

Chapter I

Introduction

In this chapter, the reader will find:

- **Background information** on the 2045 Long Range Transportation Plan
- **Basic knowledge** of the MPO, the transportation planning process and what LRTPs are
- **Guidance** on how to best use this document

15	Danville Metropolitan Planning Organization
15	Long Range Transportation Plans
16	The 2040 LRTP
18	Since the 2040 LRTP
19	The 2045 LRTP

The Long Range Transportation Plan, or LRTP, is a blueprint for creating a more efficient, connected, and environmentally-sensitive transportation system in the Danville region over the next 25 years. The region's Metropolitan Planning Organization (MPO) is the entity responsible for preparing this plan, which builds on the most recent update, adopted in 2015.

The MPO developed this plan by learning about the concerns of residents, employers, elected officials, and other contributors. These conversations helped the MPO better understand how people want the transportation system to function in the future. The plan is also shaped by transportation trends, data on the system's performance, and regional economic plans and desires.

The MPO took into consideration this constellation of perspectives and data points to evaluate all possible transportation improvements and ultimately select a set of specific projects for improving the transportation system. These projects meet the MPO's goal of enhancing the quality and interconnectivity of the transportation system.

Danville Metropolitan Planning Organization

Federal law requires all American metropolitan areas with more than 50,000 inhabitants to establish a Metropolitan Planning Organization. MPOs ensure that current and future expenditures for transportation programs and projects are based on a continuing, cooperative, and comprehensive planning ("3-C") planning process.

Danville MPO (D-MPO) is the official transportation planning agency for the City of Danville and the urbanized areas of Pittsylvania County. The MPO collaborates with various agencies, facilitates public input, and conducts its own research and analysis to develop forward-thinking solutions for the region's transportation system.

D-MPO develops plans and programs that are subject to approval by federal transportation agencies in order for federal transportation aid to flow to the region. The most recent national transportation law, FAST Act (Fixing America's Surface Transportation), requires MPOs to develop and maintain a Long-Range Transportation Plan (LRTP) and a short-range Transportation Improvement Program (TIP). The

MPO also develops a Unified Planning Work Program (UPWP) on an annual basis to outline planning activities, such as the work required to prepare this plan. The UPWP effectively serves as both the MPO's budget and work program.

HOW IS THE MPO AREA DETERMINED?



Several federal agencies are involved in defining the MPO's service area, including the Census Bureau, Office of Management and Budget, and the Federal Highway Administration/U.S. Department of Transportation. In the early 1980s it was recognized that an urbanized area of 50,000 population existed within Danville and portions of Pittsylvania County, and so steps were taken to establish the MPO and establish an initial boundary. Since then the study area boundary also has been established at a distance outside of the Urbanized Area boundary. Following the 2000 Census, these boundaries were changed again to a limited extent.

Long Range Transportation Plans

The LRTP is a federally-mandated plan that outlines the region's priority transportation improvements over the coming decades. It is a fundamental plan that articulates a vision for the future of the region's transportation system, and identifies projects to implement over the next 25 years. The LRTP considers all modes of transportation including private vehicles, public transit, bicycles, pedestrians, and air; and covers other transportation issues such as bridge maintenance and safety improvements.

Per federal mandate, the Danville MPO's LRTP must be updated every five years. The preceding version, approved by the MPO Policy Board in October 2015, was named the 2040 Long Range Transportation Plan (2040 LRTP). The updated plan presented in this document is the 2045 Long Range Transportation Plan (2045 LRTP).

The 2040 LRTP

The MPO's 2040 LRTP, which this plan replaces, was developed as both federal and state policies were evolving to take a more performance-based approach in selecting transportation priorities. This approach means that transportation projects should be selected based on how well they can address transportation deficiencies and advance the MPO's goals. It requires the MPO to collect and make sense of qualitative and quantitative data for each transportation mode, and understand the values of the public and other stakeholders.

The MPO's needs assessment for the 2040 LRTP showed few deficiencies causing congestion, but several needs for improving safety and increasing the region's economic development. These priorities of the region aligned well with the state's SMART SCALE transportation funding program, which also heavily emphasized safety and economic development when it was introduced around the time the MPO was developing the 2040 LRTP. The MPO also evaluated projects for their contributions toward the other three SMART SCALE priorities of improving access, mitigating congestion, and environmental sensitivity. The MPO then developed a score for each proposed transportation project based on the five evaluation factors.

The MPO also used a pair of improvement alternatives to help identify its highest priorities. The first alternative, consistent with the MPO's emphasis on economic development, was titled "Berry Hill Industrial Park Access." This alternative included a set of projects that would be needed to develop the Berry Hill Industrial Park in southwest Pittsylvania County. The second alternative was titled "operations and safety focus." This alternative focused on addressing congestion and safety issues on key corridors and at intersections in the region.

This process yielded a set of 10 projects and four programs, listed in **Figure 6**, to provide funding for MPO priorities in the areas of safety, transportation enhancements such as bicycle and pedestrian improvements, rail crossing safety, and bridge reconstruction and replacement.

FAST ACT



The MPO developed this plan in accordance with the latest federal transportation law, Fixing America's Surface Transportation (FAST) Act. Among the law's many requirements for this plan are the following:

- "The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date."
- "The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system"
- "In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity."
- "The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals described in 23 U.S.C. 150(b) and the general purposes described in 49 U.S.C. 5301(c)."

The Federal Highway Administration provides access to the rules governing metropolitan transportation planning, including LRTPs, at the following webpage:

<https://www.fhwa.dot.gov/fastact/guidance.cfm>.

The 2040 LRTP also demonstrated how these projects and programs advance the eight "planning factors," which federal law requires all long-range transportation plans nationwide to address. These factors are intended to ensure that transportation plans are developed to consider all transportation modes, the environmental and social impacts of transportation projects, and better plan for the future through such actions as early preservation of transportation

rights of way. The factors defined by the previous transportation law – MAP-21 – were economic vitality, increase safety, increase security, increase accessibility and mobility, environmental enhancement and quality of life, enhance intermodal connectivity, system management, and preserve existing transportation system. Refer to **Chapter VI** for more information about the Federal Planning Factors.

The MPO reviewed these proposed alternatives and projects with the public, key stakeholders, and decision makers before settling on the final plan. The 2040 LRTP is an important reflection of the MPO’s priorities at that time, and the jumping off point for the 2045 update.

Finally, the federal government requires MPOs to demonstrate “fiscal constraint” in their long-range transportation plans. This means that only projects that can be afforded within the anticipated revenue over the next 25 years can be included in a plan. As a result, several important projects could not be included in the 2040 LRTP for funding. A total of 29 projects were instead included in a “Visioning List.” They may be implemented after the 2040 timeframe of the plan, or constructed if additional funds become available, or considered for funding in the 2045 plan. The Visioning List provides a starting point for identifying and evaluating projects for the 2045 plan.

Figure 6 Projects and programs selected for the 2040 Plan

2040 Map ID (1)	Project Description (From/To)	Locality	Description	Proposed Typical Section (2)	Estimated Cost at Year of Expenditure (3)	Estimated Cost - Prior Allocation(4)	Year of Expenditure	Previous Allocation (Prior to 2016)	Fund Allocation in LRTP (2016-2040)
1	Route 58 Business & Berry Hill Road (US 311) Intersection Improvements	Pittsylvania County	Add eastbound and northbound turn lanes. Modify signal	R4D	\$3,290,000	\$3,290,000	2018	\$0	\$3,290,000
2	Kentuck Road (VA Rte 729) Improvements	Pittsylvania County/City of Danville	Improvements at 3 locations	R2	\$7,213,000	\$7,213,000	2030	\$0	\$7,213,000
3	Sandy Creek Bridge Replacement (Rt. 730)	Pittsylvania County	Replace Bridge	R2	\$2,061,000	\$2,061,000	2030	\$0	\$2,061,000
4	Mt. Cross Road (Rt. 750) - City Line to Old Mt. Cross (Phase 1 & 2)	City of Danville	Widen to 4 Lanes with two-way center left turn lane	U5D	\$17,279,000	\$12,563,000	2020	\$4,716,000	\$12,563,000
5	Airport Dr. at Stinson Dr.	City of Danville	Geometric improvements.	U2	\$840,000	\$840,000	2030	\$0	\$840,000
6	Moorefield Bridge Road Improvements	Pittsylvania County/City of Danville	Improvements at 3 locations	RD	\$4,844,000	\$4,844,000	2035	\$0	\$1,000,000
7	US 29 (Central Boulevard) at VA 413 (Memorial Drive)	City of Danville	Improve alignment of southbound to westbound ramp	U4D	\$1,616,000	\$1,616,000	2035	\$0	\$1,616,000
8	Piney Forest Road (US 29 Bus.) at North Main Street (VA 293)	City of Danville	Upgrade and signalize intersection, modify circulation patterns (including re-alignment of Seminole Drive)	U4D	\$2,949,000	\$2,949,000	2035	\$0	\$1,000,000
9	Piney Forest Road and Central Boulevard (US 29 Bus.) – Piney Forest Road to Parker Road	City of Danville	Intersection and circulation improvements (includes shift of Piney Forest Road connection to opposite Parker Road).	U4D	\$10,704,000	\$10,704,000	2040	\$0	\$10,704,000
10	Berry Hill Road (US 311) from Route 58 Business to Industrial Park	Pittsylvania County	Improve pavement section to 24 feet in width	R2	\$20,269,000	\$20,269,000	2018	\$0	\$1,000,000
N/A	Safety/ITS/Operational Improvements (CN)	N/A	Various Improvements	N/A	\$4,500,000	\$4,500,000			\$4,500,000
N/A	Transportation Enhancements/Byway/ Other Non-traditional Transportation Projects (CN)	N/A	Various Improvements	N/A	\$284,348	\$284,348			\$284,348
N/A	Rail Crossing Safety (CN)	N/A	Various Improvements	N/A	\$40,582	\$40,582			\$40,582
N/A	Bridge Rehabilitation/Replacement/ Reconstruction (CN)	N/A	Various Improvements	N/A	\$8,090,896	\$8,090,896			\$8,090,896
Total - Improvements					\$83,980,826	\$79,264,826		\$4,716,000	\$54,202,916
Total - Maintenance: Preventative Maintenance and System Preservation, Preventative Maintenance for Bridges, and Traffic and Safety Operation (MPO Wide)									\$851,748,315 (5)

Since the 2040 LRTP

Several developments since October 2015 have influenced the 2045 LRTP. There were several changes on the federal, state, regional and local levels that reshaped the project evaluation approach and methodology. Refer to [Chapter VI](#) for additional detail.

SMART SCALE

SMART SCALE is Virginia's method for selecting transportation projects to ensure the best use of limited tax dollars. The Commonwealth launched SMART SCALE in 2014 with House Bill 2. SMART SCALE uses a transparent and data-driven approach to select projects that best achieve the state's desired performance for the transportation system. Since SMART SCALE has become an important source of funding for transportation projects in Virginia, the 2045 LRTP reflects those scoring approaches. Doing so sets the region up for success in getting its priorities funded at the state level.

FAST Act

Congress adopted the nation's latest transportation funding law - Fixing America's Surface Transportation Act (FAST Act), in 2015. The FAST Act built on the prior law's (MAP-21) emphasis on performance based planning and project selection, while increasing the emphasis and funding for freight related planning and projects.

VTrans

VTrans is the statewide multimodal transportation plan. The latest version, called VTrans 2040, was completed in January of 2018. The plan establishes a framework to guide the state's investment decisions and is strongly connected to the SMART SCALE scoring process. The latest version represented a significant step forward in the state's pivot towards a performance-based planning approach.

State and MPO Performance Targets and Measures

A shift towards a performance-based planning and project selection is one of the most significant developments in transportation nationally over the last decade. The state's Office of Intermodal Planning and Investment (OIPI) is responsible for developing transportation performance measures and targets in accordance with the FAST Act.

WHAT IS THE ROLE OF VISIONING PROJECTS?

Projects in the Visioning List are still part of the LRTP, even if those projects are not included in the Constrained List of Projects. For instance, under SMART SCALE a project from the Visioning List may qualify and receive funding. Generally, Constrained Projects are higher priority investments and vetted with further study.



The state, through VTrans, established five goals and 39 performance measures that allow it to track progress towards the goals. The state's goals are:

1. Economic Competitiveness and Prosperity
2. Accessible and Connected Places
3. Safety for All Users
4. Proactive System Management
5. Healthy Communities and Sustainable Transportation Communities

Plans and Studies

Local and regional plans were critical inputs for the 2045 transportation planning process. The West Piedmont Economic Development District's Comprehensive Economic Development Strategies Plan was a central consideration. That document is integrated throughout the LRTP, to sync economic development and transportation efforts. Local comprehensive plans helped to determine the 2045 goals, performance measures, and project lists. City of Danville or Pittsylvania County studies that involved transportation fed into the project evaluation process. A list of all known transportation recommendations in the region formed a Candidate List of Projects that eventually developed into the 2045 LRTP project lists. Over forty local and regional planning documents influenced the 2045 process. Appendix C lists those documents with a summary of the most important.

The 2045 LRTP

With the development of the 2045 LRTP, the Danville MPO continues and enhances the process for identifying and evaluating transportation projects that it used for the 2040 version. The plan consists of nine chapters, as outlined below. Refer to the following to find information on the topic of interest.

Chapter II: Public and Stakeholder Engagement

Five engagement goals guided interactions with the public and stakeholders. A toolkit of strategies supported those goals, resulting in an engagement process that far exceeded the 2040 effort. Refer to this chapter to find information about the engagement process and to Appendix C for full documentation of results.

Chapter III: 2020 State of the System Report

This State of the System Report serves as the existing conditions element of the 2045 LRTP. Conclusions from **Chapter III** provide a baseline for **Chapter V**, which forecasts future needs, using additional data sources and results from the Travel Demand Model (TDM). The State of the System Report also identifies new project recommendations for the Candidate List of Projects and feeds into final project selection.

Chapter IV: Demographics and Land Use Trends

This chapter examines the demographics and land use trends of the region in the context of the performance of the transportation system. The distribution of people and jobs across the MPO area plays a crucial role in the functioning of the transportation system.

Chapter V: 2045 State of the System Report

The 2045 State of the System Report explores anticipated transportation needs for the horizon year. The transportation model used in this process predicted future needs for roadways, calculating anticipated traffic counts and congestion.

CEDS TRANSPORTATION PROJECT PRIORITIES

“An area’s transportation accessibility serves as the framework wherein its communities grow. The adequacy of the transportation system has shaped and will continue to exert significant influence on economic growth within the West Piedmont Planning District. Transportation is a primary economic growth-forming factor because it makes land, labor, and resources both accessible and competitive interregionally and intraregionally. Local transportation modes, for the same reason, impact the growth--or lack of growth--of specific areas within the region by making some areas relatively more accessible than others. The region needs an efficient transportation system because local firms are competing globally with other firms. The consumer, through the retailer, is requiring an approximation of just-in-time delivery.

The highway network is the major element in the Planning District’s transportation system. Five federal highways and twenty state primary highways provide the localities of the region with access to each other and the rest of the nation...

Top regional priorities for infrastructure improvements for regional access are based on completion of construction of the I-73, I-785, U.S. Route 58, and U.S. Route 29 corridors. The projects are essential and the timeframe for their construction is critical to the recovery of the regional economy and directly and indirectly affect the potential success of all other projects identified in the strategy. These transportation projects will have a significant economic impact on the region. Additional information on these and other projects follow.



Chapter VI: Goals and Performance Measures

Goals and performance measures are central to the 2045 LRTP. D-MPO developed five goals and fifteen performance measures to evaluate projects and determine the 2045 Project Lists. **Chapter VI** describes what federal, state, and local considerations influenced the development of the 2045 goals and measures. This chapter also explains the Project Evaluation Tool, which was used to score and prioritize project recommendations.

Chapter VII: 2045 Performance-Based Process

The 2045 process involved multiple phases of project evaluation, using the Project Evaluation Tool described in **Chapter VI**. **Chapter VII** documents the project evaluation results and illustrates how the project consultants identified, developed, and scored projects. While Appendix F documents this process in more technical detail, **Chapter VII** is a general overview.

Chapter VIII: Transportation Priority Areas

The 2045 process set transportation priority areas, involving project categories, multi-modal retrofits to existing corridors, and interregional freight movement. This chapter details additional vision statements that are intended to guide D-MPO's operations with the Unified Planning Work Program (UPWP) and other decision-making processes. This chapter also integrates transportation-related policies from the 2019 CEDS plan, to ensure that economic development and transportation policies support each other.

Chapter IX: 2045 Project Lists

All chapters are intended to support and guide project selection, found in **Chapter IX**. This chapter includes the Constrained List of Projects and Visioning List. For the high ranking projects, one-page profile sheets communicate all relevant information and guide decision-makers on next steps for implementation. The Visioning List consists of multiple project categories, including recommendations for the WPPDC Rural Transportation Program area, along with guidance on maturing listed projects.

Appendix

The Appendix comprises the Technical Report version of the 2045 LRTP. These appendices document the process, store technical evaluations of project selection, record public and stakeholder comments, and detail other aspects of the 2045 process not included in the chapters. Throughout the 2045 LRTP, there are references to the Appendix, where readers can obtain additional detail on any given topic.

2045 GOALS



D-MPO adopted a set of five regional goals with 15 associated performance measures used to evaluate LRTP projects. The D-MPO Policy Board also set weights on these goals and performance measures that formed a project evaluation tool. D-MPO's official 2045 goals are:

- **Economy:** Retain and increase business and employment opportunities.
- **Safety:** Provide a safe and secure transportation system.
- **Mobility and Accessibility:** Provide a transportation system that facilitates the efficient movement of people and goods.
- **Community and Nature:** Improve the quality of life and protect the environment.
- **Operational Efficiency:** Preserve the existing transportation system and promote efficient system management.