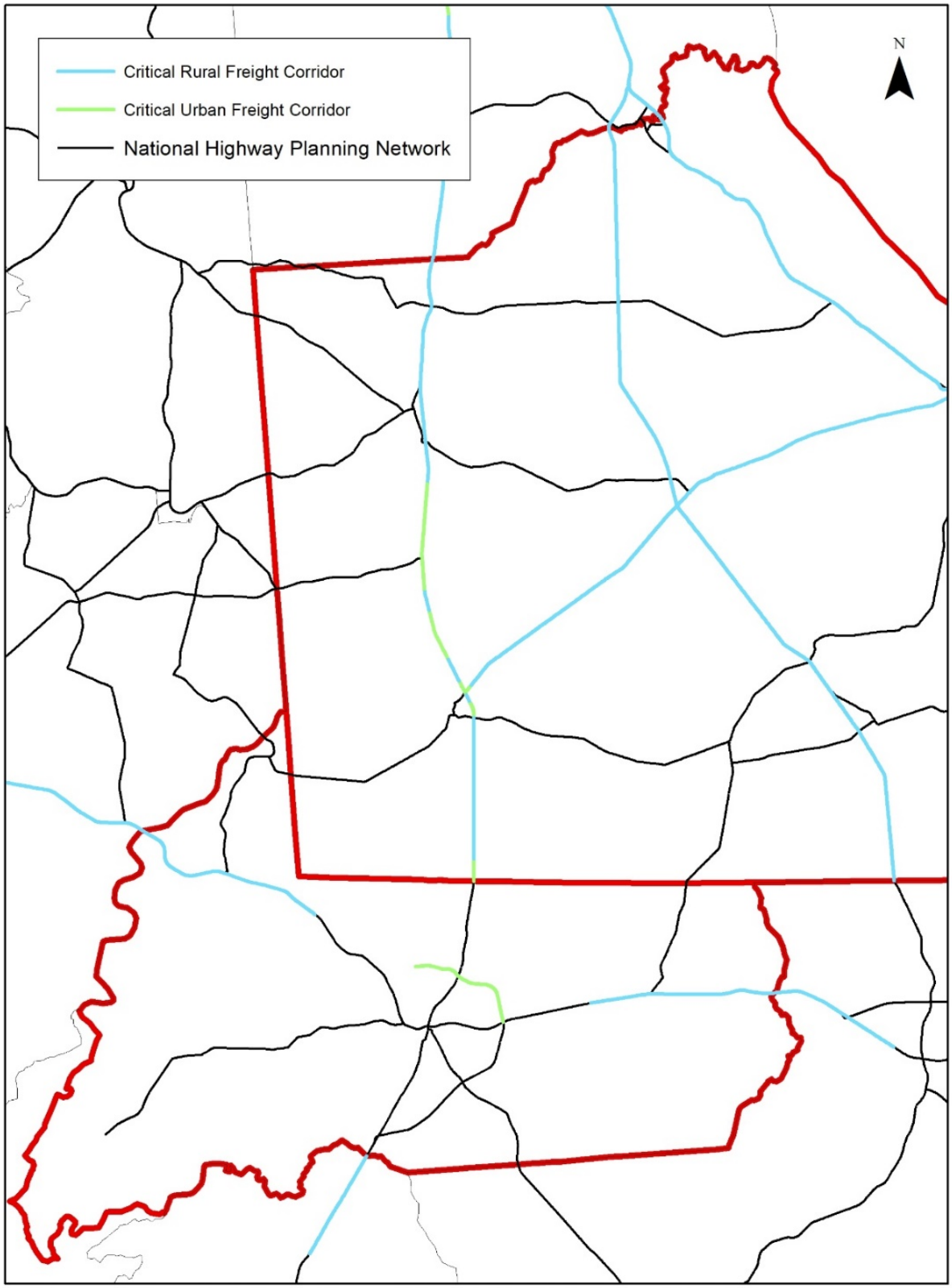
Roadway freight and the roadway network in the region provides a vital link to the economic market areas located to the northeast making the truck transport essential to the economy of the area. Therefore, the region should continue to maintain and improve roadways, vital network links, and the efficiency of roadway freight service to business and industries, as well as the markets they serve.

Figure 6.1 outlines major roadways in the S/WMPO region carrying freight movements. Depicted on the map are roads on the National Highway Planning Network and roads designated in either the Maryland or Delaware state freight plans as part of a Critical Urban Freight Corridor or Critical Rural Freight Corridor. Roads may be designated as part of a Critical Urban Freight Corridor in urbanized areas when they:

> connect an intermodal facility to – (I) the primary highway freight system; (II) the Interstate System; or (III) an intermodal freight facility; (ii) is located within a corridor of a route on the primary highway freight system and provides an alternative highway option important to goods movement; (iii) serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or (iv) is important to the movement of freight within the region as determined by the metropolitan planning organization or State.[1]

[1] Content excerpts from 23 U.S.C. §167(f) https://www.gpo.gov/fdsys/pkg/USCODE-2015-title23/html/USCODE-2015-title23.htm

Figure 6.1: S/WMPO Region – Major Freight Roadway Network



Sources: Delaware Department of Transportation, Maryland State Highway Administration, and National Transportation Atlas Database.

Roads may be designated as part of a Critical Rural Freight Corridor when they are:

not in an urbanized area and – (A) is a rural principal arterial roadway and has a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks (Federal Highway Administration vehicle class 8 to 13); (B) provides access to energy exploration, development, installation, or production areas; (C) connects the primary highway freight system, a roadway described in subparagraph (A) or (B), or the Interstate System to facilities that handle more than – (i) 50,000 20-foot equivalent units per year; or (ii) 500,000 tons per year of bulk commodities; (D) provides access to— (i) a grain elevator; (ii) an agricultural facility; (iii) a mining facility; (iv) a forestry facility; or (v) an intermodal facility; (E) connects to an international port of entry; (F) provides access to significant air, rail, water, or other freight facilities in the State; or (G) is, in the determination of the State, vital to improving the efficient movement of freight of importance to the economy of the State.[2]

6.3 How Does the Rail Corridor Operate as Part of the Freight System?

Norfolk Southern ("NS") owns the system of major rail corridors providing the S/WMPO region with access to the entire East Coast. The Delmarva Secondary is NS's primary north-south route, paralleling U.S. Route 13 on the Delmarva Peninsula. Carload Express has operated the Delmarva Secondary branch since 2016, and they are actively marketing rail service and intermodal freight opportunities to business owners along the rail corridor. Stretching approximately 120 miles from Newark, DE, to Pocomoke, MD, the branch intersects the New Castle Secondary and Reybold Connecting Track at Porter, forming a northern Delaware rail triangle between the Delmarva, New Castle/Shellpot, and the northeast corridor. At Pocomoke City, the line connects to the Eastern Shore Railroad and heads south to Norfolk, Virginia, via a car float operation at Cape Charles. Rail movements within the S/WMPO predominately consists of through movements because the lack of local manufacturing outputs. Nevertheless, it is critical to ensure sufficient areas designated for existing and future growth of industrial land uses along or in close proximity to infrastructure to promote expansion of the manufacturing sector.

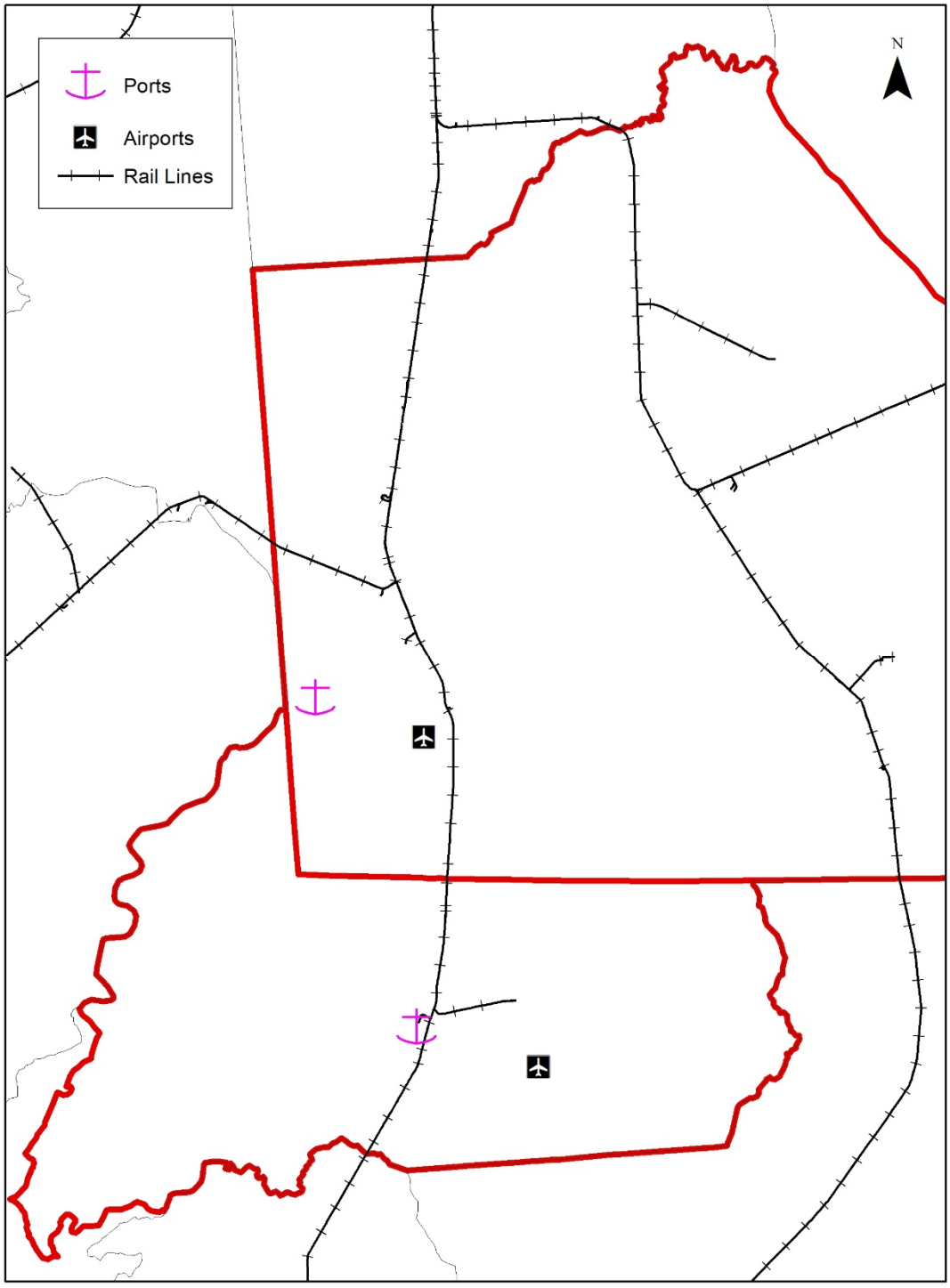
Some challenges exist with current rail freight operations including: the need to use car float at Cape Charles from Pocomoke City, MD, to Norfolk, VA; and limiting freight activity to an eight (8) hour operating window on the Northeast Collector ("NEC") between 10 p.m. to 6 a.m.

According to NS, there are only three (3) active car float operations remaining in the U.S. The car float is an outdated technology as a viable rail transportation option because of the length of time needed to complete the movements. The NEC is the busiest passenger rail corridor in the U.S., hence the need to limit non-passenger train movements to late night operations. Constructing a fly-over above the NEC would be the only way to increase freight operations in this area; however, it is not economically viable because of the limited tonnage of commodities, and their value, transported via rail.

Figure 6.2 displays multimodal freight network infrastructure in the S/WMPO region, including rail, ports, and airports.

[2] Content excerpts from 23 U.S.C. §167(f) https://www.gpo.gov/fdsys/pkg/USCODE-2015-title23/html/USCODE-2015-title23.htm

Figure 6.2: S/W MPO Region – Multimodal Freight Network



Sources: National Transportation Atlas Database.

6.4 Why is Waterborne Freight Important to the Region?

The Port of Salisbury is located at the headwaters of the Wicomico River, 30 miles northeast of the Chesapeake Bay. The River is a dredged, 14-foot deep, 150-foot-wide channel waterbody used by barges to transport grain, petroleum, and building aggregate. By tonnage of commodities transported, the Port of Salisbury is the second largest port in Maryland, behind the Port of Baltimore. The United States Army Corps of Engineers ("USACE") reported a total of 1,197,000 short tons were transported on the Wicomico River in 2017. **Figure 6.3** shows annual freight traffic trends for the Wicomico River.

What is waterborne freight movement?
Waterborne freight is an economical mode of transportation for moving bulk items through the use of barges that would otherwise require shipping through multiple truck deliveries.

Figure 6.3: Port of Salisbury – Waterborne Commodities

Year	Total (thousand short tons)	Percent Change
2003	1,783	N/A
2004	1,868	+4.8%
2005	1,885	+0.9%
2006	1,823	-3.3%
2007	1,606	-11.9%
2008	1,329	-17.2%
2009	1,133	-14.7%
2010	791	-30.2%
2011	1,065	+34.6%
2012	896	-15.9%
2013	939	+4.8%
2014	869	-7.5%
2015	885	+1.8%
2016	1,032	+16.6%
2017	1,197	+16.0%

Source U.S. Army Corps of Engineers – Navigation Data Center & Waterborne Commerce of the U.S., 2017

Figure 6.3 shows a decline of short ton traffic along the Wicomico River over the 15 year period ending in 2017, decreasing by almost 600,000 shorts tons or 33 percent from approximately 1,783,000 short tons in 2003 to approximately 1,197,000 short tons in 2017. From 2005 through 2015, freight traffic along the Wicomico experienced almost uninterrupted annual declines, though significant increases have occurred in recent years. Maintaining a five-year average of 1 million short-tons annually will be needed to sustain Federal funding for port and waterway improvements. This funding may be extremely important for making the Port of Salisbury competitive as larger capacity cargo ships enter the Atlantic seaborne. Therefore, the navigable river channels should be properly maintained and dredged. Consideration should be given to study if it is feasible to rehabilitate and expand the Port of Salisbury in an effort to encourage additional waterborne traffic serving the Delmarva Peninsula and strengthen the region as a competitive marketing and distribution center, as well as increasing the depth of the channel to accommodate larger vessels.

Figure 6.4 displays waterborne freight movement trends passing through the Port of Seaford on the Nanticoke River. Over the 2008 through 2017 period that data were available for, traffic increased by 31 percent from approximately 772,000 short tons to approximately 1,010,00 short tons. As recent traffic has been below the threshold need to sustain Federal funding, continued advocacy will be needed to ensure maintenance and improvements necessary to maintain a navigable river channel.

Figure 6.4: Port of Seaford – Waterborne Commodities

Year	Total (thousand short tons)	Percent Change
2008	772	N/A
2009	568	-26.4%
2010	543	-4.4%
2011	653	+20.3%
2012	636	-2.6%
2013	840	+32.1%
2014	785	-6.5%
2015	954	+21.5%
2016	907	-4.9%
2017	1,010	+11.4%

Source U.S. Army Corps of Engineers – Waterborne Commerce of the United States, 2017

The Delmarva Water Transport Committee ("DWTC") works in conjunction with the U.S. Army Corps of Engineers to support the commodity distribution by way of the Wicomico and Nanticoke Rivers through maintaining a dredged channel of approximately 14 and 12 feet deep, respectively. Dredging operations along the Wicomico River occur in three-year cycles to ensure the shipping land can be properly maintained. Dredging is performed through the U.S. Army Corps of Engineers using federal funding. If the shipping lane cannot be maintained and the freight hauled on the Wicomico River drops below a five-year average of 1 million tons a year, the federal aid used to maintain the port operations may be evaluated for reprogramming or suspended. A major hurdle with maintaining the shipping lane is finding appropriate spoil disposal sites. Wicomico County and DWTC work closely with the U.S. Army Corps of Engineers to locate suitable dredge spoil sites.

Delmarva Water Transport Committee (DWTC)
A non-profit organization based in Salisbury and dedicated to supporting the continued use and further development of waterborne commerce on the rivers, bays, and harbors of the Delmarva Peninsula through the promotion of adequate dredging, safe navigation, and maintenance.

Figure 6.5 shows the breakdown of waterborne commodities transported through the Ports of Salisbury and Seaford in 2017. For Salisbury, petroleum and petroleum products (618,000 short tons or 51.6 percent), crude materials (330,000 short tons or 27.5 percent), and food and farm products (184,000 short tons or 15.4 percent) accounted for the largest proportions of waterborne freight traffic by commodity for 2017. Inbound freight traffic short tonnage for the Port of Salisbury is very high (1,174,000 short tons or 98%) compared to outbound movements (23,000 short tons or 1.9%).

Figure 6.5: Freight Traffic, 2017 (Short Tons)

Commodity	Internal		Total
	Inbound (Upbound)	Outbound (Downbound)	
Port of Salisbury			
Petroleum and petroleum	618,000 (52.6%)	0 (0%)	618,000 (51.6%)
Crude materials, inedible	327,000 (27.9%)	3,000 (13%)	329,000 (27.5%)
Food and farm products	184,000 (15.7%)	0 (0%)	184,000 (15.4 %)
Chemicals and related	46,000 (3.9%)	0 (0%)	46,000 (3.8%)
Primary Manufactured	0 (0%)	20,000 (87%)	20,000 (1.7%)
Total, all commodities	**1,174,000 (98%)**	**23,000 (2%)**	**1,197,000 (100%)**
Port of Seaford			
Crude materials, inedible	268,000 (61.0%)	391,000 (68.5%)	659,000 (65.2%)
Food and farm products	155,000 (35.3%)	180,000 (31.5%)	335,000 (33.2%)
Chemicals and related	16,000 (3.6%)	0 (0%)	16,000 (1.6%)
Total, all commodities	**439,000 (43.5%)**	**571,000 (56.5%)**	**1,010,000 (100%)**

Source: U.S. Army Corps of Engineers – Navigation Data Center & Waterborne Commerce of the U.S., 2017

For the Port of Seaford in 2017, crude materials and food and farm products accounted for almost all (98.4%) of the total waterborne freight traffic by commodity. Compared to the Port of Salisbury, inbound and outbound freight traffic is more evenly balanced for the Port of Seaford. In 2017, inbound freight traffic accounted for 439,000 short tons (43.5%) while outbound freight accounted for 571,000 short tons (56.5%).

6.5 How is Aviation a Part of Goods Movement?

Salisbury-Ocean City: Wicomico Regional Airport

The Salisbury-Ocean City: Wicomico Regional Airport ("SBY Airport") is a public-use airport owned and operated by Wicomico County. SBY Airport is located on 1,081 acres of land in unincorporated Wicomico County, which is approximately five (5) miles southeast of Salisbury. SBY Airport is the second largest of the 36 commercial airports in Maryland, behind BWI, and is the only commercial airport on the Delmarva Peninsula. The SBY Airport is regarded as an economic engine for the region supporting airport operations and general aviation services employment. Also, SBY Airport supports local and regional business growth by providing freight and passenger mobility through commercial and private aviation services.

Why is a longer runway important?
With a longer runway, SBY Airport has the ability to receive larger jets. This enhancement affords the ability for reaching a larger market. Also, the improvement affords the ability to serve as a disaster recovery center for the Delmarva Peninsula.

SBY Airport serves travelers from the southern part of Delaware, the northern part of Eastern Shore of Virginia, and the Eastern Shore of Maryland. American Airlines provides direct passenger service to Charlotte, NC, and Philadelphia, PA, and indirect service to over 157 domestic and 46 international destinations, providing the region with national and global connections. In addition to the movement of people, SBY Airport is the only air cargo facility on the Lower Delmarva Peninsula providing daily air cargo service via FED EX. Also, SBY Airport supports local military training activities.

Fleet

According to AirNav Data, the SBY Airport facility has approximately 127 aircraft on the field consisting of 52 single engine aircraft, 7 multi-engine airplanes, 63 jet airplanes, 3 helicopters, and 2 ultralight aircraft. Further, AirNav reported that the facility averaged 126 flights per day, or approximately 45,990 flights annually for the 12-month period ending on December 31, 2018. This activity consisted of 30 percent military operations, 29 percent transient general aviation, 27 percent local general aviation, and 15 percent air taxi.

Terminal

Built in the mid-1990s, the airport houses a 26,000 square foot terminal with a ticket counter, TSA bag scanning area, two (2) departure gates, one (1) arrival gate, and security check points. SBY Airport is also served by Avis, Hertz, and Enterprise rental car agencies located in the arrival terminal. SBY Airport provides the following aviation-related services:

- Fuel sales
- Major airframe service
- Major power plant service
- Commercial service
- Passenger service
- Flight instruction
- Aircraft rental
- Control tower
- Corporate flight departments
- Air freight operations
- Automobile rentals
- T-hangers and paved tie-downs

Runway

SBY Airport has two (2) operating runways: Runway 14/32 and Runway 5/23. Runway 14/32 is an asphalt paved runway measuring 6,400 feet in length and 100 feet wide with parallel taxiway available. Runway 5/32 is an asphalt paved runway measuring 5,000 feet in length and 100 feet wide with parallel taxiway available. According to the Federal Aviation Administration's Terminal Area Forecasts ("TAF"), SBY Airport had

approximately 44,568 total aircraft operations (take-offs and landings) for 2018 and a future projection of 48,203 (take-offs and landings) by the year 2045.

The Maryland Aviation Administration ("MAA") performed an economic impact analysis on all of the State of Maryland's General Aviation ("GA") airports in 2018. **Figure 6.6** summarizes SBY Airport passenger and air cargo activity economic impacts. This analysis shows the importance of SBY Airport on the local and regional economy.

Figure 6.6: SBY Airport's Economic Impact – 2018

Impact Summary	On-Site	Visitor	Total
Total Jobs	1,167	454	1,620
Total Personal Income	$68,585,000	$15,788,000	$84,373,000
Business Revenue	$52,494,000	$25,757,000	$78,251,000
Local Purchases	$18,210,000	$9,518,000	$27,728,000
State and Local Taxes ($1,000)	$11,385,000	$3,749,000	$15,134,000

Source: Maryland Economic Impact of Airports 2018

Laurel Airport

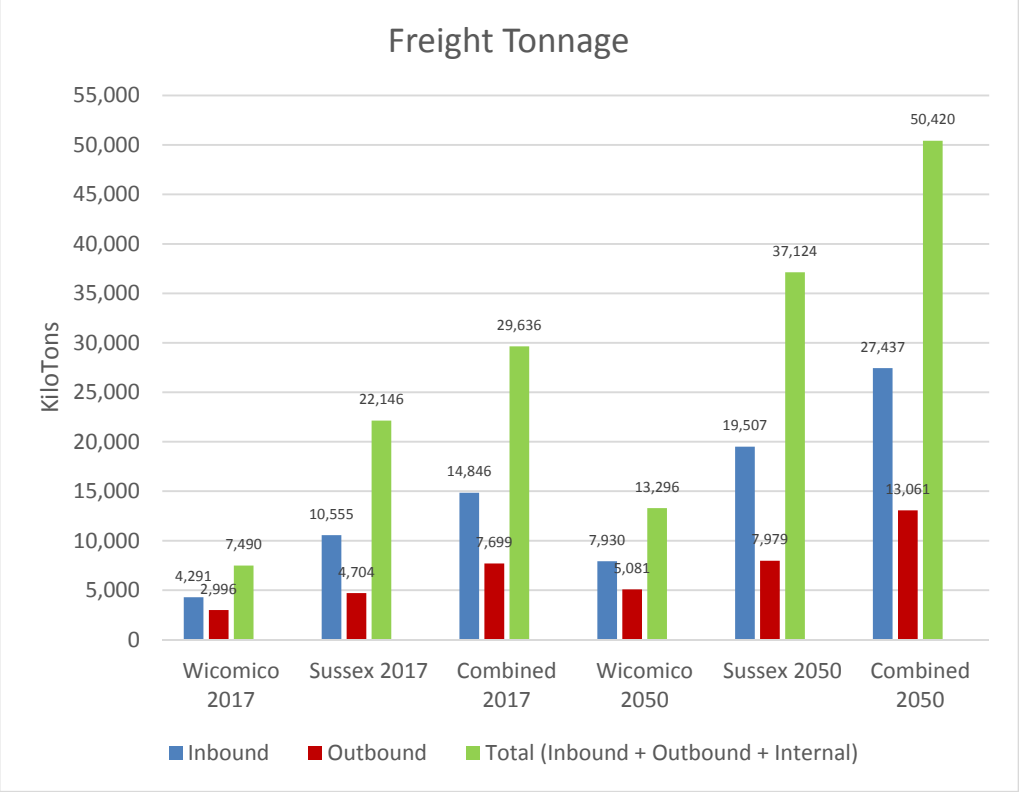
The Laurel Airport ("N06"), is a privately-owned grass strip general aviation airport open to public use, located one mile southwest of Laurel, Delaware. Airport activities are centered on agricultural spraying and skydiving, which take advantage of the Airport's geographic location providing exceptional access to Southern Delaware and Eastern Maryland. The Laurel Airport has one (1) operating turf grass runway, Runway 15/33 measuring 3,175 feet in length and 270 feet wide. According to AirNav Data, the Laurel Airport averaged 27 flights per day or 9,855 flights annually for a 12-month period ending on December 31, 2014, consisting of 81 percent local general aviation and 19 percent transient general aviation.

6.6 How Much Freight is Transported?

The S/WMPO region is a hub for a variety of commodities moved by a variety of modes into, around, and out of Wicomico County and Sussex County. **Figure 6.7** shows the total kilotons ("KTons") reported for inbound, outbound, and internal domestic freight movements throughout the region in 2017 and 2050[3,4]. In 2017, the total combined tonnage for Wicomico and Sussex counties was 29,636 KTons of freight. By 2050 the total tonnage is projected to be 50,420 KTons of freight, which represents an increase of 20,783 KTons or 70 percent compared to 2017.

Figure 6.7: Freight Transportation Movement – 2017 & 2050: All Traffic, Short Tons

County	Year	Annual Growth Rate (AGR) %			
		2.57	*2.11*	*1.21*	
		Inbound	Outbound	Internal	Total
Wicomico	2017	4,290.82	2,995.54	203.61	7,489.97
	2050	7,929.86	5,081.34	284.91	13,296.11
Sussex	2017	10,555.16	4,703.93	6,887.3	22,146.39
	2050	19,507.0	7,979.28	9,637.4	37,123.67
Combined	**2017**	**14,845.98**	**7,699.47**	**7,090.91**	**29,636.36**
	2050	**27,436.86**	**13,060.61**	**9,922.31**	**50,419.78**



Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

[3] Freight movements cited in the remainder of this section are all sourced from the Freight Analysis Framework 4, v 4.5 accessed in October 2019. County-level data were not published for Wicomico County, so the University of Delaware, Institute for Public Administration used methods outlined in "Use of FAF Data for Florida Multimodal Freight Analysis" to estimate flows for Wicomico.

[4] Internal flows for individual counties are flows originating and ending in that particular county. Internal flows for combined counties represent flows both originating and ending in either county.

In Wicomico County, nearly 7,500 KTons were moved as a result of inbound, outbound, and internal freight movements in 2017. The majority of the tonnage was moved inbound, with nearly 4,300 KTons representing just over 57 percent of total Wicomico movements. Outbound movements originating in Wicomico County accounted for nearly 3,000 KTons of freight or 40 percent of total movements. By 2050, a projected 13,296 KTons of freight will move into, within, and out of Wicomico County, which represents an increase of 77 percent or nearly 5,800 KTons from 2017. Inbound movements are projected to account for approximately 7,900 KTons of freight or 60 percent of total movements, with outbound movements accounting for roughly 5,000 KTons or 38 percent of total activity.

22,146 KTons of freight were moved in Sussex County in 2017 with projections placing this total at 37,124 KTons by 2050—an increase of 68 percent or just over 14,978 KTons. Inbound freight movements in Sussex County accounted for 10,555 KTons or 47 percent of the total, with outbound movements accounting for roughly 4,700 KTons or 21 percent. Compared to Wicomico County, internal movements for 2017 accounted for a much larger share of total Sussex County freight, with the 6,887 KTons of intracounty freight accounting for 31 percent of total movements in the County.

Mode Split

Mode split represents the choice of transportation (e.g., by road, water, air, or rail) a company uses to move goods in, out, and around the region. Mode split was estimated for Wicomico County since FAF data sets are not broken out at the county level. It is important to note, considerable caution should be exercised in using these figures for purposes other than high-level planning efforts. They are presented as best available estimates resulting from an allocation of FAF estimates and projections for movements by commodity and mode to Wicomico. [5]

Figure 6.8 reveals truck transportation is the dominant mode for the S/WMPO region, followed by pipeline, rail, multiple, water, and air. In 2017, nearly 31,000 KTons of freight were moved throughout Wicomico and Sussex counties. Truck transportation was the dominant mode, accounting for 89.4 percent or almost 28,000 KTons moved throughout the region.

By 2050, total freight traffic for Wicomico and Sussex counties is projected to increase to 51,465 KTons. Truck transportation is projected to grow in importance, accounting for 92.8 percent of expected flows. Rail transport is expected to grow in absolute terms, with approximately 170 additional KTons of freight moved by this mode. Water transport is projected to increase by nearly 50 percent from approximately 125 KTons to 183 KTons.

[5] As opposed to other freight movement estimates presented in this report, this modal analysis includes international export or import movements that either originated in or ended movement in Sussex or Wicomico counties. These movements were included to more fully represent modal flows in, from, and to the region, though it should be noted that all these estimates exclude movements that simply pass through the region without either originated or ending there. Estimates were available or originally made at the 2017 and 2045 dates, with 2050 projections made by projecting forward the average annual growth of movements during the 2017 to 2045 time period.

Figure 6.8: Freight Transportation Modes – Tonnage (2017 and 2050)
(All Traffic, Short Tons)

County	Mode	2017 Local Movements (KTons)	2017 Local Movements (Percentage)	2050 Local Movements	2050 Local Movements (Percentage)
Wicomico[1]	Truck	6,878.06	91.8	12,606.9	91.8
	Multiple	187.44	2.5	377.4	2.8
	Rail	326.52	4.4	541.2	3.9
	Water	71.58	1.0	139.8	1.0
	Pipeline	24.98	0.3	58.8	0.4
	Air	0.01	0.00	2.8	0.02
	Other	0.51	0.01	0.5	0.00
	TOTAL	**7,489.1**	**100.0**	**13,727.4**	**100.0**
Sussex	Truck	20,651.9	88.6	35,154.8	93.2
	Multiple	284.4	1.2	737.9	2.0
	Rail	831.8	3.6	787.6	2.1
	Water	53.8	0.2	43.4	0.1
	Pipeline	1,483.3	6.4	1,001.6	2.7
	Air	2.6	0.01	11.6	0.03
	Other	2.9	0.01	0.9	0.00
	TOTAL	**23,310.6**	**100.0**	**37,737.6**	**100.0**
Combined	Truck	27,530.0	89.4	47,761.7	92.8
	Multiple	471.8	1.5	1,115.3	2.2
	Rail	1,158.4	3.8	1,328.8	2.6
	Water	125.4	0.4	183.2	0.4
	Pipeline	1,508.3	4.9	1,060.3	2.1
	Air	2.6	0.01	14.4	0.03
	Other	3.4	0.01	1.37	0.00
	TOTAL	**30,799.8**	**100.0**	**51,465.0**	**100.0**

[1] Mode split had to be estimated for Wicomico County since Freight Analysis Framework (FAF) data are not broken out for Wicomico as a standalone unit. Therefore, considerable caution should be exercised in using these figures for planning or other purposes. They are presented here as best available estimates resulting from an allocation of FAF estimates and projections for movements by commodity and mode to Wicomico.

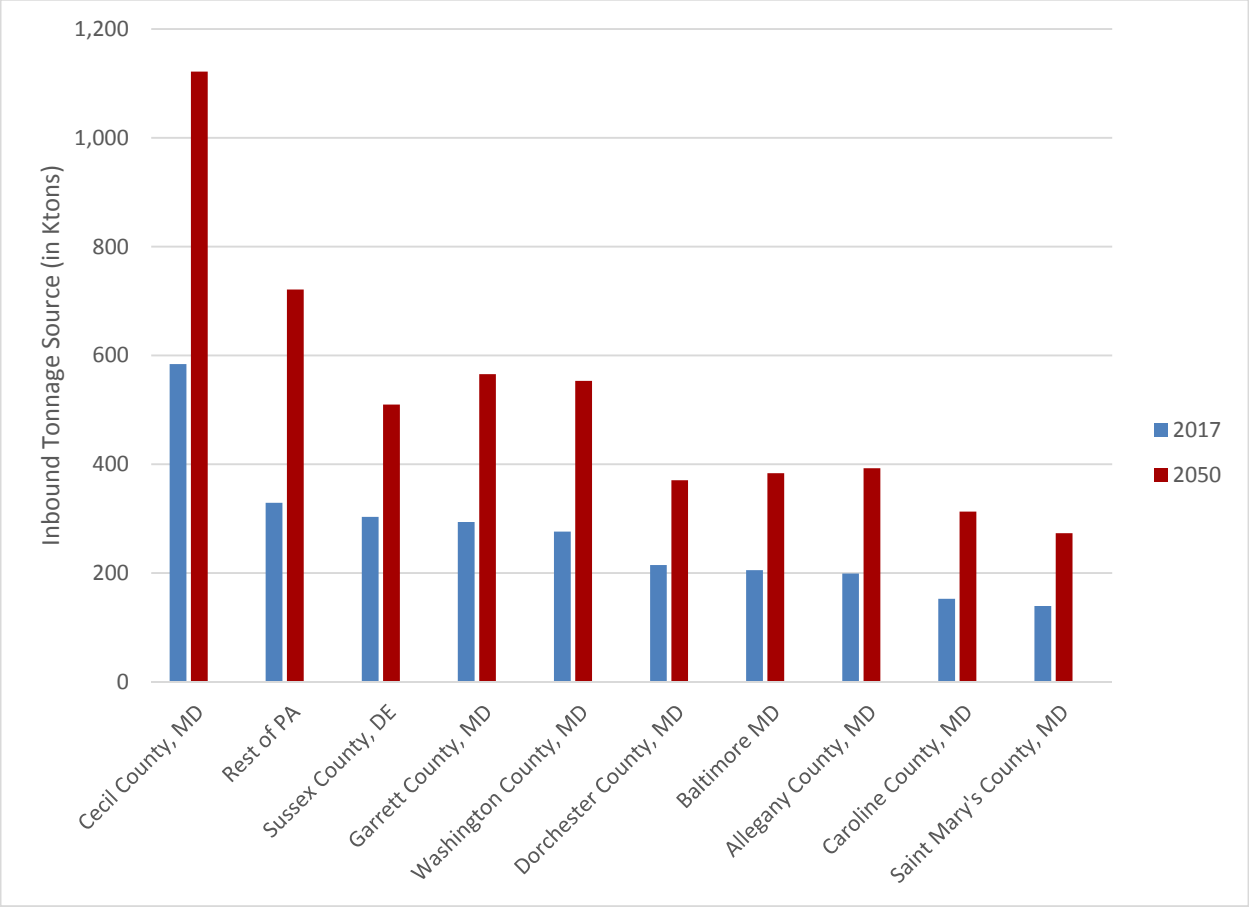
6.7 Who are the Region's Trading Partners?

Geographic trading partners include the top origin of commodities flowing into Wicomico and Sussex counties and the top destinations of commodities flowing outside of the region. Partners are presented as Freight Analysis Framework areas, which tend to include multiple counties, and as counties where available.

Figures 6.9 and **6.10** illustrate Wicomico County's top trading partners by inbound and outbound tonnage for 2017 and 2050. In 2017, the region's top three (3) inbound trading partners were estimated to be Cecil County, MD, PA FAF area, and Sussex County, DE, which accounted for about 14 percent, 8 percent, and 7 percent of inbound tonnage, respectively. Together, the top ten inbound trading partners accounted for about 63 percent of total inbound tonnage in 2017. In 2050, the top ten trading partners by inbound tonnage are projected to remain largely the same, with these ten partners projected to account for approximated 63 percent of flows.

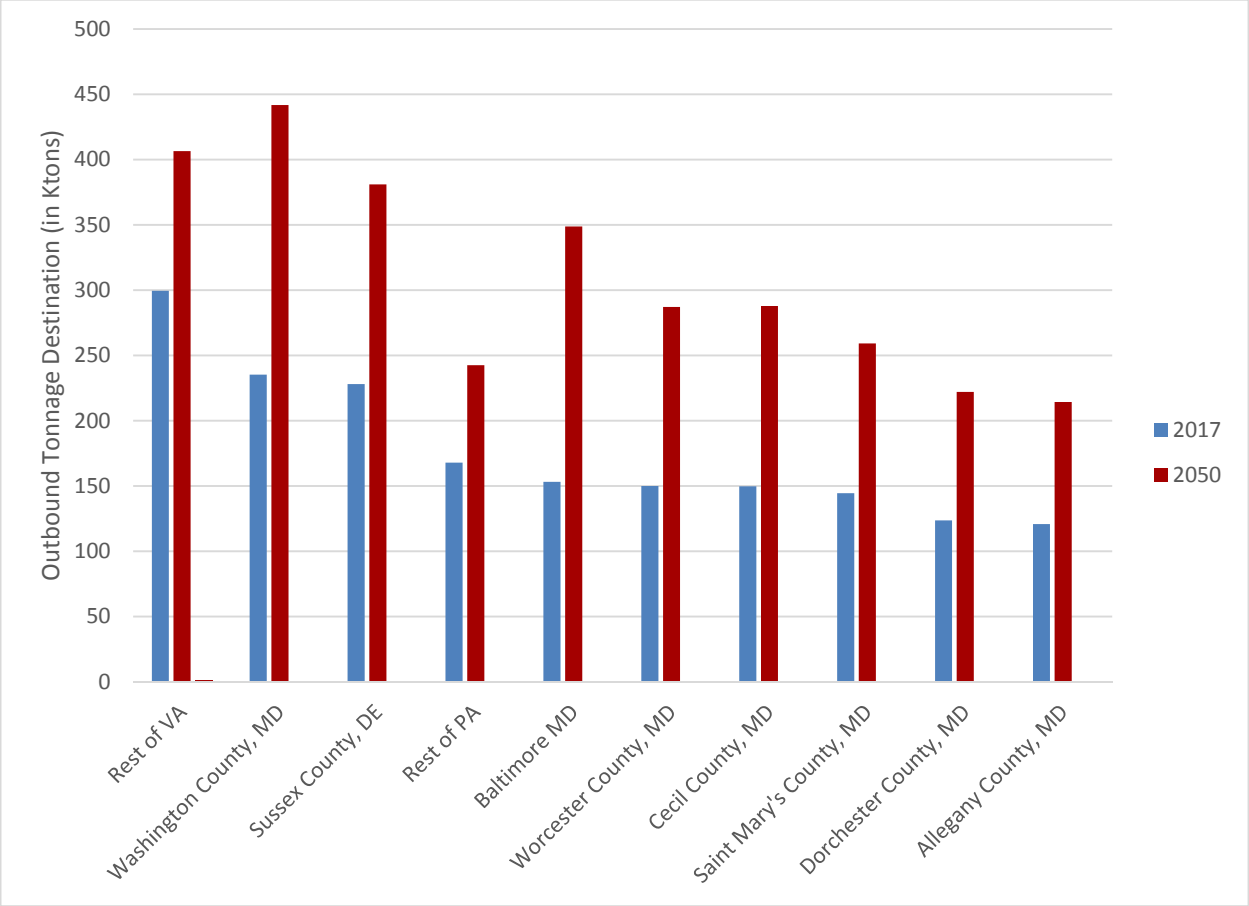
In 2017, the region's top three (3) outbound trading partners were the Rest of VA FAF area, Washington County, MD, and Sussex County, DE, which accounted for about 10 percent, 8 percent, and 8 percent of outbound tonnage, respectively. Wicomico's top ten trading partners carried about 55 percent of total inbound tonnage in 2017. In 2050, these top ten trading partners by outbound tonnage are projected to account for 57 percent of total outbound flows.

Figure 6.9: Top Trading Partners by Inbound Tonnage: Wicomico County, 2017 and 2050



Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

Figure 6.10: Top Trading Partners by Outbound Tonnage: Wicomico County, 2017 and 2050

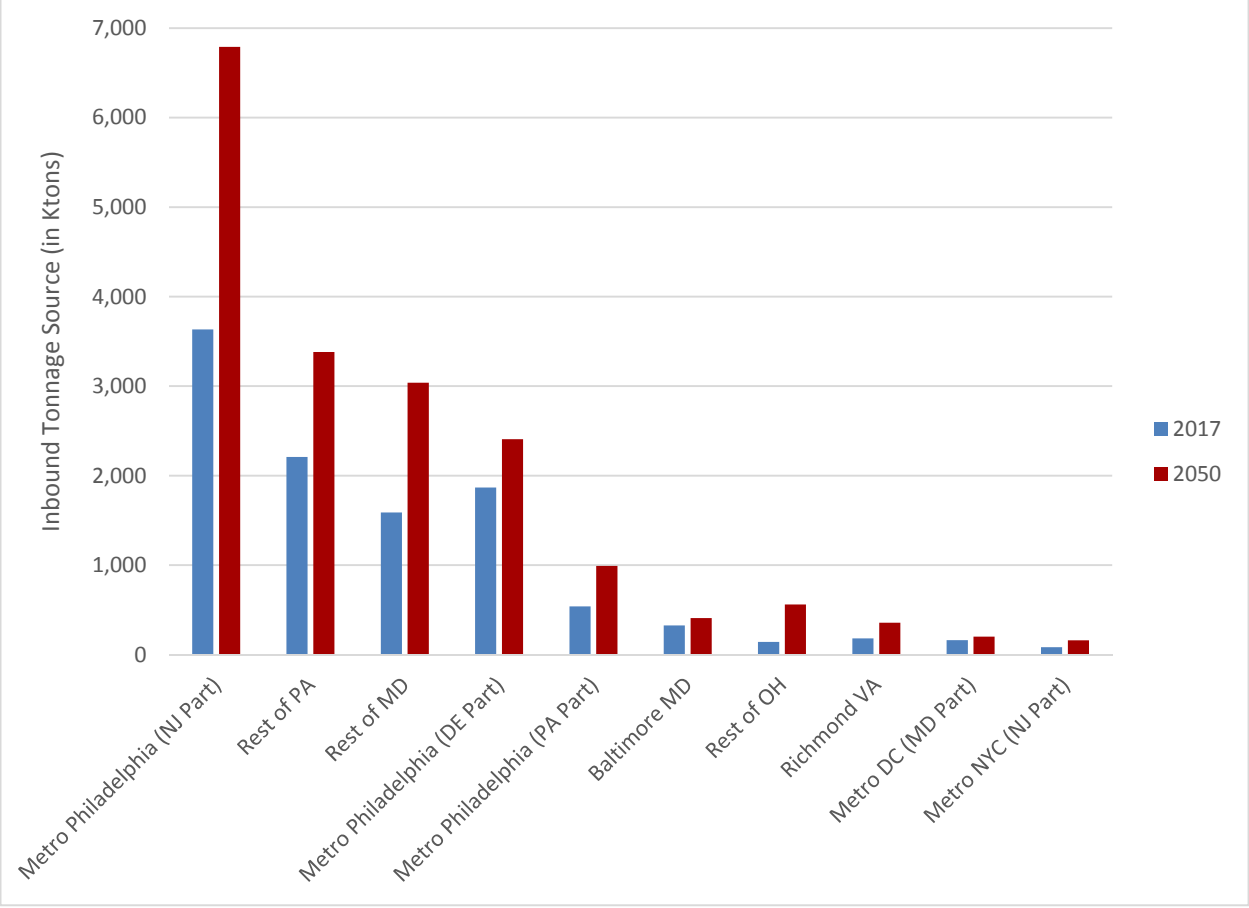


Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

Figures 6.11 and 6.12 illustrate Sussex County's top trading partners by inbound and outbound tonnage for 2017 and 2045. In 2017, the region's top three (3) inbound trading partners were the New Jersey part of the Philadelphia metro area, Rest of Pennsylvania FAF area, and the Delaware portion of the Philadelphia Metro (i.e., Kent and New Castle counties), which accounted for about 32 percent, 19 percent, and 16 percent, respectively. The Rest of Maryland FAF area, which includes Wicomico County, ranked fourth and accounted for about 14 percent of inbound tonnage. Together, Sussex County's top ten inbound trading partners carried about 94 percent of total inbound tonnage in 2017. By 2050, the Rest of Maryland is projected to enter the top three (3) inbound partners, and Sussex County's top ten partners are projected to account for roughly 93 percent of inbound flows.

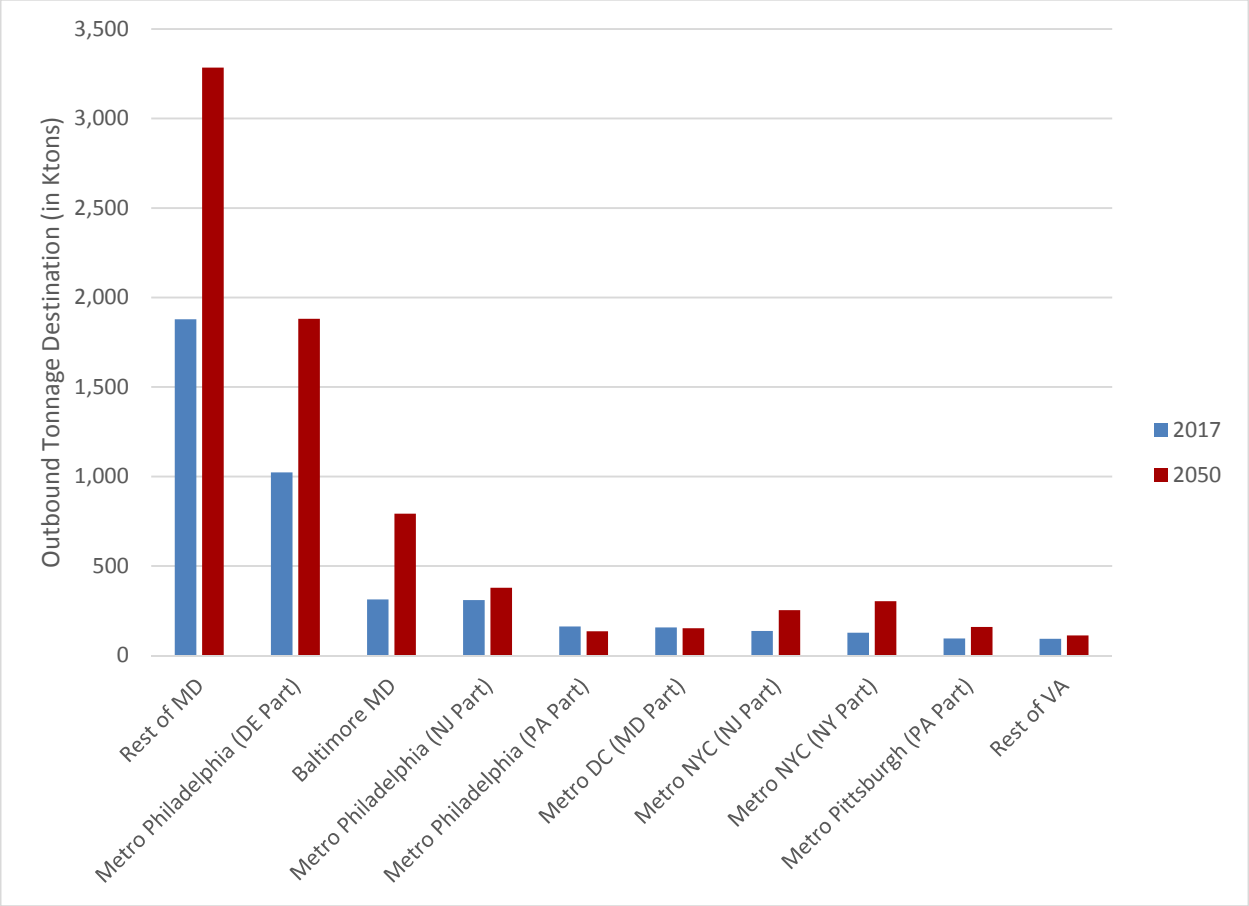
In 2017, Sussex County's top three (3) outbound trading partners were the Rest of Maryland FAF area, the Delaware portion of the Philadelphia Metro (i.e., Kent and New Castle counties), and the Baltimore Maryland FAF area, which accounted for about 38 percent, 21 percent, and 6 percent of outbound tonnage, respectively. Together, the County's top ten trading partners carried about 85 percent of total outbound tonnage in 2017. By 2050, the top ten trading partners are expected to remain largely the same, with projections calling for these partners accounting for 86 percent of outbound tonnage.

Figure 6.11: Top Trading Partners by Inbound Tonnage: Sussex County, 2017 and 2050



Source: Freight Analysis Framework 4, v. 4.5 and S/WMPO, 2019.

Figure 6.12: Top Trading Partners by Outbound Tonnage: Sussex County, 2017 and 2050



Source: Freight Analysis Framework 4, v. 4.5 and S/WMPO, 2019.

6.8 What are the Top Commodities?

There are three (3) types of commodity flows captured in an analysis of the freight system:

- **Inbound movements** are defined as movements from any other U.S. Census Region, adjoining state, or other county to Wicomico County or Sussex County;
- **Outbound movements** are defined as movements from Wicomico County or Sussex County to any other U.S. Census Region, adjoining state, or other county; and
- **Internal movements** are defined as movements within Wicomico County or Sussex County. This tonnage is counted only once, rather than counting it at both its origin county (as an outbound move) and its destination county (as an inbound move).

Figures 6.13 and 6.14 illustrate the 2017 and 2050 commodities moved in, around, and out of Wicomico County, sorted by inbound tonnage. In 2017, the top five (5) commodities by tonnage were Other foodstuffs accounting for 1,222.4 KTons; Animal feed accounting for 1,023.5 KTons; Gravel accounting for 978.1 KTons; Waste scrap accounting for 769.4 KTons; and Cereal grains accounting for 519.2 KTons.

In 2050, the top five (5) commodities by tonnage include: Other foodstuffs representing 2,366.1 KTons; Animal feed representing 2,366.1 KTons; Gravel representing 2,085.9 KTons; Wood products representing 1,275.1 KTons; and Nonmetallic mineral products representing 1,226.4 KTons. Between 2017 and 2050, the total inbound KTons represent an increase of 94 percent or 4,007.1 KTons; total internal tons represent an increase of 89.6 percent or 182.5 KTons; total outbound tons represent an increase of 68.4 percent or 2,048.5 KTons; and total tons represent an increase of 83.3 percent or 6,238.1 KTons.

Figure 6.13: Top Commodities Moved by All Modes in Wicomico County: Inbound, Internal, and Outbound Tonnage, 2017

Commodity Description	Inbound (KTons)	Internal (KTons)	Outbound (KTons)	Total (KTons)
Gravel	898.5	5.5	74.2	978.1
Animal feed	724.1	34.3	265.0	1,023.5
Other foodstuffs	446.9	63.5	711.9	1,222.4
Natural sands	279.5	1.8	28.3	309.6
Waste scrap	234.9	38.7	495.8	769.4
Cereal grains	229.3	10.1	279.8	519.2
Nonmetal min prods	196.5	12.7	146.9	356.1
Wood prods	178.2	6.4	173.5	358.0
Other ag prods	153.3	8.4	178.5	340.2
Mixed freight	114.0	1.8	132.6	248.5
TOTALS	**3,455.2**	**183.2**	**2,486.6**	**6,125.0**

Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

Figure 6.14: Top Commodities Moved by All Modes in Wicomico County: Inbound, Internal, and Outbound Tonnage, 2050

Commodity Description	Inbound (KTons)	Internal (KTons)	Outbound (KTons)	Total (KTons)
Gravel	1,736.9	11.3	170.9	1,919.1
Animal feed	1,699.4	82.4	584.3	2,366.1
Other foodstuffs	896.1	115.8	1,238.6	2,250.5
Natural sands	784.8	40.6	354.2	1,179.7
Waste scrap	496.4	-3.7	-36.7	455.9
Cereal grains	389.5	66.7	863.6	1,319.8
Nonmetal min prods	290.9	7.3	175.9	474.1
Wood prods	262.5	16.6	418.9	698.0
Other ag prods	181.2	1.6	194.1	376.8
Mixed freight	160.7	10.8	228.5	400.0
TOTALS	**6,898.2**	**349.5**	**4,192.3**	**11,439.9**

Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

Figures 6.15 and **6.16** illustrate the 2017 and 2050 commodities moved in, around, and out of Sussex County, which are sorted by total inbound tonnage. In 2017, the top five (5) commodities by tonnage were Other foodstuffs 4,238.9 KTons, Animal Feed 3,346.7 KTons, Cereal grains 2,448.1 KTons, Other coal and petroleum products 1,620.4 KTons, and Gravel 1,613.5 KTons. By 2050, the top five (5) commodities by tonnage are projected to be Other Foodstuffs 8,028.3 KTons, Animal Feed 7,669.4 KTons, Nonmetal mineral products 3,457.5 KTons, Cereal Grains 2,713.7 KTons, and Gravel 2,206.7 KTons.

Figure 6.15: Top Commodities Moved by All Modes in Sussex County: Inbound, Internal, and Outbound Tonnage, 2017

Commodity Description	Inbound (KTons)	Internal (KTons)	Outbound (KTons)	Total (KTons)
Other foodstuffs	4,118.4	17.0	103.4	4,238.9
Other coal and petroleum	1,463.5	58.7	98.3	1,620.4
Cereal grains	1,245.6	958.5	244.0	2,448.1
Gravel	687.6	915.2	10.8	1,613.5
Other ag prods	659.8	26.2	320.0	1,006.0
Live animals/fish	562.9	167.3	88.2	818.3
Animal feed	441.5	1,302.2	1,603.1	3,346.7
Nonmetal min prods	393.0	526.7	158.3	1,078.0
Wood prods	269.1	132.1	27.0	428.3
Mixed freight	232.8	12.1	16.6	261.5
TOTALS	**10,073.9**	**4,116.0**	**2,669.5**	**16,859.5**

Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

Figure 6.16: Top Commodities Moved by All Modes in Sussex County: Inbound, Internal, and Outbound Tonnage, 2050

Commodity Description	Inbound (KTons)	Internal (KTons)	Outbound (KTons)	Total (KTons)
Other foodstuffs	7,893.3	22.5	112.5	8,028.3
Gravel	2,370.4	-161.8	-1.9	2,206.7
Animal feed	1,956.0	3,435.3	2,278.0	7,669.4
Cereal grains	1,593.9	857.0	262.8	2,713.7
Nonmetal min prods	1,221.6	1,616.9	619.0	3,457.5
Other coal and petroleum	957.8	132.4	149.6	1,239.8
Live animals/fish	562.6	78.6	67.2	708.5
Mixed freight	385.3	31.7	43.4	460.3
Nonmetallic minerals	298.7	42.7	8.7	350.1
Other ag prods	202.8	12.5	315.5	530.7
TOTALS	**17,442.4**	**6,067.8**	**3854.8**	**27,365.0**

Source: Freight Analysis Framework 4, v. 4.5;
University of Delaware, Institute for Public Administration Estimates and S/WMPO, 2019.

6.9 What are Some Recommendations?

Freight transportation by land, sea, and air is integral to the S/WMPO region's economic vitality, and the MPO collaborates with transportation agencies in Delaware and Maryland to plan for and implement freight-related strategies. The S/WMPO participates in the Delmarva Freight Working Group with representatives of the DelDOT, the Wilmington Area Planning Council ("WILMAPCO"), MDOT and SHA, and the University of Delaware. As part of this participation, the S/WMPO collaborates to implement the following goals and strategies as outlined in the 2015 *Delmarva Freight Plan* and the 2017 *Maryland Strategic Goods Movement Plan*.

Delmarva Freight Plan Goals and Strategies

Goal: Economic Vitality

- Support efforts to preserve existing multimodal freight-transportation infrastructure to ensure mode choice and competition between modes.
- Support efforts to preserve land use compatibility adjacent to freight infrastructure throughout the Delmarva Peninsula ("Peninsula").
- Support strategically-located or planned improvements that recognize the existing and projected population concentrations, employment and development, and related secondary traffic/population-based freight patterns.
- Support efforts that address changes in economic activities (local, regional, national, or global) or growth in targeted industries.
- Support efforts to enhance access to and from major regional ports and international shipping opportunities in multiple surrounding states.

Goal: Freight Connectivity, Mobility & Accessibility

- Enhance freight mobility through broader transportation improvements that recognize the unique seasonal or tourist-based congestion aspects of travel to, from, and within the Peninsula.
- Enhance freight network connectivity with an emphasis on the unique needs and constraints related to serving the Delmarva Peninsula's limited geographical points of access.
- Enhance opportunities for accessing and utilizing the freight transportation network on the peninsula through strategic multimodal infrastructure improvements.

Goal: Safety & Security

- Support improvements that recognize the criticality and regional/national freight significance of I-95 and the Northeast Corridor.
- Support improvements that enhance system redundancy with respect to I-95 and the Northeast Corridor and with respect to the geographical point of access limitations of the Peninsula.
- Support improvements that recognize the presence and unique needs of the region's governmental, military, or international shipping communities.

Goal: System Management, Operations & Maintenance

- Enhance policies and opportunities related to truck parking and rest areas, weight limits, taxes, tolls, or other motor freight issues.
- Support efforts to address physical improvements on secondary roads and bridges critical to motor freight access throughout the Peninsula.
- Support efforts to maintain or enhance dredging operations and the identification and preservation of adequate disposal sites for excess dredge materials.

Goal: Sustainability & Environmental Stewardship

- Support improvements that recognize the unique relationships between consumer demand and commodity flows on the peninsula with respect to seasonal or tourist-based variability and quality of life.
- Support efforts to improve the flexibility and resiliency of the freight transportation system to

meet changing global energy demands or sources.

Maryland Freight Plan Goals and Strategies

- Maintain and improve Maryland's economic competitiveness.
- Maintain and improve the performance of Maryland's multimodal freight system.
- Improve the safety and security of goods movers, the public at large, transportation assets and cargo.
- Maintain and enhance the service experience for users of Maryland's multimodal freight system.
- Support environmental stewardship.
- Support the vitality of Maryland's communities.

Recommendations

Above and beyond the need for continued collaboration to implement the Delaware and Maryland freight plans, the following recommendations are advanced to focus the S/WMPO's regional and multimodal freight implementation efforts:

Rail and Waterborne: The S/WMPO should continue to evaluate strategies to increase the share of tonnage carried by water and rail modes to counter the increased use of trucks to transport freight. Support for intermodal freight movement is one way the S/WMPO can promote a more balanced freight transportation system. Intermodal connections and availability of multi-modal freight transportation options in the S/WMPO region are essential to providing a comprehensive transportation system, especially to minimize some of the negative impacts of truck freight transportation. For example, moving goods on a rail car or barge as opposed to a truck translates into less congestion on the roadway network and less air pollution. Rail recommendations include:

- Develop economic strategies to retain and expand existing industries and attract new businesses that will use the existing rail system.
- Explore the potential for establishing a new spur to serve industrial zoned areas.
- Analyze the logistics and feasibility of transporting dredge materials to management sites via rail;
- Identify the potential demand and feasibility to increase the current channel depth in the Wicomico River from 14' to 20'; and
- Preserve an adequate supply of land suitable for industrial development within close proximity to the rail line.

Chapter 7
Connect with… Safety and Security

Chapter 7: Safety and Security

This Chapter examines regional safety trends and statistics, plans and programs in place to improve safety on the transportation system, and how stakeholder collaboration across the region serves to assess security threats and implement mitigation measures.

7.1 How Safe are the Region's Roads?

The number and type of motor vehicle crashes is an important safety indicator of a region's roadways. Enhancing traffic safety is critical to the health and well-being of the citizens of S/WMPO region and those who travel and conduct business on our streets and highways. Traffic safety is a vital component to any successful long range transportation plan, and a thorough examination of crash history and traffic patterns can identify key locations where an improvement in traffic safety will benefit both motorists and the community as a whole.

The number of fatalities caused by motor vehicle crashes is an important measurement of safety. The National Highway Traffic Safety Administration ("NHTSA") provides nationwide reporting on traffic safety statistics, including fatalities and alcohol-impaired fatalities. At a regional level, the most recent data covers the 2013 - 2017 timeframe. **Figure 7.1** details the fatalities for Wicomico and Sussex counties. Both counties show an overall downward trend in fatalities over the reporting period.

Figure 7.1: Fatalities and Alcohol Impaired Fatalities Suffered in Motor Vehicle Crashes (2013-2017)

County	Fatalities					Fatalities per 100,000 Population				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
All Fatalities										
Wicomico County	17	9	17	9	10	16.86	8.88	16.7	8.81	9.77
Sussex County	43	45	31	39	34	22.40	23.11	15.66	19.46	16.72
Alcohol Impaired Fatalities										
Wicomico County	7	3	5	4	2	6.94	2.93	4.91	3.92	1.95
Sussex County	21	12	12	11	16	10.93	6.25	6.25	5.73	8.33

Source: NHTSA

Total crashes by type from 2015-2017 within the Delaware portion of the S/WMPO Urbanized Area are shown in **Figure 7.2**. Factors contributing to a location's number of crashes include: intersection design; access considerations; and traffic congestion. A direct relationship exists between traffic congestion and crash frequency, which justifies the ongoing efforts to provide adequate funding for transportation planning and capital programming of enhancements designed to minimize congestion and improve safety.

Figure 7.2: S/WMPO - Delaware Urbanized Area Crash Data – Motorized Vehicles (2015-2017)

Crash Type	2015	2016	2017
Fatality Crash	0	0	0
Personal Injury Crash	44	66	63
Property Damage Only	231	266	296
Non-Reportable	448	423	440
Total	**723**	**755**	**799**

Source: DelDOT

Total crashes by type from 2016-2018 for Wicomico County are shown in **Figure 7.3**. Crash rates have fluctuated during the reporting period with a significant increase in fatal crashes in 2018.

Figure 7.3: Wicomico County Crash Data – Motorized Vehicles (2016-2018)			
Crash Type	**2016**	**2017**	**2018**
Fatal Crash	9	10	7
Personal Injury Crash	789	839	783
Property Damage Only	1,552	1,429	1,471
Total	**2,350**	**2,278**	**2,261**

Source: MDOT SHA

Safety Projects: MDOT SHA

MDOT SHA District 1 is responsible for overseeing all areas of State road operations, including traffic, construction, maintenance, engineering systems, right-of-way, utilities, and safety improvements for the Maryland portion of the S/WMPO region. MDOT SHA reviews safety data, identifying high-crash locations on state roads (road sections, intersections, ramps, etc.) and making recommendations for the distribution of safety funds for the region.

Safety-related road projects identified in Maryland's FY2019 - FY2024 *Consolidated Transportation Program* ("CTP"), which is the six-year capital budget for transportation projects, lists the following ongoing and completed safety improvement projects for the S/WMPO region:

- U.S. Route 13 Business (north of South Salisbury Boulevard to north of Calvert Street): Phase VI drainage improvements;
- U.S. Route 50 (Ocean Gateway at White Lowe Road): geometric improvements and two-legged signalization; and
- U.S. Route 50 (Ocean Gateway and Sixty Foot Road): geometric improvements and signalization

Safety Projects: DelDOT

Many roadway safety improvements in Delaware are implemented via the State's Highway Safety Improvement Program ("HSIP"), including the SHSP, or through intersection or corridor specific projects funded through the Capital Transportation Program ("CTP"). Currently, DelDOT has the following ongoing project addressing safety in the S/WMPO area:

- Discount Land Road Improvements Project: The project will consist of roadway widening, adding bicycle lanes, and the construction of a sidewalk or multi-use path adjacent to the roadway. Project improvements extend from Seaford Road to U.S. Route 13.

7.2 How Can Safety be Improved?

Improving safety for all users of the transportation system is a priority for the S/WMPO and its member jurisdictions. The plans, policies, and programs developed at a statewide and local level in both Maryland and Delaware play an important role in coordinating efforts to reduce and eliminate the number of deaths and serious injuries on public roads.

In Maryland, the *Strategic Highway Safety Plan* ("SHSP") serves as MDOT's "umbrella" plan identifying the key safety needs and priorities, and establishing a program of strategies to reduce or eliminate identified safety issues. The SHSP is coordinated with the individual plans of its modal administrations including MDOT SHA, MDOT MTA, MDTA, and MVA. The 2016 – 2020 Maryland's SHSP consists of the following six (6) major emphasis areas targeting various users of the roadway system:

"Toward Zero Deaths"
Both Maryland and Delaware have adopted the "Toward Zero Deaths" strategy developed by the American Association of State Highway Transportation Officials ("AASHTO").

- Distracted Driving;
- Impaired Driving;
- Aggressive Driving;
- Occupant Protection;
- Highway Infrastructure; and
- Pedestrian Crashes.

For each of the aforementioned emphasis areas, the SHSP provides program goals, safety performance measures, and an action plan to achieve the stated goals. In April of 2019, Governor Hogan approved House Bill 889, which further demonstrates Maryland's commitment to safety. Vision Zero is an internationally recognized programmatic approach to achieve zero traffic-related fatalities on roadways. MDOT will build on work already established by their SHSP and "Toward Zero Deaths" strategy, as well as incorporating other best practices, to achieve this goal.

The Delaware SHSP similarly serves as the statewide blueprint for achieving its safety goal of working towards zero deaths on the roadway system. The Delaware SHSP has identified eight (8) priority emphasis areas along with secondary emphasis areas. Each of the following primary emphasis areas includes strategies, implementation methods, performance measures, and evaluation tools to gauge progress toward the stated goals:

- Intersections;
- Roadway Departure;
- Impaired Driving;
- Unrestrained Motorist;
- Motorcycles;
- Speeding;
- Pedestrians; and
- Traffic Records.

7.3 What are Some Threats to the Transportation System?

The S/WMPO region is susceptible to a wide range of threats and hazards, including both human-caused and naturally-occurring disasters, catastrophic acts of violence and terrorism, and the isolated or systematic failure of critical infrastructure systems. The ability to address the risks associated with these potential events is directly tied to the preparedness of all of the region's communities, levels of government, private and nonprofit organizations, and individual residents and visitors. Many of the hazards potentially affecting the region can have significant impacts to the transportation system.

As a part of the development of the Wicomico County *Multi-Hazard Mitigation Plan* (2016), a planning committee was formed to identify and rank the potential hazards impacting the County. Twenty natural and eight (8) human impacted hazards were identified. Hurricane/Tropical Storm and heavy rain were ranked as a medium-high risks, while land subsidence, earthquake, mass movement, and radiological emergencies were ranked as either medium-low or low risk. The other remaining hazards were ranked as medium. The Sussex County *Hazard Mitigation Plan* (2010) identified 12 natural and three (3) human-made hazards with the greatest potential to adversely affect Sussex County. Flooding, drought, and winter storms were ranked as the highest risks to Sussex County. Climate change and sea-level rise are increasing concerns on the Delmarva Peninsula. **Figure 7.4** depicts the extreme flooding on Fenwick Island, Delaware (north of Ocean City, Maryland and not included in the S/WMPO region) as a result of Hurricane Sandy in October 2012.

Figure 7.4: Flooding in Fenwick Island, Delaware due to Hurricane Sandy, October 2012

Source: AP Photo/Randall Chase

7.4 How Does *Connect 2050* Address Security?

The first step in any emergency response or hazard mitigation plan is to assess the types and likelihood of threats that may occur. Both at the state and county level, plans and processes are in place to identify threats and develop responses to them. The four (4) phases of emergency management, according to the Federal Emergency Management Agency ("FEMA"), are shown in **Figure 7.5**.

Figure 7.5: The Four Phases of Emergency Management

Source: FEMA

To assist with being prepared to mitigate hazards, Wicomico County has mutual aid agreements with surrounding counties and longstanding relationships with the Salisbury Fire Department, as well as the volunteer fire and rescue units throughout the County. Wicomico County also has mutual agreements with the American Red Cross and other groups that may be called upon under special circumstances, such as the National Guard. Wicomico County has agreements to coordinate mitigation activities with private utility companies, such as Delmarva Power and Verizon, and with private transportation companies, such as Norfolk Southern, for rail transportation for hazmat events.

In Sussex County, the Emergency Operations Center ("EOC") coordinates responses to natural disasters, such as winter storms, floods, and hurricanes, and technical disasters, such as chemical spills and hazardous materials incidents. The EOC also provides 911 service for the residents of Sussex County and dispatches fire companies, ambulance squads, County paramedics, State Police's Medevac helicopter, and other resource equipment to support the fire service within Sussex County. Sussex County also works in conjunction with State of Delaware Emergency Management Agency and neighboring counties and municipalities.

The next step in the hazard mitigation process is to assess the local and regional ability to respond to identified hazards and develop mitigation strategies to eliminate or reduce the impact on a community. Wicomico County Emergency Services has access to a network of trained agency and volunteer personnel through the Maryland Emergency Management Assistance Compact, a statewide mutual aid agreement to mitigate and respond to a variety of hazards. This network includes State agencies such as the Maryland State Police, Department of Natural Resources, Department of the Environment, Department of Health and Mental Hygiene, State Highway Administration, and the Maryland Emergency Management Agency. Wicomico County agencies include: County Roads Department; City-County Planning Office; General Services; Board of Education, and the Sherriff's Office.

Wicomico County's *Multi-Hazard Mitigation Plan* (2016) developed six (6) mitigation actions forming the core of the County's Plan. Specific projects related to the action areas ranged from construction projects (e.g., retrofitting existing structures to resist floods and high winds) to non-construction related projects

(e.g., acquisition and relocation of vulnerable structures and the implementation of educational awareness programs).

A similar process was used in the development of Sussex County's *Hazard Mitigation Plan* with six (6) mitigation techniques identified with a range of actions recommended. Some of the actions include: improving hazard mapping and floodplain regulations; repairing levees, dikes, and dams; and better educating citizens and businesses about potential hazards.

The six (6) actions developed in the Wicomico County Plan and the six (6) mitigation strategies developed in the Sussex County Plan reflect a focus on the same set of priorities:

- Prevention;
- Property Protection;
- Public Education and Awareness;
- Natural Resource Protection;
- Emergency Services; and
- Structural Projects.

The final phase of an emergency management plan is the recovery phase. Recovery includes both a short-term and a long-term process. Short term operations seek to restore vital services to the community and to provide for the basic needs of the public. Long-term recovery activities focus on restoring the community to its safe or improved status.

Sussex County's *Emergency Operations Plan* describes several actions to take place in the recovery phase across a range of County departments. All departments should participate in some or all of the following activities:

- Inspect infrastructure and equipment for damage and clean up debris
- Make necessary repairs to infrastructure and equipment to return to normal operations
- Initiate financial assistance or disaster relief process if applicable
- Participate in a post-emergency lessons learned activity
- Make any necessary adjustments to emergency mitigation or operation plans as necessary

An essential component to any successful planning effort is to continuously monitor and evaluate a plan's effectiveness and updates it on a five-year cycle, then submits for FEMA review. In Wicomico County, the Local Emergency Planning Committee is responsible for these actions. The Sussex County *Hazard Mitigation Plan* is reviewed, updated, and adopted by County officials. A Hazard Mitigation Plan can be revised more frequently if conditions, under which a plan was developed, materially change as a result of new or revised policy, major disaster, or availability of funding.

7.5 What are the Emergency Evacuation Plans for the Region?

The S/WMPO region has the need for emergency evacuation planning related to the transportation system for two (2) primary reasons. The region's proximity to the major metropolitan centers of Philadelphia, Wilmington, Baltimore, Washington, D.C., and Hampton Roads creates the possible scenario of having to evacuate a large number of people from these areas through the region's state and local roads. Furthermore, the S/WMPO region is susceptible to flooding and coastal storm damage from hurricanes or tropical storms. In Maryland and Delaware, evacuation strategies are incorporated into the comprehensive, transportation, and emergency operation planning for the respective states and counties.

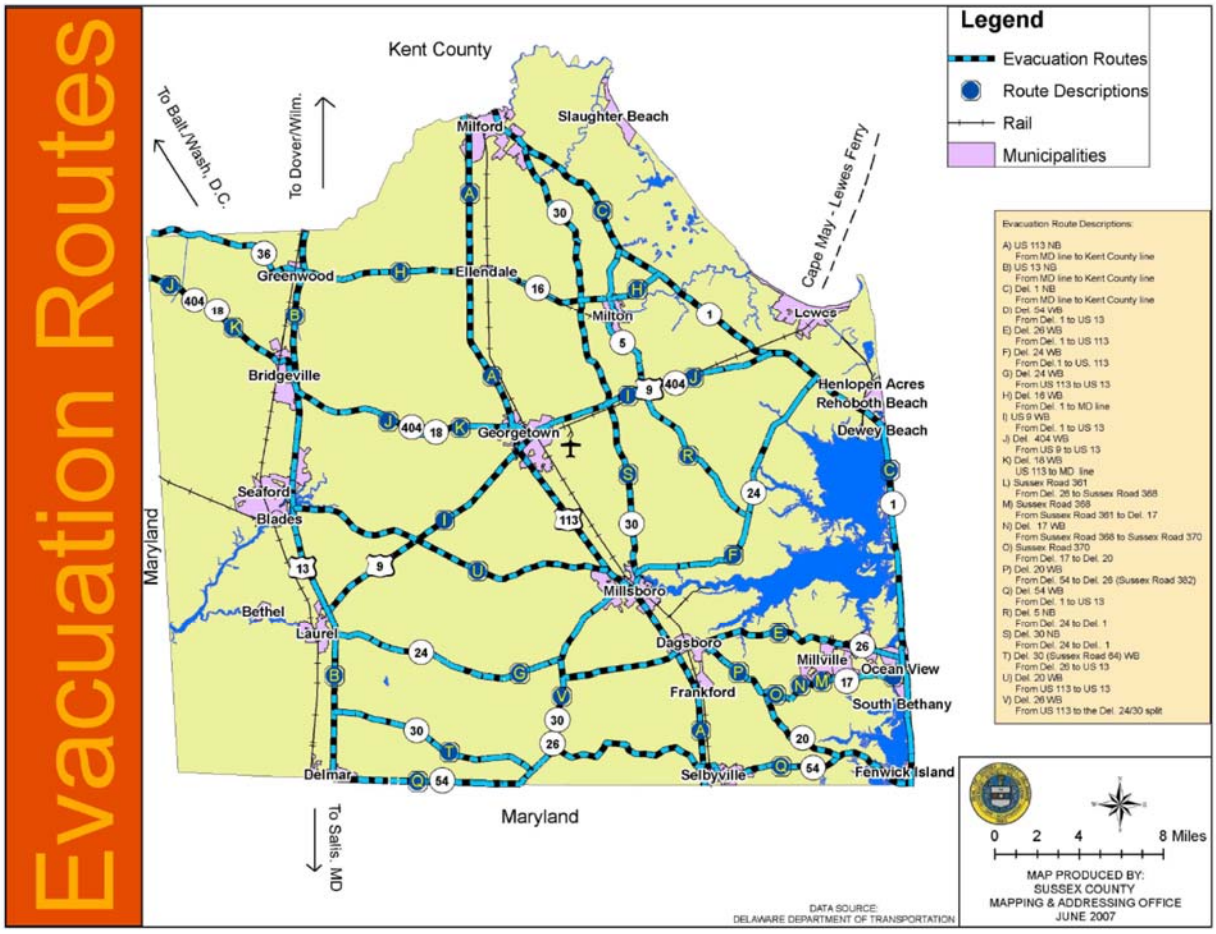
Delaware

Statewide evacuation routes are determined by Transportation Management Teams ("TMTs"), which are part of DelDOT's transportation management program known as Intelligent Transportation Management System ("ITMS"). TMTs bring together personnel and resources from police, fire, rescue, emergency management, transportation, communications, environmental protection, public works, and other agencies to improve safety and reduce delays during incidents, events, and emergencies impacting Delaware's transportation system. In Sussex County, coordination with officials in Maryland and Virginia frequently occurs to focus on routes and demand, as well as make real-time adjustments to coordinate the evacuation of the entire Delmarva Peninsula when necessary.

The composition of a TMT depends on the nature of the event or incident. Also, the TMTs develop detailed traffic control plans to be used in conjunction with evacuation plans. The Plans for each county are being integrated into a comprehensive statewide plan, which will be integrated with plans from neighboring states.

TMTs respond to planned events, such as sporting events, fairs, and shows, and to anticipated heavy volumes of traffic, such as summer weekend beach traffic. In addition, TMTs are ready to respond to unplanned incidents and events, such as hurricanes, floods, snowstorms, serious or hazardous materials accidents, natural gas leaks, major fires, a nuclear event, or terrorist attack.

Figure 7.6: Sussex County Evacuation Routes



Source: Sussex County/DelDOT

As shown in **Figure 7.6**, primary and secondary evacuation routes are identified based on Army Corps of Engineers tidal inundation maps of areas prone to flooding during severe storms. Secondary routes are

used to direct local residents to primary evacuation routes or are used to reroute traffic if a primary evacuation route becomes impassable.

Maryland

Through coordination with the Maryland's MDOT SHA and other State and local agencies on the Eastern Shore, a *Maryland Eastern Shore Hurricane Evacuation Plan* has been developed to guide the safe and efficient evacuation of coastal and inland areas. An earlier version of the Plan primarily focused on evacuating Ocean City, Maryland, traffic into Salisbury, but the current plan extends to cover the entire Eastern Shore and connections into Delaware and Virginia.

The Plan describes a regional hurricane traffic control strategy to maximize traffic flows out of Ocean City and other areas susceptible to storm surges, as well as developed specific traffic control and incident management responsibilities of agencies supporting an evacuation operation. The traffic management plan serves as a common basis for each jurisdiction to develop its own hurricane traffic evacuation plan.

The major evacuation routes on the Eastern Shore are U.S. Route 50, U.S. Route 113, U.S. Route 13, U.S. Route 301, MD 404, DE 404, DE 20, DE 24, and DE 54. There have been many estimates of the number of vehicles that might need to be evacuated from Ocean City. One estimate, based on a population of 200,000 people and an average vehicle-occupancy of 2.5-3.0 persons per vehicle, suggested that 67,000-80,000 vehicles might need to be evacuated from the beach resort city during the summer season.

The general concept of operation includes three (3) response stages for an approaching storm/hurricane, increased readiness, mobilization, and evacuation. **Figure 7.7** describes some of the activities associated with each stage.

Figure 7.7: MDOT SHA Preparedness Activities for Hurricane Evacuation Operations

Emergency Response Stage	Emergency Response Activities
Increased Readiness	• Contact personnel and activate readiness posture • Check Equipment
Mobilization	• Contact personnel o District 1, District 2, MSP • Evacuation Preparation • Fuel Vehicles • Check Equipment • Prepare Roster
Evacuation	• Place Supervisor at Ocean City Command Post • Assign vehicles to roving patrol • Set up Traffic Control Points

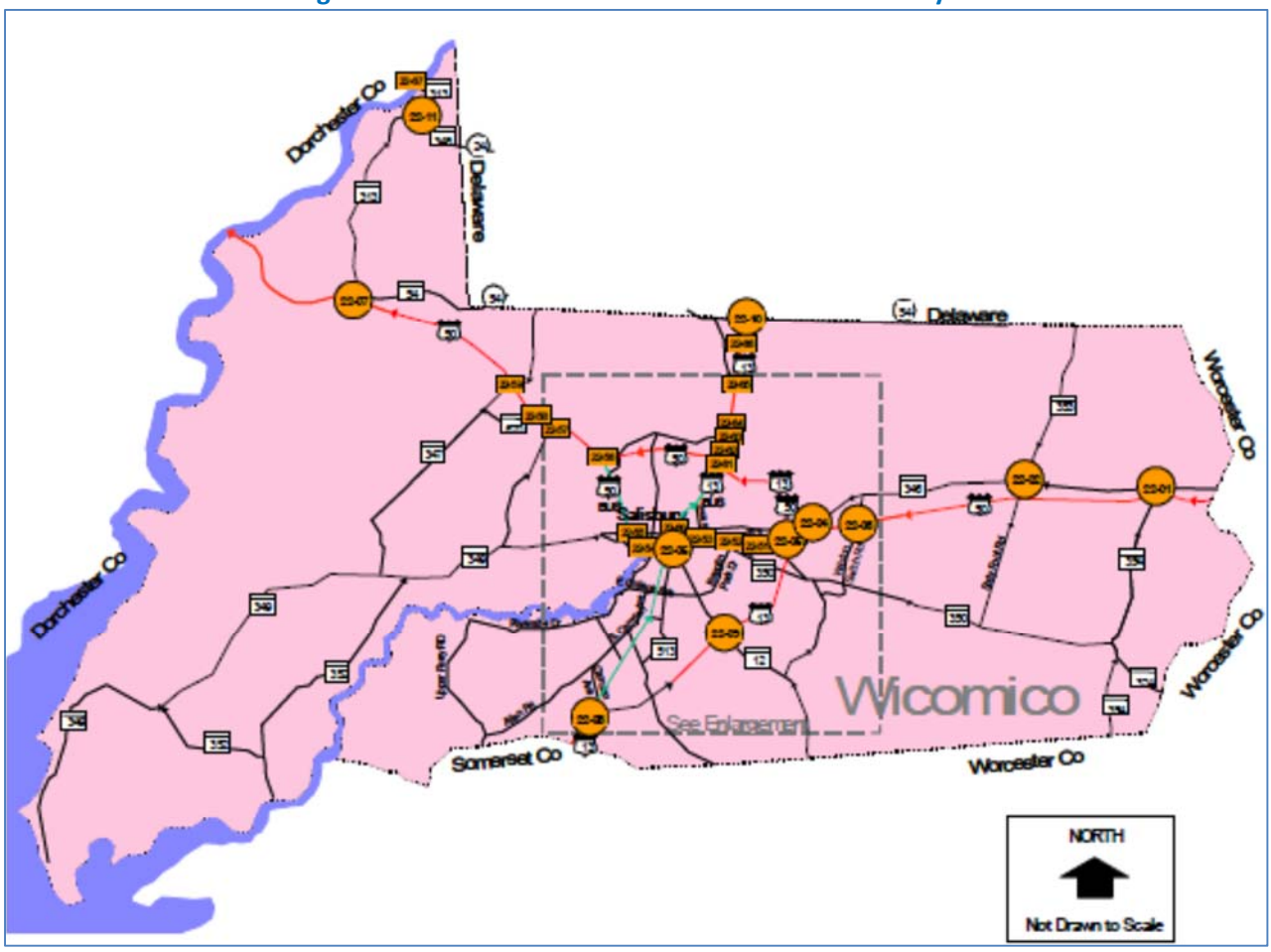
Source: Sussex County/DelDOT

The primary objective of any hurricane evacuation operation is to move people out of a barrier island or low-lying flood prone areas to a safe area, not necessarily to their ultimate destinations. The secondary objective of the hurricane evacuation operation is to move people off the Eastern Shore. To achieve this objective, traffic control points are used to manage the traffic flow along evacuation routes. The focus of hurricane evacuation operations is to manage traffic flow on the primary evacuation routes, which include U.S. Route 50, MD 528, MD 90, U.S. Route 113, U.S. Route 13, MD 404, and U.S. Route 301. **Figure 7.8** shows the traffic control points for Wicomico County and **Figure 7.9** shows the same information for Sussex County, as described in the *Maryland Eastern Shore Evacuation Plan*.

The evacuation operations as described in the *Maryland Eastern Shore Evacuation Plan* can be executed using a "playbook" that is accessible to all of the agencies tasked with executing the Plan. The "playbook" can be modified and adjusted as necessary in real-time conditions as circumstances warrant. Changes to evacuation routes, traffic control points, lane operations, and sequencing of events can be communicated immediately through radios, cell phones, computers, and other electronic devices to the personnel in the field.

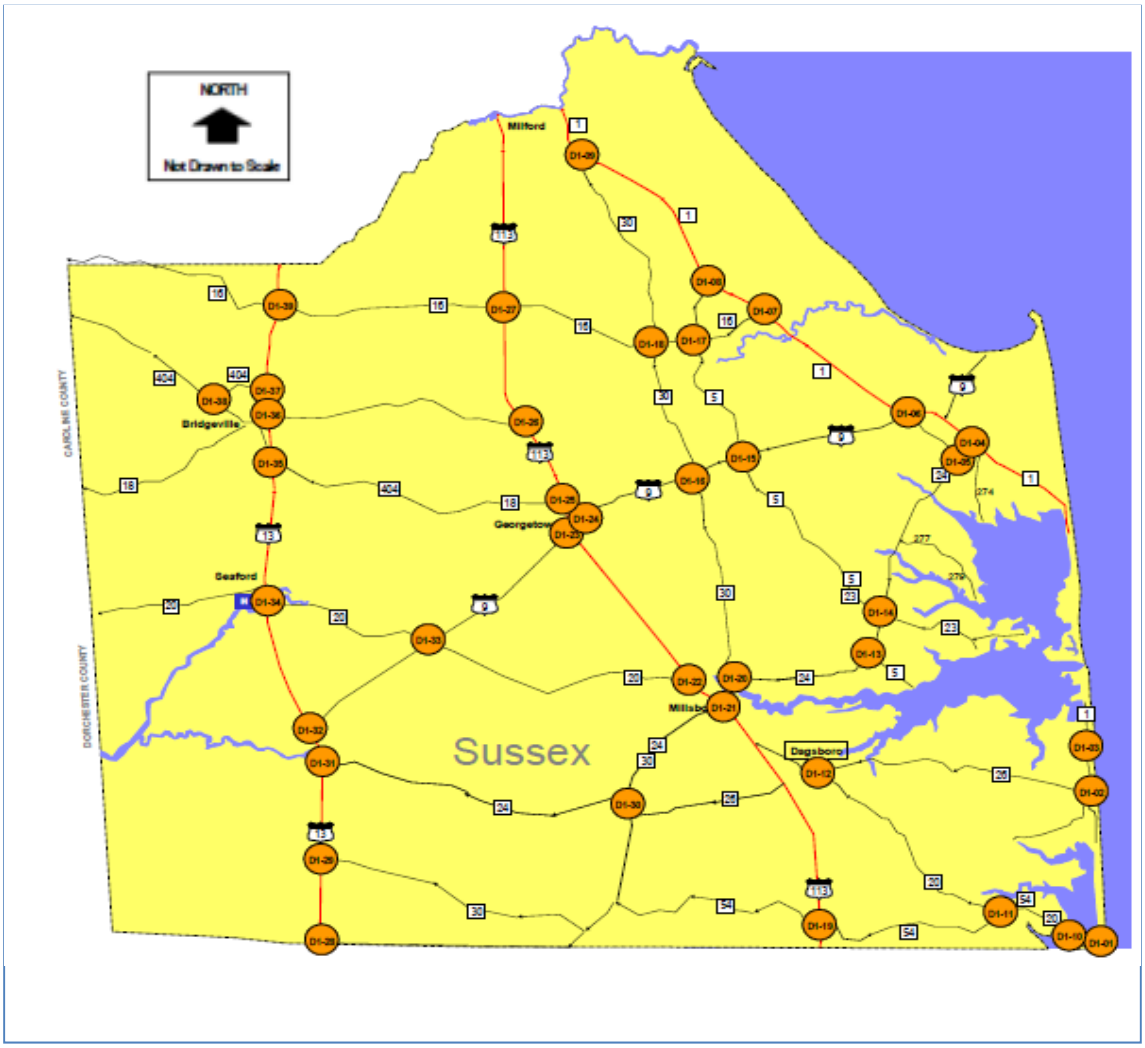
After a storm or evacuation event, agencies move into the recovery phase to assess damage, clean up debris, remove temporary traffic control devices, and return permanent traffic control devices to normal operations. The *Maryland Eastern Shore Evacuation Plan* has the ability to be adapted to other hazard evacuations as required.

Figure 7.8: Traffic Control Points for Wicomico County



Source: MDOT SHA Maryland Eastern Shore Evacuation Plan

Figure 7.9: Traffic Control Points for Sussex County



Source: MDOT SHA Maryland Eastern Shore Evacuation Plan

S/WMPO Role

The S/WMPO can embrace and support security planning by providing a forum for collaboration, which it already brings together local jurisdictions, MDOT and DelDOT Staff, transit providers, and the public to make decisions on regional transportation planning and programming. Most MPOs have Technical Advisory Committees or other specialty committees focusing on critical issues within a region. By inviting emergency personnel and other entities involved in evacuations to a MPO committee meeting, a dialogue can begin on the gaps and the various ways a MPO can assist in the planning efforts. Creating a listing of these organizations and their respective contact person, meeting regularly, and coordinating plans will ensure relationships are being built and maintained.

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Chapter 8
Connect with… The Long Range Plan Projects

Chapter 8: Long Range Plan Projects

As S/WMPO's Long Range Transportation Plan, ***Connect 2050*** is required by Federal transportation regulations to be financially constrained to the funding reasonably expected to be available over the applicable time period. ***Connect 2050*** contains recommendations for proposed projects with projected revenue.

8.1 How are Projects Identified?

Transportation operations improvements are intended to increase capacity and safety, and provide a financially viable alternative to enhancing existing facilities instead of constructing new capacity. The Federal transportation legislation MAP-21 and the FAST Act requires Metropolitan Planning Organizations to examine transportation operations activities through their LRTP processes.

The projects identified for funding in ***Connect 2050*** are contained in the following existing documents, including plans and capital programs used to identify future project needs:

- MDOT SHA Highway Needs Inventory – Wicomico County 2015 Revised;
- MDOT Consolidated Transportation Program ("CTP") (FY 2019 – FY 2024);
- Delaware DOT Capital Transportation Program ("CTP") (FY 2019 – FY 2024); and
- Shore Transit – Annual Transportation Program (FY 2020);

A complete list of the identified projects is included in **Appendix F**. There are two (2) categories of projects:

- **Capital expansion projects** increase the capacity of the transportation system through the construction of new facilities and the expansion of existing infrastructure; and
- **System preservation projects** maintain and improve existing facilities.

8.2 What is the Fiscally Constrained Plan?

The MDOT and DelDOT develop revenue projections of reasonably available funds used for transportation projects for each county in their respective states. Projects are identified by the States, member jurisdictions, and transit providers along with project costs. Based on Federal requirements, an MPO Long Range Transportation Plan must be **fiscally constrained**.

According to USDOT, this includes information on how a governmental entity reasonably expects to fund the projects included in a plan, including anticipated revenues from FHWA and FTA, state government, regional or local sources, private sector, and user charges. ***Connect 2050*** must demonstrate there is a balance between the expected revenue sources for transportation investments and the estimated costs of the projects and programs described in the Plan. In other words, the Plan must be fiscally (or financially) constrained. The complete MDOT Financial Forecast for Wicomico County, updated in December 2017, is available in **Appendix G**.

What does it mean to be fiscally constrained?
A demonstration of sufficient funds (federal, state, local, and private) to implement proposed transportation system improvements, as well as to operate and maintain the entire system, through the comparison of revenues and costs.

The focus of ***Connect 2050*** is on capital expansion and system preservation projects. The total fiscally constrained project listing equal to or less than the forecasted capital expansion funds and forecasted system preservation funds, as shown conceptually in **Figure 8.1**.

Figure 8.1: Transportation Expenditures

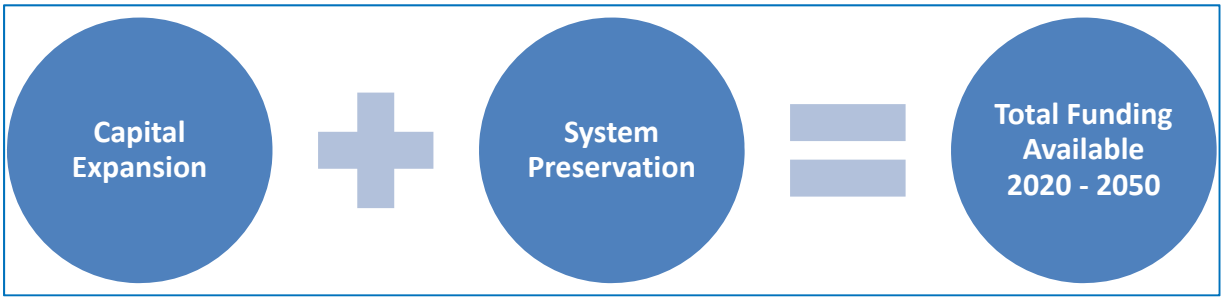

Figure 8.2 shows the funding available for capital expansion and system preservation projects in Wicomico County from 2020 through 2050, as well as the total anticipated cost of those projects. The projects are discussed in more detail in **Sections 8.3 and 8.4**.

Figure 8.2: Available Funds and Estimated Project Costs, Wicomico County

Capacity Expansion – Wicomico County	
Highway Agency	**Highways, Total Estimated Project Costs**
MDOT SHA	$0.0
Highways Subtotal	**$0.0**
Transit Agency	**Transit, Total Estimated Project Cost**
MDOT MTA / Shore Transit	**$0.0**
Transit Subtotal	**$0.0**
Total Estimated Project Costs MDOT SHA and MDOT MTA	**$0.0**
Total Funding Projected	**$0.0**

System Preservation – Wicomico County	
Highway Agency	**Highways, Total Estimated Project Costs**
MDOT SHA	$13,089.0
Highway Subtotal	**$13,089.0**
Transit Agency	**Transit, Total Estimated Project Cost**
MDOT MTA / Shore Transit	$3,712.2
Transit Subtotal	**$3,712.2**
Total Estimated Project Costs Highway and Transit	**$16,801.2**
Total Funding Projected	**$16,801.2**

Figure 8.3: Available Funds and Estimated Project Costs, Sussex County

Capacity Expansion – Sussex County	
Highway Agency	**Highways, Total Estimated Project Costs**
DelDOT	$0
Highways Subtotal	**$0**
Transit Agency	**Transit, Total Estimated Project Cost**
DART (within UA)	$0
Transit Subtotal	**$0**
Total Estimated Project Costs Highway and Transit	**$0**
Total Funding Projected	**$0**

System Preservation – Sussex County	
Highway Agency	**Highways, Total Estimated Project Costs**
DelDOT	$70,560,650.00
Highways Subtotal	$70,560,650.00
Transit Agency	**Transit, Total Estimated Project Cost**
DART	$44,849,000.00
Transit Subtotal	**$44,849,000.00**
Total Estimated Project Costs Highway and Transit	**$115,409,650.00**
Total Funding Projected	**$115,409,650.00**

8.3 Which Roadway Projects are in the Fiscally Constrained Plan?

Roadway projects – including projects benefitting the bicycle and pedestrian system and the roadway freight system – compose the majority of ***Connect 2050***, both in terms of number of projects and cost. All project costs are in **year of expenditure** dollars, reflected in the figures below.

What is "year of expenditure"?
Regardless of how financial assumptions and forecasts are developed, all forecasts in the financial plan must be shown in "year of expenditure" dollars based on reasonable inflation factors.

MDOT State Highway Administration Fiscally Constrained Projects

The states CTP's is a six-year capital budget for transportation projects which includes major and minor projects for MDOT and its modal administrations. The FY 2019 to FY 2024 CTP and the MPO's FY 2019 – FY 2022 TIP includes projects in various stages of completion, as shown in **Figure 8.4A**. These transportation improvements include the following types of projects: resurface/rehabilitation; bridge replacement/rehabilitation; safety/spot improvements; and enhancements. Based on estimated project cost in the projected year of expenditure, the State will need to allocate $1.1 billion to complete the projects contained in the HNI and $13.1 million to complete system preservation projects identified in the CTP and TIP.

Figure 8.4A: Fiscally Constrained MDOT SHA Roadway Projects (Thousands of Dollars)

Facility	Location	Project Description	Estimated Project Cost in Year of Expenditure
System Preservation			
Roadways	Wicomico	Resurface	$9,830.0
U.S. 13 Business	Bridge 2200400 East Branch of Wicomico River	PP, PE, and ROW	$582.0
U.S. 50 (Ocean Gateway)	White Lowe Road	Geometric improvements	$2,677.0
Source: MDOT SHA		**Total**	**$13,089.0**

Figure 8.4B: 2015 Highway Needs Inventory Roadway Projects (Thousands of Dollars)

Facility	Location	Project Description	Estimated Project Cost in Year of Expenditure
System Preservation			
U.S. 13 (South Fruitland Boulevard)	Somerset County line to U.S. 13 Business	Divided highway reconstruct including interchanges, 0.6 miles	$34,100.0
U.S. 13 (North Salisbury Boulevard/Ocean Highway)	Salisbury Bypass to the Delaware State line	Divided highway reconstruct, 4.4 miles	$316,900.0
U.S. 50 (Ocean Gateway)	MD 731A to White Lowe Road	Access control improvements, 9.7 miles	$214,500.0
MD 12 – Snow Hill Road	Worcester County line to south of U.S. Route 13 Bypass	Two-lane reconstruct, 4.3 miles	$84,800.0
MD 12 – Snow Hill Road	U.S. Route 13 Bypass to Johnson Road	Multi-lane urban reconstruct, 1.0 miles	$171,300.0
MD 349 – Nanticoke Road	N. Upper Ferry Road to U.S. Route 50	Multi-lane reconstruct, 4.9 miles	$188,900.0
MD 350 (Mt. Hermon Road)	Beaglin Park Drive to Walston Switch Road	2-lane reconstruct, 3.3 miles	$72,400.0
Source: MDOT SHA		**Total**	**$1,082,900.0**

DelDOT Fiscally Constrained Projects

The State's Capital Transportation Program ("CTP") is a six-year capital budget for transportation projects which includes major and minor projects for DelDOT. The FY 2020 to FY 2026 CTP includes projects in various stages of completion, as shown in **Figure 8.5** and **Appendix F**.

Figure 8.5: Fiscally Constrained DelDOT Roadway Projects (Thousands of Dollars)

Facility	Location	Project Description	Estimated Project Cost in Year of Expenditure
System Preservation			
Arterials	Sussex	Address safety and / or operation issues	$48,618.9
Discount Land Road	Fron Seaford Road to U.S. Route 13	Roadway widening, bicycle lanes, and construction of sidewalk or multi-use path	$3,050.0
BR 3-145, BR 3-231, BR 3-814, and BR 3-214	Sussex County	Scour countermeasures	$810.0
Central Avenue and Poplar Street	Bridge 3-152 on Central Avenue and BR-161 on Poplar Street over Broad Creek	Rehabilitation	$4,942.6
Delaware Avenue	Bridge 3-162 over Broad Creek	Replacement of existing superstructure	$674.0
U.S. Route 13	Bridge 3-254 over Nanticoke River	Rehabilitation	$6,100.0
Records Pond	Sussex County	Dam improvements	$6,165.2
		Total	**$70,360.65**

Source: Delaware DOT Capital Transportation Program (FY 2020-2026)

8.4 Which Transit Projects are in the Fiscally Constrained Plan?

Maryland Transit Administration Fiscally Constrained Projects for Shore Transit

The MDOT FY 2019 to FY 2024 CTP also includes transit funding under the MDOT MTA, which supports Shore Transit in Wicomico County. The vehicle replacements, preventative maintenance, and other project expenses total $3.7 million. See **Figure 8.6A** and **Appendix F.** In addition, Shore Transit's FY 2020 Annual Transportation Plan ("ATP") has requests for approximately $12.0 million from FY 2020 – FY 2025. See **Figure 8.6B**.

Figure 8.6A: MDOT FY 2019 – FY 2024 CTP (Thousands of Dollars)

Facility	Location	Start	Estimated Project Cost in Year of Expenditure
System Preservation			
Facility Construction Phase III	Shore Transit	FY 2019	$1,557.0
Preventive Maintenance (FY 2019 5339)	Shore Transit	FY 2019	$800.0
ADP Software – Vehicle Maintenance Records (FY 2014)	Shore Transit	Underway	$40.0
Mobility Management (FY 2019 5307)	Shore Transit	Underway	$143.1
Bus Wash Equipment (FY 2018 5307)	Shore Transit	Underway	$500.0
EAM Maintenance Software (FY 2015)	Shore Transit	Underway	$80.0
Trapaze Call Back Module (FY 2014)	Shore Transit	Underway	$30.0
Trapeze Certification Module (FY 2014)	Shore Transit	Underway	$16.0
1 Small Bus Replacement (FY 2019 5339), Cutaway 16/2 ($72,122 each)	Shore Transit	FY 2019	$72.1
2 35' Medium Duty Bus Replacements (FY 2019 5339), 31/2 ($119,000 each)	Shore Transit	FY 2019	$238.0
2 35' Medium Duty Bus Replacements (FY 2018 5307), 31/2 ($118,000 each)	Shore Transit	FY 2019	$236.0
Total			**$3,712.2**

Figure 8.6B: Shore Transit FY 2020 Annual Transportation Plan (Thousands of Dollars)

Facility	Location	Project Description	Estimated Project Cost in Year of Expenditure
System Preservation			
Preventive Maintenance	Shore Transit	FY 2020 – FY 2025	$5,000.0
Fixed Route Management System	Shore Transit	FY 2020	$326.4
Mobility Management	Shore Transit	FY 2020	$143.1
Security Cameras	Shore Transit	FY 2023	$350.0
10 Small Bus Replacements, Cutaway 16/2 ($72,122 each)	Shore Transit	FY 2020	$721.2
8 35’ Medium Duty Bus Replacements 31/2 ($170,450 each)	Shore Transit	FY 2020	$1,363.6
2 Other Vehicle Replacements, 5 ($25,000 each)	Shore Transit	FY 2020	$50.0
2 Other Vehicle Replacements, 5 ($25,000 each)	Shore Transit	FY 2020	$50.0
6 Small Cutaway Bus Replacements, 16/2 ($72,122 each)	Shore Transit	FY 2021	$432.7
8 Heavy Duty Bus Replacements, 35’ 28/2 ($170,450 each)	Shore Transit	FY 2021	$1,363.6
2 Light Duty Truck Replacements, 2 ($45,000 each)	Shore Transit	FY 2021	$90.0
2 Other Vehicle Replacements, 6 ($30,000 each)	Shore Transit	FY 2021	$60.0
3 Minivan Replacements, 5 ($45,000 each)	Shore Transit	FY 2021	$135.0
6 Small Cutaway Bus Replacements, 16/2 ($72,122 each)	Shore Transit	FY 2022	$432.7
2 Heavy Duty Bus Replacements, 35’ 28/2 ($170,450 each)	Shore Transit	FY 2023	$340.9
3 Small Cutaway Bus Replacements, 16/2 ($72,122 each)	Shore Transit	FY 2023	$216.4
3 Heavy Duty Bus Replacements, 35’ 28/2 ($170,450 each)	Shore Transit	FY 2024	$511.4

Facility	Location	Project Description	Estimated Project Cost in Year of Expenditure
1 Other Vehicle Replacement, 5 ($25,000 each)	Shore Transit	FY 2024	$25.0
2 Heavy Duty Bus Replacements, 35’ 28/2 ($170,450 each)	Shore Transit	FY 2025	$340.9
1 Other Vehicle Replacement, 5 ($45,000 each)	Shore Transit	FY 2025	$45.0
1 Other Vehicle Replacement, 2 ($25,000 each)	Shore Transit	FY 2025	$25.0
Total			**$12,022.9**

Source: Shore Transit Annual Transportation Plan FY 2020

Delaware Transit Corporation Fiscally Constrained Projects for DART

DelDOT's FY 2020 to FY 2026 CTP includes $44.8 million for expansion and replacement of buses serving Sussex County. These projects are detailed in **Figure 8.7** and **Appendix F**.

Figure 8.7: Fiscally Constrained Delaware Transit Corporation Projects (Thousands of Dollars)

Facility	Location	Project Description	Estimated Project Cost in Year of Expenditure
System Preservation			
Transit Vehicle Expansion (3) 30' Low Floor	Sussex County	FY 2019	$1,440.9
Transit Vehicle Expansion (2) 35' Electric Buses	Sussex County	FY 2019	$2,474.0
Transit Vehicle Replacement (7) 30' Buses	Sussex County	FY 2022	$4,165.7
Transit Vehicle Replacement (22) 30' Buses	Sussex County	FY 2023	$13,016.3
Transit Vehicle Replacement Paratransit Buses	Sussex County	FY 2020 – FY 2026	$19,412.1
Transit Vehicle Replacement (4) 40' Electric Buses	Sussex County	FY 2021	$4,340.0
Total			**$44,849.0**

Source: Delaware DOT Capital Transportation Program (CTP)

8.5 What are Some Opportunities for Additional Study?

While an MPO is not intended to be an implementing agency, there is a role for the S/WMPO in helping to achieve regional transportation priority projects in the next thirty years. Over the next four (4) years, S/WMPO will look to several opportunities to advance ***Connect 2050***. Some of these work products might be included as addenda to ***Connect 2050***.

Consult Member Jurisdictions' Priority Letters

Each county submits an annual "priority letter" to MDOT or DelDOT. S/WMPO should continue to monitor these letters for projects that are local priorities and might be most likely to receive future funding.

Sponsor Studies

The S/WMPO has recently funded corridor studies yielding valuable information about the traffic characteristics of key corridors. Over the next four (4) years, the S/WMPO should continue investments to develop maps and GIS based datasets, as well as acquiring data to assist local jurisdictions with planning and capital programming decision making. Other potential work program items include the following:

Coordinate with Wicomico and Sussex County's Emergency Services to assist with the preparation of evacuation routes map for Wicomico County;

- Partner with DelDOT to acquire LOS data and AADT information for the UA and MSA portions of the S/WMPO located in Delaware, which is in keeping with DelDOT's goal to provide a statewide Congestion Management System; and
- Gauge interest of elected officials to conduct a bicycle route master plan for the Delaware portion of the Urbanized Area;
- Coordinate with MDOT SHA to conduct an safety study for the Salisbury Bypass access from U.S. Route 50 Business extending from Tilghman to Hobbs Road;
- Initiate pedestrian & cyclist safety and connectivity study at various high volume locations without amenities;
- Conduct transit planning studies and related activities to support DART and Shore Transit operations; and
- Prepare corridor studies for the region that analyze current level of service and queueing at both signalized and non-signalized intersections in the Urbanized Area.

Create MAP-21 Performance Measures

MAP-21 established new provisions to the metropolitan planning process designed to establish a transparent, accountable decision-making framework for the MPO and public transit providers to identify multimodal capital investment and project priorities. See **Appendix I**.

Meeting Transportation Challenges

As both the *Maryland Transportation Plan 2040* and the *Delaware Statewide Transportation Plan* observe, transportation demand exceeds the supply of infrastructure, services, and funding available in both the short- and long-term. Aging infrastructure might be addressed by partnerships between the public and private sector, enhanced maintenance tools and techniques, and asset management practices. Populations aging and becoming more diverse might require an accessibility evaluation of the transportation system to people of all abilities and at ensuring a variety of multi-modal options exist, including transit and safe bicycle and pedestrian routes. Land use and development patterns resulting in sprawl might be countered by an orderly and controlled growth pattern, implementing complete streets policies, and spending system preservation funds on improving congestion and bottlenecks to improve the function of the existing network. Thoughtful planning and effective coordination will help state and

local governments to effectively manage the transportation system, and the S/WMPO is a lynchpin to the success of that system on the Delmarva Peninsula.

Appendix A
Stakeholder Interviews

Interview Summaries

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Tim Emge Vice President of Terminal Operations CATO Inc. Gas Oil Propane	Transportation	November 5, 2019 3:15 pm

Mr. Emge explained that approximately 25% of his operating budget is spent on transportation. Primarily roadway and water currently. He is concerned with the condition and maintenance of the roadway infrastructure, which is vital to his organization. In particular, the extended time frame for construction at the Chesapeake Bay Bridge by the Corps of Engineers is and will have an impact on his organization, which focuses on import by roadway and water. Mr. Emge said there is a need for continued partnership with organizations such as the Delmarva Water Transportation Committee and the Metropolitan Planning Organization to keep the transportation system community involved. In addition, his organization would benefit from an improved and maintained rail system to bring materials in. At present the Chesapeake Bay Bridge work is the only project he is aware of that will impact his organization. 10-15 years out may bring other concerns, depending upon what type of energy is being used. He would like to see a one-stop transportation opportunity from the Midwest to our region using highway system and rails.

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Cliff Grunstra Chief Marketing Officer Delmarva Central Railroad ("DCR") Transportation	Transportation	November 6, 2019 10:32 via email response

Mr. Grunstra stated the DCR is a freight railroad, without the existing rail network that we operate there would be no rail industry and our organization would not exist, essentially it's vitally important. The existing network allows DCR the ability to transport over 30,000 railcars/year (+/-250,000 round trip truck move equivalents) of essential products to the Delmarva Peninsula (Delaware, Maryland, and a small portion of Virginia). These products include, but are not limited to: stone for roads and building; and propane for heating and cooking and feed for chickens. The operating budget including employee wages counts for nearly 100% of revenue. He stated the railroad infrastructure needs to be invested in to keep the track in a state of good repair. Specifically, the bridges the DCR operates over such as the C&D Canal Bridge built in 1967, Nanticoke River Bridge in Seaford built in 1890 and Pocomoke River Bridge in Pocomoke built in 1899. They need significant investment to improve and modernize their function and operation. By investing in and upgrading the railroad track it will allow freight trains to operate a higher speeds, which would increase capacity and reduce delays and congestion at railroad crossings. The grade crossings, where roads cross the railroad track, are always locations where safety needs to be a focus. If the track on the Delmarva Peninsula upgraded to class 2 or higher standards, and all the aforementioned bridges upgraded and modernized, it will significantly enhance the rail network on the Eastern Shore. The DCR desires to continue to grow railcar traffic on the Eastern Shore, which will reduce road congestion, reduce wear and tear on the road/highway infrastructure, reduce pollution and emissions, and increase the competitiveness of local business and industry by providing safe, efficient and competitive transportation of essential commodities to the region. Delaware and Maryland need a State level program that allows for investment in short line railroad infrastructure. The programs in PA (RTAP & RFAP) and VA (Rail Preservation and Industrial Access) would be good programs to emulate that incentivize investment in critical rail infrastructure. If MD and DE would partner with the DCR to develop a comprehensive rail

infrastructure investment program that systematically identifies, prioritizes, addresses and upgrades the rail assets on the Eastern Shore and also provides funding/incentives to help with new rail customer development and attraction, it would greatly improve the regional economy, reduce road congestion, reduce damage caused by heavy trucks on the road/highway infrastructure and significantly reduce greenhouse gas emissions. The DCR stands ready to partner with the States we serve to maintain, enhance and promote the rail infrastructure under our stewardship.

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Mike Dunn Greater Salisbury Committee	Transportation	November 7, 2019 9:45 AM - phone

Mr. Dunn said that as a member of the Committee he is most interested in what can help the businesses and organizations in the Salisbury region. Buses are the primary type of transportation used through the urban corridor that includes local business, higher education facilities and residential areas. Mr. Dunn said he doesn't believe the current bus system works very effectively; however, he sees great potential for a variety of groups to work together to determine what is needed in Route 13 urban corridor, especially during the months between April and the end of September. He believes that a metro-service that serves this area would be a great asset to all parties and spoke of three (3) apartment complexes that are planned for the Salisbury area to serve as student housing. That alone will increase the demand on the public transportation system.

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Sharon Clark Perdue Agribusiness	Regional transportation network	November 12, 2019 at 8:25 AM

Ms. Clark stated the existing transportation networks is very important to their industry and works reasonably well based on their methods of transportation (truck, rail, barge, vessel and container). They import and export both inside and outside the states of MD and DE. She further recommends the following system improvements:

- On truck, we have provided the following suggestions as part of the DMV Ag Supply Chain Study performed in 2016: increase truck weights to 88,000 lbs on 5 axles and 97,000 lbs on 6 axles; establish interstate permitted truck routes for heavier weight trucks; eliminate braided intersections to improve motor vehicle safety on the DMV; and evaluate scale locations on the Delmarva which are on divided highways with merging traffic e.g. Salisbury Rt13 heading south. Also, we provided point pairs and routes on soymeal shipments from our Salisbury, MD crush plant to feed mills on the Shore which, if the routes were provided weight exemptions, should result in fewer trucks hauling the same amount of product and emission savings with fewer trucks on the road.
- On barge, we strongly support continued timely dredging and ice breaking services of the Wicomico and Nanticoke Rivers.
- On rail, the Delmarva Central Railroad is working well with the Norfolk Southern Railroad. Rail service is dependent on traffic volumes and the window of time allowable over the NEC by Amtrak at Perryville, MD.

Parts of the system that are chronically congested or at/overcapacity include the following:

- Build service roads around congested urban areas e.g. Salisbury, Cambridge

- There is a significant safety issue with the three access lanes off of Hwy50 trying to access the 13 Bypass in Salisbury and this situation is exacerbated during Beach season:
  - The turnoff from Hwy50W to access the Rt13 bypass south is becoming increasingly congested with cars extending out of the turn lane into Hwy50.
  - The turnoff from Hwy50E to cross Hwy50W to access the Rt13 bypass north has cars taking making risky decisions to cross the road forcing trucks and cars in on-coming traffic to brake abruptly.
  - The turnoff from Hobbs Road north onto Hwy50W has trucks and cars trying to merge into the turnoff lane onto the Rt13 bypass north, while local traffic is trying to cross Hwy50 to either go into Salisbury or access the Rt13 bypass south turn lane. All this activity is taking place in a very short distance and congestion is significant, putting drivers at risk.

The rail system is underutilized and one of missing connections includes service roads around urban areas to allow fluid vehicle movement. Two threats to safety include: Develop inspection/maintenance plans for secondary roads, culverts and bridges and ensure funding and maintenance for unpaved roads. We will continue to build on existing network of modal optionality and continue growth in Perdue AgriBusiness' core businesses of grain merchandising, soybean crushing and edible oil refining and animal nutrition. One of the most significant transportation issues in the next 30 years is what the U.S. rail network will look like given falling traffic volumes with the loss of coal and increased truck efficiencies through autonomous vehicle technologies.

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Cathy Smith Planning Manager, DART	Transportation	November 12, 2019 at 8:30AM

Ms. Smith shared information from the Delaware State Office of State Planning and Coordination's 2019 Annual Report to the Governor, specific to the *Planning for Connectivity and Mobility Section.* This document can be found at the following website link: https://2019-state-planning-report-delaware.hub.arcgis.com/. The existing network is 100% important and may only be as good as the street network. It works efficient and well in urban, densely populated areas and inefficient and costly in rural low density areas. Our methods of transportation include: Fixed Route; Paratransit or on-demand services; contracted commuter Rail through SEPTA. Our operating budget includes 100% transportation spending as it is our core business function to transport people. We primarily operate within DE state confines; with the exception of one Route 208 extends from Fenwick Island, DE to Ocean City, MD in the Resort Season from May to September. Additionally, DART Route 212 extends to Delmar, MD and connects with Shore Transit, via Woodlawn Ave. at State Line Road, behind the Rite Aid. Improvement needs include: Technology with fare payment systems and for data analysis, coordination with other transit agencies, and funding sources. Seasonal congestion during summer months along SR 1, beach areas, severely impacts our on-time performance of fixed routes. Underutilized systems include: fixed route services in Sussex County due to low density and service is not as frequent as urban areas, captive riders. Our missing links are Technology, system redesign for growing Sussex County, analysis of major trip origins and destinations and much better transit supportive infrastructure is needed. Typical threats to any transit agency, sustainable funding source. A successful network would include: higher ridership, % of transit mode share presently 2% statewide; system network design captures critical mass of trip origins and destinations, with frequent reliable service. In 5-10 year we envision more efficient technologies, greener fleet and innovative service delivery options. Technology and increasing mode share with transit supportive infrastructure are our significant issues over the next 30 years. Sprawling residential communities in Sussex County may impact the transportation system, especially further west to access jobs to the east and south of the County. Partnership opportunities that would benefit the

region could be pilot programs with Transportation Network Coordinators (Lyft, Uber) etc. to conduct the first and last mile trips, integrated into our fixed route hubs, major stops.

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Dr. Memo Diriker, Director Salisbury University		November 20, 2019 at 2:01 PM

Dr. Diriker stated that the existing transportation system for the University, is a key part of the student services puzzle. Transporting the students and SU employees to and from their residences; to and from the sister campus in Princess Anne; to and from Downtown Salisbury/PRMC, and to and from the commercial area North side of town is a key part of our long-term strategic planning. That thinking can be extended to include Ocean City in the summer. It works with Cards serving "Bus Passes," the utilization is already happening. We plan to encourage it more for a variety of reasons (including reducing parking pressures on campus). They have a large fleet of vehicles and are in partnership with Shore Transit for the bulk of our "People Moving" activities. Promoting the transportation system to the users can be improved upon and if more resources were available, the reach and frequency could be improved. Within 5-20 years he envisions a larger footprint, more satellite locations, and different student segments being served. The most significant issue over the next 30 years is getting students to the right location at the right time, efficiently and reliably. Secondary benefit would be not having to build additional parking decks. The City is growing both within the Metro Core and outward. Additional partners could include the Board of Ed, PRMC, SU, City, and the County.

Name, Title, and Affiliation	Primary Areas of Interest	Telephone Interview Date/Time
Dawn Veatch Regional Manager, SBY Airport	Transportation	November 20, 2019 at 2:03 PM

Ms. Veatch stated the existing transportation network is essential and the highway structures are critical to provide appropriate access and signage. A new roadway is needed to support the cargo industry as it grows. The network of other transportation systems must be in sync with our development going forward. We provide a tri-state air transportation system as the only air carrier airport. We are developing and expanding our capabilities to meet the current and future needs of the Delmarva. The other modes of transportation and users of our industry need to support the airport's growth and expanded utilization. We are the aviation industry for the Delmarva. The methods or transportation include:

- We provide the only commercial air service in the tri-state area. American Airlines is our current service provider with a potential new air carrier in 2021.
- We provide drone/Unmanned Aircraft System ("UAS") services and development for the industry. Autonomous transportation is in the near future and we are providing a needed platform for the springboard of this industry-
- Cargo and cold storage shipping are essential for agriculture, aquaculture and the poultry industries.
- And the corporate jet industry will return with our newly added hangar and fixed-based operation with a maintenance facility in 2020.

We spend 100% of our annual budget on transportation and improving capacity, capabilities, and safety. In the past 3 years, we have increased that budget by about 300 percent. We transport people as passengers, express freight with FEDEX Express, and will soon provide drone export and import of components and products. We export/import interstate, and internationally. We need infrastructure.

The Airport has been behind in developing and providing basic infrastructure. We need a fire station facility to house our crash fire rescue equipment and firefighters. We need a Snow Removal Equipment ("SRE") building to house our old equipment will make it last at least a few more years until we can fund new equipment. All of our equipment is stored either outside or in hangars that should be generating revenue, which is also a safety issue. This equipment is essential for safe operations at our Airport. The lack of replacement equipment for the aging vehicles is not acceptable and housing them in the outdoor elements caused deterioration and overall a lack of priority for safety. The Bay Bridge has exceeded its capacity and nothing can be done quickly enough in terms of building a new bridge or expanding the Bay Bridge to head off the 13 miles queues that will be daily in 2028. The Airport is expanding the runway and its capability by late 2021. This can offset the Bay Bridge congestion if cargo is developed out of SBY Regional Airport and by passengers having expanded airline options, would reduce traffic to BWI, DCA, and IAD. All of these efforts will assist in the growing demands for transportation in the Delmarva. SBY Regional Airport is underutilized. We only capture 8% of our catchment area of traveling passengers. BWI captures 35%, DCA 20%, and IAD 13%. The traveling public needs to be aware of the asset at SBY Regional Airport.

This year we are requesting a budget to market and advertise our services. The highway system is supportive, but does not provide good direct access. There is a need for a southerly expansion of Snow Hill Road for truck traffic to access our cargo facility when built in 2021 after the runway extension. The northerly entrance off of HWY 50 and the HWY 50/13 Bypass need to be consolidated to provide direct access to the Bypass. Customers travel Hobbs Road or Walston Switch Road from Wor-Wic and they are not designed for commercial airport traffic requirements.

Success would be another airline operating to two alternate cities with hubs, a new Corporate Jet Center with daily operation to Europe, Africa, and Middle East, cargo transportation with cold storage capabilities to the west coast USA non-stop for our poultry/agriculture/aquaculture and drones and other autonomous vehicles being manufactured and operated from SBY Regional Airport. SBY Regional Airport has a strategic plan that makes a successful transportation network a reality in 2022. Bridge expansion will be the most challenging given the Chesapeake Bay environmental issues. A new bridge location or an expanded bridge will take years of environmental review to obtain approvals. The funding for transportation is going to need a new revenue source. The road tax and other funding sources are no longer covering the expenses with highly efficient and electrical vehicles. Drone manufacturing could be a huge potential for our geographic area given the proximately to NASA/Wallops airspace. This partnership is continually being expanded and developed. The shipping of cold storage and other freight could transform the area with intra-Delmarva shipping from freight delivered to SBY Regional Airport. This could provide a major relief from the 3 different bridge access points. We currently are cultivating three partnerships that can transform our area. We hope to be able to announce those new partnerships soon. Currently we have partnerships with Sentinel Robotics ("SRS") solution based at Wallops and Kilroy Industries. SRS is the sole service provider for drone operations at Wallops. They are moving their commercial non-defense contractors to SBY once our new facility opens in June 2020. We also partner with Kilroy Industries. They are FAA approved aircraft certification designees. They will soon be the only FAA Drone approved designee in the USA. This partnership combined with access to NASA/Wallops airspace is truly a unique environment to grow the drone industry.

Appendix B
Air Quality Conformity

Appendix B: Air Quality Conformity

Federal regulations require air quality issues be considered during the preparation of a LRTP and TIP. The S/WMPO area meets air quality conformity criteria as identified in the 1990 Clean Air Act Amendments ("CAAA"). The Sussex County, Delaware, portion of the area was previously not in conformance with ozone standards and was considered a "nonattainment area." The Maryland portion of the area is in attainment of the criteria contained in the CAAA.

As part of this comprehensive planning effort, DelDOT completed a review of the projects contained in the FY 2020 – FY 2025 Capital Transportation Program. From this review, it was concluded no new regionally significant or non-exempt projects were submitted for the S/WMPO's portion of the Urbanized Area located within Sussex County, Delaware.

The Air Quality Conformity Analysis, dated August 30, 2019, estimated nitrogen oxides ("NOx") and volatile organic compounds ("VOC") emissions for Sussex County for the horizon years of 2020, 2030, 2040, 2045, and 2050 using MOVES2010b. For all years tested, NOx and VOC emissions were below the applicable 2008 budget Reactive Oxygen Species ("ROS"). At the time of adoption of this LRTP, Sussex County's Non-Attainment status has been upgraded to a Maintenance Area.

Air Quality Conformity Analysis
USDOT Approval Letter

U. S. Department
of Transportation

Federal Transit Administration
Region III
1835 Market Street
Suite 1910
Philadelphia, PA 19103
215- 656-7100
215-656-7260 (fax)

Federal Highway Administration
DE Division
1201 College Park Drive
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Dover, DE 19904
302-734-5323
302-734-3066 (fax)

Refer to: HDA-DE

Ms. Jennifer Cohan
Secretary
Delaware Department of Transportation
800 Bay Road
P.O. Box 778
Dover, DE 19901

Mr. Keith Hall
Chief, Long-Range and Transportation Planning
Salisbury/Wicomico Metropolitan Planning Organization
P.O. Box 870
Salisbury, MD 21803-0870

Re: **SWMPO 2050 Long range Transportation Plan and Amended FY 2020 - 2023 Transportation Improvement Plan (TIP) and the Sussex County, DE portion of Delaware's FY 2019-2022 Statewide Transportation Improvement Program (STIP)**

Dear Ms. Cohan and Mr. Hall:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed a joint review of the Sussex County, DE & Salisbury/Wicomico Metropolitan Planning Organization's (SWMPO) conformity determination for the 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) for Sussex County, DE (i.e., Seaford, DE Nonattainment Area). The conformity determination applies to SWMPO's Connect 2050 Long range Transportation Plan (LRTP) and the SWMPO's amended Fiscal Year (FY) 2020 - 2023 Transportation Improvement Plan (TIP), and the Sussex County, DE portion of Delaware's FY 2019-2022 Statewide Transportation Improvement Program (STIP).

In accordance with the 1990 Clean Air Act Amendments (CAAA) and 23 CFR 450.322(l), the FHWA and the FTA must make a joint air quality conformity determination. The EPA, by letter dated February 20, 2020, determined that the LRTP and TIP meet the requirements, and they have no issues with the conformity determinations.

Based on our evaluation of the material submitted, coordination with EPA's Region 3 Office, and input from DelDOT and SWMPO, we have determined that SWMPO's Connect 2050 LRTP and amended FY 2020-2023 TIP, and the Sussex County portion Delaware's FY 2019-2022 STIP conform with the 1990 CAAA and 40 CFR Part 93, and, therefore, **render a positive conformity determination for the aforementioned programs**.

Ms. Jennifer Cohan and Mr. Keith Hall Page 2

Re: **SWMPO 2050 Long range Transportation Plan and Amended FY 2020 - 2023 Transportation Improvement Plan (TIP) and the Sussex County, DE portion of Delaware's FY 2019-2022 Statewide Transportation Improvement Program (STIP)**

We have also determined the amended FY 2020 – 2023 TIP and Connect 2050 LRTP are based on a continuing, comprehensive transportation planning process carried on cooperatively by the State, MPO, and transit operators in accordance with provisions of 23 USC 134 and 135 and 49 USC Sections 5303-5305. Based upon the information provided by DelDOT and SWMPO, we concur that the TIP is fiscally constrained and consistent with the LRTP.

If you have any questions, please contact Lindsay Donnellon, FHWA Delaware Division, (410) 779-7157, or Tim Lidiak, FTA Region III, (215) 656-7084.

Sincerely yours,

Digitally signed by THERESA GARCIA CREWS
Date: 2020.05.12 19:18:54 -04'00'

DOUGLAS S. ATKIN
Digitally signed by DOUGLAS S. ATKIN
Date: 2020.05.13 10:03:31 -04'00'

Terry Garcia Crews
Regional Administrator
Federal Transit Administration

Doug S. Atkin
Division Administrator
Federal Highway Administration

cc: Drew Boyce, DelDOT (sent via email)
Mike DuRoss, DelDOT (sent via email)
Josh Thomas, DelDOT (sent via email)
Tyson Byrne, Maryland DOT (sent via email)
Ian Beam, Maryland DOT (sent via email)
Gregory Becoat, EPA, Region 3 (sent via email)
Kwame Arhin, FHWA Maryland (sent via email)

Air Quality Conformity Analysis

For the 8-hour Ozone National Ambient Air Quality Standards (NAAQS)

for

Sussex County, Delaware

Prepared by:

Delaware Department of Transportation
Division of Planning
Statewide & Regional Planning

Updated
August 30, 2019

Table of Contents

Air Quality Conformity Analysis for Sussex County, Delaware

Executive Summary

What is this Document ?

Essentially, the report demonstrates the Federal statutory requirement that estimates of future roadway-sourced emissions are likely to be within allowable levels as determined by DNREC and the EPA.

This report is required by Federal Highway Administration (FHWA) and Environmental Protection Agency (EPA) regulations under the 1990 Clean Air Act Amendments (CAAA). It presents the required emissions analysis of transportation projects in three documents:

1) the Sussex County portion of DelDOT's FY 2020-2025 Capital Transportation Program (CTP),
2) the update of the Salisbury-Wicomico MPO's 2019-2023 Transportation Improvement Program (TIP), and
3) the "Connect 2050: Salisbury/Wicomico Long Range Transportation Plan (LRTP)".

The report compares the total estimated mobile source on-road emissions for transportation projects listed in the above three documents, that are or would be located Sussex County, against applicable maximum limits (so-called "air quality budgets") prepared by the Delaware Department of Natural Resources and Environmental Control (DNREC) as part of its State Implementation Plan (SIP) for Sussex County. The budgets are based on the 8-hour National Ambient Air Quality Standards (NAAQS).

This report documents the methods and assumptions used in the conformity analysis, and also demonstrates the findings meet all current and imminent conformity criteria established by EPA.

Why Does DelDOT Need to Prepare this Document ?

DelDOT's Division of Planning must prepare this document because it is currently the responsible agency for transportation conformity in Sussex County. At this time, the "triggers" initiating the preparation of this conformity analysis are:

1) **the update of the Salisbury-Wicomico MPO's 2019-2023 Transportation Improvement Program (TIP), and**

2) **the "Connect 2050: Salisbury/Wicomico Long Range Transportation Plan (LRTP)".**

EPA's issued a final rule designating the nonattainment areas for the 2008 ozone NAAQS on July 20, 2012. Since all of Sussex County was designated through that action as an *ozone nonattainment area* **AND** part of Sussex County was included in the Salisbury-Wicomico urbanized area based on the 2010 Census, conformity determinations must be made, when required, for regionally significant transportation projects located in Sussex County.

According to FHWA and EPA regulations, this conformity analysis and determination covers **BOTH** the expanded Sussex County portion of Salisbury-Wicomico urbanized area (per the 2010 Census) and the remaining, non-urbanized (so-called "donut area") portions of Sussex County. These two areas, together, comprise the entire area of Sussex County.

What Methods were Used ?

The emissions analysis presented in this report comprised two major modeling processes. The first involved estimation of annual average daily traffic data for the horizon years of 2020, 2030, 2040, and 2050 using the Delaware Department of Transportation's **"Peninsula Travel Demand Model"** (TDM). This process converts estimates of projected population and employment for those horizon years into forecasts or estimates of future traffic on the various roads included in the model. The estimated future traffic levels include projections for average travel speeds on those same roads.

The second component of the methods used in this analysis involves the EPA's "**MO**tor **V**ehicle **E**mission **S**imulator, otherwise known as the "MOVES" model. The analysis used MOVES2010b which is the latest version of the software. The software is used nationally by State DOTs and MPOs to estimate on-road, mobile source emissions from cars, trucks, motorcycles, and buses.

The MOVES model develops emission estimates by combining traffic estimates with other statewide and countywide information such as: the age of the vehicle fleet in a county by model year, the type and standards of applicable emission inspection programs, weather and temperature-related data, and other factors.

More information on EPA's MOVES model can be found at:

http://www.epa.gov/otaq/models/moves/index.htm

What were the Findings ?

Since Sussex County was designated on July 20, 2012 as being in nonattainment status for ozone, DelDOT must demonstrate that future roadway-sourced ozone precursor emissions for "nitrogen oxides" (NOx) and "volatile organic compounds" (VOC's) within Sussex County are consistent with all applicable DNREC Mobile Emission Budgets for that county.

For all years tested, both NOx and VOC emissions were below the applicable 2008 and 2009 "On-Road Vehicle Mobile Emission Budgets" for Sussex County.

What Does it Mean ?

As noted above, both NOx and VOC emissions were below the applicable 2008 and 2009 "On-Road Vehicle Mobile Emission Budgets" for Sussex County.

Therefore, because each test passes required emission budgets DelDOT is able to make a determination that transportation conformity with applicable SIP's is established.

Air Quality Conformity Analysis for Sussex County, Delaware

Summary:

This report demonstrates transportation conformity of the Sussex County portion of the FY 2020-2025 Capital Transportation Program (CTP), the Salisbury-Wicomico MPO's 2019-2023 Transportation Improvement Program (TIP) and the "Connect 2050: Salisbury/Wicomico Long Range Transportation Plan (LRTP)" to the 8-hour National Ambient Air Quality Standards (NAAQS).

This document ensures that the findings meet all current and imminent conformity criteria established by US EPA.

Background on 8-Hour Ozone:

Ozone is an odorless, colorless, gas created by a reaction between nitrogen oxides (NOx) and volatile organic compounds (VOC) in the presence of sunlight. While higher-level ozone located in the stratosphere forms a protective layer that shields the earth from the sun's harmful rays, ground level ozone is significantly different and is a key contributor to smog. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents, and even natural sources all contribute to NOx and VOC emissions. Since ozone is formed in the presence of heat and sunlight, it is generally considered a summertime pollutant.

The health effects of ozone vary. Ozone can irritate airways and cause inflammation similar to sunburn. Other symptoms include wheezing, coughing, and pain when taking a deep breath and breathing difficulties during exercise or outdoor activities. According to EPA studies people with respiratory problems, children and the elderly are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high. Even at relatively low levels, ground-level ozone may trigger a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses such as pneumonia and bronchitis.

Background on the NAAQS and Conformity:

In an attempt to reduce harmful emissions nationwide, the Clean Air Act of 1970 and Clean Air Act Amendments (CAAA) of 1990 classified certain metropolitan and non-metropolitan areas that did not comply with federal air quality standards under the 1-hour ozone standard, from marginal to extreme, based on the severity of their local air pollution problems. In the early 1990's Sussex County was classified as a *marginal nonattainment area* under the 1-hour ozone standard, based on air quality monitoring programs managed by DNREC.

The CAAA requires EPA to set National Ambient Air Quality Standards (NAAQS, 40 CFR Part 50) for ozone and five other criteria pollutants considered harmful to public health and the environment (the other pollutants are particulate matter, nitrogen oxides, carbon monoxide, sulfur dioxide and lead). The law also requires EPA to periodically review the standards to ensure that they provide adequate health and environmental protection, and to update those standards as necessary.

In 1997, the EPA issued the 8-hour ozone (NAAQS) to replace the existing 1-hour ozone standard. That standard was an 8-hour average concentration of 0.080 ppm. According to that standard, the fourth highest value in a year, rounded to the nearest 0.01 and averaged over three years, may not exceed this level at any monitor in the area. DNREC located and maintains air quality monitors in Sussex County.

Information on DNREC's air quality monitoring program can be found at:

http://www.dnrec.delaware.gov/whs/awm/aqm/pages/default.aspx

On April 15, 2004, EPA issued final designations (or, classifications according to severity) for those areas that were in nonattainment status for the 8-hour ozone standard. Following some modifications those designations became final on June 15, 2005.

Through this process EPA designated the entire PA-NJ-MD-DE area as *"moderate nonattainment"* for the 1997 8-hour ozone standard. At this time, all three of Delaware's counties were thus classified as nonattainment and subject to the transportation conformity process described in this report.

Classifications through this process resulted in an attainment date of six years following the original designations or, June 2010, for the PA-NJ-MD-DE nonattainment area.

On March 27, 2008 the EPA subsequently lowered the ozone NAAQS from 0.080 ppm to 0.075 ppm. In April and May 2012, EPA reviewed and processed area designations for the 2008 ozone standards. New Castle County and Sussex County were designated as "*marginal nonattainment*" on July 20, 2012.

New Castle County continued to be in the Philadelphia – Wilmington nonattainment area while Sussex County became the Seaford, Delaware nonattainment area. Kent County was classified as attainment (although in late 2018 was reclassified as nonattainment based on a Federal Court case).

Through the July, 2012 designations New Castle County was still in nonattainment for the PM2.5 NAAQS. However, Sussex was designated as in attainment for PM2.5 so the air quality conformity analyses and related conformity determination processes only apply to the ozone criteria pollutant.

States or areas designated as *"marginal ozone nonattainment"* status are not required to submit State Implementation Plans (SIPs) to the EPA outlining how they will meet the ozone standard. Nevertheless, states must keep in place those measures to reduce emissions they had in the SIP under the 1997 ozone standard. The 1997 standard SIP include mobile source emissions budgets used in conformity analyses, such as those presented in this report.

States or areas that have been designated as nonattainment areas for any of the six NAAQS criteria pollutants are subject to the transportation conformity process. Transportation conformity requires nonattainment and maintenance areas to demonstrate that all future transportation projects will not hinder the area from reaching and maintaining its attainment goals outlined in SIPs.

In particular, the Federally-required transportation conformity process requires State DOTs and MPOs to complete an analysis demonstrating that planned transportation-related projects will not:

- Cause or contribute to **new air quality violations** of the NAAQS.
- Worsen **existing violations** of the NAAQS.
- Delay timely **attainment** of the relevant NAAQS.

In October 2011, the Secretary of the DNREC issued orders finalizing new motor vehicle emissions budgets as part of *"Delaware's Revised 2008 SIP"* for the attainment of the PM2.5 NAAQS. This SIP updated mobile source budgets for all three counties based on the newer EPA MOVES model methodologies.

Subsequent to that, DNREC issued the *"Attainment SIP for the 8-Hour Ozone NAAQS, with Revision for Establishment of 2008 and 2009 Mobile Source Emission Budgets"*. This document assigned ozone budgets (again, "maximum amounts") for both 2008 and 2009 for each of Delaware's three counties.

Background on Conformity Analysis and Determination Processes in Sussex County:

Sussex County has been a designated nonattainment area for ozone under the NAAQS since the early 1990's. Such nonattainment areas are required by Federal regulations to periodically conduct "transportation conformity" analyses and make conformity determinations. In most nonattainment areas, conformity analyses are performed by MPOs.

However, prior to the 2010 Census there was no Federally-designated Metropolitan Planning Organization (MPO) for Sussex County. Thus, according to Federal regulations the Delaware Department of Transportation (DelDOT) was the agency required by Federal law to show transportation projects *conform* to applicable Federal air quality planning requirements.

DelDOT completed required conformity analyses and determinations for the Sussex County nonattainment area in 1995, 1998, 2001, 2005, 2010, 2013, and most recently in December, 2016. Each of these conformity determinations used methods similar to those described in this report and included coordination with Sussex County planning officials, public outreach and a minimum 30-day public comment period.

EPA issued a final rule designating nonattainment areas for the 2008 ozone NAAQS that became effective July 20, 2012. Through this process Sussex County was designated as a *"marginal nonattainment"* area. According to FHWA and EPA regulations nonattainment counties and areas have a "one-year grace period" in which to conduct a conformity analysis and make a conformity determination. The

one-year grace period for Sussex County ended July 20, 2013, which required the July, 2013 conformity analysis determination.

Following the 2010 Census, the designated urbanized area for the Salisbury-Wicomico MPO was expanded further into Sussex County to include additional portions of the county, primarily along the US 13 corridor from Delmar to north of Seaford. This expansion of urbanized area boundaries was based on population density-based methods used by the Census Bureau.

Through this action a portion of Sussex County is now contained within the planning area of the Salisbury-Wicomico MPO and because of that, the MPO's TIP and long range transportation plan **must** include a transportation conformity analysis and corresponding conformity determination for the urbanized portion of the Sussex County. As a result, the Salisbury-Wicomico MPO and DelDOT conduct and participate in interagency coordination efforts regarding air quality conformity and other transportation planning issues.

If the Sussex County Census-designated urbanized area did not contain any part of the Salisbury-Wicomico MPO area it would be considered an *"isolated rural nonattainment area"* and a conformity determination would only be required:

1) if and when a non-exempt FHWA/FTA project needed federal funding or approval. *This is the Federal regulation DelDOT was following previously in conducting required conformity analyses in Sussex County.*

2) Or, if and when the maximum four-year time between conformity determinations had elapsed.

At the current time Sussex County presents a somewhat unique situation in which the expansion of the Salisbury-Wicomico urbanized area into Sussex County (following the 2010 Census) resulted in a bi-state urbanized area.

The non-urbanized (Census-designated rural) portions of Sussex County are considered a donut areas due to the county-wide nonattainment status and, according to Federal regulations, must also be included in any conformity determination done by a MPO or State DOT.

The Salisbury-Wicomico MPO's FY19-23 TIP and "Connect 2050: Salisbury/Wicomico Long Range Transportation Plan (LRTP)" include and list Sussex County's regionally significant transportation projects. This air quality

conformity analysis also accounts for regionally significant projects in Sussex County (as shown in Appendix G).

For additional information on Federal conformity regulations, please refer to:

http://www.epa.gov/otaq/stateresources/transconf/regs/420b12045.pdf

Status of the FY2020-2025 Capital Transportation Program:

According to Federal requirements, transportation plans and projects must demonstrate conformity according to tests applicable to each nonattainment area. As part of the annual (biannual after April, 2019) development of the Sussex County portion of the Capital Transportation Plan, any new or amended capital transportation projects must be reviewed to determine whether any of these additions or changes requires a new conformity analysis.

In general, for transportation conformity purposes capital projects are divided into two groups: **regionally significant** and non-exempt projects, and **exempt** projects. Non-exempt projects or any projects considered through a consultation process to be *regionally significant* require a conformity analysis when they are added to the CTP.

Projects defined as *exempt* include non-capacity enhancing safety and roadway improvement projects, the addition of bicycle and pedestrian facilities, and transit vehicle replacements. These projects may move forward towards implementation even in the absence of a conformity demonstration. (For the entire list of Exempt Projects, see 40 CFR 93.126 and 40 CFR 93.127)

DelDOT completed a review of the projects contained in the FY2020-2025 CTP and determined that there are *no new regionally significant or non-exempt projects* being submitted for Sussex County, Delaware. In other words, there are no new projects submitted under this CTP that would independently serve as a "trigger" for a conformity determination for Sussex County, Delaware.

As noted previously, the "trigger" (the transportation planning-related action requiring it to take place) for this conformity analysis and determination is primarily the update of:

1) the Salisbury-Wicomico MPO's 2019-2023 Transportation Improvement Program (TIP) and
2) the "Connect 2050: Salisbury/Wicomico Long Range Transportation Plan (LRTP)".

These documents were prepared according to Federal transportation planning regulations, including:

1) **Long Range Plan:** Federal regulations provide, that a long-range transportation plan and TIP can include only projects for which funding "can reasonably be expected to be available" [23 CFR 450.322(b)(11) (metropolitan long-range transportation plan), 23 CFR 450.324(e) (TIP), and 23 CFR 450.216(a)(5)(STIP)].

2) **TIP:** In addition, the regulations provide that projects in air quality nonattainment and maintenance areas can be included in the first two years of the TIP and STIP only if funds are "available or committed" [23 CFR 450.324(e) and 23 CFR 450.216(a)(5)].

3) **Air Quality Determination:** Finally, the Clean Air Act's transportation conformity regulations specify that a conformity determination can only be made on a fiscally constrained long-range transportation plan and TIP [40 CFR 93.108].

Conformity Determination for the 2020-2025 Capital Transportation Program, Salisbury-Wicomico MPO's 2019-2023 Transportation Improvement Program (TIP) and the "Connect 2050: Salisbury/Wicomico Long Range Transportation Plan (LRTP)":

Both NOx and VOC emissions were estimated for Sussex County for the horizon years of 2020, 2030, 2040, and 2050. Emissions for these years were generated using MOVES2010b.

For all years tested, NOx and VOC emissions were below the applicable 2008 "ROP" Budget. The 2009 Attainment Budget is presented here as a courtesy and is not a statutory requirement of the conformity determination process. Table 1 summarizes Sussex County's conformity status:

Table 1
Sussex County Emissions Summary*

	Nox				VOC			
Month	2020	2030	2040	2050	2020	2030	2040	2050
6	5.04	2.05	1.44	1.46	2.57	1.39	1.03	0.96
7	5.28	2.14	1.50	1.52	2.65	1.42	1.06	0.99
8	5.41	2.20	1.55	1.58	2.61	1.41	1.05	0.98

	VOC (Tons/Day				NOx (Tons/Day)		
Horizon Year	2008 ROP Budget	2009 Attain. Budget	Modeled Emissions	Horizon Year	2008 ROP Budget	2009 Attain. Budget	Modeled Emissions
	7.09	7.05			12.86	11.93	

Source: DelDOT Planning (reference Whitman, Requardt and Associates, email to M. DuRoss dated August 29, 2019 from L. Li)

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NOTES:

*The Following Notes Apply to and Were Used in the Estimation of Transportation-Based Ozone Precursor Emissions:

1) Vehicle Fleet Registration Data:

July 1, 2018.

2) Population & Employment (TAZ Data):

October 2017 Control Totals from Delaware Population Consortium (Including State and County Updates from the 2010 Census).

For Additional Information, Refer to:

http://stateplanning.delaware.gov/information/dpc.shtml

July, 2018 Allocations to TAZ Performed by WILMAPCO & DelDOT Planning Staff.

3) HPMS VMT:

Used for Adjust Model VMT to FHWA-Reported VMT.:

July, 2017.

4) Table 1 Emissions:

Months 6, 7, 8 Modeled in MOVES2010b.
July or Month 7 Shown (Highest of 3 Months Modeled).

**The 2009 on-road emissions budget has been submitted as part of Delaware's Attainment SIP for the 8- hour ozone NAAQS but not yet approved by USEPA.

The following Table 2 presents VMT data for analyzed horizon years.

Sussex County Annual VMT by Vehicle Type

HPMSVTypeID	2020 HPMS Annual VMT	2030 HPMS Annual VMT	2040 HPMS Annual VMT	2050 HPMS Annual VMT
Motorcycles	26,203,928	29,481,741	33,225,352	36,314,773
Passenger Vehicles	2,483,038,900	2,793,638,805	3,148,376,934	3,441,125,067
Transit Buses	20,863,327	23,473,092	26,453,721	28,913,489
Single Unit Trucks	31,210,621	35,114,715	39,573,605	43,253,310
Combination Trucks	104,454,472	117,520,538	132,443,375	144,758,466
Total	2,665,771,248	2,999,228,890	3,380,072,987	3,694,365,105

Appendix A:

Copy of Public Notice For Newspaper

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Delaware Department of Transportation
Jennifer Cohan
Secretary

PUBLIC NOTICE

Air Quality Conformity Analysis for the Sussex County Portion of the Salisbury/Wicomico Long Range Transportation Plan and FY 2014 – FY 2017 Transportation Improvement Program

The Delaware Department of Transportation (DelDOT) is required by the Federal Highway Administration (FHWA) to prepare an analysis periodically to demonstrate conformity of planned transportation projects in Sussex County with applicable Federal laws relating to air quality standards of the National Ambient Air Quality Standards (NAAQS).

To comply with the eight-hour ozone NAAQS, conformity of the Sussex County portion of the Capital Transportation Program (CTP) must be approved by USDOT because Sussex County is part of the "Seaford DE 2008 eight-hour nonattainment area" under the eight-hour standard, and because a portion of southwestern Sussex County is part of the "Salisbury, Maryland Urbanized Area" following the 2010 Census.

The Delaware Department of Transportation has now prepared a Draft Air Quality Conformity Analysis for Sussex County as part of the "Connect 2045 Salisbury/Wicomico Long Range Transportation Plan" and the update of the FY 2014 – FY 2017 Transportation Improvement Program.

This analysis demonstrates that the Sussex County portion of the CTP is in conformity with NAAQS and complies with applicable Federal regulations for the content of conformity analyses per requirements of 23 CFR 450.

DelDOT, in accordance with federal requirements, is hereby notifying the public of the availability of the Draft Air Quality Conformity Analysis for the Sussex County Portion of the "Connect 2045 Salisbury/Wicomico Long Range Transportation Plan" and the FY 2014 – FY 2017 Transportation Improvement Program. Copies of the documents are available at the DelDOT Administration Building at 800 Bay Road, Dover, DE, 19901.

Interested parties may also obtain a copy of the document by contacting DelDOT Community Relations at 302-760-2080. All interested parties are invited to comment upon the report. Comments must be submitted in writing within 30 days of the publication of this notice or by December 3, 2015. Written comments may be sent to the following address:

Delaware Department of Transportation
800 Bay Road
Dover, Delaware 19901
ATTN: Sussex County Conformity - Planning

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Appendix B:

MOVES2010b Input files

1) MOVES "runspec" files available upon request.
2) **Filenames:**

   10005_Sussex_MOVESb_2020_Input Files.XLS
   10005_Sussex_MOVESb_2030_Input Files.XLS
   10005_Sussex_MOVESb_2040_Input Files.XLS
   10005_Sussex_MOVESb_2050_Input Files.XLS
3) DNREC provided a 2008 "base" MOVES runspec input file to DelDOT and to WRA (DelDOT consulting firm) in 2017. DNREC runspec used the MOVES "inventory" method.
4) Runspec traffic data was updated with travel demand model output and vehicle population and age distribution data.
5) WRA created a copy of the original DNREC runspec file, so that a separate runspec would exist for each horizon year and county.
6) WRA, with DelDOT concurrence, updated the following for each horizon year and county:
   a) **Speedbin distribution**, based on speed and VMT summary for each horizon year, from travel demand model.
   b) **Annual VMT**, in the VehicleTypeVMTYear tab.
   c) **Sourcetype population**, based on population growth rates used in travel demand model.
   d) **Vehicle age distribution**, based on July 2017 DMV data, provided by Phil Wheeler. EPA converter used to convert the DMV data from MOBILE format and vehicle composition to MOVES required format.
   e) **IMProgram**, minor adjustment needed to make it run in MOVES2010b since the original DNREC file was set up to run in MOVES2010.

Appendix C:
MOVES2010b Output Files

1) Complete electronic files available upon request

Appendix D:

Travel Demand Model Summary

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Air Quality Modeling Methodology:

This air quality analysis conducted for the Sussex County portion of the Salisbury/Wicomico MPO TIP and LRTP used a series of computer-based modeling techniques. These techniques are consistent with methods WILMAPCO, Dover/Kent MPO and DelDOT have used previously on a recurring, as needed basis, in conducting air quality analyses required by the CAA amendments, and are similar to those used by other state and regional transportation agencies in preparing air quality analyses. They are consistent with methods DelDOT used in preparing conformity analyses for Sussex County in the past. They are also consistent with the modeling procedures DelDOT has used in the past in preparation of various SIP documents with the Delaware Department of Natural Resources and Environmental Control (DNREC).

Travel Demand Modeling

A travel demand model for Delaware, including Sussex County, is maintained by DelDOT. The model applies a variety of data regarding roadway network conditions, vehicular travel patterns, automobile ownership, and the location of population and employment sites.

The model follows the "traditional four-step process" of trip generation, distribution, mode split, and assignment that is commonly used throughout the transportation planning industry. The model components were processed through the CUBE Voyager software package. The primary products of the model used in the air quality analysis were estimated volumes and average speeds for each segment or "link" of the roadway system.

The modeling process developed for the Sussex County portion of the FY 2020-2025 CTP used a 2016 base year network validated against DelDOT traffic counts for 2017. Model networks were developed for the years 2020, 2030, 2040, and 2050 for Sussex County. As per standard travel modeling practice, the networks include the major capacity improvement projects that are expected to be in place and open to service during these years. The types of projects that are tested include enhanced transit service, highway widening (one lane or more) and/or new construction. It should be noted that there were relatively few, if any, regionally significant

improvements included, based on information from the Sussex County portion of the FY 2020 – 2025 CTP.

Demographic projections, including employment, households, and population, were developed for each of the horizon analysis years. The projections were based on statewide and countywide "control totals" for Sussex County from the October, 2017 series of projections from the Delaware Population Consortium.

In the July, 2018, WILMAPCO and DelDOT Planning staff developed a series of allocations of the control totals to "traffic analysis zones" (TAZ). That process used the previous set of TAZ projections for Sussex County as a base, as prepared through a cooperative process in Fall of 2011 involving staffs from Delaware State Planning Office, DelDOT Planning, Sussex County Planning, and Sussex County Economic Development.

Travel estimates were developed for this conformity analysis using a so-called "five-step travel demand" modeling process. The model process follows the traditional four-step modeling approach that includes trip generation, trip distribution, mode split, assignment, and feedback. This type of process is required by Federal air quality conformity regulations, and is a set of planning tools commonly used among MPOs and State DOTs.

The travel demand modeling process uses two sets of primary input data. The first is socio-economic data for traffic analysis zones (TAZ) for the entire modeled area including Sussex County. The modeling process maintained for Sussex County by DelDOT Division of Planning uses a single, integrated model of the Delaware/Maryland portion of the Delmarva Peninsula.

As noted above, WILMAPCO and DelDOT planning staffs developed a subcommittee process to estimate and manage demographic data for all of the TAZ in the modeled area (the Dover/Kent MPO manages a similar process for Kent County and participates in the WILMAPCO process as well).

Demographic data used in travel models generally consists of:

1) Population
2) Dwelling Units
3) Total Employment by Place of Work
4) Employment by Job Sector, by Place of Work

5) Total Employed Persons (Employment by Place of Residence)
6) Average Income
7) Income Quartiles
8) Average Vehicle Ownership
9) Vehicle Ownership Quartiles

For each TAZ, data for each of these items is obtained from the most recent census (2010 Census), updated as needed to the base year of the plan model (in this case, 2016).

For this conformity analysis, that means data from the 2010 Census was used with other locally obtained information to develop a set of TAZ estimates for 2016. Employment by place of work is not a product of the US Census, but the TAZ data allocation process used a series of local and state data sources to develop and achieve consensus on TAZ-based employment locations.

The process developed and finalized demographic forecasts for each TAZ, for the horizon years of 2020, 2030, 2040, and 2050. Any other years needed for travel forecasts or air quality planning can be obtained through interpolation.

The second primary travel model input is the so-called "travel network" which is a map-like representation of Sussex County roadways and streets. The network file stores the following data for each street segment:

1) Functional Class (or road type)
2) Number of Lanes
3) Lane Capacity
4) Posted Speed
5) Operating Speed
6) Average Peak Period Capacity (Lanes X Lane Capacity)

The current set of DelDOT/MPO/Sussex County travel demand models is typical of advanced TAZ-based travel models in use in the United States. DelDOT staff (with assistance from an engineering consulting firm) estimated these models using data from the 1997 – 2017 Delaware Travel Monitoring Survey (DTMS).

The current TAZ-based models are referred to as aggregate demand models because they are applied at an aggregate, zonal level with extensive market segmentation.

As part of this conformity analysis update a review and process update of the Sussex County modeling area was performed by DelDOT staff, which added the 2014 – 2017 DTMS travel survey data to the modeling process.

The trip generation models include a precursor step, which disaggregates TAZ-based household data using workers per household, persons per household, and vehicles per household data from US Census PUMS, then applies cross classification based trip generation rates to estimate productions and attractions for each TAZ, for several trip purposes including:

1) Home-Based Work (HBW)
2) Home-Based Local Shopping (HBLS)
3) Home-Based Regional Shopping (HBRS)
4) Home-Based Other (HBO)
5) Non-Home Based (NHB)
6) Journey-to-Work (JTW)
7) Journey-at-Work (JAW)
8) Trucks

The trip distribution models are standard gravity model formulations using trip length frequencies for each trip purpose, from the 1997 – 2017 DTMS.

The mode choice model used by DelDOT is a nested logic choice format. Non-motorized trips (separate modes for bicycle and walk) are included as an option in certain sets of model runs that are based on tax-parcel TAZ geography. Non-motorized trips are not currently modeled in the TAZ-based regional modeling process used for county-based conformity analyses.

The trip assignment procedures use network capacity-constrained equilibrium methods, which emphasize average weekday peak period congestion levels to allocate roadway volumes and speeds by time period of day. Four peak period times are used: AM, Midday, PM, and Offpeak. The process uses customized speed-flow delay curves representing freeway, arterial, collector, and local speeds separately.

The model process methods, as required by conformity regulations, incorporate full feedback from trip assignment back through trip distribution. The travel model was run in the CUBE Voyager software package (Version 6.4.4) under license from the vendor, Citilabs.

In summary, the modeling process developed used a 2016 base year network validated against DelDOT traffic counts for 2017.

Model networks were developed for the base year of 2016 and 10-year intervals of 2020, 2030, 2040 and 2050. The types of projects tested were corridor improvements, highway widening, and new roadway construction. Each project was added to the network in the year when the improvement was completed. Socioeconomic projects such as population, employment, and household size were developed for the same planning horizon years.

Emission Factor Estimate

EPA's Office of Transportation and Air Quality (OTAQ) developed the **MO**tor **V**ehicle **E**mission **S**imulator (MOVES). Initial draft versions of the software were released in 2009. This is the required modeling software used in regional or countywide air quality analyses including transportation conformity analyses.

The software replaces the previous EPA tool which was called MOBILE6.2. The MOVES software is required by the EPA for use in all conformity analyses in the U.S. after March 2013.

MOVES software is a new, revised emission modeling system estimating emissions for mobile sources covering a broad range of mobile source pollutants and allows multiple scale analysis. The MOVES software produces estimates of emissions from cars, trucks and motorcycles.

The travel model software, CUBE Voyager, was arranged by DelDOT staff with consultant assistance to include the DNREC spreadsheet-based "MOVES inventory method" process for estimating mobile source emissions in Sussex County.

Essentially, DNREC staff developed an Excel-based application of the MOVES inventory method for estimating mobile source emissions. The portions of the requiring various data to be extracted from the travel demand model for each horizon year were identified, and a data transfer process was developed to facilitate the integration of required, travel model output data into the DNREC "runspec" MOVES input file. A separate MOVES "runspec" input file was developed for each horizon year (for each of Delaware's three counties). DelDOT and its engineering

consulting firm (WRA) "ran" the runspec file for each horizon year to obtain speed-bin VMT and emissions, per DNREC controls defined in the runspec file.

A series of quality-control checks was performed by DelDOT and the consulting firm staff ensuring the CUBE-model generated emissions data accurately replicated the DNREC spreadsheet method, for each of the horizon years.

Through the process travel model link segment volumes are summed to countywide totals. Adjustment factors are then used to account for seasonal traffic variations and alignment of Delaware-based vehicle miles traveled (VMT) estimates with the federally-required Highway Performance Management System (HPMS). HPMS data are used to standardize the Delaware specific VMT data as required by the USEPA so that direct comparisons can be made among different years and modeling scenarios.

Mobile Source Emissions Estimates

The estimates of emissions for Sussex County are generated jointly by the DelDOT and DNREC. The model post-processor takes data produced by CUBE Voyager model output for New Castle County and adjusts it for input into the MOVES mobile emissions process noted above. This process links the estimated roadway speeds and volumes generated by the travel demand model with current and planned emission reduction trends derived from MOVES that reflect and incorporate planned emission reduction programs and technologies that will be implemented (by DNREC) within Delaware.

The product of this process is countywide emission estimates presented in this document.

The vehicle miles traveled (VMT) and emissions data for Sussex County were adjusted to be compatible with the data contained in the current SIPs. The adjustments represent factors to account for seasonal traffic variations and to align the travel demand estimates with DelDOT's and HPMS traffic level reporting system. These data were used to standardize the Delaware specific VMT data as required by the EPA so that direct comparisons can be made among different years and modeling scenarios.

Sussex County Travel Demand Model File Summary

Model: DelDOT Peninsula Travel Demand Model
Version: "Clean Model 18" (Whitman, Requardt, and Associates, November, 2018)
Model Catalog: Peninsula Model.CAT
Scenario: "Sussex County Conformity"
Software: CUBE Voyager 6.4.4 (July, 2019)

Year	LOD Filename
2020	A20ADT_LOAD.NET (August 25, 2019)
2030	A30ADT_LOAD.NET (August 25, 2019)
2040	A40ADT_LOAD.NET (August 25, 2019)
2050	A50ADT_LOAD.NET (August 25, 2019)

Note: Travel Demand Model output files available upon request, but require a commercial seat or enterprise license for CUBE Voyager available from Citilabs, Inc.

Appendix E:

Sussex County 2020 – 2025 CTP Project List

2020-2025 Draft CTP Project List

Proposed FY21 to FY26 Capital Transportation Program

Proposed Project Implementation For Prioritized Projects

Denotes Projects in construction or going to advertisement in the next 6 months
New Projects added to FY21 - FY26 CTP
New Projects added to FY20 - FY25 CTP
Changes in Projects
Projects moved to Highway Safety Improvement Program Line

PE Preliminary Engineering
ROW Right-of-Way Acquisition
C Construction

Rank	Project Name	FY20	FY21	FY22	FY23	FY24	FY25	FY26	County	Score
1	US 40, Salem Church Road to Walther Road	PE/ROW	ROW/C	C	C	C			New Castle	0.711
2	Elkton Road, MD State Line to Casho Mill Road	PE/ROW/C	C	C	C				New Castle	0.709
3	West Camden Bypass (Proposed Name Change)	PE/ROW	PE/ROW/C	C	ROW/C	C			Kent	0.701
4	US 13, US 40 to Memorial Drive Pedestrian Improvements	PE/ROW	PE/ROW/C	PE/C	C	C	C	C	New Castle	0.668
5	US 9, Kings Highway, Dartmouth Dr to Freeman Highway			PE	PE		ROW	ROW/C	Sussex	0.667
6	SR 299, SR1 to Catherine Street	PE/ROW/C	PE/C	PE/C					New Castle	0.661
7	US 9 and Minos Conway Intersection Improvement			PE	PE	ROW	C	C	Sussex	0.637
8	US 9 and US 113 Grade Separated Intersection			PE	PE		C	C	Sussex	0.626
9	***HSIP NCC: US 40 and SR7 Intersection Improvements***	C							New Castle	0.606
10	**US 40, Pulaski Highway / SR 72, Wrangle Hill Road**	C	C	C					New Castle	0.596
11	Glasgow Avenue, SR 896 to US 40			PE	PE	ROW	ROW	C	New Castle	0.592
12	East Camden Bypass (Proposed Name Change)	PE/ROW	PE/ROW/C	ROW/C	C				Kent	0.586
13	SR1 Fenwick Island Sidewalk (Lighthouse Rd. to Lewes St.)					PE	PE	ROW	Sussex	0.580
14	SR 896 Widening, US 40 to I-95			PE	PE	PE	ROW	C	New Castle	0.580
15	US 9 Widening (Ward Ave. to Old Vine Rd.)					PE	PE	PE	Sussex	0.579
16	***HSIP NCC, SR41 and Faulkland Road Intersection***	C							New Castle	0.578
17	SR4, Harmony Road Intersection Improvements		PE	PE	PE	PE	ROW/C	C	New Castle	0.571
18	**US 113 Widening, Dagsboro Road to Harbeson Road**			PE	PE	PE	PE/ROW	ROW	Sussex	0.569
19	SR 9, New Castle Ave, Landers Lane to A Street, Planning Study				PE	PE/ROW	ROW/C	C	New Castle	0.569
20	***HSIP SR 24 at Mount Joy Road and SR 24 at Bay Farm Road Intersection Improvements***	C	C						Sussex	0.568
21	Walnut Shade Road, US13 to Peachtree Run Road	PE	ROW	ROW	C	C			Kent	0.567

Proposed FY21 to FY26 Capital Transportation Program

Proposed Project Implementation For Prioritized Projects

Denotes Projects in construction or going to advertisement in the next 6 months
New Projects added to FY21 - FY26 CTP
New Projects added to FY20 - FY25 CTP
Changes in Projects
Projects moved to Highway Safety Improvement Program Line

PE Preliminary Engineering
ROW Right-of-Way Acquisition
C Construction

Rank	Project Name	FY20	FY21	FY22	FY23	FY24	FY25	FY26	County	Score
22	US13 at SR18/SR404 (Georgetown) Grade Separated Intersection	PE	PE/ROW	PE/ROW	PE/ROW/C	C	C		Sussex	0.546
23	SR 2 and Red Mill Road, Intersection Improvement	PE/ROW	ROW/C	C	C				New Castle	0.539
24	US 13, Lochmeath Way to Puncheon Run Connector	PE/ROW	PE/ROW/C	C	C	C	C		Kent	0.527
25	US 13, Walnut Shade Road to Lochmeath Way	PE	PE/ROW	PE/ROW	ROW	C	C		Kent	0.526
26	NE Front Street, Rehoboth Blvd to SR1		PE	PE	PE	ROW	ROW/C	C	Kent	0.519
27	***SR 24, Mulberry Knoll to SR 1***	C	C						Sussex	0.518
28	Dewey Beach Pedestrian and ADA Improvements (Anchors Way to Bayard Ave.)					PE	PE	ROW	New Castle	0.516
29	HSIP NCC: SR 273 and Harmony Road Intersection Improvement	PE/ROW/C	C						New Castle	0.516
30	S. College Ave. Gateway					PE	PE	PE	New Castle	0.513
31	Wilmington Initiatives, King and Orange Streets, MLK to 13th Street	PE/C	C						New Castle	0.501
32	I-95 and SR896 Interchange	PE	PE	PE/ROW	ROW		C	C	New Castle	0.499
33	US 40 (Pulaski Hwy) and SR 7 (Bear Christiana Rd) Intersection Improvements				PE	PE	PE	ROW	New Castle	0.497
34	HSIP SR 24 at SR 5 / SR 23 Intersection Improvements	PE/ROW	C	C					Sussex	0.496
35	HEP SC, SR1 and SR16 Grade Separated Intersection	PE/ROW	C	C	C				Sussex	0.494
36	***HSIP NCC, I-95, SR12 Carr Road & N2, Marsh Road Interchange Improvements***	C							New Castle	0.491
37	Canterbury Road - SR 12 to US 13	PE	PE	ROW	ROW	PE	ROW	ROW	Kent	0.490
38	SR1 and Cave Neck Road Grade Separated Intersection	PE	PE	PE/ROW	ROW	C	C	C	Sussex	0.488
39	SR 54 Multi-modal Improvements (Blue Beard Trail to Melrose Ave.)						PE	PE	Sussex	0.488
40	***Newark Regional Transportation Center***	PE/C	PE/C						New Castle	0.484
41	SR 1 Widening, SR 273 to the Rash Bridge	PE/ROW	ROW	ROW	ROW/C	ROW/C	ROW/C	ROW/C	New Castle	0.483
42	SR273 and Chapman Road, Intersection Improvements	PE	PE	PE/ROW/C	ROW/C	C	C	C	New Castle	0.480

Proposed FY21 to FY26 Capital Transportation Program

Proposed Project Implementation For Prioritized Projects

Denotes Projects in construction or going to advertisement in the next 6 months
New Projects added to FY21 - FY26 CTP
New Projects added to FY20 - FY25 CTP
Changes in Projects
Projects moved to Highway Safety Improvement Program Line

PE Preliminary Engineering
ROW Right-of-Way Acquisition
C Construction

Rank	Project Name	FY20	FY21	FY22	FY23	FY24	FY25	FY26	County	Score
43	US 40 & SR 896 Grade Separated Intersection	PE	PE/ROW	PE	PE/C	C	C		New Castle	0.479
44	N427, Cedar Lane Road, Marl Pit Road, to Boyd's Corner Road	ROW	ROW	C	C	C			New Castle	0.479
45	Old Capitol Trail, Newport Road to Stanton Road		PE	PE	PE	ROW	ROW/C	C	New Castle	0.477
46	NCC Transit Center	PE	PE/ROW	C	C				New Castle	0.473
47	Safety NC: SR4 and Churchmans Rd Intersection improvement						PE	PE	New Castle	0.465
48	SR 72, McCoy Road to SR 71, including Utility Contract	PE	C	C					New Castle	0.465
49	Peachtree Run Rd. (Voshells Mill Rd. to Irish Hill Rd.)						PE	PE	New Castle	0.464
51	Crawford Carroll Road Extension, Crawford Carroll Road to US13 (Proposed Project Deletion)								Kent	0.463
52	***HSIP NCC, N282, Mill Creek Road and Stoney Batter Road Intersection (Proposed change in scope from safety to drainage -State of Good Repair funding)***								New Castle	0.461
53	US13: I-495 to PA Line						PE	PE	New Castle	0.461
54	***Cedar Lane Road and Marl Pit Road Intersection Improvement***	C							New Castle	0.460
55	***SR 141 Improvements, I-95 Interchange to Jay Drive***	PE/ROW/C	C	C					New Castle	0.455
56	HSIP SR 24 at Camp Arrow Head Road and SR 24 at Robinsonville Rd/Angola Rd Intersection Improvements	PE/ROW	ROW	C					Sussex	0.449
57	Realignment of S268A at Westcoats Corner	PE/ROW	PE/ROW/C	C	C				Sussex	0.449
58	Georgetown East Gateway Improvement (US 9, Market Street, Sand Hill Road / Airport Road intersection improvement)	PE/ROW/C	C	C					Sussex	0.444
59	SR 8, Connector from Commerce Way to SR 8		PE	PE	PE	ROW	C	C	Kent	0.441
60	Tyler McConnell Bridge, SR 141, Montchanin Road to Alapocas Road				PE	PE	PE	PE/ROW	New Castle	0.439
61	N15, Boyd's Corner Road, Cedar Lane Road to US 13	PE	PE/ROW	ROW				C	New Castle	0.436
62	North Millsboro Bypass, US113 to SR24	PE	PE/ROW	PE/ROW	PE/ROW/C	C	C	C	Sussex	0.437
63	HSIP NCC: SR 2 (Kirkwood Hwy) & Harmony Rd Intersection Improvements.					PE	PE	ROW	New Castle	0.437

Proposed FY21 to FY26 Capital Transportation Program

Proposed Project Implementation For Prioritized Projects

cts in construction or going to advertisement in the next 6 months
dded to FY21 - FY26 CTP
dded to FY20 - FY25 CTP
ojects
o Highway Safety Improvement Program Line

PE Preliminary Engineering
ROW Right-of-Way Acquisition
C Construction

ct Name	FY20	FY21	FY22	FY23	FY24	FY25	FY26	County	Score
nd SR141 Interchange, Ramps G & F Improvements	C							New Castle	0.432
NCC, Old Baltimore Pike and Salem Church Road	PE/C	C						New Castle	0.428
Minos Conaway Grade Separated Intersection	PE	ROW	ROW	C	C	C		Sussex	0.425
erman Street / Forest Street	ROW	C						Kent	0.423
ngton Initiatives -Walnut Street, MLK to 13th Street	PE/ROW	PE/ROW	PE/C	C	C			New Castle	0.423
ations Road Improvements, SR 24 to US 9	ROW	ROW	ROW/C	ROW/C	ROW	C	C	Sussex	0.421
son Corner Road Relocated at Boyd's Corner Road	C							New Castle	0.421
Ogletown Stanton Road/SR 7, Christiana Stanton Road Phase I, Stanton		PE	PE	PE	PE/ROW	ROW/C	C	New Castle	0.419
NCC, SR 273, Appleby Road and Airport Road Intersection ***ovements***	C							New Castle	0.418
SC, SR 24, Love Creek to Mulberry Knoll	ROW	ROW/C	C					Sussex	0.414
ngton Initiatives - 4th Street, Walnut Street to I-95	PE	PE	ROW	C	C			New Castle	0.405
Creek Parkway (Bassett St. To Main St.)							PE	New Castle	0.400
, NE Front Street Grade Separated Intersection	C							Kent	0.399
Christina Parkway from SR 2, Elkton Road to SR 896, South College ue, Newark	PE	PE/ROW	ROW				C	New Castle	0.397
on Road, SR8 to Chestnut Grove Road	PE/ROW	PE/ROW					C	Kent	0.394
bridge Local Street Network					PE	PE	C	New Castle	0.393
Street, New Burton Road to North Street		PE	PE/ROW	ROW	C			Kent	0.389
Neck Road, Hudson Road and Sweetbriar Road					PE	PE	ROW	Sussex	0.384
Connector							PE	New Castle	0.381
stina River Bridge and Approaches	C	C						New Castle	0.379
KC, South State Street/Pearldealing Road/Woodtown Road Intersection Improvements					PE	ROW	C	Kent	0.378

Proposed FY21 to FY26 Capital Transportation Program

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PE Preliminary Engineering
ROW Right-of-Way Acquisition
C Construction

Rank	Project Name	FY20	FY21	FY22	FY23	FY24	FY25	FY26	County	Score
85	Otts Landing Rd and Airport Rd Intersection Improvement and Airport Rd Extension						PE	PE	Sussex	0.371
86	Discount Land Road, US 13A to US 13	PE	PE/ROW	PE/ROW/C	C				Sussex	0.370
87	Churchman's Crossing Fairplay Station Parking Expansion	PE	PE	C	C				New Castle	0.368
88	***Lewes Park and Ride and Maintenance Facility***	C							Sussex	0.362
89	HSIP SC: Dairy Farm Road and Beaver Dam Road/Fisher Road intersection improvement							PE	Sussex	0.360
90	North Main St. Smyrna - Shoulders (Duck Creek Parkway to Glenwood Ave.)							PE	Kent	0.358
91	Iron Hill Road, Fox Chase Road to McCinnis Pond Road		PE	PE	PE	ROW	ROW/C	ROW/C	Kent	0.350
92	College Road, Kenton Road to McKee Road				PE	PE	ROW	ROW	Kent	0.339
93	***Garasches Lane, Wilmington***	C	C						New Castle	0.337
94	Beaver Dam Rd. Widening (SR 1 to Dairy Farm Rd.)							PE	Sussex	0.333
95	US 113, North / South Improvements	ROW	ROW	ROW	ROW	ROW	ROW	ROW	Sussex	0.325
96	I-295 Northbound, SR141 to US13				PE	PE	ROW	ROW/C	New Castle	0.325
97	HSIP KC, SR 15 and SR 42 Intersection Improvements							PE	Kent	0.293
98	SR896 at Bethel Church Road Interchange		PE	PE	PE			C	New Castle	0.286
99	Maryland Ave. and Monroe St. (Maryland Ave./Monroe St./MLK Area)							PE	New Castle	0.281
100	***Road A / SR 7 Improvements***	C	C						New Castle	0.278
101	Park Avenue Relocation	PE/ROW	PE/ROW/C	ROW/C	ROW	C	C		Sussex	0.273
102	US 13, Duck Creek to SR1	PE/ROW	PE/ROW	PE				C	New Castle	0.268
103	HEP KC, SR 8 & SR 15 Intersection Improvements	PE/ROW	ROW/C	C					Kent	0.266
104	SR 9, River Road Area Improvements, Flood Remediation	PE	PE						New Castle	0.266
105	Old Landing Road and Warrington Road Intersection Improvement						PE	PE	Sussex	0.255

Proposed FY21 to FY26 Capital Transportation Program

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Rank	Project Name	FY20	FY21	FY22	FY23	FY24	FY25	FY26	County	Score
106	Possum Park Road and Old Possum Park Road Intersection Improvements	PE/C	ROW	C					New Castle	0.255
107	East 7th Street							PE	New Castle	0.244
108	N412, Lorewood Grove Road, Rd 412A to SR 1	ROW	ROW	ROW				C	New Castle	0.236
109	New Road, Nassau Road to Old Orchard Road						PE	PE	Sussex	0.232
110	Denny Road and Lexington Parkway Intersection Improvement		PE	PE		ROW	C		New Castle	0.226
111	***Claymont Regional Transportation Center***	PE/C	C	C					New Castle	0.194
112	US 113 at SR 16 (Ellendale) Grade Separated Intersection	PE	PE	PE	PE/ROW	PE/ROW			Sussex	0.154
113	SR1, Scarborough Road C-D Roads		PE	PE	PE	ROW	ROW/C	C	Kent	0.154
114	HSIP NCC: Otts Chapel Road and Welsh Track Road intersection improvements				PE	ROW	C	C	New Castle	0.148
115	***Shallcross Lake Road, Greytag Road to Boyds Corner Road***	C							New Castle	0.136
116	Wilmington Operations Center Bus Wash	C	PE/C	C					New Castle	0.114

Appendix F:

US EPA Conformity Criteria Checklist

CRITERIA FOR EVALUATING CONFORMITY DETERMINATIONS

Evaluation of the Conformity Determination for the Proposed Sussex County, Delaware 2013 – 2018 Capital Transportation Plan

SECTION of 40 CFR Part 93	CRITERIA	Y/N	COMMENTS
GENERAL CRITERIA APPLICABLE TO BOTH PLAN AND TIP			
93.110	Are the conformity determinations based upon the latest planning assumptions?	Yes	The conformity determination uses the most recent available information including recent demographics and vehicle registration.
	(a) Is the conformity determination, with respect to all other applicable criteria in §§93.111 - 93.119, based upon the most recent planning assumptions in force at the time of the conformity determination?	Yes	Population, housing and land use data inputs for the Travel Demand Model were updated in **Fall of 2017** to reflect growth since the **2010** US Census. Vehicle fleet data for **July, 2017** was utilized in the conformity determination
	(b) Are the assumptions derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other designated agency? Is the conformity determination based upon the latest assumptions about current and future background concentrations?	Yes	Transportation demand and emissions modeling assumptions are developed by the DE Dept of Transportation in conjunction with other local, state and federal representatives as part of the consultation process.
	(c) Are any changes in the transit operating policies (including fares and service levels) and assumed transit ridership discussed in the determination?	Yes	No changes to transit fare policy are anticipated. Changes to service levels for fixed route service in Sussex County are not anticipated for the duration of the plan.
	(d) The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.	Yes	It is reasonable to assume they will remain constant. There are no road or bridge tolls in the study area.
	(e) The conformity determination must use the latest existing information regarding the effectiveness of the TCMs and other implementation plan measures which have already been implemented.	N/A	There are currently no TCM's active in the Sussex County.

	(f) Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105.	Yes	Key planning assumptions are agreed upon by all participating parties through the interagency consultation process. The conformity document has been made available for public review for the required **30 day period**.
93.111	Is the conformity determination based upon the latest emissions model?	Yes	Emissions factors for the Conformity Determination were calculated using **MOVES2010b.** This is the latest version of the current emissions model.
	Did the MPO make the conformity determination according to the consultation procedures of the conformity rule or the state's conformity SIP?	Yes	DelDOT conducted the conformity determination in accordance with the consultation procedures of the conformity rule.

TRANSPORTATION PLAN

93.106(a) (1)	Are the Horizon Years correct?	Yes	Analysis horizon years included **2020, 2030, 2040, and 2050**. These represent the appropriate horizon years for the 8-hour ozone NAAQS conformity determination.
93.106(a) (2)(i)	Does the plan quantify and document the demographic and employment factors influencing transportation demand?	Yes	Socioeconomic data including population, retail and non retail employment and number of house-holds are included in the body of the conformity document
93.106(a) (2)(ii)	Is the highway and transit system adequately described in terms of the regionally significant additions or modifications to the existing transportation network which the transportation plan envisions to be operational in the horizon years?	Yes	The regional modifications to the highway and transit systems are documented within the conformity determination report and included in the emissions analysis
93.108	Is the Transportation Plan Fiscally Constrained?	Yes	The transportation plan is in complete agreement with the State's **2020 – 2025 Capital Improvement Plan.**
93.113(b)	Are TCM's being implemented in a timely manner?	N/A	There are no TCM's included in the Plan
93.118	For Areas with SIP Budgets: Is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Yes	Emission totals calculated for each analysis years were found to be consistent with the Sussex County Delaware **2008 and 2009 SIP budgets for ozone.**

Appendix C
Traffic Projections

Index of Segment Numbers by Route

Segment	Route	Segment	Route
1	US 50 (OCEAN GATEWAY)	35	MU 415 (E CARROLL ST)
2	US 50 (SALISBURY BYPASS)	36	MU 1632 (E MAIN ST)
3	US 13 (SALISBURY BYPASS)	37	MD 346 (E MAIN ST)
4	US 13 (SALISBURY BYPASS)	38	MD 350 (MT HERMON RD)
5	US 13 (SALISBURY BYPASS)	39	CO 416 (NAYLOR MILL RD)
6	US 13 (SALISBURY BYPASS)	40	MU 415 (E CARROLL ST)
8	US 50 BU(W SALISBURY PKWY)	41	MD 350 (MT HERMON RD)
7A	US 50 BU(OCEAN GATEWAY)	42	MD 12 (SNOW HILL RD)
7B	US 50 BU(W SALISBURY PKWY)	43	MD 12 (SNOW HILL RD)
9	US 50 BU(E SALISBURY PKWY)	44	MD 12 (SNOW HILL RD)
10	US 50 BU(E SALISBURY PKWY)	45	CO 420 (JERSEY RD)
11	US 50 BU(E SALISBURY PKWY)	46	MU 1430 (JERSEY RD)
12	US 50 BU(E SALISBURY PKWY)	47	CO 1106, MU 38, MU 39 & MU 370 (CAMDEN AVE)
13	US 50 (OCEAN GATEWAY)	48	CO 153, CO 1302 & MU 2421 (RIVERSIDE DR)
14	US 50 (OCEAN GATEWAY)	49	MU 38 & US 13 A (S CAMDEN AVE)
15	MD 675 B (BI STATE BLVD)	50	MD 513 (E CEDAR LA)
16	US 13 (OCEAN HWY)	51	MU 2422 (RIVERSIDE DR #2)
17	US 13 (OCEAN HWY)	52	MU 630, MU 631 & CO 445 (W COLLEGE AVE)
18	US 13 BU(N SALISBURY BLVD)	53	CO 277 (BEAGLIN PARK DR)
19	US 13 BU(N SALISBURY BLVD)	54	CO 294 (WALSTON SWITCH RD)
20	US 13 BU(S SALISBURY BLVD)	55	MU 2910 (WAVERLY DR)
21	US 13 BU(N FRUITLAND BLVD)		
22	US 13 BU(S FRUITLAND BLVD)		
23	US 13 (OCEAN HWY)		
24	MU 828 (EASTERN SHORE DR)		
25	MU 765 & CO 213 (DIVISION ST S)		
26A	MD 349 (NANTICOKE RD)		
26B	MD 349 (NANTICOKE RD)		
27	MU 1330 (W ISABELLA ST)		
28	MU 2600 (SOUTH BLVD)		
29	MU 520 (E CHURCH ST)		
30	CO 277 (BEAGLIN PARK DR)		
31	MD 346 (OLD OCEAN CITY RD)		
32	MD 346 (OLD OCEAN CITY RD)		
33	MU 2125 (PEMBERTON DR)		
34	MU 960, 2095, & CO 106 (PARSONS RD)		

Projected ADTS (Internal)

SALISBURY/WICOMICO CO. TRANSPORTATION PLAN - Directional Distribution for Internal Trips

TAZ	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA		
	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	ADT	
link	N/A	2,076	5,157	2,610	545	322	1,271	609	670	1,683	340	3,701	3,425	295	1,371	635	2,720	1,710	220	287	423	396	350	1,240	350	120	958	TOTAL 33,484	link
1	27%	27%	27%	27%	27%	73%	27%	0%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	80%	16,700	1
2	36%	36%	36%	36%	37%	50%	37%	0%	13%	13%	36%	7%	0%	0%	0%	0%	0%	0%	36%	36%	36%	36%	0%	0%	0%	0%	35%	9,400	2
3	25%	25%	25%	25%	25%	25%	25%	0%	0%	10%	52%	13%	0%	8%	10%	8%	8%	8%	56%	62%	62%	25%	25%	8%	8%	8%	25%	9,000	3
4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	20%	18%	18%	28%	0%	0%	0%	0%	20%	20%	30%	30%	0%	4,200	4
5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	18%	28%	0%	0%	0%	0%	0%	50%	30%	30%	0%	3,200	5
6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	28%	0%	0%	0%	0%	0%	5%	30%	50%	0%	1,900	6
7A	0%	0%	0%	0%	0%	13%	0%	9%	23%	23%	0%	29%	36%	36%	36%	36%	36%	36%	0%	0%	0%	36%	20%	36%	30%	36%	13%	11,400	7A
7B	0%	0%	0%	0%	0%	13%	0%	9%	23%	23%	0%	29%	36%	36%	36%	36%	36%	36%	0%	0%	0%	36%	20%	36%	30%	36%	13%	11,400	7B
8	0%	0%	0%	0%	0%	13%	0%	38%	23%	23%	0%	29%	38%	36%	36%	36%	36%	36%	0%	0%	0%	0%	0%	15%	36%	36%	13%	11,900	8
9	0%	0%	0%	0%	0%	13%	0%	38%	23%	23%	0%	29%	38%	36%	36%	36%	36%	36%	0%	0%	0%	0%	0%	15%	36%	36%	13%	11,900	9
10	0%	0%	0%	0%	13%	13%	13%	38%	8%	15%	10%	39%	38%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	13%	5,700	10
11	0%	0%	0%	0%	0%	0%	0%	25%	13%	15%	10%	39%	38%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	5%	4,600	11
12	0%	0%	0%	0%	0%	0%	0%	25%	13%	35%	10%	25%	25%	15%	15%	15%	15%	5%	0%	13%	0%	0%	15%	15%	5%	5%	2%	6,100	12
13	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	62%	25%	25%	25%	25%	25%	25%	25%	56%	75%	50%	25%	25%	25%	25%	25%	25%	14,900	13
14	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	50%	0%	25%	25%	25%	25%	25%	1,800	14
15	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	5%	5%	5%	1%	0%	200	15
16	88%	88%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	70%	12%	12%	12%	12%	12%	10,200	16
17	74%	74%	74%	74%	12%	12%	12%	12%	26%	26%	16%	16%	12%	4%	26%	16%	16%	16%	20%	26%	26%	60%	3%	3%	10%	10%	12%	16,700	17
18	0%	0%	13%	13%	0%	0%	0%	12%	24%	0%	0%	0%	12%	0%	6%	8%	3%	3%	0%	0%	0%	0%	0%	0%	3%	3%	0%	3,300	18
19	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	25%	54%	48%	48%	0%	0%	0%	0%	5%	5%	48%	48%	0%	7,700	19
20	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	54%	48%	48%	0%	0%	0%	0%	0%	30%	48%	48%	0%	6,500	20
21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%	61%	56%	0%	0%	0%	0%	0%	20%	56%	56%	0%	5,100	21
22	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	56%	0%	0%	0%	0%	0%	0%	40%	56%	0%	2,500	22
23	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0	23
24	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	1,400	24
25	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	20%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	1,600	25
26A	0%	0%	0%	0%	0%	0%	0%	73%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2,400	26A
26B	0%	0%	0%	0%	0%	0%	0%	73%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2,400	26B
27	0%	0%	0%	0%	0%	0%	0%	26%	0%	0%	0%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,800	27
28	0%	0%	0%	0%	13%	0%	13%	12%	0%	0%	0%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,100	28
29	0%	0%	0%	0%	0%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	300	29
30	13%	13%	13%	13%	0%	0%	0%	0%	15%	29%	0%	16%	0%	8%	10%	0%	5%	5%	0%	0%	0%	5%	5%	5%	5%	5%	0%	4,000	30
31	0%	0%	0%	0%	0%	0%	0%	0%	12%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	400	31
32	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	1,000	32
33	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3,800	33
34	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	34
35	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	23%	23%	23%	0%	0%	0%	0%	0%	10%	20%	2%	2%	0%	3,400	35
36	0%	0%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	18%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,500	36
37	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	200	37
38	13%	13%	13%	13%	13%	13%	13%	13%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	13%	5%	10%	15%	15%	0%	0%	13%	3,700	38
39	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	100	39
40	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0	40
41	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	300	41
42	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	46%	24%	0%	0%	0%	0%	0%	0%	0%	40%	40%	0%	0%	0%	2,600	42
43	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	25%	0%	0%	0%	0%	0%	0%	0%	40%	40%	0%	0%	0%	2,200	43
44	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	40%	0%	0%	0%	600	44
45	0%	0%	0%	0%	14%	0%	14%	14%	0%	0%	10%	10%	14%	0%	10%	10%	10%	14%	6%	0%	0%	0%	0%	0%	14%	14%	0%	3,600	45
46	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	10%	10%	10%	0%	6%	0%	0%	0%	0%	5%	10%	5%	0%	1,800	46
47	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	23%	23%	23%	23%	0%	0%	0%	0%	0%	0%	10%	5%	5%	0%	3,300	47
48	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,600	48
49	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	500	49
50	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	5%	0%	20%	0%	700	50
51	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	5%	5%	0%	1,900	51
52	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	28%	18%	13%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	3,400	52
53	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	27%	25%	28%	18%	13%	0%	0%	0%	0%	0%	10%	10%	13%	13%	0%	4,300	53
54	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	81%	0%	15%	0%	10%	10%	0%	10%	0%	600	54
55	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	55

Source: The Traffic Group via S/W MPO

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TAZ	A	B		C		D	E	F		G		H	I		J		K		L	
	Res.	Res.	Com.	Res.	Com.	Res.	Res.	Res.	Com.	Res.	Com.	Res.	Res.	Com.	Res.	Com.	Res.	Com.	Res.	Com.
link		5434	824	13493	1138	6829	1425	837	7630	3325	2483	1595	1755	246	4400	692	886	1034	9677	466
1	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	0%	25%	25%	25%	25%	25%	25%	25%	25%
2	25%	25%	25%	25%	25%	25%	60%	40%	45%	40%	45%	10%	10%	5%	25%	5%	25%	25%	5%	5%
3	50%	50%	45%	50%	45%	25%	35%	15%	15%	15%	15%	0%	0%	10%	10%	10%	50%	55%	10%	10%
4	25%	25%	20%	25%	20%	15%	10%	0%	0%	0%	0%	0%	0%	10%	15%	10%	25%	20%	10%	10%
5	15%	15%	10%	15%	10%	10%	5%	0%	0%	0%	0%	0%	0%	5%	10%	5%	15%	10%	5%	5%
6	15%	15%	10%	15%	10%	11%	7%	3%	2%	3%	2%	3%	3%	6%	11%	6%	15%	10%	7%	6%
7A	0%	0%	0%	0%	0%	0%	10%	35%	30%	25%	20%	10%	15%	20%	0%	20%	0%	0%	20%	20%
7B	0%	0%	0%	0%	0%	0%	10%	35%	30%	25%	20%	10%	15%	20%	0%	20%	0%	0%	20%	20%
8	0%	0%	0%	0%	0%	0%	10%	35%	30%	15%	15%	45%	10%	20%	0%	20%	0%	0%	20%	20%
9	0%	0%	0%	0%	0%	0%	5%	25%	20%	10%	10%	45%	10%	10%	0%	10%	0%	0%	10%	10%
10	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	10%	25%	10%	40%	0%	40%	0%	0%	0%	0%
11	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	10%	25%	25%	30%	0%	30%	0%	0%	10%	10%
12	0%	0%	0%	0%	0%	10%	0%	10%	10%	10%	10%	25%	25%	45%	60%	45%	0%	0%	45%	45%
13	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	75%	75%	25%	25%
14	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
15	15%	0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
16	60%	30%	75%	20%	25%	25%	20%	20%	25%	20%	25%	20%	20%	25%	20%	25%	20%	25%	20%	25%
17	75%	75%	80%	75%	75%	75%	25%	25%	30%	25%	30%	25%	25%	30%	25%	30%	25%	30%	25%	30%
18	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	35%	0%	0%	0%	0%	0%	0%	0%
19	0%	0%	0%	0%	0%	0%	15%	25%	20%	20%	15%	25%	25%	10%	0%	10%	0%	0%	10%	10%
20	0%	0%	0%	0%	0%	0%	8%	12%	8%	12%	8%	12%	12%	0%	0%	0%	0%	0%	0%	0%
21	0%	0%	0%	0%	0%	4%	8%	12%	8%	12%	8%	12%	12%	4%	4%	4%	0%	0%	8%	4%
22	0%	0%	0%	0%	0%	4%	8%	12%	8%	12%	8%	12%	12%	4%	4%	4%	0%	0%	8%	4%
23	15%	15%	15%	15%	15%	15%	15%	15%	10%	15%	10%	15%	15%	10%	15%	10%	15%	10%	15%	10%
24	0%	0%	0%	0%	0%	0%	2%	3%	2%	3%	2%	3%	3%	1%	1%	1%	0%	0%	2%	1%
25	0%	0%	0%	0%	0%	1%	2%	3%	2%	3%	2%	3%	3%	1%	1%	1%	0%	0%	2%	1%
26A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
26B	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
27	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%
28	0%	0%	0%	0%	0%	0%	5%	0%	0%	10%	5%	5%	5%	0%	0%	0%	0%	0%	0%	0%
29	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	50%	0%	50%	0%	0%	0%	0%
30	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	20%	70%	40%	70%	0%	0%	20%	25%
31	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	70%	0%	70%	0%	0%	0%	0%
32	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	50%	0%	50%	0%	0%	0%	0%
33	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
34	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
35	0%	0%	0%	0%	0%	0%	5%	10%	0%	15%	15%	15%	0%	10%	0%	10%	0%	0%	10%	10%
36	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	30%	0%	30%	0%	0%	10%	10%
37	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	40%	0%	40%	0%	0%	0%	0%
38	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	20%	0%	0%	10%	10%
39	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	5%	0%	0%	0%	0%
40	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
41	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
42	0%	0%	0%	0%	0%	0%	5%	10%	10%	10%	10%	10%	10%	10%	0%	10%	0%	0%	10%	10%
43	0%	0%	0%	0%	0%	5%	5%	10%	10%	10%	10%	10%	10%	5%	5%	5%	0%	0%	5%	5%
44	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
45	0%	0%	0%	0%	0%	0%	5%	0%	0%	20%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%
46	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
47	0%	0%	0%	0%	0%	0%	5%	10%	10%	15%	15%	15%	0%	10%	0%	10%	0%	0%	10%	10%
48	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
49	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
50	0%	0%	0%	0%	0%	1%	2%	3%	2%	3%	2%	3%	3%	1%	1%	1%	0%	0%	2%	1%
51	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
52	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	5%	5%	5%	0%	0%	10%	5%
53	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	10%	10%	10%	0%	0%	15%	10%
54	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
55	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Source: The Traffic Group via S/W MPO

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M		N		O		P	Q		R		S		T	U	V	W	X	Y	Z	AA		Total ADT	
Res.	Com.	Res.	Com.	Res.	Com.	Res.	Res.	Com.	Res.	Com.	Res.	Com.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Com.		
8961	492	777	209	3586	707	1663	7114	449	4473	302	577	77	751	1111	1044	916	3248	916	315	2505	2246	106608	link
25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	26,300	1
0%	0%	0%	5%	0%	5%	0%	0%	5%	0%	5%	25%	25%	25%	25%	0%	0%	0%	25%	25%	25%	45%	19,100	2
0%	5%	10%	10%	10%	10%	0%	15%	10%	15%	10%	50%	55%	50%	50%	0%	15%	15%	50%	50%	50%	15%	23,700	3
0%	5%	20%	15%	20%	15%	5%	30%	15%	40%	15%	0%	20%	15%	15%	5%	30%	40%	0%	15%	15%	0%	16,000	4
0%	5%	10%	5%	5%	5%	10%	40%	15%	50%	15%	15%	10%	15%	15%	10%	40%	50%	15%	15%	15%	0%	13,700	5
0%	0%	15%	6%	15%	6%	0%	5%	6%	50%	6%	15%	10%	15%	15%	0%	5%	50%	15%	15%	15%	2%	11,800	6
25%	30%	25%	20%	25%	20%	25%	25%	20%	25%	20%	0%	0%	0%	0%	25%	25%	25%	0%	0%	0%	30%	15,800	7A
25%	30%	25%	20%	25%	20%	25%	25%	20%	25%	20%	0%	0%	0%	0%	25%	25%	25%	0%	0%	0%	30%	15,800	7B
60%	5%	10%	20%	25%	20%	25%	25%	20%	25%	20%	0%	0%	0%	0%	25%	25%	25%	0%	0%	0%	30%	18,700	8
45%	20%	10%	10%	10%	10%	10%	10%	10%	10%	10%	0%	0%	0%	0%	10%	10%	10%	0%	0%	0%	20%	11,400	9
25%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	4,900	10
25%	10%	0%	10%	0%	10%	0%	0%	10%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	6,200	11
25%	10%	15%	45%	15%	45%	20%	10%	45%	0%	45%	0%	0%	0%	0%	20%	10%	0%	0%	0%	0%	10%	15,800	12
25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	50%	75%	65%	65%	25%	25%	25%	50%	65%	65%	25%	29,900	13
25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	75%	0%	25%	25%	25%	25%	75%	0%	25%	26,300	14
5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5,100	15
20%	25%	20%	25%	20%	25%	20%	20%	25%	20%	25%	20%	25%	20%	20%	20%	20%	20%	20%	20%	20%	25%	23,600	16
25%	30%	25%	30%	25%	30%	25%	25%	30%	25%	30%	25%	30%	25%	25%	25%	25%	25%	25%	25%	25%	30%	41,400	17
25%	0%	0%	0%	5%	0%	15%	5%	0%	5%	0%	0%	0%	0%	0%	15%	5%	5%	0%	0%	0%	0%	4,500	18
25%	15%	25%	10%	30%	25%	40%	30%	25%	20%	25%	0%	0%	0%	0%	40%	30%	20%	0%	0%	0%	20%	14,400	19
15%	8%	0%	0%	0%	5%	40%	30%	25%	20%	40%	0%	0%	0%	0%	40%	30%	20%	0%	0%	0%	8%	8,700	20
15%	8%	0%	4%	0%	4%	25%	40%	10%	10%	40%	0%	0%	0%	0%	25%	40%	10%	0%	0%	0%	8%	9,500	21
15%	8%	0%	4%	0%	4%	5%	10%	4%	10%	40%	0%	0%	0%	0%	5%	10%	10%	0%	0%	0%	8%	6,600	22
15%	10%	15%	10%	15%	10%	15%	15%	10%	65%	10%	15%	10%	15%	15%	15%	15%	65%	15%	15%	15%	10%	19,000	23
0%	2%	0%	1%	15%	20%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1,500	24
0%	2%	5%	1%	15%	15%	0%	5%	10%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	2%	2,000	25
0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,600	26A
0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,600	26B
15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,500	27
15%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2,100	28
0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,000	29
0%	0%	15%	25%	10%	25%	0%	5%	25%	5%	25%	0%	0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	8,200	30
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,000	31
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	800	32
100%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9,100	33
0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	400	34
15%	15%	15%	10%	15%	10%	15%	15%	10%	15%	10%	0%	0%	0%	0%	15%	15%	15%	0%	0%	0%	0%	7,400	35
0%	0%	0%	10%	0%	10%	0%	0%	10%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,900	36
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	800	37
0%	0%	0%	10%	0%	10%	0%	0%	10%	0%	10%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,400	38
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100	39
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	10%	10%	0%	0%	0%	25%	10%	10%	0%	800	40
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	1,500	41
10%	10%	25%	35%	15%	10%	0%	0%	10%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	5,000	42
10%	10%	55%	10%	20%	10%	5%	0%	10%	0%	5%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	10%	5,600	43
10%	10%	10%	15%	10%	15%	10%	10%	15%	10%	5%	15%	10%	0%	0%	10%	10%	10%	15%	0%	0%	10%	10,300	44
0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1,200	45
0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	700	46
15%	15%	15%	10%	15%	10%	15%	15%	10%	15%	25%	0%	0%	0%	0%	15%	15%	15%	0%	0%	0%	10%	8,400	47
0%	0%	0%	0%	0%	0%	25%	0%	0%	15%	30%	0%	0%	0%	0%	25%	0%	15%	0%	0%	0%	0%	1,900	48
0%	0%	0%	0%	0%	0%	10%	0%	0%	25%	30%	0%	0%	0%	0%	10%	0%	25%	0%	0%	0%	0%	2,300	49
0%	2%	5%	1%	0%	1%	10%	90%	25%	0%	0%	0%	0%	0%	0%	10%	90%	0%	0%	0%	0%	2%	8,500	50
0%	0%	0%	0%	0%	0%	25%	0%	0%	15%	0%	0%	0%	0%	0%	25%	0%	15%	0%	0%	0%	0%	1,800	51
0%	0%	5%	5%	25%	15%	35%	30%	15%	5%	15%	0%	0%	0%	0%	35%	30%	5%	0%	0%	0%	0%	6,500	52
0%	0%	30%	30%	25%	30%	30%	30%	30%	5%	30%	0%	0%	0%	0%	30%	30%	5%	0%	0%	0%	0%	8,000	53
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	0%	10%	10%	0%	0%	0%	75%	10%	10%	0%	1,600	54
0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	55

Source: The Traffic Group via S/W MPO

Existing and Projected AADTS

Segment	AADT 2014	K Factor	D Factor	Existing Peak Hour Directional Flow	Existing v/c	Projected External Trips	Projected Internal Trips	Projected Total AADT	Projected Peak Hour Directional Flow	Projected v/c
1	23,040	7.4%	53%	891	0.21	26,300	16,700	66,040	2,555	0.59
2	19,022	7.7%	54%	792	0.18	19,100	9,400	47,522	1,979	0.46
3	37,782	8.9%	52%	1,765	0.41	23,700	9,000	70,482	3,293	0.77
4	25,372	8.0%	50%	1,027	0.24	16,000	4,200	45,572	1,845	0.43
5	24,212	8.1%	55%	1,079	0.25	13,700	3,200	41,112	1,833	0.43
6	17,102	7.9%	52%	701	0.16	11,800	1,900	30,802	1,262	0.29
7A	17,210	8.4%	54%	770	0.35	15,800	11,400	44,410	1,988	0.91
7B	20,650	7.9%	57%	936	0.43	15,800	11,400	47,850	2,169	0.99
8	24,140	8.3%	60%	1,202	0.40	18,700	11,900	54,740	2,726	0.91
9	17,390	8.0%	50%	695	0.32	11,400	11,900	40,690	1,627	0.75
10	20,090	8.2%	50%	823	0.27	4,900	5,700	30,690	1,257	0.42
11	19,820	8.3%	56%	923	0.31	6,200	4,600	30,620	1,426	0.48
12	17,280	8.0%	51%	698	0.32	15,800	6,100	39,180	1,583	0.73
13	40,220	8.2%	52%	1,693	0.78	29,900	14,900	85,020	3,579	1.64
14	28,540	8.2%	50%	1,176	0.54	26,300	1,800	56,640	2,334	1.07
15	6,085	9.2%	56%	315	0.26	5,100	200	11,385	590	0.49
16	30,832	7.7%	57%	1,341	0.61	23,600	10,200	64,632	2,812	1.29
17	37,106	9.8%	50%	1,818	0.61	41,400	16,700	95,206	4,665	1.55
18	32,052	7.0%	52%	1,182	0.54	4,500	3,300	39,852	1,470	0.67
19	32,782	7.2%	50%	1,192	0.55	14,400	7,700	54,882	1,995	0.91
20	22,492	7.1%	52%	832	0.38	8,700	6,500	37,692	1,395	0.64
21	18,422	8.0%	54%	797	0.37	9,500	5,100	33,022	1,428	0.65
22	12,051	8.3%	50%	501	0.23	6,600	2,500	21,151	880	0.40
23	26,537	10.2%	53%	1,430	0.66	19,000	0	45,537	2,454	1.12
24	10,683	8.4%	53%	478	0.22	1,500	1,400	13,583	608	0.28
25	12,121	8.5%	52%	537	0.45	2,000	1,600	15,721	697	0.58
26A	18,400	7.8%	60%	864	0.72	1,600	2,400	22,400	1,052	0.88
26B	12,300	9.0%	65%	719	0.60	1,600	2,400	16,300	953	0.79
27	3,861	7.8%	58%	175	0.15	1,500	1,800	7,161	325	0.27
28	4,813	9.6%	53%	246	0.21	2,100	1,100	8,013	410	0.34
29	2,013	9.3%	58%	109	0.09	1,000	300	3,313	179	0.15
30	15,842	8.3%	51%	665	0.30	8,200	4,000	28,042	1,177	0.54
31	7,704	9.0%	53%	366	0.31	1,000	400	9,104	433	0.36
32	4,944	9.6%	56%	268	0.22	800	1,000	6,744	365	0.30
33	8,850	7.3%	50%	325	0.27	9,100	3,800	21,750	798	0.67
34	9,251	7.9%	60%	435	0.36	400	0	9,651	454	0.38
35	9,413	8.4%	57%	452	0.21	7,400	3,400	20,213	971	0.44
36	10,651	7.5%	54%	427	0.36	1,900	1,500	14,051	564	0.47
37	4,460	8.7%	52%	199	0.17	800	200	5,460	244	0.20
38	4,622	9.6%	57%	254	0.21	1,400	3,700	9,722	534	0.45
39	13,692	8.4%	54%	615	0.51	100	100	13,892	624	0.52
40	7,973	9.1%	58%	422	0.35	800	0	8,773	465	0.39
41	1,962	9.4%	60%	110	0.09	1,500	300	3,762	211	0.18
42	10,252	7.9%	53%	429	0.36	5,000	2,600	17,852	747	0.62
43	9,282	8.8%	54%	441	0.37	5,600	2,200	17,082	812	0.68
44	4,252	9.8%	53%	219	0.18	10,300	600	15,152	780	0.65
45	5,662	8.2%	55%	255	0.21	1,200	3,600	10,462	471	0.39
46	5,662	8.2%	55%	255	0.21	700	1,800	8,162	367	0.31
47	10,531	8.5%	56%	499	0.42	8,400	3,300	22,231	1,054	0.88
48	2,991	8.8%	60%	156	0.13	1,900	1,600	6,491	339	0.28
49	1,471	10.0%	53%	78	0.07	2,300	500	4,271	227	0.19
50	8,082	9.1%	53%	393	0.33	8,500	700	17,282	840	0.70
51	10,603	8.7%	63%	578	0.48	1,800	1,900	14,303	780	0.65
52	14,891	8.3%	52%	636	0.29	6,500	3,400	24,791	1,059	0.49
53	15,842	8.3%	51%	665	0.30	8,000	4,300	28,142	1,181	0.54
54	3,212	8.7%	53%	148	0.12	1,600	600	5,412	250	0.21
55	8,681	8.0%	51%	353	0.16	0	0	8,681	353	0.16

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Source: The Traffic Group via S/W MPO

Appendix D
Traffic Trend Analysis

Appendix D: Traffic Trend Analysis

Sussex County

A trend analysis using DelDOT historical AADT counts reveals high-growth segments for selected roadways in the S/WMPO area over the 2014 to 2018 period. Data Source: DelDOT via S/WMPO.

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
50030.53	U.S. 13 & DEL. 20	0.53	0.66	23413	37325	37522	37736	38636
50030.66	U.S. 13 & DEL. 20	0.66	0.84	33195	33778	33957	34180	34897
50030.84	U.S.13 & DEL. 20	0.84	1.39	23334	25162	25602	27495	26726
50130.69	CENTRAL AVE., LAUREL	0.69	6.02	2951	3223	3142	3282	2986
50200.36	CONCORD RD.	0.36	1.00	6689	7306	7122	7157	7193
50280.61	US. 9, COUNTY SEAT	0.61	2.22	9032	9411	9560	9668	9716
50300.58	ATLANTA RD., SEAFORD	0.58	2.77	4265	4658	4541	4564	5332
50690.37	OAK LANE DR., LAUREL	0.37	0.48	2574	2831	2987	2473	2473
50760.42	DELMAR RD., DELMAR	0.42	1.49	4063	4470	4716	5108	5132
54190.53	STATE ST., DELMAR	0.53	0.86	8509	6813	6642	6675	7799
54190.86	DEL. 54, LINE RD.	0.86	1.03	15015	16396	15984	16702	18767
54510.67	SALT BARN RD.	0.67	1.47	524	576	608	659	662
54660.28	DELAWARE AVE., LAURE	0.28	0.57	1882	2070	2184	1798	1798
54660.57	SYCAMORE RD.	0.57	0.87	1333	1467	1548	1687	1687
54660.87	SYCAMORE RD.	0.87	3.63	914	1005	1060	1218	1224
54680.8	DISCOUNT LAND RD.	0.80	2.72	576	634	669	724	728
54820.38	BOYCE RD.	0.38	1.09	139	153	161	175	176
54900.74	RIVER RD.	0.74	2.54	1452	1597	1685	1826	1834
55240.17	GERMAN RD.	0.17	0.33	4990	5489	5791	6274	6274

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
55240.33	GERMAN RD.	0.33	2.71	887	976	1030	811	815
55350.94	MIDDLEFORD RD.	0.94	2.90	5952	6547	6908	7483	7483
500100	U.S. 13, SUSSEX HWY	0.00	3.21	23773	25001	25438	27618	27158
500103.21	U.S. 13, SUSSEX HWY	3.21	6.88	24719	22224	22613	22916	22602
500200	U.S. 13, SUSSEX HWY	0.00	1.13	24833	26410	26872	27235	26282
500201.13	DEL. 20, RD. 20	1.13	6.32	24917	22856	23256	23569	23871
500300	U.S. 13 & DEL. 20	0.00	0.53	34283	34885	35153	35299	35475
500301.39	U.S. 13, SUSSEX HWY	1.39	3.08	21249	22436	22828	23140	23256
500303.08	U.S. 13, SUSSEX HWY	3.08	4.10	73147	31250	31796	32224	32385
500400	U.S. 13, SUSSEX HWY	0.00	1.63	32843	21805	22186	22486	22598
501300	BI STATE BLVD.	0.00	0.69	4113	4492	4379	4401	4423
501306.02	CENTRAL AVE., LAUREL	6.02	7.07	3306	3611	3520	3537	3555
501307.07	CENTRAL AVE., LAUREL	7.07	7.74	5909	6454	6292	6323	6355
501307.74	SEAFORD RD.	7.74	12.54	5543	6054	5902	5930	5960
501803.89	DEL. 18, BOWDENS GAR	3.89	7.56	2010	2095	2128	2151	2162
501807.56	DEL. 18, SEASHORE HW	7.56	9.06	2865	2986	3033	3066	3081
502000	CONCORD RD.	0.00	0.36	4468	4747	4799	4822	4846
502001	DEL. 20, CONCORD RD.	1.00	1.51	6775	7400	7214	7536	6856
502001.51	DEL. 20, CONCORD RD.	1.51	2.83	6038	6595	6429	6460	6492
502002.83	DEL. 20, CONCORD RD.	2.83	7.51	5544	6055	5903	5693	6397
502100	DEL. 21, STEIN HWY.	0.00	3.25	5342	5475	5571	6050	5957
502103.25	DEL. 21, STEIN HWY.	3.25	3.53	9918	10472	10655	10800	10854
502103.53	STEIN HWY.	3.53	4.34	10331	10512	10568	9093	9182

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
502104.34	STEIN HWY.	4.34	4.48	16288	16574	16662	16996	17163
502104.48	STEIN HWY.	4.48	4.67	18333	18655	18754	18876	18970
502104.67	STEIN HWY.	4.67	5.07	19542	19885	19990	20122	20223
502105.07	STEIN HWY.	5.07	5.24	21892	17969	18064	18167	18601
502105.24	STEIN HWY.	5.24	5.49	17026	17325	17417	17530	17618
502105.49	NORMAN ESKRIDGE HWY.	5.49	6.31	11933	11899	11962	12031	12091
502406.2	SHARPTOWN RD., LAUREL	6.16	7.22	3097	3228	3279	3315	3812
502407.27	WEST ST., LAUREL	7.22	7.98	7867	8197	8326	8420	6352
502408.02	MARKET ST, LAUREL	7.98	8.54	2922	3045	3093	3129	3708
502408.58	DEL. 24, LAUREL RD.	8.54	8.85	3241	3378	3431	3469	3918
502408.89	DEL. 24, LAUREL RD.	8.85	10.17	6933	7090	7202	7371	7281
502800	US. 9, COUNTY SEAT	0.00	0.61	5121	5337	5421	5482	5509
503000	ATLANTA RD., SEAFORD	0.00	0.58	4232	4622	4506	4567	4253
504600	OLD FURNACE RD.	0.00	1.06	1798	1978	2087	2261	2261
504601.06	OLD FURNACE RD.	1.06	2.88	2675	2943	3105	3071	3086
504602.88	OLD FURNACE RD.	2.87	5.53	5773	6351	6701	6628	6031
506400	DEL. 30, DOROTHY	0.00	0.54	1738	1426	1449	1498	1543
506800	OLD STAGE RD.	0.00	3.33	2024	2226	2348	1304	1267
506900	OAK LANE DR., LAUREL	0.00	0.37	2414	2655	2801	2771	2785
507003.74	GORDY RD.	3.53	4.22	792	865	843	638	638
507100	KING ST., LAUREL	0.00	0.26	446	491	518	561	561
507600	DELMAR RD., DELMAR	0.00	0.42	5718	5587	5895	5832	5550
507800	WOODLAND FERRY RD.	0.00	2.55	2759	3035	3202	3469	3485

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
508001.33	WOODPECKER RD.	1.33	3.98	1856	2042	2154	2196	2206
508100	JEWEL ST., DELMAR	0.00	0.04	88	97	103	101	102
509300	SHIPLY ST., SEAFORD	0.00	0.58	3348	3556	3595	3968	3610
541900	STATE ST., DELMAR	0.00	0.53	6501	6250	6093	6124	6487
541901.03	DEL. 54, LINE RD.	1.03	3.50	6996	7640	7448	7782	8744
545100	SALT BARN RD.	0.00	0.67	1153	1268	1338	1450	1456
545200	W. SNAKE RD.	0.00	0.63	342	376	397	430	432
545301.66	ROBIN HOOD RD.	1.66	3.29	150	165	174	189	189
546100	OLD STAGE RD.	0.00	1.46	1538	1692	1785	1934	1943
546200	TRUSSUM POND RD.	0.00	3.43	1131	1244	1312	1422	1428
546500	CHIPMANS POND RD.	0.00	1.94	2070	2277	2402	2603	2614
546600	DELAWARE AVE., LAURE	0.00	0.28	1380	1518	1601	1535	1535
546800	DISCOUNT LAND RD.	0.00	0.80	4042	4446	4691	5082	5082
547000	CAMP RD.	0.00	0.67	1004	1104	1165	1118	1123
548000	WALLER RD.	0.00	2.39	241	265	280	303	304
548100	BRICKYARD RD.	0.00	1.36	4086	4495	4742	5137	5137
548101.36	BRICKYARD RD.	1.36	1.55	1516	1668	1760	1906	1906
548200	BOYCE RD.	0.00	0.38	1088	1197	1263	1368	1368
548300	BAKER MILL RD.	0.00	2.13	1474	1621	1710	1853	1862
548500	ONEALS RD.	0.00	2.30	1541	1695	1788	1937	1937
548502.3	BETHEL CONCORD RD.	2.30	4.94	2177	2395	2527	2737	2750
548600	HENRY DR.	0.00	0.46	188	207	218	236	236
548800	JOHNSON RD.	0.00	1.18	349	384	405	411	413
548801.18	AIRPORT RD.	1.18	4.60	982	1080	1139	1235	1235

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
549002.54	RIVER RD.	2.54	2.68	2889	3178	3353	3632	3632
549200	PORTSVILLE RD	0.00	3.26	916	1000	975	1019	1024
549203.26	SIXTH ST., LAUREL	3.26	3.53	475	519	506	528	528
549203.53	SIXTH ST., LAUREL	3.53	4.22	792	865	843	638	638
549204.22	GORDY RD.	4.22	4.66	639	1305	1272	1279	1336
549304.62	BETHEL RD.	4.62	6.62	1211	1322	1289	1347	1353
549900	DUKES RD.	0.00	0.91	599	659	695	753	757
550100	ST. GEORGES RD.	0.00	1.61	1169	1286	1357	1470	1476
550101.61	ST. GEORGES RD.	1.61	4.31	212	233	246	267	268
550104.31	ST. GEORGES RD.	4.31	5.12	383	421	444	482	484
550200	OLD RACETRACK RD.	0.00	2.20	243	267	282	306	307
550202.2	OLD RACETRACK RD.	2.20	2.27	1377	1515	1598	1731	1731
550202.27	OLD RACETRACK RD.	2.27	2.44	1082	1190	1256	1242	1248
551200	WALLER RD.	0.00	2.63	1608	1769	1866	2022	2031
551502.03	BACONS RD.	2.03	3.03	788	867	915	652	652
551600	CONCORD POND RD.	0.00	1.79	698	768	810	878	878
552400	GERMAN RD.	0.00	0.17	2727	3000	3165	3429	3429
552500	KING RD.	0.00	1.05	1237	1108	1169	1156	1007
552600	HASTINGS FARM RD.	0.00	3.85	268	295	311	337	338
553000	OLD MEADOW RD.	0.00	1.66	2081	2289	2415	2616	2629
553100	ESKRIDGE RD.	0.00	2.12	908	999	1054	1142	1142
553200	CAMP RD.	0.00	1.72	847	932	983	1065	1065
553300	SANFILIPPO RD.	0.00	1.84	424	466	492	608	610
553400	HERRING RUN RD.	0.00	1.28	1220	1342	1416	1534	1534

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
553401.28	HERRING RUN RD.	1.28	1.65	9542	10496	11074	11997	11997
553401.65	THARP RD.	1.65	2.69	5486	6035	6367	6897	6897
553500	MIDDLEFORD RD.	0.00	0.94	9564	8392	8484	9366	8521
553601.92	WOODLAND RD.	1.92	3.45	1325	1458	1538	1522	1530
553603.45	WOODLAND RD.	3.45	3.49	1271	1350	1365	1506	1371
553603.49	HARRINGTON ST.	3.49	4.05	1424	1512	1529	1688	1535
553604.05	SHIPLEY ST., SEAFORD	4.05	4.21	1161	1233	1247	1376	1252
553604.21	PENNSYLVANIA AVE.	4.21	4.30	1285	4874	4928	4952	4948
553604.3	HIGH ST., SEAFORD	4.30	4.58	4061	1098	1110	1116	1114
553604.58	HIGH ST., SEAFORD	4.58	4.63	6481	6063	6130	6767	6801
553900	SUSSEX AVE., SEAFORD	0.00	0.59	877	1346	1361	1368	1366
554200	BUTLER BRANCH RD.	0.00	1.28	192	211	223	209	209
554300	PINE ST. EXT.	0.00	1.28	1606	1675	1693	1870	1701
554301.28	ROSS STATION RD.	1.28	2.59	3694	4063	4287	4644	4666
554400	HEARNS POND RD.	0.00	1.08	725	798	842	912	916
554401.08	HEARNS POND RD.	1.08	2.49	1185	1304	1376	1490	1490
554600	CONRAIL RD.	0.00	2.50	749	824	869	860	864
555200	SHUFELT RD.	0.00	1.71	515	567	598	647	650
555300	NEALS SCHOOL RD.	0.00	2.25	79	87	92	99	100
555600	FIGGS RD.	0.00	1.50	219	241	254	275	277
555601.5	CHAPEL BRANCH RD.	1.50	3.27	186	205	216	168	169
563900	VIRGINIA AVE.	0.00	0.82	2268	2409	2435	2688	2446
564500	EIGHTH ST.	0.00	0.19	1001	1101	1162	1259	1259

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
564600	SECOND ST	0.00	0.25	657	723	763	826	826
564900	BROOKLYN AVE	0.00	0.26	645	710	749	811	811
565000	TOWNSEND ST.	0.00	0.14	2550	2805	2959	3206	3206
5013012.54	MARKET ST.,BLADES	12.54	13.06	6704	7122	7200	7946	7229
5013013.06	MARKET ST.,BLADES	13.06	13.38	11368	12077	12210	12268	12329
5013013.38	FRONT ST., SEAFORD	13.38	13.42	10863	11537	11664	12875	11713
5013013.42	FRONT ST., SEAFORD	13.42	13.51	5498	5841	5905	5933	5963
5013013.51	FRONT ST., SEAFORD	13.51	13.94	7645	8122	8211	8250	8291
5013013.94	FRONT ST., SEAFORD	13.94	15.07	12123	12879	13021	14368	13072
5013015.07	BRIDGEVILLE HWY	15.07	16.67	4838	4552	4438	4637	4219
5020A0	DEL. 20, CHURCH RD.	0.00	0.67	1184	1302	1374	1489	1489
5028A.15	E. POPLAR ST., LAUREL	0.15	0.56	3123	3436	3625	3178	3178
5078A0	OLD SAILOR RD.	0.00	1.00	132	145	153	157	158
5454A.74	IRON HILL RD.	0.74	1.48	479	527	556	602	602
5454A0	ALLENS MILL RD.	0.00	0.74	1644	1808	1908	2067	2076
5454B0	COACHMEN LN.	0.00	0.71	560	616	650	704	707
5485A0	EASTER LN.	0.00	0.49	554	609	643	697	697
5486A0	HENRY DR.	0.00	0.19	115	127	134	145	145
5503B0	OLD CROW RD.	0.00	1.07	318	350	369	400	402
5526A0	DOVE RD.	0.00	0.86	3401	3741	3947	4276	4276
5534A0	HELENS LN (PWR STA A	0.00	0.06	73	80	84	92	92
5535A0	NORTH SHORE DR.	0.00	0.69	147	162	171	185	185
5535B0	POPLAR ST.	0.00	0.12	1123	1235	1303	1289	1295
5536A0	NANTICOKE ST.	0.00	0.36	68	75	79	79	79

Segment ID	Road Name	Beg. Mile point	Ending Mile point	2014	2015	2016	2017	2018
5542A0	CRAIGS MILL RD.	0.00	0.18	302	332	350	380	380
5544A0	SWAIN RD.	0.00	0.09	2293	2522	2661	2883	2883
5544B0	HEARNS MILL RD.	0.00	0.09	41	45	48	52	52

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Appendix E
Trip Generation Projections

Trip Generation for Proposed Development of Salisbury Area

	RESIDENTIAL			COMMERCIAL				Total 2045 AADT
	Equivalent Dwelling Units		2045 AADT				2045 AADT	
TAZ	Full Buildout	2045 Development		Acres	Land Use	Sq. Ft.		
A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
B	1121	784.7	7,510	4.0	Retail	30,000	2,576	10,086
C	2784	1948.8	18,650	75.0	Light Ind.	816,750	2,846	21,496
D	1409	986.3	9,439	N/A	N/A	N/A	N/A	9,439
E	294	205.8	1,970	N/A	N/A	N/A	N/A	1,970
F	173	121.1	1,159	51.0	Retail	555,390	23,848	25,007
G	686	480.2	4,596	140.0	Light Ind.	1,524,600	5,313	10,808
	N/A	N/A	N/A	15.0	Office	163,350	899	N/A
H	329	230.3	2,204	N/A	N/A	N/A	N/A	2,204
I	362	253.4	2,425	2.5	Office	27,225	150	3,159
	N/A	N/A	N/A	2.5	Retail	27,225	585	N/A
J	908	635.6	6,083	8.5	Office	92,565	510	8,112
	N/A	N/A	N/A	6.5	Retail	70,785	1,520	N/A
K	183	128.1	1,226	12.0	Office	130,680	719	4,283
	N/A	N/A	N/A	10.0	Retail	108,900	2,338	N/A
L	1997	1397.9	13,378	8.5	Office	92,565	510	14,706
	N/A	N/A	N/A	3.5	Retail	38,115	818	N/A
M	1849	1294.3	12,386	20.0	Light Ind.	217,800	759	13,730
	N/A	N/A	N/A	2.5	Retail	27,225	585	N/A
N	160	112	1,072	2.5	Office	27,225	150	1,689
	N/A	N/A	N/A	2.0	Retail	21,780	468	N/A
O	740	518	4,957	6.0	Retail	65,340	1,403	6,720
	N/A	N/A	N/A	6.0	Office	65,340	360	N/A
P	343	240.1	2,298	N/A	N/A	N/A	N/A	2,298.0
Q	1468	1027.6	9,834	6.0	Retail	65,340	1,403	11,237
R	923	646.1	6,183	2.0	Retail	21,780	468	7,030
	N/A	N/A	N/A	10.0	Light Ind.	108,900	380	N/A
S	119	83.3	797	5.0	Light Ind.	54,450	190	987
T	155	108.5	1,038	N/A	N/A	N/A	N/A	1,038.0
U	229	160.3	1,534	N/A	N/A	N/A	N/A	1,534.0
V	215	150.5	1,440	N/A	N/A	N/A	N/A	1,440.0
Y	189	132.3	1,266	N/A	N/A	N/A	N/A	1,266
X	670	469	4,488	N/A	N/A	N/A	N/A	4,488
Y	189	132.3	1,266	N/A	N/A	N/A	N/A	1,266
Z	65	45.5	435	N/A	N/A	N/A	N/A	435
AA	517	361.9	3,463	30.0	Retail	326,700	7,014	10,478
	18077	***12,654***	***121,098***			***4,369,665***	***54,107***	***176,907***

Notes:

1) Full buildout based on 2010 Development Capacity Analysis prepared by the Maryland Department of Planning.
2) 2045 Development assumes an even distribution across TAZs, which is equal to 70 percent total buildout occurring by 2045.
3) ADTs for residential land use are based on ITE rates for single-family detached dwelling units.
4) Sq. ft. of commercial land uses to be developed by 2045 is 25 percent of total acres.

Source: The Traffic Group via S/WMPO

Analysis of Internal and External Trips

			COMMERCIAL TAZ																
			B	C	F	G	I	J	K	L	M	N	O	Q	R	S	AA		
		2045 RESIDENTIAL AADT	2576	2846	23848	6212	734	2029	3057	1328	1344	617	1763	1403	847	190	7014	INTERNAL TRIPS	EXTERNAL TRIPS
RESIDENTIAL TAZ	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	B	7,510	96	106	887	231	27	75	114	49	50	23	66	52	32	7	261	2076	5434
	C	18,650	238	263	2204	574	68	187	282	123	124	57	163	130	78	18	648	5157	13493
	D	9,439	120	133	1115	291	34	95	143	62	63	29	82	66	40	9	328	2610	6829
	E	1,970	25	28	233	61	7	20	30	13	13	6	17	14	8	2	68	545	1425
	F	1,159	15	16	137	36	4	12	18	8	8	4	10	8	5	1	40	322	837
	G	4,596	59	65	543	141	17	46	70	30	31	14	40	32	19	4	160	1271	3325
	H	2,204	28	31	260	68	8	22	33	15	15	7	19	15	9	2	77	609	1595
	I	2,425	31	34	287	75	9	24	37	16	16	7	21	17	10	2	84	670	1755
	J	6,083	78	86	719	187	22	61	92	40	41	19	53	42	26	6	211	1683	4400
	K	1,226	16	17	145	38	4	12	19	8	8	4	11	9	5	1	43	340	886
	L	13,378	171	189	1581	412	49	134	203	88	89	41	117	93	56	13	465	3701	9677
	M	12,386	158	175	1464	381	45	125	188	81	82	38	108	86	52	12	430	3425	8961
	N	1,072	14	15	127	33	4	11	16	7	7	3	9	7	4	1	37	295	777
	O	4,957	63	70	586	153	18	50	75	33	33	15	43	34	21	5	172	1371	3586
	P	2,298	29	32	272	71	8	23	35	15	15	7	20	16	10	2	80	635	1663
	Q	9,834	126	139	1162	303	36	99	149	65	65	30	86	68	41	9	342	2720	7114
	R	6,183	79	87	731	190	22	62	94	41	41	19	54	43	26	6	215	1710	4473
	S	797	10	11	94	25	3	8	12	5	5	2	7	6	3	1	28	220	577
	T	1,038	13	15	123	32	4	10	16	7	7	3	9	7	4	1	36	287	751
	U	1,534	20	22	181	47	6	15	23	10	10	5	13	11	6	1	53	423	1111
	V	1,440	18	20	170	44	5	14	22	9	10	4	13	10	6	1	50	396	1044
	W	1,266	16	18	150	39	5	13	19	8	8	4	11	9	5	1	44	350	916
	X	4,488	57	63	530	138	16	45	68	30	30	14	39	31	19	4	156	1240	3248
	Y	1,266	16	18	150	39	5	13	19	8	8	4	11	9	5	1	44	350	916
	Z	435	6	6	51	13	2	4	7	3	3	1	4	3	2	0	15	120	315
	AA	3,463	44	49	409	107	13	35	52	23	23	11	30	24	15	3	120	958	2505
		INTERNAL TRIPS 60%	1546	1708	14311	3729	441	1215	1836	797	805	371	1056	842	507	113	4207	33484	87613
		EXTERNAL TRIPS 40%	1030	1138	9537	2483	293	814	1221	531	539	246	707	561	340	77	2807		

Source: The Traffic Group via S/WMPO

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Appendix F
Constrained and Unfunded Projects
2020 – 2050

Appendix F: Constrained Projects, 2020 - 2050

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
2015 Highway Needs Inventory – Roadway													
Maryland State Highway Administration	U.S. Route 13 – N. Salisbury Boulevard/ Ocean Highway	Salisbury Bypass to Delaware State line	Divided highway reconstruct with access control improvements, 4.4 miles	$316,900.0	$0	SHA	1	●	●	●			
Maryland State Highway Administration	U.S. Route 13 – S. Fruitland Boulevard	Somerset County line to U.S. Route 13 Bypass	Divided highway reconstruct, 0.6 miles	$34,100.0	$0	SHA	1	●	●	●			
Maryland State Highway Administration	MD 350 – Mt. Hermon Road	Beaglin Park Drive to Walston Switch Road	Two-lane reconstruct, 4.3 miles	$72,400.0	$0	SHA	1	●	●	●			
Maryland State Highway Administration	MD 12 – Snow Hill Road	Worcester County line to south of U.S. Route 13 Bypass	Two-lane reconstruct, 4.3 miles	$84,800.0	$0	SHA	1	●	●	●			
Maryland State Highway Administration	MD 12 – Snow Hill Road	U.S. Route 13 Bypass to Johnson Road	Multi-lane urban reconstruct, 1.0 miles	$171,300.0	$0	SHA	1	●	●	●			
Maryland State Highway Administration	MD 349 – Nanticoke Road	N. Upper Ferry Road to U.S. Route 50	Multi-lane reconstruct, 4.9 miles	$188,900.0	$0	SHA	1	●	●	●			
Maryland State Highway Administration	U.S. Route 50 – Ocean Gateway	MD 731A to White Lowe Road	Acces control improvements, 9.7 miles	$214,500.0	$0	SHA	1	●	●	●			
			SHA Total Identified Projects	**$1,082,900.0**									
			SHA Constrained		**$0.0**								
			SHA Unfunded	**$1,082,900.0**									

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
System Preservation – Roadway, Bicycle/Pedestrian, Freight													
Maryland State Highway Administration	Roadways	Various in Wicomico County (county-wide)	Resurface	$9,830.0	$9,830.0	SHA	2	●					
Maryland State Highway Administration	Bridge 2200400	US 13 Business over East Branch of Wicomico River	Bridge replacement	$1,074.0	$1,074.0	SHA and FHWA	4	●	●				
Maryland State Highway Administration	U.S. Route 50 (Ocean Gateway)	White Lowe Road	Geometric improvements	$2,677.0	$2,677.0	SHA	2	●	●				
			SHA Total Identified Projects	**$13,581.0**									
			SHA Constrained		**$13,581.0**								
			SHA Unfunded	**$0.0**									

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
System Preservation – Roadway, Bicycle/Pedestrian, Freight													
Wicomico County	Bridge	Three Bridges Road over Burnt Mill Branch	Bridge replacement	$344.0	$344.0	FHWA and Local	4	●	●				
Wicomico County	Ferry	Upper Ferry over Wicomico River	Ferry rehabilitation	$376.9	$376.9	FHWA and Local	4	●	●				
			Wicomico Total Identified Projects	**$720.9**									
			Wicomico Constrained		**$720.9**								
			Wicomico Unfunded	**$0.0**									

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
System Preservation – Roadway, Bicycle/Pedestrian, Freight													
City of Salisbury	Naylor Mill Road Bridge	Naylor Mill Road over Naylors Pond Stream	Bridge replacement	$471.4	$471.4	FHWA and Local	4	●	●				
			Salisbury Total Identified Projects	**$471.4**									
			Salisbury Constrained		**$471.4**								
			Salisbury Unfunded	**$0.0**									

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
System Preservation – Roadway, Bicycle/Pedestrian, Freight													
Delaware Department of Transportation	Discount Land Road	Laurel	Roadway widening, bicycle lanes, and construction of sidewalk or multi-use path adjacent to roadway	$2,950.0	$2,950.0	PE: 100% State; ROW: 100% State and Const: 100% State	3	●	●				
Delaware Department of Transportation	BR 3-254 on U.S. Route 13	Bridge 3-254 north and south over Nanticoke River	Bridge rehabilitation	$6,100.0	$6,100.0	Const: 80% FHWA, 20% State	3	●	●				
Delaware Department of Transportation	Records Pond	Sussex County	Dam improvements	$6,158.9	$6,158.9	CE: 100% State; Const: 100%; Traffic: 100% State; and Contingency : 100% State	3	●	●				
Delaware Department of Transportation	BR 3-320	King Street in Laurel	Replacement of existing superstructure	$80.0	$80.0	PE: 100% State; and ROW: 100% State	3	●	●				
Delaware Department of Transportation	BR 3-314	SR24 Laurel Road over James Branch	Bridge rehabilitation	$1,000.0	$1,000.0	PE and ROW: 100% State; and Const: 80% FHWA, 20% State	3	●	●				
Delaware Department of Transportation	BR 3-145, BR 3-231, BR 3-814, and BR 3-214	Sussex County	Scour countermeasures	$3,066.7	$3,066.7	Const: 100% State; and Utility: 100% State	3	●	●				
Delaware Department of Transportation	BR-3-152 and BR 3-161	Central Avenue and Poplar Street, respectively. Crossing Broad Creek	Bridge rehabilitation	$5,353.5	$5,353.5	CE: 80% FHWA and 20% State	3	●	●				
Delaware Department of Transportation	BR 3-162	Delaware Avenue over Broad Creek	Replacement of existing superstructure	$1,859.1	$1,859.1	Const: 80% FHWA and 20% State; and Utilities: 80% FHWA; and 20% State	3	●	●				
			DelDOT Total Identified Projects	**$26,568.2**									
			DelDOT Funded		**$26,568.2**								
			DelDOT Unfunded	**$0.0**									

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
System Preservation – Transit													
Maryland Transit Administration	Shore Transit Facility	Shore Transit	Facility construction phase III	$1,557.0	$1,557.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Preventative Maintenance	Shore Transit	FY 2019 (5339)	$800.0	$800.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	ADP Software – Vehicle Maintenance Records	Shore Transit	FY 2014	$40.0	$40.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Mobility Management	Shore Transit	FY 2019 (5307)	$143.1	$143.1	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Bus Wash Equipment	Shore Transit	FY 2018 (5307)	$500.0	$500.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	EAM Maintenance Software	Shore Transit	FY 2015	$80.0	$80.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Trapeze Call Back Module	Shore Transit	FY 2014	$30.0	$30.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Trapeze Certification Module	Shore Transit	FY 2014	$16.0	$16.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Small Bus Replacement, Cutaway 16/2 (1)	Shore Transit	FY 2019 (5339)	$72.0	$72.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Medium Duty 35’ Bus Replacements, 35’ 31/2 (2)	Shore Transit	FY 2019 (5339)	$238.0	$238.0	FTA, MTA, + Local (PTP)	2	●					
Maryland Transit Administration	Medium Duty 35’ Bus Replacements, 35’ 31/2 (2)	Shore Transit	FY 2018 (5307)	$236.0	$236.0	FTA, MTA, + Local (PTP)	2	●					
			MTA Total Identified Projects	**$3,712.1**									
			MTA Constrained		**$3,712.1**								
			MTA Unfunded	**$0.0**									

Agency	Facility/System	Location	Description	Cost (Thousands $)	Available Capital Funds (Thousands $)	Funding Source	Project Source	Manage System	Safety + Security	Access + Mobility	Multimodal	Environ-mental	Economic Development
System Preservation – Transit													
DART	Transit Vehicle Expansion (2) 30’ Low Floor Buses	Sussex County	FY 2023	$1,162.0	$1,162.0	80% FTA and 20% DelDOT	3	●					
DART	Transit Vehicle Replacement (7) 30’ Buses	Sussex County	FY 2022	$4,165.7	$4,165.7	DelDOT	3	●					
DART	Transit Vehicle Expansion (2) 35’ Electric Buses	Sussex County	FY 2019	$3,120.4	$3,120.4	DelDOT	3	●				●	
DART	Transit Vehicle Replacement (22) 30’ Buses	Sussex County	FY 2023	$13,016.3	$13,016.3	DelDOT	3	●					
DART	Transit Vehicle Replacement Paratransit Buses Sussex	Sussex County	FY 2020 – FY 2026	$19,412.1	$19,412.1	DelDOT	3	●					
			DART Total Identified Projects	**$40,876.5**									
			DART Funded		**$40,876.5**								
			DART Unfunded	**$0.0**									

Project Identification Sources (Codes):
1 = Maryland SHA Highway Needs Inventory – Wicomico County 2015 Revised
2 = MDOT Consolidated Transportation Program (FY 2019 to 2024)
3 = Delaware DOT Capital Transportation Program (FY 2020 to 2026)
4 = S/WMPO TIP (FY 2021 – FY 2024)

Appendix G
MDOT Financial Forecast for Wicomico County

Appendix G: MDOT Financial Forecast for Wicomico County

In December of 2017, MDOT developed revenue projections of reasonably available funds that can be used for transportation projects in Wicomico County. According to USDOT, this includes information on how the MPO reasonably expects to fund the projects included in the plan, including anticipated revenues from FHWA and FTA, state government, regional or local sources, the private sector, and user charges. **Connect 2050** must demonstrate that there is a balance between the expected revenue sources for transportation investments and the estimated costs of the projects and programs described in the plan. In other words, the plan must be fiscally (or financially) constrained. The following table represents the complete MDOT Financial Forecast for Wicomico County:

Salisbury/Wicomico Metropolitan Planning Organization Regional Transportation Plan

Financial Projections for Wicomico County

Prepared by

Maryland Department of Transportation

December 2017

DOCUMENTATION OF ASSUMPTIONS

Date: December 2017

Subject: Methodology and Assumptions used to derive the 2017 – 2045 Constrained Long-range Transportation Plan

Total Program Revenues/Expenditures (operating and capital):

- FY 1981 to FY 2016 figures are actual expenditures from historical records. FY 2017 to FY 2022 are from the FY 2017 Transportation Trust Fund Financial Plan and Consolidated Transportation Plan (CTP).
- The federal funds received directly by WMATA are **not** included in this exercise.
- FY 2023 to FY 2045 projections of state funds use a historical annual average growth rate of 5.3%. Federal fund projections for the same period are based on an average growth rate of 3.0% for Highway and Transit program funds.

Operating Expenditures:

- FY 1981 to FY 2016 figures are actual expenditures from historical records. Expenditures for FY 2017 to FY 2022 are the operating budget projections contained in the current Trust Fund Forecast.
- FY 2023 to FY 2045 projections are derived by inflating the previous year with an estimate for the percentage change in CPI-U plus 2%. The Consumer Price Index is a generally accepted measure of inflation. The projected annual change in index figures is based on information received from two economic forecasting firms. Two percent (2%) is added to the forecasted rate to account for the additional operating costs associated with new capital expansions.

Capital - Systems Preservation:

- Department records were used to determine the split between systems preservation and expansion for FY 1981 to FY 2016. Amounts for FY 2017 to FY 2022 represent the current version of the capital program.
- For the period FY 2023 – FY 2045, an annual growth rate of 2.0% is assumed for systems preservation projects, not to exceed 70% of the total program.

Capital - Expansion:

- Expenditures for capital expansion were derived by subtracting both operating and systems preservation expenditures from the total program expenditures for each year.

Wicomico County – Percentage of Capital Expansion:

- Total capital figures from FY 1981 to present were split into surface and non-surface. Surface included highway (SHA) and transit (MTA, MARC, and WMATA) costs. Non-surface included the Maryland Port, Aviation, and Motor Vehicle Administrations and the Secretary's Office expenses.

- The surface / non-surface data and the system preservation / expansion data were combined, analyzed, and evaluated to produce estimates of the percentage of Maryland expansion associated with surface transportation for the various time periods.

- Surface capital in Wicomico County was derived from historical records and used with the above-mentioned projections to produce the estimates for Wicomico County as a percent of Total Surface Expansion and as a percent of Total Maryland Expansion.

MDOT Operating & Capital Expenditures - Statewide
History, Program & Forecast
(Millions of Dollars)

Fiscal Year	Operating	Systems Preservation	Operating & Systems Pres.	Expansion	Statewide Total
1981	265	111	376	247	623
1982	287	136	423	236	659
1983	322	164	486	284	770
1984	352	167	519	246	765
1985	385	204	589	319	908
1986	428	234	662	403	1,065
1987	441	264	705	506	1,211
1988	478	260	738	615	1,353
1989	508	227	735	677	1,412
1990	551	270	821	760	1,581
1991	591	268	859	773	1,632
1992	577	187	764	542	1,306
1993	638	254	892	418	1,310
1994	689	279	968	393	1,361
1995	709	400	1,109	497	1,606
1996	784	391	1,175	465	1,640
1997	770	417	1,187	493	1,680
1998	808	451	1,259	411	1,670
1999	868	515	1,383	420	1,803
2000	913	476	1,389	455	1,844
2001	979	578	1,557	632	2,189
2002	1,045	612	1,657	772	2,429
2003	1,158	620	1,778	772	2,550
2004	1,178	619	1,797	762	2,559
2005	1,237	714	1,951	780	2,731
2006	1,303	729	2,032	793	2,825
2007	1,396	724	2,120	701	2,821
2008	1,488	766	2,254	680	2,934
2009	1,527	974	2,501	368	2,869
2010	1,583	957	2,540	275	2,815
2011	1,548	908	2,456	325	2,781
2012	1,572	1,096	2,668	366	3,034
2013	1,638	1,154	2,792	416	3,208
2014	1,843	1,324	3,167	477	3,644
2015	1,859	1,438	3,297	603	3,900
2016	1,917	1,389	3,306	806	4,112
2017	1,947	1,560	3,507	1,123	4,630
2018	2,030	1,580	3,610	1,071	4,681
2019	2,080	1,557	3,637	1,005	4,642
2020	2,131	1,475	3,606	687	4,293
2021	2,181	1,391	3,572	483	4,055
2022	2,264	1,449	3,713	400	4,113
2023	2,454	1,284	3,738	550	4,288
2024	2,592	1,259	3,851	540	4,391
2025	2,696	1,332	4,028	571	4,599
2026	2,811	1,408	4,219	603	4,822
2027	2,924	1,490	4,414	639	5,053
2028	3,043	1,576	4,619	676	5,295
2029	3,176	1,661	4,837	712	5,549
2030	3,313	1,698	5,011	805	5,816
2031	3,451	1,732	5,183	914	6,097
2032	3,597	1,766	5,363	1,030	6,393
2033	3,754	1,802	5,556	1,146	6,702
2034	3,911	1,838	5,749	1,279	7,028
2035	4,079	1,874	5,953	1,416	7,369
2036	4,257	1,912	6,169	1,559	7,728
2037	4,433	1,950	6,383	1,721	8,104
2038	4,633	1,989	6,622	1,879	8,501
2039	4,837	2,029	6,866	2,052	8,918
2040	5,042	2,070	7,112	2,242	9,354
2041	5,258	2,111	7,369	2,444	9,813
2042	5,475	2,153	7,628	2,667	10,295
2043	5,717	2,196	7,913	2,889	10,802
2044	5,963	2,240	8,203	3,131	11,334
2045	6,228	2,285	8,513	3,383	11,896

MDOT - Office of Finance
29-Dec-17

SALISBURY / WICOMICO COUNTY

Percentage of Capital Expansion

(Millions of Dollars)

Surface Expansion % of Maryland Expansion:	
1981-2016	86.4%

Salisbury Expansion % of Surface Expansion:	
1981-2016	1.0%

Fiscal Year	Statewide Expansion Funds	Surface Percentage	Private Funds	Total Surface Available	Salisbury Percentage	Total Salisbury Expansion Funds
2014	477					1.2
2015	603					1.2
2016	806					1.2
2017	1,123					1.2
2018	1,071					1.2
2019	1,005					1.2
2020	687					1.2
2021	483					1.3
2022	400					1.3
2023	550	475	24	499	5.1	5.1
2024	540	467	24	491	5.1	5.1
2025	571	493	24	517	5.3	5.3
2026	603	521	24	545	5.6	5.6
2027	639	552	25	577	5.9	5.9
2028	676	584	25	609	6.3	6.3
2029	712	615	25	640	6.6	6.6
2030	805	696	25	721	7.4	7.4
2031	914	790	25	815	8.4	8.4
2032	1,030	890	25	915	9.4	9.4
2033	1,146	990	25	1,015	10.5	10.5
2034	1,279	1,105	25	1,130	11.6	11.6
2035	1,416	1,224	25	1,249	12.9	12.9
2036	1,559	1,347	25	1,372	14.1	14.1
2037	1,721	1,487	25	1,512	15.6	15.6
2038	1,879	1,624	25	1,649	17.0	17.0
2039	2,052	1,773	25	1,798	18.5	18.5
2040	2,242	1,938	25	1,963	20.2	20.2
2041	2,444	2,112	25	2,137	22.0	22.0
2042	2,667	2,305	25	2,330	24.0	24.0
2043	2,889	2,497	25	2,522	26.0	26.0
2044	3,131	2,706	25	2,731	28.1	28.1
2045	3,383	2,924	25	2,949	30.4	30.4
Total '23'45	34,848	30,116	571	30,687	316	316.0
Total '14-'45	41,503					327.0

MDOT - Office of Finance
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Appendix H
DelDOT Financial Forecast for Sussex County

Appendix H: DelDOT Financial Forecast for Sussex County

The Delaware Department of Transportation developed revenue projections of reasonably available funds that can be used for transportation projects in Sussex County. According to USDOT, this includes information on how the MPO reasonably expects to fund the projects included in the plan, including anticipated revenues from FHWA and FTA, state government, regional or local sources, the private sector, and user charges. **Connect 2050** must demonstrate that there is a balance between the expected revenue sources for transportation investments and the estimated costs of the projects and programs described in the plan. In other words, the plan must be fiscally (or financially) constrained. The complete DelDOT Financial Forecast for Sussex County is below.

Capital Funding Forecast by County (FY16-FY30)[1]

November 6, 2015

Calculation of County Percentages, Using Population and Mileage Factors

	Population (2014 Census Estimates)	Population Ratio	Population Factor (Ratio *.4)
New Castle	552,778	0.59	0.24
Kent	171,987	0.18	0.07
Sussex	210,849	0.23	0.09
Total	935,614	1.00	0.40

	Number of Lane Miles (2014)	Mileage Ratio	Mileage Factor (Ratio *.6)
New Castle	5,576.02	0.41	0.25
Kent	3,123.45	0.23	0.14
Sussex	4,841.94	0.36	0.21
Total	13,541.41	1.00	0.60

Population Factor + Mileage Factor → Final Percentage

	Population Factor + Mileage Factor	Final Percentage
New Castle	0.483	48%
Kent	0.212	21%
Sussex	0.305	31%
Total	1.000	100%

%

Calculation of Estimated[1] Capital Dollars[2] Through 2030, Using County Percentages

Total Funds Available for Capital Expenditures	$6,352,438
"State of Good Repair" Dollars Removed	-$2,550,000
Net Amount Available for Capital Projects	**$3,802,438**

Multiply the Net Amount by the Final Percentage

	Final Percentage	Capital Forecast Amount
New Castle	48%	$1,825,170
Kent	21%	$798,512
Sussex	31%	$1,178,756
Total	100%	$3,802,438

[1] *These numbers are estimates of capital transportation funding that are to be used* ***for planning purposes only*** *and are subject to change.*

[2] ***All figures are in 000's.*** *Capital expenditure estimates were taken from DelDOT's Base Financial Plan through 2030, as of October 2015.*

Appendix I
S/WMPO Performance Measures

Appendix I: Performance Measures

Transportation Performance Measure 1: Safety Performance Target Setting

In compliance with the FHWA's 23 CFR Part 490, Subpart B - National Performance Management Measures for the Highway Safety Improvement Program ("HSIP"), the following is a summary of S/WMPO, DelDOT, and MDOT targets to meet or make significant progress toward the five (5) required safety performance goals. The targets were set by the DOTs in August 2017 and S/WMPO opted to adopt and support the statewide targets set both DOTs.

Methodology: Both states have adopted the Toward Zero Deaths ("TZD") approach. TZD is a data-driven effort to reduce fatalities and serious injuries by developing strong leadership in organizations that directly impact highway safety. For consistency with the 2015 Strategic Highway Safety Plan ("SHSP"), DelDOT and Office of Highway Safety ("OHS") agreed to use the SHSP annual targets as the basis for developing Delaware's 2018 targets for each safety measure. Annually, Delaware's an additional reduction of at least 3 fatalities and 15 serious injuries over the previous year to achieve a 50% reduction by 2035. In Maryland the annual targets for each of the measures are set using an exponential trend line connecting the historical data to the 2030 goal found in their SHSP.

The chart shows the Delaware and Maryland established statewide targets (2014-2018, 5 year rolling averages) for each of the five (5) measures. Once 2018 Fatality Analysis Reporting System ("FARS"), Highway Performance Monitoring System ("HPMS"), and FARS Annual Report File ("ARF") data becomes finalized (December 2019) it will be compared to these targets to determine whether Delaware, Maryland, and S/WMPO and MPOs have met or made significant progress toward our crash reduction targets.

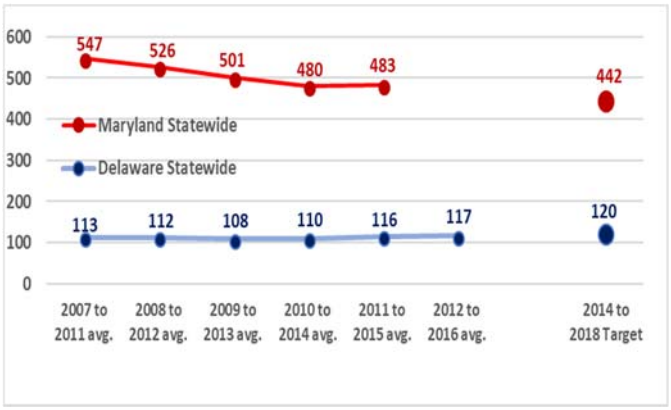
Details on the HSIP projects can be found in the TIP.

State/MPO Established Safety Targets*	Maryland	Delaware
Number of Fatalities	442.0	120.2
Rate of Fatalities per 100 million VMT	0.72	1.208
Number of Serious Injuries	3,422.0	578.6
Rate of Serious Injuries per 100 million VMT	6.08	5.822
Number of Non-motorized Fatalities and Non-motorized Serious Injuries	488.0	94.2

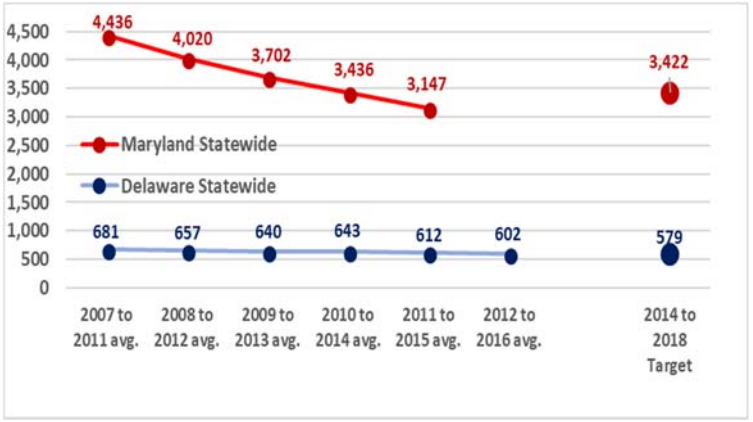
* Projected 2014-2018 5-year rolling averages

The following charts show the historical trends composed of 5-year rolling averages, 2018 HSIP baseline figures and 2014-2018 targets for all five safety performance measures. Figures include all injuries and fatalities which occurred on all public roads.

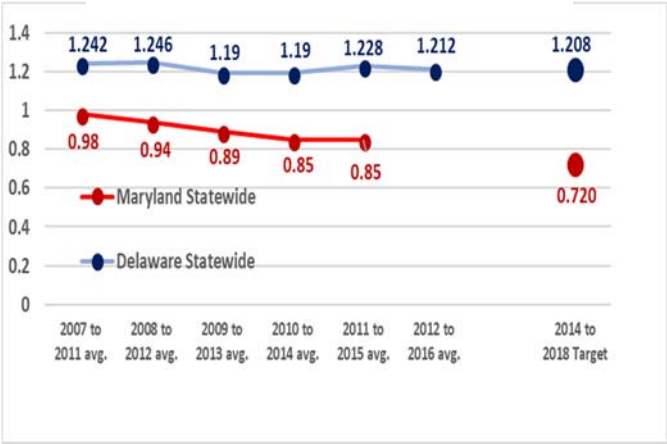
Total Number of Fatalities



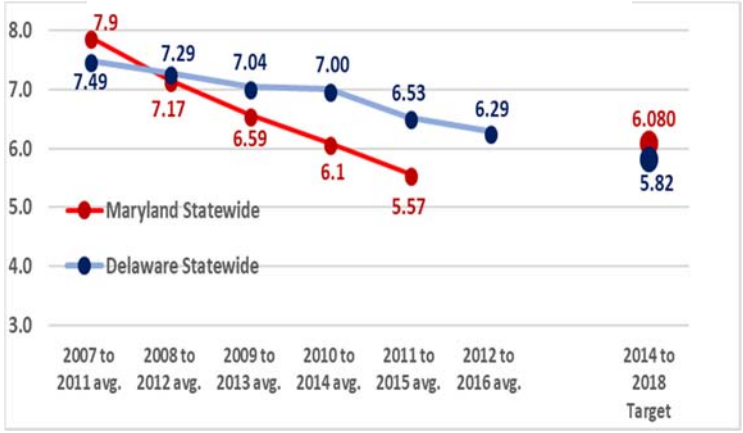
Number of Serious Injuries



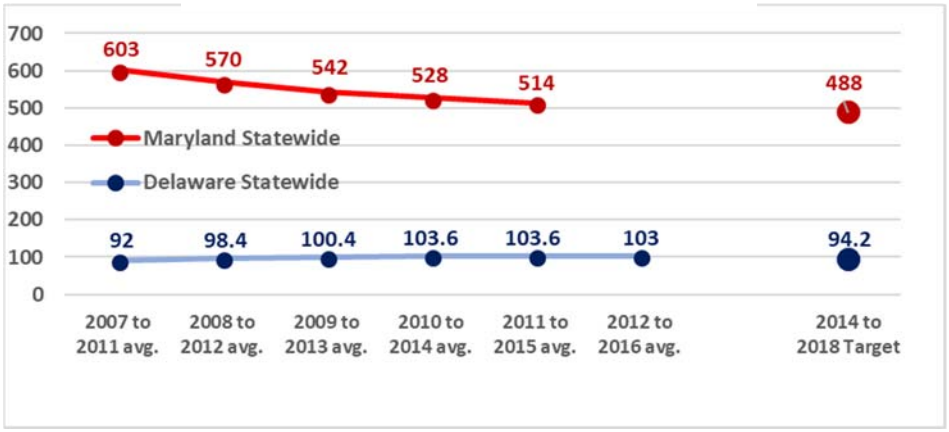
Rate of Fatalities per 100 million VMT



Rate of Serious Injuries per 100 million



Non-Motorized Fatal and Serious Injuries



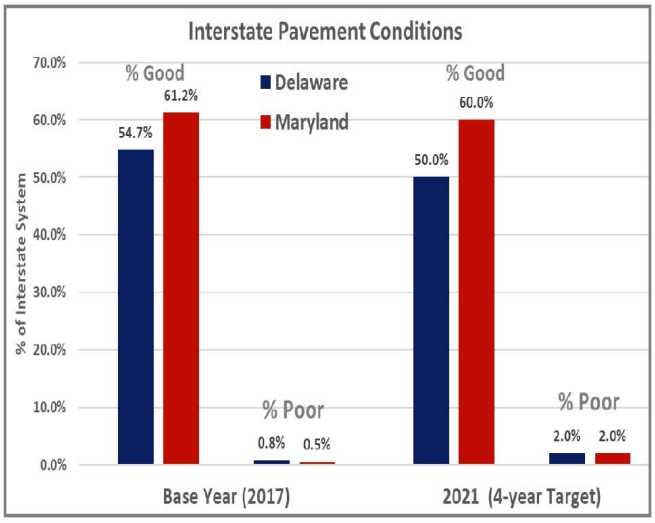
Transportation Performance Measure 2: Pavement and Bridge Conditions

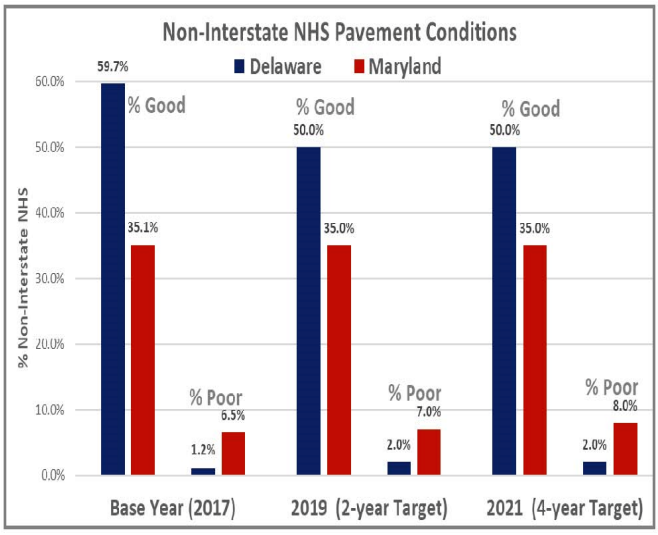
Pavement conditions are reported to FHWA by states through the HPMS for Federal-aid highways. The reporting agency will use the International Roughness Index ("IRI") to measure the smoothness of pavement, as well as the ride quality. Minimum pavement condition for the Interstate System is not to exceed 5 percent classified in Poor condition. The following performance measures are utilized in assessing the condition of the National Highway System:

Performance Measures: Pavement Condition*
% of Interstate pavement in GOOD condition (4-year target only)
% of Interstate pavement in POOR condition (4-year target only)
% of non-Interstate NHS pavements in GOOD condition (2 and 4 year target)
% of non-Interstate NHS pavement POOR condition (2 and 4 year target)

	Pavement Type		
	Asphalt and Jointed Concrete	Continuous Concrete	
Overall Section Condition Rating	3 metric ratings (IRI, cracking and rutting/faulting)	2 metric ratings (IRI and cracking)	Measures
Good	All three metrics rated "Good"	Both metrics rated "Good"	→ percentage of lane-miles in "Good" condition
Poor	≥ 2 metrics rated "Poor"	Both metrics rated "Poor"	→ percentage of lane-miles in "Poor" condition
Fair	All other combinations	All other combinations	

*Good condition: Suggests no major investment is needed
*Poor condition: Suggests major investment is needed





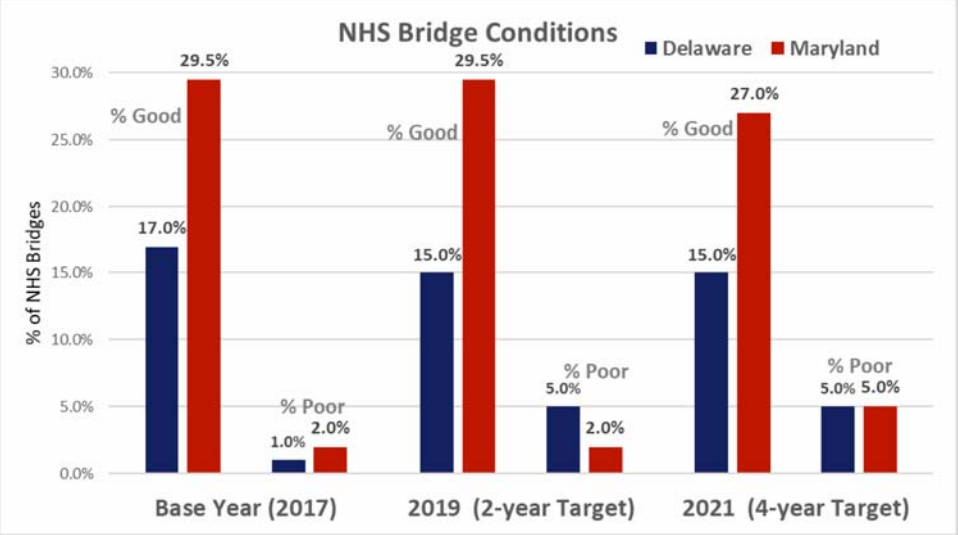
Transportation Performance Measure 3: Infrastructure condition targets for the National Highway System ("NHS") – Bridge Conditions

States and MPOs must establish two and four-year targets for all bridges carrying the NHS. This includes on-and off-ramps connected to the NHS within a state, as well as bridges carrying the NHS across a state border (regardless of ownership. States must maintain NHS bridges at less than 10.0 percent of a deck area as being structurally deficient.

Performance Measures: Bridge Condition
% of NHS bridges in GOOD condition
% of NHS bridges in POOR condition

Measure: Deck area based on National Bridge Inventory ("NBI") condition ratings for the deck, superstructure, substructure and / or culvert. Overall, condition is determined by the lowest of the four ratings.

NBI Rating Scale (from 0 – 9)	9 8 7 Good	6 5 Fair	4 3 2 1 0 Poor
Bridge: Deck (Item 58)	≥7	5 or 6	≤4
Bridge: Superstructure (Item 59)	≥ 7	5 or 6	≤ 4
Bridge: Substructure (Item 60)	≥ 7	5 or 6	≤ 4
Culvert (Item 62)	≥ 7	5 or 6	≤ 4



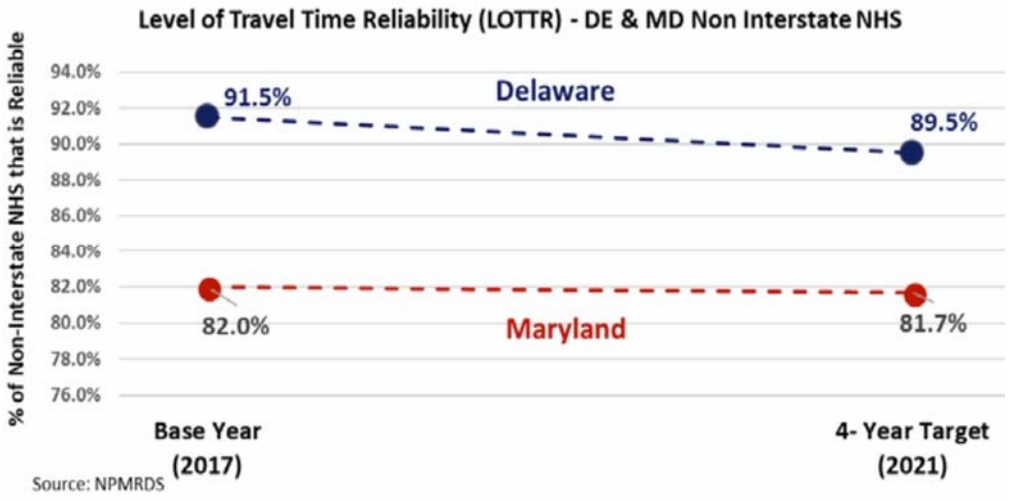
Transportation Performance Measure 3: Travel Time Reliability Measures – Level of Travel Time Reliability

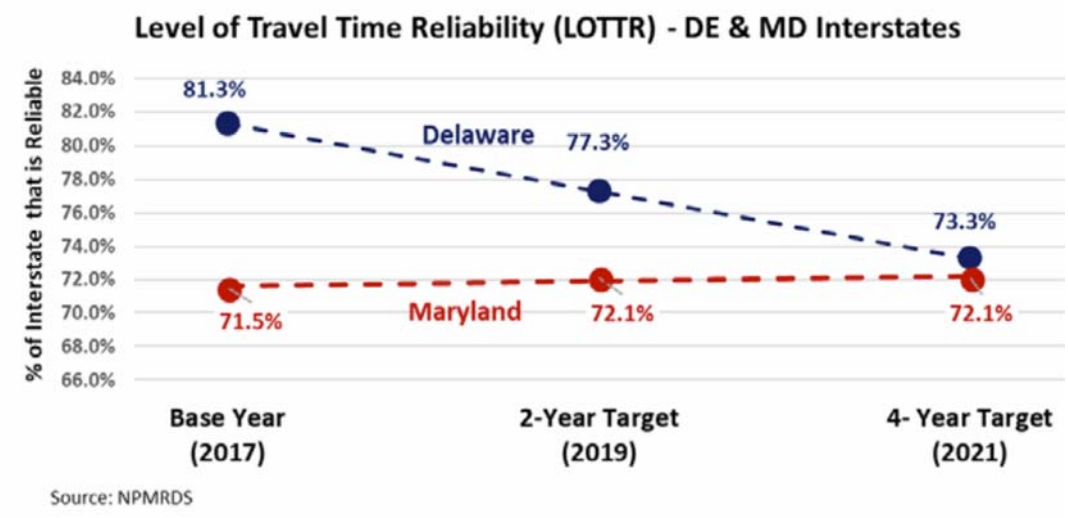
Level of Travel Time Reliability ("LOTTR") is defined as the ratio of the longer travel times (80th percentile) to a "normal" travel time (50th percentile), using data from FHWA's National Performance Management Research Data Set ("NPMRDS"). Reliability is measured during the full calendar year broken down into four (4) time periods: AM Peak; Midday; PM Peak; and Weekends. If any of these segments have a LOTTR above 1.50, the segment is determined not reliable. All non-reliable segments are then calculated in combination with daily traffic volumes and average vehicle occupancy to produce the total number of person-miles impacted by each unreliable segment.

Performance Measures: Travel Time Reliability
Interstate Travel Time Reliability Measure: Percent of person-miles traveled on the Interstate that are reliable
Non-Interstate Travel Time Reliability Measure: Percent of person-miles traveled on the non-Interstate that are reliable

Illustration of Reliability Determination

Monday – Friday	6am – 10am	LOTTR = $\frac{44 \text{ sec}}{35 \text{ sec}}$ = 1.26
	10am – 4pm	LOTTR = 1.39
	4pm – 8pm	LOTTR = 1.54
Weekends	6am – 8pm	LOTTR = 1.31
Must exhibit LOTTR below 1.50 during all of the time periods		Segment IS NOT reliable



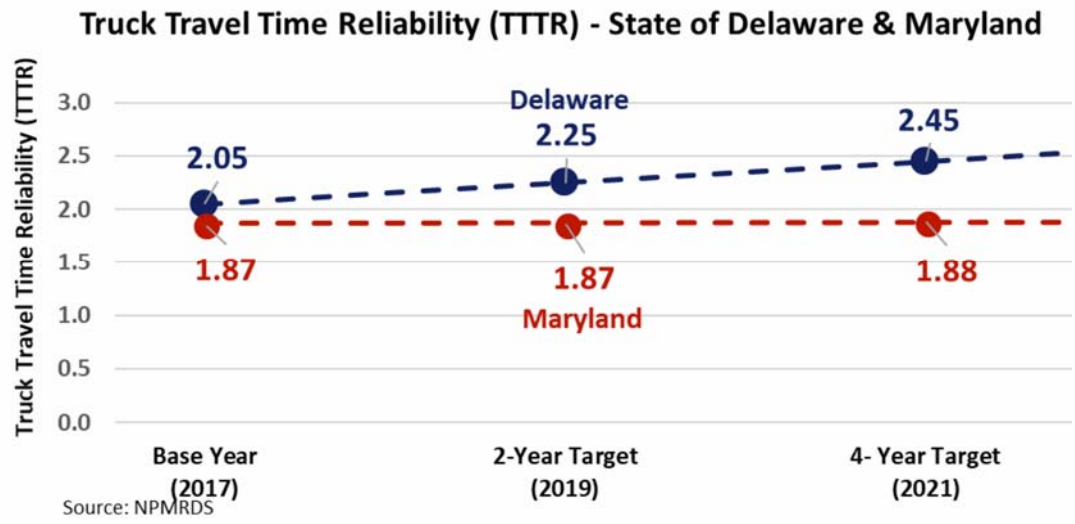


Transportation Performance Measure 3: Travel Time Reliability Measures – Truck Level of Travel Time Reliability ("TTTR")

Measure: The sum of maximum TTTR for each reporting segment, divided by the total miles of Interstate system only. Reporting is divided into five (5) periods: morning peak (6-10 A.M.); midday (10 a.m. – 4 p.m.); afternoon peak (4-8 p.m.); and overnights for all days (8 p.m. – 6 a.m.). The TTTR ratio is generated by dividing the 95th percentile time by the normal time (50th percentile) for each segment. The measure is based on the worst performing time period for each segment, averaged together to create a single file.

Illustration of Truck Reliability Determination

Monday – Friday	6 – 10 a.m.	$TTTR = \frac{63\ sec}{42\ sec} = 1.50$
	10 a.m. – 4 p.m.	$TTTR = \frac{62\ sec}{45\ sec} = 1.38$
	4 – 8 p.m.	$TTTR = \frac{85\ sec}{50\ sec} = \mathbf{1.70}$
Weekends	6 a.m. – 8 p.m.	$TTTR = \frac{52\ sec}{40\ sec} = 1.30$
Overnight	8 p.m. – 6 a.m.	$TTTR = \frac{46\ sec}{38\ sec} = 1.21$
Maximum TTTR		1.70



Transit Asset Management Plans ("TAM Plan")

On October 1, 2016 the Federal Transit Administration ("FTA") published its Final Rule (49 CFR 625 and 630) on the Federal Requirements for the development of TAM Plans by all transit agencies that receive federal funding. A TAM Plan involves an inventory and assessment of all assets used in the provision of public transportation. The term "asset" refers to physical equipment including rolling stock, equipment and facilities. The goal of asset management is to ensure that an agency's assets are maintained and operated in a consistent State of Good Repair ("SGR").

The TAM Final Rule distinguishes requirements between larger and smaller or rural transit agencies:

— Tier I provider: "owns, operates, or manages either 1): 101 or more vehicles in revenue service during peak regular service or in any one non-fixed route mode, or 2): rail transit."

— Tier II provider: "owns, operates, or manages 1): 100 or fewer vehicles in revenue service during peak regular service across all non-rail fixed route modes or in any one non-fixed route mode, 2): a subrecipient under the 5311 Rural Area Formula Program, and 3): or any American Indian tribe."

In the S/WMPO region, DTC DelDOT is considered a Tier I provider, and Shore Transit is considered a Tier II provider. As statewide transit agencies, DTC DelDOT and MDOT MTA have completed their TAM Plans in 2018. Per federal regulations, MDOT MTA created a group TAM Plan on behalf of the Tier II Locally Operated Transit Systems (LOTS) in the State of Maryland that supports their implementation of asset management practice and the federal requirements. This group TAM Plan applies only to the 23 LOTS in Maryland that are recipients of 5311 funding, operate less than 100 vehicles, or serve an American Indian tribe.

Measures: The TAM Rule requires transit agencies establish SGR performance measures and targets for each asset class. Tier I providers must report on the SGR measures for the following asset categories:

— Rolling stock (revenue vehicles): Percent of vehicles that have either met or exceeded their Useful Life Benchmark ("ULB");

— Equipment (including non-revenue service vehicles): Percent of vehicles that have either met or exceeded their ULB;

— Infrastructure (rail fixed-guideway, track, signals, and systems): Percent of track segments with performance restrictions; and

— Facilities: Percent of facilities rated below condition 3 on the FTA TERM scale

DTC DelDOT is not responsible for infrastructure, as they are not a grantee that directly operates, maintains or stores rail cars, and has no associated rail infrastructure in its asset portfolio.

As Tier I providers, DTC DelDOT must develop its own TAM Plan with all the elements listed below. As required by the TAM Final Rule, Tier I Provider TAM Plans must include the following:

- Include the capital asset inventory;
- Provide asset condition assessment information;
- Describe the decision support tools used to prioritize capital investment needs;
- Identify project-based prioritization of investments;
- Define the TAM and SGR policy;
- Discuss the TAMP implementation strategy;
- Describe the key TAM activities to be undertaken during the plan's four-year horizon period;
- List resources needed to carry out the TAMP; and
- Outline how the TAMP will be monitored and updated to support continuous TAM improvement.

As a Tier II providers, Shore Transit was included in MDOT MTA's group TAM Plan with 22 other LOTS. As required by the TAM Final Rule, Tier II Provider TAM Plans must include the following:

- Maintain an Asset Inventory that includes all vehicles, facilities, and equipment used in the delivery of transit service;
- Identify all Safety-Critical assets within the Asset Inventory and prioritize efforts to maintain those Safety-Critical assets in a SGR;
- Clearly define ownership, control, accountability, and reporting requirements for assets, including leased and third-party assets;
- Set annual asset performance targets and measure, monitor, and report on progress towards meeting those targets;
- Consider asset criticality, condition, performance, available funding, safety considerations, and the evaluation of alternatives that consider full lifecycle benefits, costs, and risks in capital project prioritization and other asset management decisions; and
- Maintain a group asset management plan, in coordination with MDOT MTA and LOTS safety policies and plans, as a means of delivering this policy.

Data: In this initial Tier I TAMP, DTC will use FTA ULB measures for transit assets and rolling stock. Targets for revenue/non-revenue vehicles are expressed as a percentage of the assets that are at or the ULB. Targets for equipment are expressed as a percentage of the assets that are at or beyond the ULB. Facility targets are based on the overall condition score in terms of a percentage of facilities failing to meet the target score.

DTC ASSET PERFORMANCE TARGETS – ROLLING STOCK AND EQUIPMENT

ASSET CLASS	ASSET USE	DTC UL	FTA ULB	TARGET %	RATIONALE
Rolling Stock - Revenue Vehicles					
Commuter Rail Car (RP)	Rail	-	39	<10%	DTC's policy is to replace at end of UL. Less than 10% is acceptable.
Over-the-Road Bus (BR)	Commuter	12	14	<10%	
40ft/30ft Buses (BU)	Fixed-route	12	14	<10%	
Cutaway Bus (CU)	Paratransit	5	10	<10%	
Equipment - Non-Revenue Vehicles					
Car (AO)	Support Services	8	8	<20%	With current funding levels DTC will meet target goal within 4 years.
SUV (SV)	Support Services	8	8		
Truck/Van (VN)	Support Services	10	8		

DTC ASSET PERFORMANCE TARGETS – FACILITIES

ASSET CLASS	CONDITION BENCHMARK	TARGET %	RATIONAL
Facilities	3	20%	With DTC's Facility Preventative Maintenance plan goals, a 20% target is reasonable

For Shore Transit, based on the reported asset condition, targets have been set for each asset class taking the projected funding levels into consideration. The table below summarizes the FY 2017 performance and FY 2019 targets for Tier II LOTS assets. Targets have been set based on the anticipated funding availability and the priorities of both the LOTS and MDOT MTA.

FY19 TARGET ASSET PERFORMANCE FOR ALL ASSETS

NTD Vehicle Type	FY 2017 Performance	FY 2019 Target
Revenue Vehicles		
Bus	17.3%	13.3%
Cutaway Bus	14.2%	10.2%
Automobile	42.9%	38.9%
Van	39.4%	35.4%
Equipment		
Trucks and Other Rubber Tire Vehicles (Non-Revenue Vehicles)	14.6%	14.6%
Facilities		
Administrative*	10.0%	5.0%
Administrative/Maintenance	30.8%	25.8%
Maintenance	40.0%	35.0%
Passenger	25.0%	25.0%