CHAPTER 4

RECOMMENDATIONS

GOALS & STRATEGIC PERFORMANCE MEASURES

The biggest challenge for RATS will be to maintain the flexibility required to meet changing conditions. One area of focus for the planning process has been to identify emerging trends that affect the transportation system, which help to define future needs. Long-range plans are undeniably skewed to meeting the needs of today, given that future projections are notoriously difficult to make and accept. Future needs, known or unknown, take a backseat to the most pressing of today's problems. Therefore, this LRTP sets goals and strategies that RATS must manage effectively to meet challenges as they arise, rather than becoming locked into a project level plan that attempts to allocate resources precisely over a long period of time.

In coordination with the State Transportation Commission, we asked residents to prioritize where funds should be spent and shared information about the current transportation system, funding, and the forecast for transportation funding. Residents shared a wide range of options and opinions about investment choices and the direction we should go as a county. They continue the trend of seeking investments in the maintenance and safety of existing highways and bridges with targeted expansion of the regional highway system. They also ask for improvements to both the public transportation system and bicycling and walking options.

In addition, the many sections of this plan provided a detailed look at a variety of important population, economic and travel trends. Some key takeaways that influence the goals and performance measures include:

- **Overall demand for transportation will increase as the population and economy grows.**
- **In the near future, the most popular choice for travel remains the automobile and the most popular choice for freight will be the truck. Therefore, congestion, safety, and system maintenance will continue to be priority concerns.**
- **While driving is, and likely will continue to be, the primary means of travel in Berks County, there are indications that due to changing demographics, the decades- old trend of increased driving may be slowing. This may mean that more people will rely on alternative modes to get around, such as public transportation, walking and bicycling**
- **In 2020, the county had 123 bridges rated as being in poor condition that include 78 posted bridges and 7 closed bridges.**
- **Berks County has more drivers aged 65+ on the road than ever before and that number will continue to rise. Therefore, safety improvements tailored towards older drivers will be needed.**
- **Berks County has a significant amount of crashes – ranking sixth in the state in the number of overall crashes and fifth in the number of fatal crashes between 2015 and 2019.**
- **The county has 25 locations reporting greater than 20 crashes.**

Truck traffic will continue to grow.

Large trucks are involved in fatal crashes more in Berks County than most other counties, ranked no lower than 6th in the last five years, and placing 2nd in 2019. Overall, Berks County sees many large truck crashes and has been ranked in the top ten for crash frequency for the last five years.

The county has 33 congested corridors. The most heavily congested corridor is Route 222 North into Lehigh County. The traffic in this corridor is 21 percent truck traffic.

Berks County residents want a lot from their transportation system in the future. They suggested dozens of projects, wants and needs that significantly exceed the amount of money we will have available. Not surprisingly, there is a significant gap – and it will continue to grow – between the transportation system that people want and the one we can deliver with current funds.

The plan's goals and performance measures apply common SMART principles to ensure the goals and performance measures are:

Specific	Sufficient to guide the plan
Measureable	We can measure our progress towards the goals
Agreed	Consensus among partners
Realistic	Can be accomplished
Time-Bound	Identified time-frame for accomplishment

We use these goals and performance measures to track how well we will meet our mission over time. These measures help focus on what is important today and provide direction for the future. Since our last plan update in 2018, we have been working with our state and federal partners to establish and track our progress towards many of these goals. A full discussion of this effort is provided in the next section.

GOAL #1

Safety: Keep travelers safe and secure, no matter the mode of transportation.

STRATEGIC PERFORMANCE MEASURES

- See Safety Performance Measures (PM1) and Public Transportation Safety Measures

GOAL #2

Maintenance:

Maintain and improve the transportation system and services we enjoy today where financially feasible.

STRATEGIC PERFORMANCE MEASURES

- See Pavement / Bridge Performance Measures (PM2) and Transit Asset Management Performance Measures

GOAL #3

Economic Development:

Invest in projects that strengthen the ability of Berks County commerce to access national and international trade markets, and support regional economic development and tourism opportunities.

STRATEGIC PERFORMANCE MEASURES

- See System Performance Measures (PM3)
- Support the Reading Regional Airport Authority in strengthening the use of the airport for both business and commercial aviation activities.
- Support the efforts of the newly created Schuylkill River Passenger Rail Authority to reestablish passenger rail service between Reading and Philadelphia.

GOAL #4

Improved Connections and Choices:

Give travelers a variety of well-designed transportation choices that are in good condition.

STRATEGIC PERFORMANCE MEASURES

- Support projects that expand the county trail and sidewalk network.
- Work closely with municipalities, PennDOT and SCTA/BARTA to ensure the safe interaction of vehicles, transit and bicyclists / pedestrians and other vulnerable road users.
- Support projects that expand the transit network as identified in the South Central Transit Authority Transit Development Plan.

GOAL #5

Environmental Sustainability:

Enhance the performance of the county transportation system in environmentally sustainable ways that increase resiliency to both climate change and vulnerability to natural disaster.

STRATEGIC PERFORMANCE MEASURES

1. Maintain the county's attainment status for both ozone and fine particulates (PM 2.5).
2. Work closely with federal, state, municipal and private entities to implement alternative fuels use throughout our region. Specific focus should be given to the new National Electric Vehicle Infrastructure (NEVI) program and similar programs offered at the state level.
3. Continue coordination with appropriate agencies to protect and provide resiliency for critical transportation infrastructure against disaster by identifying vulnerable assets and prevention strategies through an updated, current hazard mitigation plan.
4. Work with all local, regional, state, and federal organizations and agencies to avoid, minimize, or mitigate impacts from TIP and LRTP projects using the PennDOT Connects process.
5. Assist in identification of potential environmental mitigation issues by acquiring, creating, and updating, as needed, geographic information system data layers for use by the implementing agencies and disseminating them in a readily accessible format to municipalities.
6. Work with PennDOT to implement best management practices and mitigation strategies on transportation projects.

Comparison of LRTP goals and Map-21 and FAST Act Planning Factors

1. Increase the safety of the transportation system for motorized and non-motorized users. **(Goal #1)**
2. Increase the security of the transportation system for motorized and non-motorized users. **(Goal #1)**
3. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency. **(Goals #2 and #3)**
4. Increase the accessibility and mobility of people and for freight. **(Goal #3)**
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. **(Goal #4 and #5)**
6. Enhance the integration and connectivity of the transportation system, across and between modes, people and freight. **(Goal #3 and #4)**
7. Promote efficient system management and operation. **(Goal #2)**
8. Emphasize the preservation of the existing transportation system. **(Goal #2)**
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation. **(Goal #5)**
10. Enhance travel and tourism. **(Goal #3)**

PROJECT PRIORITIZATION AND PERFORMANCE MEASURES

In terms of project prioritization, RATS does not use a scoring system but instead employs a qualitative approach in selecting projects. We expect these projects to make positive, substantive progress towards meeting this plan's performance measures. These guidelines indicate the types of projects RATS is willing and not willing to fund. RATS applies the guidelines and considers potential impacts to land use and the natural and built environments, and consistency with the Berks County Comprehensive Plan and PennDOT plans and operations.

These generalized statements address the various programmatic areas found in this plan. More specific details related to the establish Performance Measures and examples of relevant selected projects follows.

Proposed congestion mitigation projects must be located in a corridor identified in the current RATS Congestion Management Process (CMP). If there are several projects that match that criteria, projects are prioritized by crash data that is provided by PennDOT. The project that has higher overall levels of crashes receives priority.

Proposed safety projects are evaluated using current PennDOT safety data and comparing crash rates against statewide crash rates for roads with similar characteristics and against current PennDOT District 5-0 safety concerns and projects. A project must have a crash rate greater than the statewide average for that type of road. Highest priority is given to those roadways with higher crash rates.

Proposed air quality projects that want to use Congestion Mitigation/Air Quality (CMAQ) funds must go through an air quality test showing that emissions of ozone, PM2.5 or NOx are reduced because of the implementation of that project.

Proposed bridge projects must have a sufficiency rating below 80 in order to be eligible for rehabilitation and below 50 in order to be eligible for replacement. Highest priority is given to poor bridges on the National Highway System (NHS) followed by all other poor bridges.

Maintenance projects are proposed and prioritized by PennDOT District 5-0. RATS defers to PennDOT's expertise on life cycle costing and maintenance cycles. Priority is given to maintaining adequate pavement conditions on the NHS network.

Proposed projects of types that do not fit any of the above categories are evaluated against the goals and performance measures of this LRTP and the specific requirements of the funding program. Those goals and performance measures are consistent with the Berks County Comprehensive Plan.

Projects must comply with 1) the transportation goals and advance the performance measures in the RATS 2023-2045 Long Range Plan and 2) the Berks County Comprehensive Plan. Highest priority shall be assigned to:

- Projects essential for safety, maintenance of the transportation system, and/or congestion relief.
- Projects that upgrade unsafe roads and intersections, rehabilitate or replace deficient bridges, and upgrade existing highways that are deficient.
- Capacity improvements will be considered if they serve regional traffic and freight movements and:
    - Are located in areas designated for existing development, designated growth, or future growth in the Berks County Comprehensive Plan and;
    - Identified as a congested corridor by the RATS CMP or;
    - Identified as a roadway with higher crash frequencies or;
    - Program-specific improvements cannot provide satisfactory operations.

Transportation Performance Management

The Bipartisan Infrastructure Law (BIL) continues the requirements established in Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act for performance management. These requirements aim to promote the most efficient investment of Federal transportation funds. Performance-based planning ensures that the Pennsylvania Department of Transportation (PennDOT) and the Metropolitan Planning Organizations (MPOs) collectively invest Federal transportation funds efficiently towards achieving national goals. In Pennsylvania, the Rural Planning Organizations (RPOs) follow the same requirements as MPOs.

Transportation Performance Management (TPM) is a strategic approach that uses data to make investment and policy decisions to achieve national performance goals. 23 USC 150(b) outlines the national performance goal areas for the Federal-aid program. This statute requires the Federal Highway Administration (FHWA) to establish specific performance measures for the system that address these national goal areas. The regulations for the national performance management measures are found in 23 CFR 490.

National Goal Areas	
Safety	▪ To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
Infrastructure Condition	▪ To maintain the highway infrastructure asset system in a state of good repair
Congestion Reduction	▪ To achieve a significant reduction in congestion on the National Highway System
System Reliability	▪ To improve the efficiency of the surface transportation system
Freight Movement and Economic Vitality	▪ To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
Environmental Sustainability	▪ To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced Project Delivery Delays	▪ To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

Performance Based Planning and Programming

Pennsylvania continues to follow a Performance Based Planning and Programming (PBPP) process, with a focus on collaboration between PennDOT, FHWA, and MPOs/RPOs at the county and regional levels. These activities are carried out as part of a cooperative, continuing, and comprehensive (3C) planning process which guides the development of many PBPP documents, including:

- Statewide and Regional Long Range Transportation Plans (LRTPs)
- Twelve-Year Transportation Program (TYP)
- State Transportation Improvement Program (STIP)
- Regional Transportation Improvement Programs (TIPs)
- Transportation Asset Management Plan (TAMP)
- Transit Asset Management (TAM) Plans
- Public Transportation Agency Safety Plans (PTASP)
- Pennsylvania Strategic Highway Safety Plan (SHSP)
- Comprehensive Freight Movement Plan (CFMP)
- Congestion Mitigation and Air Quality (CMAQ) Performance Plan(s)
- Congestion Management Process (CMP)
- Regional Operations Plans (ROPs)

The above documents in combination with data resources including PennDOT's bridge and pavement management systems, crash databases, historical travel time archives, and the CMAQ public access system provide the resources to monitor federal performance measures and evaluate needs across the state. Based on these resources, PennDOT and MPOs/RPOs have worked together to (1) create data driven procedures that are based on principles of asset management, safety improvement, congestion reduction, and improved air quality, (2) make investment decisions based on these processes, and (3) work to set targets that are predicted to be achieved from the programmed projects. Aligning goals and performance objectives across national (FHWA), state (PennDOT) and regions (MPOs/RPOs) provide a common framework for decision-making.

PennDOT, in cooperation with the MPOs/RPOs, has developed written provisions for how they will cooperatively develop, and share information related to the key elements of the PBPP process including the selection and reporting of performance targets. These PBPP written provisions are provided in Appendix A. In addition, PennDOT has updated their Financial Guidance to be consistent with the PBPP provisions. The Financial Guidance provides the near term revenues that support the STIP and is provided in Appendix B.

Evaluating 2023-2026 TIP Performance

The Federal Fiscal Year (FFY) 2023-2026 Transportation Improvement Program (TIP) supports the goal areas established in PennDOT's current long range transportation plan (Pennsylvania 2045). These include safety, mobility, equity, resilience, performance and resources. The goals are aligned with the national goal areas and federal performance measures and guide PennDOT and the Reading MPO in addressing transportation priorities.

The following sections provide an overview of the federal performance measures. Since asset management, reliability and CMAQ targets have not yet been set for the 2022-2025 performance period, the current project selection process for the FY2023-2026 TIP is highlighted and related to meeting future targets. Over the 4-year TIP, nearly 85% of the total funding is associated with highway and bridge reconstruction, preservation, and restoration projects. However, these projects are also anticipated to provide significant improvements to highway safety and traffic reliability for both passenger and freight travel. Through these performance measures, PennDOT and the MPO will continue to track performance outcomes and program impacts on meeting the transportation goals and targets. Decision support tools including transportation data and project-level prioritization methods will be continually developed and enhanced to meet PennDOT and MPO needs. Dashboards and other reporting tools will be maintained to track and communicate performance to the public and decision-makers.

Safety Performance Measures (PM1)

Background
The FHWA rules for the *National Performance Management Measures: Highway Safety Improvement Program* (Safety PM) and *Highway Safety Improvement Program* (HSIP) were published in the Federal Register (81 FR 13881 and 81 FR 13722) on March 15, 2016, and became effective on April 14, 2016. These rules established five safety performance measures (commonly known as PM1). The current regulations are found at 23 CFR 490 Subpart B and 23 CFR 924. Targets for the safety measures are established on an annual basis.
Data Source
Data for the fatality-related measures are taken from the Fatality Analysis Reporting System (FARS) and data for the serious injury-related measures are taken from the State motor vehicle crash database. The Vehicle Miles of Travel (VMT) are derived from the Highway Performance Monitoring System (HPMS).

2022 Safety Measures and Targets (Statewide)		
Measure	**Baseline (2016-2020)**	**Target (2018-2022)**
Number of fatalities	1,140.6	**1,113.7**
Rate of fatalities per 100 million VMT	1.157	**1.205**
Number of serious injuries	4445.6	**4,490.8**
Rate of serious injuries per 100 million VMT	4.510	**4.860**
Number of non-motorized fatalities & serious injuries	761.2	**730.1**

Methods for Developing Targets
An analysis of Pennsylvania's historic safety trends was utilized as the basis for PennDOT and MPO/RPO coordination on the State's safety targets. The targets listed above are based on a 2% annual reduction for fatalities and maintaining levels for suspected serious injuries, which was derived from the actions listed in the Strategic Highway Safety Plan (SHSP), crash data analysis and the desire to support the national initiative Toward Zero Deaths.

Progress Towards Target Achievement and Reporting:

PennDOT and the Reading MPO continue efforts to ensure the TIP and Long-Range Transportation Plan (LRTP) are developed and managed to support progress toward the achievement of the statewide safety targets. At this time, only the Delaware Valley Regional Planning Commission (DVRPC) has elected to establish their own regional safety targets. All other MPOs/RPOs have adopted the statewide targets.

PennDOT's Strategic Highway Safety Plan (SHSP) serves as a blueprint to reduce fatalities and serious injuries on Pennsylvania roadways and targets 18 Safety Focus Areas (SFAs) that have the most influence on improving highway safety throughout the state. Within the SHSP, PennDOT identifies 3 key emphasis areas to improve safety – impaired driving, lane departure crashes, and pedestrian safety.

2022 SHSP Safety Focus Areas			
Lane Departure Crashes	Speed & Aggressive Driving	Seat Belt Usage	Impaired Driving
Intersection Safety	Mature Driver Safety	Local Road Safety	Motorcycle Safety
Pedestrian Safety	Bicycle Safety	Commercial Vehicle Safety	Young & Inexperienced Drivers
Distracted Driving	Traffic Records Data	Work Zone Safety	Transportation Systems Management & Operations
Emergency Medical Services	Vehicle-Train Crashes		

Pursuant to 23 CFR 490.211(c)(2), a State Department of Transportation (DOT) has met or made significant progress toward meeting its safety performance targets when at least 4 of the 5 safety performance targets established under 23 CFR 490.209(a) have been met or the actual outcome is better than the baseline performance for the year prior to the

establishment of the target. For Pennsylvania's 2020 targets, the FHWA determined in March 2022 that Pennsylvania did not meet the statewide targets and is subject to the provisions of 23 U.S.C. § 148 (i). This requires the Department to submit an implementation plan that identifies gaps, develops strategies, action steps and best practices, and includes a financial and performance review of all HSIP funded projects. In addition, the Department is required to obligate in Federal Fiscal Year (FFY) 2023 an amount equal to the FFY 2019 HSIP apportionment.

As part of the Highway Safety Improvement Program Implementation Plan, the Department identified gaps and best practices to support further reducing serious injuries and fatalities. The following opportunities were identified as ways to assist with meeting future targets: (1) appropriate project selection, (2) expanding local road safety in HSIP, (3) assessing programs that support non-motorized safety, (4) expanding use of systemic safety projects, (5) improved project tracking for evaluation purposes and (6) project prioritization for greater effectiveness.

PennDOT continues to provide feedback on statewide and MPO-specific progress towards target achievement. The progress helps regional MPOs understand the impacts of their past safety investments and can guide future planning goals and strategy assessments.

Evaluation of TIP for Target Achievement:

The following will ensure that planned projects in the TIP will help to achieve a significant reduction of traffic fatalities and serious injuries on all public roads:

- PennDOT receives federal funding for its Highway Safety Improvement Program (HSIP). The 2023-2026 STIP includes $520 million of HSIP funding. The Department distributes nearly 70% of this funding to its regions based on fatalities, serious injuries, and reportable crashes. In addition, a portion of the HSIP funding is reserved for various safety initiatives statewide.

- All projects utilizing HSIP funds are evaluated based on a Benefit/Cost (B/C) analysis, Highway Safety Manual (HSM) analysis, fatal and injury crashes, application of systemic improvements, improvements on high-risk rural roads, and deliverability. Specifically, as part of PennDOT's HSIP application process, a data-driven safety analysis in the form of B/C analysis or HSM analysis is required. Performing this analysis early in the planning process for all projects will help ensure projects selected for inclusion in the TIP will support the fatality and serious injury reductions goals established under PM1.

- The process for selecting safety projects for inclusion in the TIP begins with the Network Screening Evaluation that the Department has performed on a statewide basis. Selecting locations with an excess crash frequency greater than zero from this network screening is key to identifying locations with a high potential to improve safety. This evaluation has been mapped and is included in PennDOT's OneMap to ease use by PennDOT's partners. At the current time, this is not all inclusive for every road in Pennsylvania. Locations not currently evaluated may be considered by performing the same type of excess crash frequency evaluation the Department utilizes. Once this analysis has been performed, the data is used by the Engineering Districts and planning partners to assist MPO/RPO's in evaluating different factors to address the safety concern

- PennDOT continues to improve on the methods to perceive, define and analyze safety. This includes integration of Regionalized Safety Performance Functions (SPFs) that have been used to support network screening of over 20,000 locations.1

- PennDOT continues to identify new strategies to improve safety performance. PennDOT is actively participating in EDC 5 to identify opportunities to improve pedestrian safety as well as reduce rural roadway departures. These efforts new strategies are incorporated into future updates to the SHSP.

- Safety continues to be a project prioritization criterion used for selecting other TIP highway and bridge restoration or reconstruction projects. Many of these projects also provide important safety benefits.

- PennDOT continues to evaluate procedures to help in assessing how the TIP supports the achievement of the safety targets. As HSIP projects progress to the engineering and design phases, Highway Safety Manual (HSM) predictive analyses are completed for the project in accordance with PennDOT Publication 638. The HSM methods are the best available state of practice in safety analysis and provides quantitative ways to measure and make safety decisions related to safety performance. PennDOT will continue to identify ways to expand the application of HSM analyses to support more detailed assessments of how the STIP is supporting achievement of the safety targets.

1 For more information on SPFs: https://www.penndot.gov/ProjectAndPrograms/Planning/Research-And-Implementation/Pages/active-Projects/Safety-Performance-Functions.aspx

The following HSIP-funded TIP projects, using $10.3 million in HSIP funding and associated matching funds, often in combination with other state and federal funds, were developed in cooperation between PennDOT and the Reading MPO :

MPMS #	Project	Description and Location
114484 & 117632	RATS High Friction Surface 2023 and 2025	This project involves application of a high friction surface treatment to various identified locations within Berks County
79467	SR 12 / Elizabeth	Project involves shoulder widening, removal of a narrow bridge, installation of a hybrid roundabout at Elizabeth Avenue and a traffic signal with realignment and a southbound left turn lane on PA 12 at Skyline Drive in Alsace Township.
61972	US 222 Widening	Widening of US Route 222 from Schaeffer Road to the Kutztown Bypass in Richmond, Maidencreek and Maxatawny Townships. The highway will be widened to four lanes, a median barrier will be installed and roundabouts at Pleasant Hills Road and Richmond Road.
105963	Route 662 and Oley Turnpike Intersection	Construct a roundabout at the intersection of PA662 (Memorial Highway) and SR 2020 (Oley Turnpike Road) in Oley Township.
102162	SR 2014 Spring Street Safety Corridor	Corridor improvements to the entire length of SR 2014 (Spring Street) from Centre Avenue (SR 61) to 13th Street in the City of Reading. This project will upgrade traffic signals to provide higher visibility by adding larger signal heads, brighter illumination with LED modules, and additional signal heads over travel lanes with protected phasing where needed. Signal Coordination using new controller equipment will reduce congestion and improve safety through radio interconnection.
105954	SR 3023 State Hill Road from Colony Drive to SR 222 SB Ramps	Corridor safety improvements along State Hill Road between Colony Drive and the US 222 Southbound on-ramp in Wyomissing Borough. Improvements to be considered include, widening, access management, roundabouts at Woodland Road and at Greenwood Mall/ mall entrance, traffic signal updates and coordination.
117603 (LRTP Only)	SR 3023 State Hill Road – SR 222SB to Norfolk Southern RR	Improvements to State Hill Road (SR 30323) with the addition of a roundabout at US 222 Southbound ramps and addition of a roundabout combining the US 222 Northbound ramps with Spring Street in Wyomissing Borough

The following non-HSIP-funded projects also support the achievement of the safety targets:

MPMS #	*Project*	*Description and Location*
114484 and 117622	RATS AWPM 2023 and 2025	These projects involve the installation of all weather pavement markings on various routes in various municipalities in berks County
91658	TOC Operator - Berks	This project funds an operator working in the Traffic Operations Center in District 5-0 who monitors cameras, message boards and radio systems along I-78, I-176, Us 222 and US 422 in Berks County.
94900	Freeway Service Patrol	This project funds the freeway service patrol on US 422, US 222 and PA 12 in the urban area of Berks County.
116752	Dynamic Curve Warning Signs - RATS	This project involves the installation of Dynamic Curve Warning Signs at various locations within the US 222/ US 422/ PA 12 interchange in Wyomissing Borough and at the northern end of the US 222 expressway in Ontelaunee Township to reduce crashes and improve safety
109337	61 Median Barrier - Tilden	This project will add a median barrier on PA 61 from Lowland Road to a point approximately 0.4 miles north in Tilden Township
97258	SR 61 Median Barrier – Perry /Windsor	This project will add a median barrier on PA 61 from Zion's Church Road to 4th Street in Perry and Windsor Townships and Hamburg Borough.
110008	222SB Auxiliary Lane - Wyo-missing	This project involves the addition of an auxiliary lane to US 222 Southbound between the Berkshire Boulevard overpass and the Paper Mill Road Interchange in Wyomissing Borough to improve both safety and congestion.
110012	724 Fence Barrier	This project involves the upgrade of an existing concrete barrier and fence system to better withstand the debris and rocks that fall down the slope onto SR 724 between Valley Stream Road and Kennel Drive in Cumru Township.
102161	Lancaster Ave (US 222 Bus.) Corridor Improvements	This project involves corridor safety improvements along SR 3222 (Lancaster Ave. / US 222 Bus.) from Kenhorst Boulevard to PA 10 in the City of Reading. Study phase only in TIP. Balance in LRTP

Pavement/Bridge Performance Measures (PM2)

Background

The FHWA rule for the National Performance Management Measures; Assessing Pavement and Bridge Condition for the National Highway Performance Program was published in the Federal Register (82 FR 5886) on January 18, 2017 and became effective on February 17, 2017. This rule established six measures related to the condition of the infrastructure on the National Highway System (NHS). The measures are commonly known as PM2. The current regulations are found at 23 CFR 490 Subpart C and Subpart D. Targets are established for these measures as part of a four-year performance period, the first was 2018 to 2021. This TIP includes projects that will impact the second four-year performance period of 2022 to 2025.

Data Source

Data for the pavement and bridge measures are based on information maintained in PennDOT's Roadway Management System (RMS) and Bridge Management System (BMS). The VMT are derived from the Highway Performance Monitoring System (HPMS).

2022-2025 Pavement Performance Measure Targets (Statewide) – Due October 1st 2022

Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
% of Interstate pavements in Good condition	*TBD*	*TBD*	*TBD*
% of Interstate pavements in Poor condition	*TBD*	*TBD*	*TBD*
% of non-Interstate NHS pavements in Good condition	*TBD*	*TBD*	*TBD*
% of non-Interstate NHS pavements in Poor condition	*TBD*	*TBD*	*TBD*

Bridge Performance Measure Targets (Statewide)

Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
% of NHS bridges by deck area in Good condition	*TBD*	*TBD*	*TBD*
% of NHS bridges by deck area in Poor condition	*TBD*	*TBD*	*TBD*

Methods for Developing Targets

Pennsylvania's pavement and bridge targets will be established by October 2022 through extensive coordination with a Transportation Asset Management Plan (TAMP) steering committee and workshops with MPOs/RPOs and FHWA's Pennsylvania Division. The targets will be consistent with PennDOT's asset management objectives of maintaining the system at the desired state of good repair, managing to lowest life cycle costs (LLCC), and achieving national and state transportation goals.[2] Targets are expected to be calculated based general system degradation (deterioration curves) offset by improvements expected from delivery of the projects in the TIP along with planned state funded maintenance projects.

Progress Towards Target Achievement and Reporting:

TAMP Objectives

- Sustain a desired state of good repair over the life cycle of assets
- Achieve the lowest practical life-cycle cost for assets
- Achieve national and state goals

PennDOT and the Reading MPO continue to implement enterprise asset management for programming and decision-making as outlined in the TAMP.3 PennDOT will be transitioning to the new TAMP to be finalized in the summer of 2022. The tools and methodologies are continually evaluated to prioritize state-of-good repair approaches that preserve transportation system assets. Within the TAMP, PennDOT identifies the following key objectives:

2 For more information on LLCC: https://www.penndot.gov/ProjectAndPrograms/Asset-Management/Documents/Lowest-Life-Cycle-Cost-Infographic.pdf
3 PennDOT TAMP: https://www.penndot.pa.gov/ProjectAndPrograms/Asset-Management/Pages/default.aspx

PennDOT's analyses pertaining to life cycle management, risk management, financial planning, and any performance gaps culminate in an investment strategy to support the objectives and goals established in the TAMP.

PennDOT and the MPO continue to ensure the TIP and LRTP are developed and managed to support progress toward the achievement of the statewide pavement/bridge objectives and targets that will be established for the 2022-2025 performance period. The Reading MPO's pavement and bridge projects provided in the FY2023-2026 TIP were selected through extensive coordination with PennDOT's Asset Management Section in accordance with the TAMP. The projects are consistent with PennDOT's asset management objectives of maintaining the system at the desired state of good repair, managing to lowest life cycle costs (LLCC), and achieving national and state transportation goals.

After the 2022-2025 performance targets are set, PennDOT will provide feedback on statewide and MPO-specific progress towards target achievement. The progress helps each region understand the impacts of their past bridge and pavement investments and can guide future planning goals and strategy assessments.

Evaluation of TIP for Target Achievement:

The following has helped to ensure that planned projects in the TIP will help to maintain a desired state of good repair in bridge and pavement conditions for the interstate and NHS roadways:

Nearly 85% of PennDOT's TIP funding is directed to highway and bridge preservation, restoration, and reconstruction projects. Many of these projects are focused on our region's NHS roadways. PennDOT is responsible for programming projects on the Interstate system.

Pennsylvania's investment strategy, reflected in the statewide 2023 Twelve Year Program (TYP) and 2023-2026 TIP, is the result of numerous strategic decisions on which projects to advance at what time. PennDOT and the Reading MPO continue to work to meet the challenges of addressing local needs and priorities, while ensuring a decision framework is applied consistently across the state.

The TAMP provides a 12-year outlook that includes the financial strategy for various work types and is a driver for the TIP and LRTP development. The TAMP projects the levels of future investment necessary to meet the asset condition targets and contrasts them with expected funding levels. This helps PennDOT and the MPO make ongoing assessments and reevaluate data associated with its future investment decisions.

In support of the TIP development, PennDOT and MPOs/RPOs jointly developed and approved General and Procedural Guidance and Transportation Program Financial Guidance documents.4 The guidance, which is consistent with the TAMP, formalizes the process for Districts, MPOs/RPOs and other interested parties as they identify projects, perform a project technical evaluation, and reach consensus on their portion of the program.

The Procedural Guidance also helps standardize the project prioritization process. The guidance is key to resolving issues between programming to lowest life-cycle cost, managing current infrastructure issues and risk mitigation. The resulting methodology allows data-driven, asset management-based decisions to be made with human input and insight based on field evaluations to achieve maximum performance of the available funds. The guidance document is revised for each TIP cycle as PennDOT's asset management tools and methods evolve and enhance its ability to program to lowest life cycle cost.

In the short term, candidate projects are defined, and the proposed program is compared to Pavement Asset Management System (PAMS) and Bridge Asset Management System (BAMS) outputs to verify that the program is developed to the lowest practical life cycle cost. The percentages of good and poor can also be projected for evaluation of how the program may impact the national performance measures. When PAMS and BAMS are further implemented and improved, then planners can use the systems to optimize the selection of projects to achieve optimal performance within the funding constraints. Draft programs can then be analyzed in relation to the PM2 measures.

For MPO TIP]

- Include how lowest life cycle cost methodology is integrated into MPO/RPO planning process
- Identify amount of Spike/Discretionary funding programmed on TIP for bridges and pavement
- Provide table of key bridge and pavement projects in region and primary improvement focus
- Include table/chart of total amount of bridge deck area & miles of pavement preserved or improved based on TIP
- To the maximum extent practicable, include a description of the anticipated effect of the TIP toward achieving the performance targets identified in the LRTP.

4 The 2023 Financial Guidance can be found at: https://talkpatransportation.com/how-it-works/tip

Pavement projects appearing on the Reading MPO TIP and LRTP are developed in coordination with PennDOT. The Pavement Asset Management System (PAMS) is reviewed to identify candidate corridors and the required level of improvement. Projects can either be large scale capital projects funded with federal dollars and are listed in the TIP and LRTP or smaller scale pavement programs funded using state funds. Examples of these state programs include projects such as seal coating to preserve existing pavements or simple resurfacing projects through PennDOT's County maintenance allocations (M89 Program). Pavement improvements also can be accomplished as a byproduct of projects addressing operational or safety issues as their primary focus.

The following pavement projects on the NHS and other major routes were developed in cooperation between PennDOT and the Reading MPO :

MPMS #	*Project*	*Description and Location*
89215	PA 12 West Resurface – 422 WB Ramps to SR 183	Project involves highway resurfacing of PA 12 (Warren Street Bypass) from US 422 WB ramps in Wyomissing Borough to PA 183 (Schuylkill Avenue) in the City of Reading. This project also involves driveway curb closures, guiderail and barrier upgrades, and pavement restriping to provide lengthened acceleration lanes.
96373	PA 61 Restoration – Phase 1	Project involves highway restoration of PA 61 from approximately 1700 feet south of Cabela's Drive to the south end of the bridge over the Schuylkill River in Tilden Township.
10328	PA 61 Restoration – Phase 2A	Project involves highway restoration of PA 61 from 4th Street to the bridge over the Schuylkill River and State Street.
10867	PA 61 Restoration – Phase 2B	Project involves highway restoration of PA 61 from Zion's Church Road in Perry Township through Windsor Township to the 4th Street intersection in Hamburg. The 4th Street intersection will be reconfigured.
110007	222 Warren Street - Wyomissing	Project involves concrete patching and ultra-thin overlay of US 222 from the Spring Township line near the Reading Boulevard overpass to a point between the State Hill Road and Paper Mill Road interchanges. The project also involves similar improvements to the ramps to US 422 Penn Avenue and State Hill Road.

While not specifically included in the Reading MPO TIP, two resurfacing projects to be carried out by PennDOT are included in the current Interstate TIP. These two projects extend along I-78 from the Midway exit in Bethel Township to Shartlesville and from Shartlesville to just west of PA 61.

Bridge projects appearing on the Reading MPO TIP and LRTP are developed in coordination with PennDOT. The Bridge Asset Management System (BAMS) is reviewed to identify candidate corridors and the required level of improvement. The bridge projects programmed in this TIP will make a major improvement to the MPO's overall bridge conditions.

The Reading MPO works closely with PennDOT to determine the most effective and efficient level of improvements to be implemented. In addition to those structures designated for major rehabilitation or replacement, the FFY 2023-2026 TIP contains four Bridge Preventative Maintenance packages, each containing several bridges, that are intended to provide repairs necessary to keep bridges currently designated as FAIR from becoming POOR. There are also two Bridge Overlay Bundles which look to extend the life of additional bridges by overlaying their decks. There are also two Box Culvert Bundles which address numerous smaller structures carrying highways over watercourses.

The following bridge projects on the NHS and other major routes were developed in cooperation between PennDOT and the Reading MPO :

MPMS #	*Project*	*Description and Location*
109894	SR 61 Bridge Rehabilitation	Project involves the rehabilitation of the PA 61 bridge over the Schuylkill River and SR 4028 (West State Street) in the Borough of Hamburg and Tilden Township.
92070	US 422 (Penn Avenue) over Cacoosing Creek	Project involves the rehabilitation or replacement of US 422 over the Cacoosing Creek in Sinking Spring Borough.
10613	5th Street Bridge over NS RR	Project involves the rehabilitation or replacement of the Fifth Street (US 222-B) bridge over the Norfolk Sothern Railroad in the City of Reading.
93626	5th Street Bridge over PA 12	Project involves the rehabilitation or replacement of the Fifth Street (US 222-B) bridge over PA 12 in Muhlenberg Township.
91995	Centre Avenue over Norfolk Southern RR	Project involves the rehabilitation or replacement of the bridge carrying Centre Avenue (SR2087) over the Norfolk Southern Railroad in the City of Reading
91091	Schuylkill Avenue Bridge SB	Project involves a bridge replacement on Schuylkill Avenue (PA 183) southbound over the Norfolk Southern Railroad in the City of Reading.
91908	North Third Street over Tulpehocken Creek	Project involves the rehabilitation or replacement of the PA 419 (North Third Street) bridge over the Tulpehocken Creek in Marion and Heidelberg Townships.

The TIP also addresses 57 more specific bridge repair or rehabilitation projects on lower order roadways and repairs to a further 15 bridges included as elements of highway improvement projects. Most significantly, the TIP contains the Final Design phase for the proposed improvements to and reconstruction of the US 422 West Shore Bypass Phase 1, to be implemented in the LRTP beginning in FFY 2027. That project alone will replace seven large bridges with over 210,000 square feet of deck area and make repairs to three more with nearly 94,000 square feet of deck area. Subsequent phases of this reconstruction project will also include additional bridge upgrades.

While not specifically included in the Reading MPO TIP, Interstate improvements carried out by PennDOT are currently repairing or replacing bridges as an element of the reconstruction of I-78 from just east of Lenhartsville to the Lehigh County line and a major rehabilitation / widening of the bridge carrying I-78 over the Schuylkill River, Industrial Drive, the Blue Mountain and Northern Railroad, and Port Clinton Avenue is under way. This project also replaced the bridge carrying PA 61 over I-78. One additional project to replace and widen the I-78 bridge over PA 143 and the Maidencreek is included in the current Interstate TIP.

System Performance Measures (PM3)

Background

The FHWA final rule for the *National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program* was published in the Federal Register (82 FR 5970) on January 18, 2017 and became effective on May 20, 2017. This rule established six measures related to various aspects of the transportation system (commonly known as PM3). The current regulations are found at 23 CFR 490 Subparts E, F, G & H. Targets are established for these measures as part of a four-year performance period, the first was 2018 to 2021. This TIP includes projects that will impact future performance periods based on when projects are constructed or completed.

Data Source

The Regional Integrated Transportation Information System (RITIS) software platform is used to generate the travel time-based measures. Data from the American Community Survey (ACS) and FHWA's CMAQ annual reporting system are used for the non-SOV travel and mobile source emissions measures, respectively.

Travel Time and Annual Peak Hour Excessive Delay Targets - Due October 1st 2022

Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
Interstate Reliability (Statewide)	*TBD*	*TBD*	*TBD*
Non-Interstate Reliability (Statewide)	*TBD*	*TBD*	*TBD*
Truck Reliability Index (Statewide)	*TBD*	*TBD*	*TBD*
Annual Peak Hour Excessive Delay Hours Per Capita (Urbanized Area)	*Philadelphia - TBD*	*TBD*	*TBD*
	Pittsburgh – TBD	*TBD*	*TBD*
	Reading	*TBD*	*TBD*
	Allentown	*TBD*	*TBD*
	Harrisburg	*TBD*	*TBD*
	York	*TBD*	*TBD*
	Lancaster	*TBD*	*TBD*

Non-SOV Travel Measure Targets

Measure	Baseline 2021	2-year Target 2023	4-year Target 2025
Percent Non-Single Occupant Vehicle Travel (Urbanized Area)	*Philadelphia - TBD*	*TBD*	*TBD*
	Pittsburgh – TBD	*TBD*	*TBD*

CMAQ Emission Targets

Measure	2-year Target 2023	4-year Target 2025
VOC Emissions (Statewide)	*TBD*	*TBD*
NOx Emissions (Statewide)	*TBD*	*TBD*
PM2.5 Emissions (Statewide)	*TBD*	*TBD*
PM10 Emissions (Statewide)	*TBD*	*TBD*
CO Emissions (Statewide)	*TBD*	*TBD*

Methods for Developing Targets

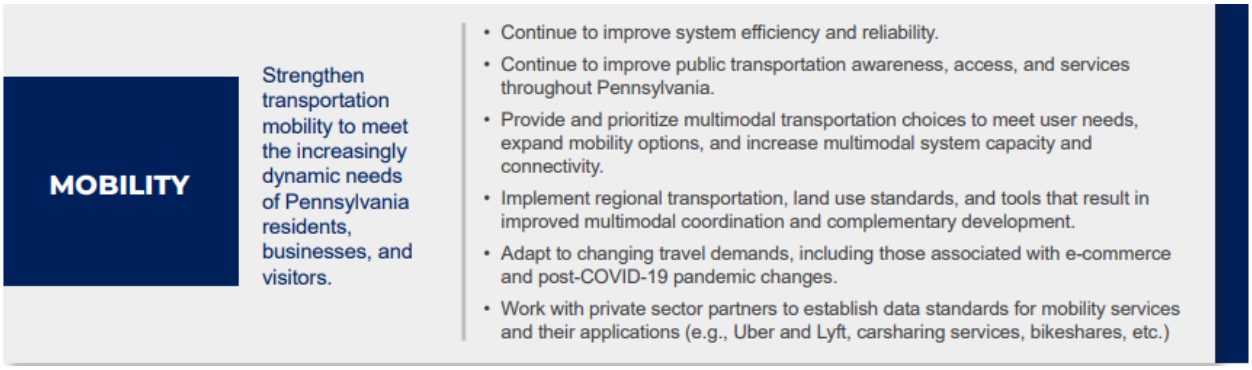
The System Performance measure targets will be established by October 2022 in coordination with MPOs/RPOs within the state. PennDOT continues to evaluate historic variances in performance measures in relation to project completion to assist with the target setting process.

Progress Towards Target Achievement and Reporting:

PennDOT and the Reading MPO continue efforts to ensure the TIP and LRTP are developed and managed to support the improvement of the reliability and CMAQ performance measures. This future progress will be measured against the targets established for the 2022-2025 performance period. PennDOT continues to monitor the impacts of completed investments on performance measures to better evaluate investment strategies. These efforts include evaluating the causes of historic reliability and delay issues, identifying freight bottlenecks, and assessing completed projects that provided the most benefits to reliability.

PennDOT remains committed to expand and improve system mobility and integrate modal connections despite the large percentage of funding dedicated to infrastructure repair and maintenance. PennDOT's LRTP provides objectives to address mobility across the transportation system that will guide investment decisions. The federal systems performance measures will be used to assess future progress in meeting these objectives and the associated targets.

PennDOT LRTP Mobility Goal and Objectives



The Reading MPO currently meets overall performance targets for Interstate Reliability, Non-Interstate Reliability and Truck Reliability Index. The Reading MPO is not currently subject to targets for Annual Peak Hour Excessive Delay Hours Per Capita but will be following the establishment of targets by the state later this year.

Evaluation of TIP for Target Achievement:

The following has helped to ensure that planned projects in the TIP will help to achieve an improvement in the system performance measures for the statewide interstate and NHS road system:

- PennDOT and the Reading MPO continue to emphasize their Transportation Systems Management and Operations (TSMO) initiatives to program low-cost technology solutions to optimize infrastructure performance. This has included the development of Regional Operations Plans (ROPs) that integrate with the MPO Congestion Management Process (CMP) to identify TIP projects. A TSMO funding initiative was established in 2018 to further support these efforts. The STIP includes over $289 million of funding dedicated to congestion relief projects.

- PennDOT has funded interstate projects to address regional bottlenecks. Mainline capacity increasing projects are limited to locations where they are needed most. These investments will provide significant improvements to mobility that support meeting the interstate and freight reliability targets.

- The statewide CMAQ program provides over $440 million of funding on the STIP for projects that benefit regional air quality. PennDOT has worked with Districts and MPO/RPOs to develop more robust CMAQ project selection procedures to maximize the air quality benefits from these projects..

- Over $210 million is provided in the STIP for multi-modal alternatives. This includes funding for transit operating costs, transit and rail infrastructure, support for regional carpooling and other bike and pedestrian infrastructure within the state. These projects provide opportunities to reduce vehicle miles of travel (VMT) and increase the percentage of non-single occupant vehicles.

- At this time, the potential impact of past and planned STIP investments on PM-3 performance measures are still being evaluated. The timeline for project implementation often prevents an assessment of measurable results until a number of years after project completion. PennDOT continues to monitor the impact of recently completed projects on the reliability and delay measures. As more data is obtained, these insights will help PennDOT and the Reading MPO in evaluating potential project impacts in relation to other factors including incidents and weather on system reliability and delay.

The Reading MPO will receive $15.6 million in CMAQ funding over the period FFY 2023-2026. The following projects using CMAQ funding were developed in cooperation between PennDOT and the Reading MPO using the MPO's CMAQ project selection process found in Appendix A:

MPMS #	Project	Description and Location
86420	Berks Commuter Services	This project funds the Transportation Demand Management program in Berks County that is administered by Commuter Services of PA. By helping commuters find alternatives to driving alone such as public transit, car/van pooling, bicycles and walking, traffic congestion can be reduced and air quality and safety can be increased.
79467	SR 12 Elizabeth Avenue	Project involves shoulder widening, removal of a narrow bridge, installation of a hybrid roundabout at Elizabeth Avenue and a traffic signal with realignment and a southbound left turn lane on PA 12 at Skyline Drive in Alsace Township.
110318	SR 12 Alsace Manor	Project involves shoulder widening and the addition of a center two-way left turn lane between the non-signalized intersections of Antietam Road (SR 2029) and Mount Laurel Road (SR 1004) including at the intersection with Woodside Avenue in Alsace Township
10815	SR 73 & Friedensburg Road (SR 2023)	Project involves intersection improvements to reconfigure and improve traffic flow at SR 73 (Memorial Highway) and SR 2023 (Friedensburg Road) in Oley Township.
90569	SR 222 and Long Lane (SR 1024)	Project involves the construction of a roundabout on US 222 at Long Lane (SR 1024) to improve safety and reduce congestion.
110075	SR 422 Benn Franklin Congested Corridor	Project involves the upgrade of 13 signalized intersections along US 422 (Ben Franklin Highway) between Pineland Road and River Bridge Road (SR 2077) in Exeter and Amity Townships.
117620	State Hill Road – Norfolk Southern RR to Penn Avenue	Project involves the conversion of the State Hill Road (SR 3023) intersection with Penn Avenue (SR 3422) (US 422 -B) into a roundabout to improve safety and reduce congestion in Wyomissing Borough

In addition to the above, the following projects using non-CMAQ funding were also developed in cooperation between PennDOT and the Reading MPO to reduce congestion and improve safety:

MPMS #	Project	Description and Location
88781	SR 12 and SR 73	Project involves the installation of turn lane lanes on all four approaches and signal retiming at the intersection of PA 73 and PA 12 in Ruscombmanor Township
61972	US 222 Widening	Project involves widening US 222 to four lanes and installing a median barrier from Schaeffer Road in Maidencreek Township to the Kutztown Bypass in Richmond Township. Roundabouts will be constructed at Us 222 intersections with Pleasant Hills Road and at Richmond Road.
87688	SR 422 Sinking Spring	Project involves re-alignment of intersections at US 422 (Penn Avenue) and PA 724 (Shillington Road) and SR 3055 (Mull Avenue) to reduce congestion in the Borough of Sinking Spring.
114439	West Shore Bypass – Phase 1	This project involves highway reconstruction and widening to six lanes of US 422 (West Shore Bypass) from the Buttonwood Street Bridge overpass in West Reading through the Lancaster Avenue (US 222-B) interchange in the City of Reading. This includes the reconfiguration of both the Penn Avenue / Penn Street interchange and the Lancaster Avenue interchange and the reconstruction of the Bingaman Street bridge. The project also includes the reconstruction of the US 422 bridges over the Schuylkill River and Norfolk Southern RR just west of the I-176 interchange in Cumru Township including an improved ramp connection from I-176. The project will also include preventative maintenance activities on US 422 bridges over Brentwood Drive, the Schuylkill River east of Lancaster Avenue and the Schuylkill River east of I-176. Only Right of Way acquisition costs are included in the TIP. The balance of the project, including construction is included in the LRTP with construction estimated to begin in FFY 2027.

Transit Asset Management Performance Measures

SOUTH CENTRAL TRANSIT AUTHORITY

FFY 2023-2026 TRANSIT TIP UPDATE

TRANSIT PERFORMANCE MEASURES NARRATIVE DOCUMENTATION

June 2022 Update DRAFT

Background on Transit Asset Management Plan

The final rule on metropolitan and statewide planning, published in the Federal Register on May 27, 2016, addressed changes to the metropolitan planning process stemming from the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation Act (FAST) and discussed Performance Based Planning and Programming (PBPP).

As part of the implementation of the PBPP requirements, States, MPOs, and providers of public transportation must jointly agree upon and develop specific written provisions for cooperatively developing and sharing information related to transportation performance data, the selection of performance targets, and the reporting of performance targets, with the reporting of performance to be used in tracking progress toward attainment of critical outcomes for the MPO region.

As a Tier II provider as defined under the Transit Asset Management (TAM) final rule, the South Central Transit Authority (SCTA) decided to develop and maintain its own Transit Asset Management Plan (TAMP). SCTA's TAMP 2021update was adopted by its Board in July 2021, by the Lancaster MPO in September 2021 and by the Reading MPO in September 2021. The TAMP outlines the performance measures, targets, and implementation strategies SCTA will use to maintain its transit system assets. The TAMP also outlined the Authority's performance philosophy and policy, and covered performance management related to Rolling Stock, Facilities and Equipment used by SCTA in providing service.

The goal of the TAMP is for SCTA to reach and maintain a state of good repair for all of its capital assets through the Performance Based Planning and Programming process. Annually, a Performance Target is to be developed for the three Asset Classes the FTA has identified in its implementing guidelines. The expectation is that by achieving the annual Performance Targets SCTA will reach and maintain a state of good repair for the Asset Class identified.

Performance Targets

The TAM process requires SCTA to annually set performance measure targets and report performance against those targets. Required measures are:

- Rolling Stock – Percentage of revenue vehicles within a particular vehicle asset class past their Useful Life Benchmark (ULB) (age only)
- Facilities – Percentage of facilities that are below a 3 on the Transit Economic Recovery Model (TERM) Scale
- Equipment – Percentage of non-revenue, support-service and maintenance vehicles and equipment with a value of $50,000 or more past their ULB (age only)

SCTA's Performance Targets are authority-wide and reflect consideration of Rolling Stock, Facilities and Equipment supporting its Lancaster (RRTA) and Reading (BARTA) operations. It was decided to prepare authority-wide targets, since SCTA is required to report its National Transit Database (NTD) data as SCTA with the RRTA and BARTA operating information combined.

In addition, SCTA presents its Performance Targets for Rolling Stock in three separate groups: Fixed Route Buses/Directly Operated, Shared Ride Vehicles/Directly Operated and Shared Ride Vehicles/Purchased Transportation.

Annual performance measure targets are developed by SCTA for each asset class. The update of the performance targets is based on an annual inventory to provide a current picture of each asset, the prior year's performance and anticipated/obligated funding levels for the upcoming fiscal year available to advance the planned projects in each asset class.

The performance targets are approved by SCTA's Executive Director as the Plan's Accountable Executive. Coordination occurs with the Lancaster and Reading MPO's on the report and adoption of the performance targets by the SCTA Board and the MPO Boards.

Performance targets, and how those targets translate into project prioritization, is discussed in the TAMP. The SCTA TAMP is available on the SCTA website under the "About" tab at www.sctapa.com.

Public Transit Safety Performance Measures

Public Transportation Agency Safety Plans

The FTA issued a final rule on Public Transportation Agency Safety Plans (PTASP), effective July 19, 2019. The PTASP final rule (49 C.F.R. Part 673) is meant to enhance safety by creating a framework for transit agencies to manage safety risks in their organization. It requires recipients of FTA funding to develop and implement safety plans that support the implementation of Safety Management Systems (SMS).

As part of the plan development process, performance targets must be established for the following areas:

1. Fatalities,
2. Injuries,
3. Safety Events, and
4. System Reliability.

SCTA developed its own PTASP in accordance with the final rule. SCTA's initial Safety Plan and Safety Performance Targets were adopted by the SCTA Board and the Berks and Lancaster MPO's in September 2020. As required by FTA guidelines, the Safety Plan is updated annually along with the preparation of the annual Safety Performance Targets. The updated Safety Plan and CY 2022 Performance Targets were adopted by the SCTA Board and the Berks and Lancaster MPO's in September 2021.

Safety has always been a factor in SCTA's selection of capital projects to advance for funding in a fiscal year. The approved Safety Plan and its safety measures and targets will inform the prioritization of capital projects for advancement and the selection of projects for inclusion in the Transit TIP.

Development of FFY 2023-2026 Transit TIP

SCTA prepares a 20-year Long-Range Capital Improvement Program based on the Asset Inventory, Condition Assessment, and project based prioritization process described in SCTA's TAMP. The first four year years of the Long-Range Capital Improvement Program became the basis for identifying projects for inclusion in the proposed FFY 2023-2026 Transit TIP. As the TIP was being developed, consideration was given to the financial guidance provided for the development of the TIP; how the projects will contribute to achieving the performance targets in each asset class and maintain SCTA's Rolling Stock, Facilities and Equipment in a state-of-good- repair; and the impact the project will have on safety. The proposed FFY 2023-2026 Transit TIP does not reflect any increased funding SCTA will receive as part of the Infrastructure Investment and Jobs Act (IIJA). Additional projects will be programmed pending confirmation of the increased level of funding and the review and development of plans to invest the additional funds.

SCTA's Long-Range Capital Improvement Program also programs funding for the purchase of support and maintenance equipment with a value under $50,000. These projects include Computer Hardware/Software Upgrades (IT Equipment) and Purchase Shop/Maintenance Equipment. These projects are important to fund and advance in order to operate safely and efficiently and maintain the SCTA system in a state-of-good-repair.

Overall, the implementation of the proposed projects included in the FFY 2023-2026 Transportation Improvement Program are expected to assure SCTA achieves its goal of maintaining its Rolling Stock, Facilities and Equipment in a state-of-good-repair, achieve the current or higher Performance Targets in the future and address long-term operating and capital improvement needs.

PROJECT AND FINANCIAL PLANNING

In order to address the issues identified at the end of Chapter 3 and maintaining consistency with the Goals and Performance Measures, a specific set of projects and programs have been identified to be implemented during the period FFY 2023 through FFY 2045. The plan is divided into three intervals as follows:

Short-Term (Years 1-4): This segment is also referred to as the Transportation Improvement Program (TIP). It includes the highest priority projects for the region. Most projects on the TIP have advanced to at least the environmental assessment / preliminary engineering stage. Most are scheduled for construction during the four- year period. Projects must be on the TIP to receive federal funding.

Mid-Term (Years 5-12): Projects in this category are generally in the early stages of detailed study. Some but not all may have advanced to the environmental and engineering analysis stage. Most projects in this category will be in the Needs Analysis stage. In most cases, specific funding requirements for projects in this phase will be very preliminary. Projects in the short term and mid-term project list constitute the Pennsylvania Twelve Year Transportation Program. Major capital projects must be on the Twelve Year Program to receive State funding.

Long-Term (Years 13 +): These are projects that have been identified in the Mid-Term as extending beyond Year 12. Projects on the long range plan will require substantial further analysis and funding commitments before they can move forward to the environmental assessment, preliminary design, final design and construction. These also include ongoing programs or practices expected to continue through this period. Finally, it includes line items within specific funding categories that will be drawn upon to fund both asset management and program driven projects as they are identified in subsequent LRTP and TIP updates.

Projects in the transportation plan are determined by various technical analyses of the Pennsylvania Department of Transportation (PennDOT), the South Central Transit Authority (SCTA) and the Berks County Planning Commission (BCPC) staff, serving as the technical staff for the Reading Area Transportation Study (RATS) committees. In addition, the plan recommends and supports numerous projects that have been brought to the attention of RATS by local municipalities and others. Typically, projects pass through a preliminary MPO screening process before they are placed on the plan. Exceptions to this process, such as Congressionally-mandated “earmarked” projects are also included. Normally major projects start on Candidate Project lists and then move through the mid- and short-range elements of the plan as more detailed studies and design elements are completed and funding needs, priorities and funding availability are reviewed. Smaller scaled projects may move directly to the mid- and short-range elements if they are developed from planning studies or program- specific line items.

Information from local municipalities and the public is valuable in identifying projects. In preparing this plan, the Berks County Planning Commission staff corresponded with the 72 municipalities in Berks County. Outreach in developing this plan also included close coordination with the Pennsylvania State Transportation Commission’s efforts in early 2021 to solicit priorities and project recommendations throughout the Commonwealth through an online process. This effort alone generated 645 local project recommendations. Responses were received requesting improvements to local and state bridges and intersection improvements, bicycle and pedestrian projects and transit projects. Many of these called for routine maintenance of roadways and bridges.

The Highway, Bridge and Transit Project tables and Maps 47 through 53 show projects on the transportation plan. Maps 47 and 48 provide an overview of the County while Maps 49 through 53 highlight the five planning regions.

Projects were classified into seven categories based on the funding used for their implementation. The highway program was broken down into four groups: Expressway Improvements; New / Expanded Facilities; Mobility, Congested Corridors, and ITS Projects; and Safety, Maintenance and Other Projects and Bridge Projects.

An additional highway category is the Interstate Management Program. This program is centrally managed by PennDOT. It sets aside annual funds to address statewide Interstate highway and bridge maintenance projects. The Interstate Management System **will not** address capacity adding projects or new Interstate Highway projects. These projects, if desired, must be contained and funded within a fiscally constrained regional LRTP and TIP.

Transit projects are illustrated in the SCTA / BARTA Capital Improvement Program.

Within each of those categories, projects are further broken down by the specific phase or phases of the project that are expected to occur within the specified planning period. These are identified as follows:

Study (S): The analysis of an area identified as having particular transportation deficiencies to document the extent of the problem (need) and identify a project or series of projects to correct that deficiency.

Preliminary Engineering (P): This consists of environmental and engineering studies and public and agency involvement procedures related to the implementation of one or more of the study recommendations. As the project progresses into preliminary engineering, both project need and scope may be further developed, formally defined, and refined.

Final Engineering (F): This phase involves the development of detailed working drawings, specifications and estimates for approved transportation projects that allow the project to be bid and awarded to a contractor.

Utility Relocation (U): Depending on the scope and location of a project, it may become necessary to relocate public utilities such as sewer, water, gas, telephone or electric lines. This work needs to be coordinated with the appropriate utility and be completed either prior to or concurrent with actual construction.

Right of Way (R): Acquisition of property required to construct a project. PennDOT must have control of all right-of-way associated with a project prior to it going to construction.

Construction (C): The physical construction of the project extending from groundbreaking through the final acceptance by PennDOT.

Public Transit (PT): These projects relate to the provision of public transportation services.

Major Corridor Initiatives

RATS has initiated project programming efforts based on corridor studies for the US 222 North and US 422 West Shore Bypass corridors.

US 222 North Corridor:

A review of these studies resulted in US 222 North being recommended as the highest priority for new capacity and safety improvements. This corridor has the least capacity to handle future growth due to its limited lanes (one through lane in each direction), has the least opportunity to accommodate this growth through interim improvements, and has the greatest potential for serious crashes due to the fact that there is no physical separation of opposing traffic. Following several years of reviewing costs and impacts of alternatives ranging from doing nothing through a new expressway on a new alignment, it was mutually agreed to focus improvements on a major upgrade to the existing highway. These improvements include the completed roundabout at PA 662 in Richmond Township and the current widening and expansion of the US 222 intersections at: PA 73 (signalized) , Genesis Drive and Schaeffer Road (both roundabouts) in Maidencreek Township. Construction of a roundabout at Long Lane in Maxatawny Township and the widening of the highway to 4-lanes with median barriers between Schaeffer Road in Maidencreek Township and the Kutztown Bypass in Richmond Township, including roundabouts at Pleasant Hill Road and Richmond Road are included in the Short-Range Period. Planning for widening the highway from the Kutztown Bypass to the Lehigh County Line is initiated in the Mid-Range Period. Construction phases for that section will be addressed in future plan updates. Similar improvements are also under construction (PA 863 roundabout) or considered for implementation in the Lehigh Valley's TIP and LRTP for the balance of the US 222 corridor extending from the Lehigh County line to the Trexlertown Bypass.

US 422 West Shore Bypass:

The US 422 West Shore Bypass constitutes the most significant maintenance need facing the region. To address this concern, the MPO requested funding to conduct a study documenting the extent of need for the rehabilitation of the West Shore Bypass (SR 422) between PA 12 and Perkiomen Avenue (SR 2021) and development of an implementation plan for the correction of those deficiencies. The US 422 West Shore Bypass currently carries traffic ranging from 46,000 vehicles per day on the eastern side to nearly 80,000 vehicles per day on the western end. This highway serves as the principal arterial through the urban area and provides the primary regional access to the City of Reading. This highway was originally constructed in 1964 and there are some sections of original pavement while others have seen some overlay. Safety and capacity issues exist at each interchange. The section also contains 7 bridges in need of significant repairs or replacement. Two (2) of these are currently designated as being in POOR condition. The design of the highway and the structures does not allow for the provision of maintaining two through lanes of traffic in each direction during reconstruction and the opportunities for detour routes are extremely limited. Given the fragile condition of this highway and the need for a

coordinated effort to make these highway and bridge improvements in a way that allows the community to continue to function, we requested coordination with our partners at PennDOT and the Federal Highway Administration to identify the scope of this project and the development of an implementation plan that minimizes the impact to the County.

The study phase was completed and identified over $650 million in improvements required to bring the corridor up to current design standards and to accommodate future traffic growth. Preliminary engineering was initiated for the portion of the corridor extending from SR 12 to just east of I-176. Based on financial considerations, this section will be broken into multiple construction phases. Final design and Right-of-Way acquisition for Phase 1, a section extending from Buttonwood Street to just west of I-176 is included in the Short-Range Period with reconstruction planned in the Mid-Range Period. Phase 2, extending from Buttonwood Street to PA 12 on the west end of the corridor, and including the reconstruction of the US 422 interchange with I-176 will continue through its design process in the Mid-Range Period with reconstruction anticipated to begin in the Mid-Range Period and extend into the Long-Range Period. The final section extending east to Perkiomen Avenue remains a candidate project at this time.

Bridge Initiatives

Beginning in early 2008, PennDOT launched a state-wide bridge initiative. The ultimate goal of that program was to make a significant reduction in the number of structurally deficient bridges throughout Pennsylvania. An initial target was to repair or replace a minimum of 1000 structurally deficient bridges in Pennsylvania over a 3-year period. PennDOT has continued this focus on bridge repair and replacement by targeting significant resources at the program and in project development processes such as bridge bundling and bridge preventative maintenance programs. The IIJA expanded the emphasis on bridges at the Federal level with the inclusion of the Bridge Investment Program funding in addition to the formula programs.

Short-Range Program (2023 – 2026)

The Short-Range Program is the locally endorsed list of high priority highway and transit projects proposed for implementation with Federal assistance. The Federal and State governments designated RATS as the body responsible for preparing the Transportation Improvement Program (TIP) for Berks County. The Federal regulations require that a TIP shall: a) consist of improvements from the locally developed transportation plan; b) cover a period of not less than three years; c) indicate the area's priorities; d) include realistic estimates of the total costs and revenues for the program period; and e) conform to air quality regulations. As such, the TIP will be updated at least twice during the short-range period. Both highway and transit projects proposed to be implemented with Federal assistance must be consistent with an approved LRTP and included in an approved TIP as a condition for federal review and approval. A defining characteristic of the TIP is that it must be constrained to the level of funding that can be reasonably expected to be available. PennDOT provides each MPO in Pennsylvania with specific guidance regarding available funding. Additional documentation on funding occurs later in this chapter.

Key Highway Projects - Short-Range (2023 - 2026)

US 222 North – Construction of improvements at US 222 intersection with Long Lane in Maxatawny Township and initiate widening from Maidencreek Township through Richmond Township to the Kutztown Bypass .

US 422 West Shore Bypass – Completion of detailed designs and initiation of right-of-way acquisition for phased reconstruction and widening to 6-lanes extending from SR 12 to just east of I-176 including upgraded interchanges at North Wyomissing Boulevard, Penn Street / Penn Avenue (US 422-B), Lancaster Avenue (US 222-B) and I-176, replacement of all related structures including the Bingaman Street Bridge and improved bicycle and pedestrian facilities.

Interstate 78 – Completion of the widening of the I-78 bridge over the Schuylkill River at Hamburg to 6-lanes and upgrading the interchange with PA 61 as well as bridge widening at Lenhartsville to improve safety and operations at that interchange. This last project is currently under consideration for tolling under PennDOT's Major Bridge Program as a Public-Private Partnership.

Other Major Road and Bridge Projects – In addition to the above, the following projects are scheduled for completion in the short-range period: three intersection and safety projects on PA 12 extending from Elizabeth Avenue in Alsace Township to the PA 12 / PA 73 intersection in Ruscombmanor Township; reconstruction of the intersection of US 422, PA 724 and Mull Avenue in Sinking Spring; and major highway and bridge restorations on PA 61 between Perry Township and the Schuylkill County line, and PA 12 in Reading. Major bridge projects include: the replacement of the Schuylkill Avenue (PA 183 SB) bridge over Norfolk Southern Railroad (Reading); and the PA 419 bridge over the Tulpehocken Creek in Marion Township. Two new studies will also be initiated during this period.

One will identify potential improvements to PA 183 from New Schaefferstown Road in Jefferson Township to I-78 in Upper Tulpehocken Township. The other will look at PA 737 between US 222 in Kutztown and I-78 in Greenwich Township.

Key Transit Projects (Short Range)

Purchase of Transit Buses – Ongoing fleet upgrade. Transit buses are generally replaced on a 12-year cycle.

Purchase of Paratransit Vans – Ongoing replacement of paratransit vans on a 5-year cycle.

Mid-Range Program (2027– 2034)

During the mid-range program the TIP will be updated four times.

US 222 North – Construction will be completed on the widening project from Maidencreek Township through Richmond Township to the Kutztown Bypass. The preliminary engineering phase will begin for widening the section extending from the Kutztown Bypass to the Lehigh County line.

US 422 West Shore Bypass – Construction will begin on Phase 1 of the reconstruction widening the highway to to 6-lanes extending from the Buttonwood Street bridge overpass to to just east of SR 3222 Lancaster Avenue including upgraded interchanges at Penn Street / Penn Avenue (US 422-B) and Lancaster Avenue (US 222-B) and replacement of all related structures including the Bingaman Street Bridge and improved bicycle and pedestrian facilities. Two bridges immediately west of the I-176 interchange crossing over the Schuylkill River and NS Railroad will also be replaced and other bridges will be rehabilitated.

Highway programs will focus on improving safety and maintaining existing facilities and based on reviews of the Highway Safety Improvement Program and Pavement Asset Management Program. Significant projects include; three phases of widening and safety improvements to the SR 3023 State Hill Road corridor extending from Colony Drive to Penn Avenue in the Borough of Wyomissing; construction of both southbound and northbound auxiliary lanes on US 222 between the Berkshire Boulevard overpass and the State Hill Road interchange Road interchange in the Borough of Wyomissing to relieve congestion and improve safety. Bridge projects and priorities will be selected on a two year cycle in coordination with the update of the TIP and will be drawn primarily from a review of PennDOT's Bridge Asset Management System. Certain local and functionally deficient bridges may also be added as funding and priorities dictate. Line items have been created in this period for categories to which specific projects will be assigned in future updates. These projects will be selected based on the asset management program and investment plan and consistency with the goals and performance measures of this plan.

Transit projects will be primarily scheduled replacements of transit buses based on a 12-year cycle and of paratransit vans based on a 5-year cycle as well as regular facility maintenance.

Long-Range Program (2035 – 2045)

During the long-range period of the plan, the TIP will be updated six times.

Due to the current emphasis on bridge replacement and rehabilitation, specific bridge projects will not be listed in the Long-Range Program. Bridge projects will be selected on a two year cycle in coordination with the update of the Transportation Improvement Program and will be drawn primarily from PennDOT's inventory of structurally deficient bridges. Certain local and functionally deficient bridges may also be added as funding and priorities dictate. Line items have been created in this period for categories to which specific projects will be assigned in future updates. These projects will be selected based on the asset management program and investment plan and consistency with the goal s and performance measures of this plan.

Major projects anticipated to occur in the long-term period are anticipated to be: the final phases of the US 422 West Shore Bypass reconstruction; construction of the section of US 222 North extending from the Kutztown Bypass to the Lehigh County line; ongoing county-wide pavement restoration, bridge rehabilitation and replacements based on the state's Transportation Asset Management Plan (TAMP) and local project recommendations; ongoing Transit fleet upgrades and maintenance of facilities.

Highway, Bridge and Transit Projects
Short, Mid and Long Range Transportation Planning Periods
May, 2022
EXPRESSWAY IMPROVEMENTS

Map #	Project Name	Municipality	Cost	Short Range 2023-2026	Mid-Range 2027-2034	Long-Range 2035-2045
89215	PA 12 West Resurface - 422 WB Ramps to SR 183	Reading, Wyomissing	$72,000	C		
110007	US 222 Warren Street	Wyomissing	$575,000	C		
110008	US 222 SB Auxilary Lane *	Wyomissing	$9,286,000	FRC		
110008	US 222 SB Auxilary Lane *	Wyomissing	$15,884,000		C	
110009	US 222 from 61 to BUS 222 *	Muhlenberg, Ontelaunee	$369,000	C		
114439	US 422 West Shore Bypass Phase 1 *	Reading, Cumru	$2,833,000	R		
114439	US 422 West Shore Bypass Phase 1 *	Reading, Cumru	$313,077,000		UC	
72814	US 422 West Shore Reconstruction Phase 2 *	Wyo, Reading, W Reading, Cumru, Exeter	$368,115,000		FUC	
72814	US 422 West Shore Reconstruction Phase 2 *	Wyo, Reading, W Reading, Cumru, Exeter				C
	Future Expressway Maintenance (1)				PFURC	PFURC
	* Includes Related Bridge Work	**SUBTOTAL**	**$710,211,000**			

S = Study P = Preliminary Engineering F = Final Engineering R = Right of Way U = Utility Relocation C = Construction PT = Public Transit
(1) Funding from Highway / Bridge Line Items as Necessary

Highway, Bridge and Transit Projects
Short, Mid and Long Range Transportation Planning Periods
May, 2022
NEW / EXPANDED FACILITIES

Map #	Project Name	Municipality	Cost	Short Range 2023-2026	Mid-Range 2027-2034	Long-Range 2035-2045
70274	River Road Extension	Reading	$60,000	C		
117721	PA 183 (Bernville Road) Lane Drop Hourglass Fix	Bern	$8,645,000		PFURC	
92414	SR 222/SR 73 & Genesis Drive	Maidencreek	$25,000	C		
90569	SR 222 & Long Lane	Maxatawny	$7,301,000	C		
61972	US 222 Widening	Maidencreek, Maxatawny, Richmond	$50,953,000	URC		
61972	US 222 Widening	Maidencreek, Maxatawny, Richmond	$19,723,000		C	
97234	US 222 Kutztown Bypass to Lehigh County Line	Maxatawny	$5,658,000		P	
		SUBTOTAL	**$92,365,000**			

S = Study P = Preliminary Engineering F = Final Engineering R = Right of Way U = Utility Relocation C = Construction PT = Public Transit

Highway, Bridge and Transit Projects
Short, Mid and Long Range Transportation Planning Periods
May, 2022
MOBILITY, CONGESTED CORRIDORS AND ITS PROJECTS

Map #	Project Name	Municipality	Cost	Short Range 2023-2026	Mid-Range 2027-2034	Long-Range 2035-2045
88781	PA 12 and PA 73	Ruscombmanor	$215,000	C		
10815	SR 73 & Friedensburg Road	Oley	$563,000	P		
10815	SR 73 & Friedensburg Road	Oley	$6,087,000		FURC	
87688	US 422 in Sinking Spring	Sinking Spring	$3,219,000	UC		
110075	US 422 Ben Franklin Congested Corridor	Amity, Exeter	$1,444,000	PFURC		
110075	US 422 Ben Franklin Congested Corridor	Amity, Exeter	$1,875,000		C	
86420	Berks Commuter Services	Various	$1,153,000	C		
86420	Berks Commuter Services	Various	$2,362,000		C	
86420	Berks Commuter Services	Various				C
82791	CMAQ Reserve Line Item	Misc.	$431,000	PFURC		
82791	CMAQ Reserve Line Item	Misc.	$14,333,000		PFURC	
82791	CMAQ Reserve Line Item	Misc.				PFURC
94900	Freeway Service Patrol	Various	$1,004,000	C		
94900	Freeway Service Patrol	Various	$2,316,000		C	
94900	Freeway Service Patrol	Various				C
69335	RATS BARTA Flex	N/A	$6,750,000		PT	
69335	RATS BARTA Flex	N/A				PT
91658	TOC Operator-Berks	Various	$400,000	C		
91658	TOC Operator-Berks	Various	$900,000		C	
91658	TOC Operator-Berks	Various				C
		SUBTOTAL	**$43,052,000**			

S = Study P = Preliminary Engineering F = Final Engineering R = Right of Way U = Utility Relocation C = Construction PT = Public Transit

Highway, Bridge and Transit Projects
Short, Mid and Long Range Transportation Planning Periods
May, 2022
SAFETY, MAINTENANCE & OTHER PROJECTS

Map #	Project Name	Municipality	Cost	Short Range 2023-2026	Mid-Range 2027-2034	Long-Range 2035-2045
110318	SR 12 Alsace Manor Intersection	Alsace	$3,979,000	FURC		
79467	PA 12 Elizabeth Avenue	Alsace	$8,161,000	URC		
79467	PA 12 Elizabeth Avenue	Alsace	$2,290,000		C	
96373	PA 61 Restoration Phase 1 *	Tilden	$8,795,000	UC		
109337	PA 61 Median Barrier	Tilden	$530,000	C		
10328	PA 61 Restoration Phase 2A *	Hamburg	$7,828,000	C		
10867	PA 61 Restoration Phase 2B	Hamburg, Windsor, Perry	$9,115,000	UC		
97258	PA 61 Median Barrier	Perry, Windsor, Hamburg	$530,000	C		
109222	PA 73 and 1005 Intersection Improvement	Maidencreek	$375,000	F		
109222	PA 73 and 1005 Intersection Improvement	Maidencreek	$1,433,000		FURC	
117719	PA 183 Bernville Rd Study - New Schaefferstown Rd North	Jefferson, Upper Tulpehocken	$155,000	S		
114108	US 222 Warren Street NB Auxiliary Lane	Wyomissing	$8,695,000		C	
105963	PA 662 and Oley Turnpike Road Intersection	Oley	$1,929,000	PFR		
105963	PA 662 and Oley Turnpike Road Intersection	Oley	$4,116,000		UC	
110012	PA 724 Fence Barrier	Cumru	$1,739,000		C	
117723	PA 737 (Krumsville Road) Slope Repair	Greenwich	$103,000	S		
117973	SR 1011 Walnuttown Road RR Crossing	Richmond	$214,000	C		
117973	SR 1011 Walnuttown Road RR Crossing	Richmond	$240,000		C	
106140	SR 2006 Reading NS RR Crossing Corridor	Reading	$592,000	C		
102162	SR 2014 (Spring St) Corridor Improvements	Reading	$10,000	C		
113821	SR 2025 Antietam Rd Resurf SR 562 to Carsonia	Amity, Exeter, Oley, Alsace, and Lower Alsace	$2,898,000		C	
113825	SR 2025 Limekiln Road Resurface	Amity	$550,000	C		
113825	SR 2025 Limekiln Road Resurface	Amity	$2,039,000		C	
110206	SR 2033 Gibraltar and Shelbourne Intersection	Exeter	$63,000	C		
117975	SR 2036 Manatawny Drive RR Crossing	Douglass	$380,000	C		
105954	SR 3023 State Hill Rd Colony Dr. to SR 222 SB Ramps	Wyomissing	$7,562,000	PFURC		
105954	SR 3023 State Hill Rd Colony Dr. to SR 222 SB Ramps	Wyomissing	$4,291,000		C	
117620	SR 3023 State Hill Road - NS RR to Penn Ave.	Wyomissing	$2,404,000	PFR		
117620	SR 3023 State Hill Road - NS RR to Penn Ave.	Wyomissing	$4,529,000		URC	
117603	SR 3023 State Hill Road - SR 222 SB to NS RR	Wyomissing	$14,408,000		PFURC	
113835	SR 3032 Carbon Street Warren St Bypass to SR 183	Reading	$1,194,000		C	
113838	SR 3034 Butler Street Warren St Bypass to SR 183	Reading	$1,194,000		C	
113841	SR 3055 (Mull Ave/Van Reed Road) Resurface	Sinking Spring, Spring	$2,088,000		C	
102161	SR 3222 Lancaster Ave. (US 222 Bus) Corridor	Reading	$409,000	SP		
102161	SR 3222 Lancaster Ave. (US 222 Bus) Corridor	Reading	$1,268,000		PFC	
113221	SR 4028 Resurface Krumsville Rd to Old 22	Greenwich	$50,000	C		
110082	SR 4040 Old Route 22	U Tulpehocken, U Bern, Tilden	$20,000	C		
117668	BPN-4 Guide Rail Upgrade Line Item	Various	$200,000	C		

117668	BPN-4 Guide Rail Upgrade Line Item	Various	$400,000		C	
116752	Dynamic Curve Warning Signs	Various	$142,000	C		
114484	RATS AWPM - 2023	Various	$400,000	C		
117622	RATS AWPM - 2025	Various	$400,000	C		
117622	RATS AWPM - 2025	Various	$800,000		C	
114407	RATS High Friction Surface 2023	Various	$880,000	C		
114407	RATS High Friction Surface 2023	Various	$800,000		C	
82793	Alternative Transportation (TAP) Line Item	Various	$2,317,000	C		
82793	Alternative Transportation (TAP) Line Item	Various	$4,778,000		C	
82793	Alternative Transportation (TAP) Line Item	Various				C
97417	Construction Assistance	Various	$200,000	C		
97417	Construction Assistance	Various	$400,000		C	
97417	Construction Assistance	Various				C
97838	Construction Assistance	Various	$200,000	C		
97838	Construction Assistance	Various	$400,000		C	
97838	Construction Assistance	Various				C
83081	Delivery Consultant Assistance	Misc.	$4,500,000	P		
83081	Delivery Consultant Assistance	Misc.	$12,000,000		P	
83081	Delivery Consultant Assistance	Misc.	$15,000,000			P
95399	Environmental Impacts Resolution Line Item	Various	$200,000	P		
95399	Environmental Impacts Resolution Line Item	Various	$400,000		P	
95399	Environmental Impacts Resolution Line Item	Various				P
116907	Geotech In-House Assistance	Misc.	$200,000	P		
116907	Geotech In-House Assistance	Misc.	$400,000		P	
116907	Geotech In-House Assistance	Misc.				P
102189	RATS Highway and Bridge Reserve Line Item	Misc.	$4,792,000	C		
102189	RATS Highway and Bridge Reserve Line Item	Misc.	$130,619,000		C	
102189	RATS Highway and Bridge Reserve Line Item	Misc.				C
102763	RATS Traffic Review Assistance	Misc.	$200,000	P		
102763	RATS Traffic Review Assistance	Misc.	$400,000		P	
102763	RATS Traffic Review Assistance	Misc.				P
82795	Safety Reserve Line Item - HSIP	Misc.	$307,000	PFURC		
82795	Safety Reserve Line Item - HSIP	Misc.	$8,786,000		PFURC	
82795	Safety Reserve Line Item - HSIP	Misc.				PFURC
89056	Transportation Alternative Project Mgmt	Misc.	$40,000	P		
89056	Transportation Alternative Project Mgmt	Misc.			P	
89056	Transportation Alternative Project Mgmt	Misc.				P
82796	Urban Reserve Line Item	Misc.	$644,000	PFURC		
82796	Urban Reserve Line Item	Misc.	$23,583,000		PFURC	
82796	Urban Reserve Line Item	Misc.				PFURC
	* Includes Related Bridge Work	**SUBTOTAL**	**$320,564,000**			

S = Study P = Preliminary Engineering F = Final Engineering R = Right of Way U = Utility Relocation C = Construction

Highway, Bridge and Transit Projects
Short, Mid and Long Range Transportation Planning Periods
May, 2022
BRIDGE PROJECTS

Map #	Project Name	Municipality	Cost	Short Range 2023-2026	Mid-Range 2027-2034	Long-Range 2035-2045
10943	PA 10 Morgantown Road over trib Conestoga Creek	New Morgan	$1,251,000	UC		
109894	PA 61 Bridge Rehabilitation	Tilden, Hambur	$9,988,000	C		
114408	SR 143 over Unnamed trib to Maiden Creek	Albany	$587,000		P	
91091	PA 183 Schuylkill Ave Bridge SB	Reading	$6,077,000	C		
91976	PA 183 over Little Northkill Creek & Trib to Little Northkill	Upper Tulpehoc	$600,000	P		
91976	PA 183 over Little Northkill Creek & Trib to Little Northkill	Upper Tulpehoc	$3,368,000		PFURC	
91908	PA 419 North Third Street over Tulpehocken Creek	Heidelberg	$8,366,000	FURC		
92079	PA 419 Rehrersburg Road over Mill Creek	Tulpehocken	$63,000	F		
92079	PA 419 Rehrersburg Road over Mill Creek	Tulpehocken	$1,349,000		FURC	
110014	PA 419 Rehrersburg Road over Trib Mill Creek	Tulpehocken	$2,397,000	PFURC		
110014	PA 419 Rehrersburg Road over Trib Mill Creek	Tulpehocken	$664,000		C	
114386	PA 419 Culvert Replacement	Tulpehocken	$17,000	R		
114386	PA 419 Culvert Replacement	Tulpehocken	$12,000		U	
92070	US 422 Penn Avenue over Cacoosing Creek	Sinking Spring	$2,689,000	PFURC		
92070	US 422 Penn Avenue over Cacoosing Creek	Sinking Spring	$225,000		C	
110016	PA 501 Lancaster Ave over Swatara Creek	Bethel	$360,000	P		
79086	PA 568 Green Hills Road over Allegheny Creek	Robeson	$995,000	C		
85670	PA 645 Camp Swatara Road over Little Swatara	Bethel	$2,795,000	FURC		
85670	PA 645 Camp Swatara Road over Little Swatara	Bethel	$1,000,000		C	
10700	PA 724 Main Street over Allegheny Creek	Robeson	$3,134,000	FURC		
85643	SR 1015 Donat Road over Stoney Run	Albany	$312,000	FR		
85643	SR 1015 Donat Road over Stoney Run	Albany	$1,309,000		FURC	
10588	SR 1017 Stumps Bridge over Kistler Creek	Albany	$30,000	C		
85648	SR 1018 Stoney Run Valley Road over Maiden Creek	Albany	$6,000	R		
85648	SR 1018 Stoney Run Valley Road over Maiden Creek	Albany	$1,851,000		UC	
10746	SR 1021 Forgedale Rd Bridge	Rockland	$2,261,000	C		
114459	SR 1022 Huffs Church Rd over Br Perkiomen Creek	Hereford	$10,000	R		
114459	SR 1022 Huffs Church Rd over Br Perkiomen Creek	Hereford	$27,000		UR	
117724	SR 1024 Long Lane over Mill Creek	Maxatawny	$926,000	PFR		
117724	SR 1024 Long Lane over Mill Creek	Maxatawny	$1,473,000		UC	

115991	SR 1025 Centennial Road Dual Pipe Replacement	Longswamp	$8,000	R		
115991	SR 1025 Centennial Road Dual Pipe Replacement	Longswamp	$18,000		UR	
116478	SR 1029 Smoketown Road over Little Sacony Creek	Rockland	$2,833,000	FURC		
10613	SR 2005 5th Street Bridge over NS RR	Reading	$1,557,000	PFUR		
10613	SR 2005 5th Street Bridge over NS RR	Reading	$2,937,000		C	
93626	SR 2005 5th St Bridge over PA Route 12	Muhlenberg	$20,330,000		PFRC	
10527	SR 2016 Bellevue Ave over RBM&N RR	Muhlenberg	$4,329,000	UC		
91932	SR 2023 Carsonia Avenue over Antietam Creek	Lower Alsace	$110,000	C		
10616	SR 2032 East Chestnut St over Branch of W. Swamp Creek	Washington	$1,597,000	URC		
10753	SR 2041 Weavertown Road Bridge	Amity	$3,256,000	UC		
10753	SR 2041 Weavertown Road Bridge	Amity	$97,000		C	
10751	SR 2045 Funk Road over Trib to Ironstone Creek	Colebrookdale	$808,000	PFR		
10751	SR 2045 Funk Road over Trib to Ironstone Creek	Colebrookdale	$1,507,000		UC	
92043	SR 2057 Tollgate Rd over Unnamed Trib to Leaf Creek	Amity	$292,000	C		
92043	SR 2057 Tollgate Rd over Unnamed Trib to Leaf Creek	Amity	$910,000		C	
89634	SR 2082 Trap Rock Bridge Removal	Robeson	$520,000		PFURC	
91995	SR 2087 Centre Avenue over Norfolk Southern RR	Reading	$7,393,000		FURC	
79079	SR 3003 Freemansville Road over Angelica Creek	Cumru	$886,000	UC		
110017	SR 3024 Maple Grove Road over I-176	Robeson	$3,109,000	FURC		
110017	SR 3024 Maple Grove Road over I-176	Robeson	$1,063,000		C	
94290	SR 3037 Charming Forge over Mill Race Creek	Marion	$322,000	FR		
94290	SR 3037 Charming Forge over Mill Race Creek	Marion	$1,049,000		FUC	
117725	SR 4005 over Meck Creek	Bethel	$404,000	PFR		
117725	SR 4005 over Meck Creek	Bethel	$695,000		C	
10702	SR 4015 Tilden Road Bridge	Centre	$1,117,000	FURC		
117726	SR 4028 (Old Route 22) over Maiden Creek Tributary	Greenwich	$636,000	P		
117726	SR 4028 (Old Route 22) over Maiden Creek Tributary	Greenwich	$2,526,000		FURC	
110013	SR 4040 (Old Route 22) Bridge Bundle	Bethel, Upper T	$8,858,000	C		
110189	SR 4040 Old Route 22 Over Birch Creek	Upper Tulpehoc	$31,000	U		
110191	SR 4040 over Birch Creek	Upper Tulpehoc	$31,000	U		
110192	SR 4040 over Trib Birch Creek	Upper Tulpehoc	$31,000	U		
110193	SR 4040 over Mollhead Creek	Upper Tulpehoc	$31,000	U		
110194	SR 4040 over Trib Mollhead Creek	Upper Tulpehoc	$31,000	U		
111811	SR 4040 Northkill Creek UBT	Upper Bern	$31,000	U		
110078	SR 4040 (Old Route 22) over Trib to Northkill Creek	Upper Tulpehoc	$2,143,000	UC		
10727	Dwight Street Bridge	Spring	$369,000	PF		

10727	Dwight Street Bridge	Spring	$2,948,000		FURC	
103884	Gibraltar Road Bridge	Exeter	$1,114,000	C		
110088	High Boulevard Bridge	Cumru	$438,000	P		
110088	High Boulevard Bridge	Cumru	$2,733,000		FURC	
10774	Parkview Road Bridge	St. Lawrence	$519,000	P		
10774	Parkview Road Bridge	St. Lawrence	$2,927,000		FURC	
102959	Peach Street Bridge	Kutztown	$1,875,000	C		
110079	Penn Street over Maiden Creek	Lenhartsville	$125,000	P		
110079	Penn Street over Maiden Creek	Lenhartsville	$1,890,000		PFURC	
56728	Pigeon Creek Bridge	Shoemakersville	$522,000		P	
110089	Rock Hollow Bridge	Robeson	$491,000	P		
110089	Rock Hollow Bridge	Robeson	$2,896,000		FURC	
110011	Berks Box Culvert Bundle	Misc.	$2,601,000	C		
114392	Berks Box Culvert Bundle #2	Various	$1,616,000	PF		
114392	Berks Box Culvert Bundle #2	Various	$2,301,000		FC	
110032	RATS Bridge Preservation #8	Various	$225,000	C		
114378	RATS Bridge Preservation #9	Various	$3,278,000	C		
114485	RATS Bridge Preservation #10	Various	$1,828,000	PC		
114485	RATS Bridge Preservation #10	Various	$2,439,000		C	
114489	RATS Bridge Preservation #11	Various	$6,389,000		PC	
114391	RATS Bridge Overlay Bundle #2	Various	$150,000	C		
117637	RATS Bridge Overlay Bundle #3	Various	$2,430,000	PC		
80070	RATS Bridge Review/Management	Misc.	$200,000	P		
80070	RATS Bridge Review/Management	Misc.	$400,000		P	
80070	RATS Bridge Review/Management	Misc.	$500,000			P
	RATS LR Bridge Reserve Line Item					PFRUC
		SUBTOTAL	**$168,842,000**			

S = Study P = Preliminary Engineering F = Final Engineering R = Right of Way U = Utility Relocation C = Construction

Highway, Bridge and Transit Projects
Short, Mid and Long Range Transportation Planning Periods
May, 2022
INTERSTATE MANAGEMENT PROGRAM (FROM STATEWIDE PROGRAM)

Map #	Project Name	Municipality	Cost	Short Range 2023-2026	Mid-Range 2027-2034	Long-Range 2035-2045
72807	I-78 Shartlesville to Hamburg Resurfacing	Tilden, Upper Bern	$18,201,000	C		
85903	I-78 Midway to Shartlesville Resurface	Bethel	$16,100,000	C		
97274	I-78 Lenhartsville Bridge	Greenwich	$41,500,000	C		
		SUBTOTAL	**$75,801,000**			

S = Study P = Preliminary Engineering F = Final Engineering R = Right of Way U = Utility Relocation C = Construction

BERKS AREA REGIONAL TRANSPORTATION AUTHORITY
STATE OF GOOD REPAIR
CAPITAL IMPROVEMENT PROGRAM
SHORT RANGE PERIOD FFY 2023-FFY 2026

	CAPITAL NEEDS	FEDERAL	STATE	LOCAL	TOTAL	PROJECTED FEDERAL FUNDING	BALANCE FEDERAL SHORTFALL
		80.00%	19.36%	0.65%		$5,003,489	(Carryover/CMAQ)
YEAR	CAPITAL NEEDS	FEDERAL	STATE	LOCAL	TOTAL		
FFY 2023	REPLACE 18-2017 - PARATRANSIT VANS	$1,200,082	$290,420	$9,676	$1,500,102	$900,000	
	COMPUTER HARDWARE/SOFTWARE	$28,000	$6,776	$226	$35,000		
	REPLACE PORTABLE LIFTS	$80,000	$19,360	$645	$100,000		
	REPLACE BUS VACUUM SYSTEM	$120,000	$29,040	$968	$150,000		
	REPLACE EMERGENCY GEN - BTC	$80,000	$19,360	$645	$100,000		
	TDP UPDATE	$80,000	$19,360	$645	$100,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$1,960,886**	**$474,535**	**$15,810**	**$2,451,108**	**$4,152,617**	**$5,663,565**
FFY 2024	REPLACE 11 - PARATRANSIT VANS	$755,385	$182,803	$6,090	$944,231	$900,000	
	REPLACE 1-2014 SUPERVISORY VEHICLE	$28,000	$6,776	$226	$35,000		
	REPLACE BULK FLUID SYSTEM-2009	$80,000	$19,360	$645	$100,000		
	REPLACE FLOOR SWEEPER-BTC	$40,000	$9,680	$323	$50,000		
	REPLACE SCISSOR LIFT F&T	$20,000	$4,840	$161	$25,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$1,296,189**	**$313,678**	**$10,451**	**$1,620,237**	**$4,152,617**	**$9,419,993**
FFY 2025		$0	$0	$0	$0	$900,000	
	REPLACE BOBCAT-2010	$32,000	$7,744	$258	$40,000		
	REPLACE/UPGRADE AVL SYSTEM	$800,000	$193,600	$6,450	$1,000,000		
	REPLACE BOBCAT-2010	$32,000	$7,744	$258	$40,000		
	REPLACE /UPGRADE TELEHONE SYSTEM	$40,000	$9,680	$323	$50,000		
	REPLACE/UPGRADE MAINT. SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE/UPGRADE FINANCE SOFTWARE	$40,000	$9,680	$323	$50,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$1,388,805**	**$336,091**	**$11,197**	**$1,736,006**	**$4,152,617**	**$13,083,805**
FFY 2026	REPLACE 26-2021 - PARATRANSIT VANS	$1,894,189	$458,394	$15,272	$2,367,736	$900,000	
	REPLACE TWO VENTRACS -2016	$64,000	$15,488	$516	$80,000		
	REPLACE JACK STANDS (14) -2011	$20,000	$4,840	$161	$25,000		
	MOBILE TICKETING UPGRADES	$320,000	$77,440	$2,580	$400,000		
	REPLACE TWO FLOOR SWEEPERS	$40,000	$9,680	$323	$50,000		
	REPLACE TWO FLOOR SCRUBBERS	$40,000	$9,680	$323	$50,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$2,750,994**	**$665,740**	**$22,180**	**$3,438,742**	**$4,152,617**	**$15,385,428**
	SHORT RANGE TOTAL FFY 2023-2026	**$7.396.874**	**$1.790.044**	**$59.637**	**$9.246.093**		

BERKS AREA REGIONAL TRANSPORTATION AUTHORITY
STATE OF GOOD REPAIR
CAPITAL IMPROVEMENT PROGRAM
MID_RANGE PERIOD FFY 2027-2034

YEAR	CAPITAL NEEDS	FEDERAL 80.00% FEDERAL	STATE 19.36% STATE	LOCAL 0.65% LOCAL	TOTAL TOTAL	PROJECTED FEDERAL FUNDING $5,003,489	BALANCE FEDERAL SHORTFALL (Carryover/CMAQ)
FFY 2027	REPLACE 19-2022 - PARATRANSIT VANS	$1,425,741	$345,029	$11,495	$1,782,177	**$900,000**	
	REPLACEMENT 3 2015 BUSES - HYBRIDS	$1,771,073	$428,600	$14,279	$2,213,841		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	REPLACE FAREBOX SYSTEM	$800,000	$193,600	$6,450	$1,000,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$4,401,619**	**$1,065,192**	**$35,488**	**$5,502,024**	**$4,152,617**	**$19,289,043**
FFY 2028	REPLACE 18-2023 - PARATRANSIT VANS	$1,391,223	$336,676	$11,217	$1,739,029	**$900,000**	
	REPLACEMENT 4 2016 BUSES - HYBRIDS	$2,432,273	$588,610	$19,610	$3,040,342		
	FRANKLIN ST STATION UPGRADES	$400,000	$96,800	$3,225	$500,000		
	REPLACE/UPGRADE HYDRAULIC ELEV BTC	$80,000	$19,360	$645	$100,000		
	TDP UPDATE	$96,000	$23,232	$774	$120,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$4,772,302**	**$1,154,897**	**$38,477**	**$5,965,377**	**$4,152,617**	**$19,569,359**
FFY 2029	REPLACE 11-2024 - PARATRANSIT VANS	$875,698	$211,919	$7,060	$1,094,622	**$900,000**	
	REPLACE 2 2019 -SUPERVISORY VEHICLE	$56,000	$13,552	$452	$70,000		
	REPLACE 1 2019 -MAINTENANCE VEHICLE	$64,000	$15,488	$516	$80,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	REPLACE SCISSOR LIFT-2014	$16,000	$3,872	$129	$20,000		
	REPLACE FUEL SYSTEM-2017	$96,000	$23,232	$774	$120,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$1,512,503**	**$366,026**	**$12,195**	**$1,890,628**	**$4,152,617**	**$23,109,473**
FFY 2030		$0	$0	$0	$0	**$900,000**	
	REPLACE 12 2018 HYBRID BUSES	$7,741,196	$1,873,370	$62,413	$9,676,495		
	REPLACE 2 2020 -SUPERVISORY VEHICLE	$72,000	$17,424	$581	$90,000		
	REPLACE 1 2020 -MAINTENANCE VEHICLE	$72,000	$17,424	$581	$90,000		
	FACILITY UPGRADES	$400,000	$96,800	$3,225	$500,000		
	REPLACE AIR COMPRESSOR	$80,000	$19,360	$645	$100,000		
	REPLACE AIR DRYER	$12,000	$2,904	$97	$15,000		
	UPGRADE TELEHONE SYSTEM	$40,000	$9,680	$323	$50,000		
	UPGRADE MAINT SOFTWARE	$40,000	$9,680	$323	$50,000		
	UPGRADE FINANCE SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE PARKING EQUIPMENT	$80,000	$19,360	$645	$100,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$8,950,001**	**$2,165,900**	**$72,159**	**$11,187,501**	**$4,152,617**	**$19,212,089**
FFY 2031	REPLACE 24-2026 - PARATRANSIT VANS	$2,026,970	$490,527	$16,342	$2,533,712	**$900,000**	
	REPLACE 12 2019 BUSES HYBRIDS	$7,973,432	$1,929,571	$64,286	$9,966,790		
	REPLACE TWO COPIERS	$40,000	$9,680	$323	$50,000		
	REPLACE 1 2021 -SUPERVISORY VEHICLE	$32,000	$7,744	$258	$40,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	MOBILE TICKETING UPGRADES	$400,000	$96,800	$3,225	$500,000		
	BTC UPGRADES	$800,000	$193,600	$6,450	$1,000,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$11,677,207**	**$2,825,884**	**$94,147**	**$14,596,509**	**$4,152,617**	**$12,587,499**

	MID_RANGE PERIOD FFY 2027-2034					PROJECTED FEDERAL	BALANCE FEDERAL
	CAPITAL NEEDS	**FEDERAL**	**STATE**	**LOCAL**	**TOTAL**	**FUNDING**	**SHORTFALL**
FFY 2032	REPLACE 19-2027 - PARATRANSIT VANS	$1,652,825	$399,984	$13,326	$2,066,031	**$900,000**	
	REPLACE 6 2020 BUSES HYBRIDS	$4,106,318	$993,729	$33,107	$5,132,897		
	RADIO SYSTEM UPGRADES	$200,000	$48,400	$1,613	$250,000		
	PURCHASE (20) BUS SHELTERS	$240,000	$58,080	$1,935	$300,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$6,571,947**	**$1,590,411**	**$52,986**	**$8,214,934**	**$4,152,617**	**$11,068,168**
FFY 2033	REPLACE 18-2028 - PARATRANSIT VANS	$1,612,809	$390,300	$13,003	$2,016,012	**$900,000**	
	REPLACE 7 2021 BUSES HYBRIDS	$4,934,425	$1,194,131	$39,784	$6,168,031		
	COMPUTER HARDWARE/SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE PORTABLE LIFTS	$80,000	$19,360	$645	$100,000		
	REPLACE BUS TIRE CAROUSEL -2018	$36,000	$8,712	$290	$45,000		
	REPLACE VAN TIRE CAROUSEL-2018	$28,000	$6,776	$226	$35,000		
	TDP UPDATE	$104,000	$25,168	$839	$130,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$7,208,039**	**$1,744,345**	**$58,115**	**$9,010,049**	**$4,152,617**	**$8,912,746**
FFY 2034	REPLACE 11-2029 - PARATRANSIT VANS	$1,015,174	$245,672	$8,185	$1,268,967	**$900,000**	
	REPLACE 6 2022 BUSES HYBRIDS	$4,356,392	$1,054,247	$35,123	$5,445,490		
	FRNAKLIN STREET STATION UPGRADES	$400,000	$96,800	$3,225	$500,000		
	REPLACE PORTABLE LIFTS	$40,000	$9,680	$323	$50,000		
	REPLACE 1 2024 -SUPERVISORY VEHICLE	$32,000	$7,744	$258	$40,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$6,216,371**	**$1,504,362**	**$50,119**	**$7,770,464**	**$4,152,617**	**$7,748,992**
	MID RANGE TOTAL FFY 2027-2034	**$51,309,989**	**$12,417,017**	**$413,687**	**$64,137,486**		

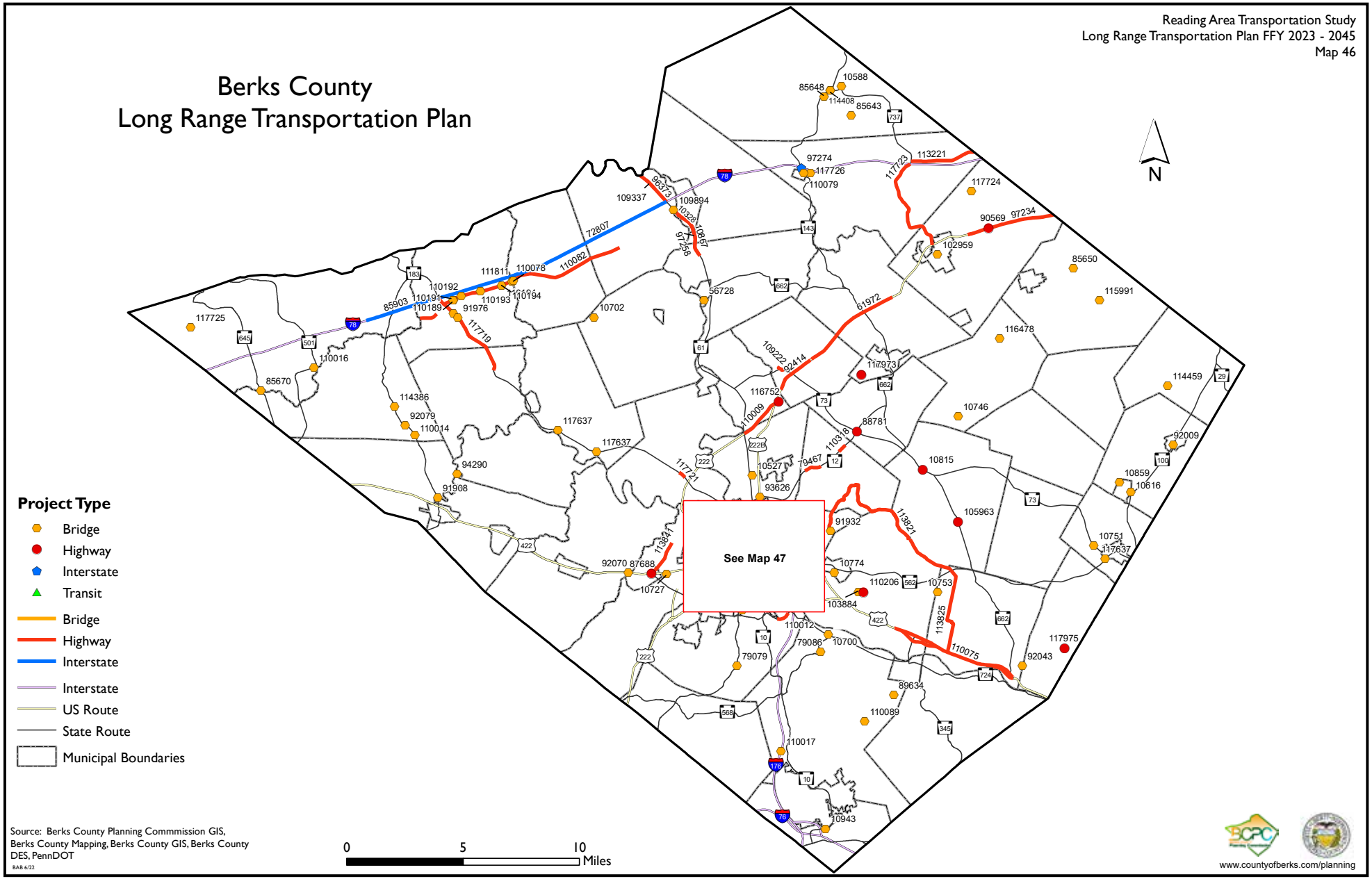
BERKS AREA REGIONAL TRANSPORTATION AUTHORITY
STATE OF GOOD REPAIR
CAPITAL IMPROVEMENT PROGRAM
LONG RANGE PERIOD FFY 2035-FFY 2045

YEAR	CAPITAL NEEDS	FEDERAL 80.00%	STATE 19.36%	LOCAL 0.65%	TOTAL	PROJECTED FEDERAL FUNDING $5,003,489	BALANCE FEDERAL SHORTFALL (Carryover/CMAQ)
	CAPITAL NEEDS	FEDERAL	STATE	LOCAL	TOTAL		
FFY 2035		$0	$0	$0	$0	**$900,000**	
	REPLACE/UPGRADE AVL SYSTEM	$800,000	$193,600	$6,450	$1,000,000		
	UPGRADE SECURITY SYSTEM	$200,000	$48,400	$1,613	$250,000		
	COMPUTER HARDWARE/SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE/UPGRADE FIRE ALARM BTC	$200,000	$48,400	$1,613	$250,000		
	REPLACE DISPLAY PANELS BYC	$80,000	$19,360	$645	$100,000		
	REPLACE FORKLIFT/TOW MOTOR-2020	$24,000	$5,808	$194	$30,000		
	REPLACE WASTE OIL BURNERS	$120,000	$29,040	$968	$150,000		
	UPGRADE TELEHONE SYSTEM	$40,000	$9,680	$323	$50,000		
	UPGRADE MAINT SOFTWARE	$40,000	$9,680	$323	$50,000		
	UPGRADE FINANCE SOFTWARE	$40,000	$9,680	$323	$50,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$1,956,805**	**$473,547**	**$15,777**	**$2,446,006**	**$4,152,617**	**$10,844,805**
FFY 2036	REPLACE 24-2031 - PARATRANSIT VANS	$2,349,814	$568,655	$18,945	$2,937,267	**$900,000**	
	COMPUTER HARDWARE/SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE 4-POST LIFT	$80,000	$19,360	$645	$100,000		
	MOBILE TICKETING UPGRADES	$480,000	$116,160	$3,870	$600,000		
	REPLACE TWO FLOOR SWEEPERS	$48,000	$11,616	$387	$60,000		
	REPLACE TWO FLOOR SCRUBBERS	$48,000	$11,616	$387	$60,000		
	REPLACE TWO VENTRACS BTC-OPS	$72,000	$17,424	$581	$90,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$3,490,619**	**$844,730**	**$28,143**	**$4,363,273**	**$4,152,617**	**$12,406,803**
FFY 2037	REPLACE 19-2032 - PARATRANSIT VANS	$1,916,077	$463,691	$15,448	$2,395,097	**$900,000**	
	REPLACE BUS WASH	$160,000	$38,720	$1,290	$200,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$2,480,882**	**$600,373**	**$20,002**	**$3,101,103**	**$4,152,617**	**$14,978,538**
FFY 2038	REPLACE 18-2033 - PARATRANSIT VANS	$1,869,688	$452,465	$15,074	$2,337,110	**$900,000**	
	UPGRADE AVL SYSTEM	$800,000	$193,600	$6,450	$1,000,000		
	REPLACE BUS VACCUM	$140,000	$33,880	$1,129	$175,000		
	TDP UPDATE	$112,000	$27,104	$903	$140,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$3,294,493**	**$797,267**	**$26,562**	**$4,118,116**	**$4,152,617**	**$16,736,662**
FFY 2039	REPLACE 11-2034 - PARATRANSIT VANS	$1,176,865	$284,801	$9,488	$1,471,081	**$900,000**	
	REPLACEMENT 3 2027 BUSES - HYBRIDS	$2,525,126	$611,081	$20,359	$3,156,408		
	REPLACE 2 2030 -SUPERVISORY VEHICLE	$88,000	$21,296	$710	$110,000		
	REPLACE 1 2030 -MAINTENANCE VEHICLE	$64,000	$15,488	$516	$80,000		
	REPLACE FARE COLLECTION SYSTEM	$1,040,000	$251,680	$8,385	$1,300,000		
	REPLACE SALT SPREADER	$32,000	$7,744	$258	$40,000		
	UPGRADE FLUID DISPENSING SYSTEM	$100,000	$24,200	$806	$125,000		
	COMPUTER HARDWARE/SOFTWARE	$100,000	$24,200	$806	$125,000		
	REPLACE/UPGRADE FUEL SOFTWARE	$120,000	$29,040	$968	$150,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$5,618,796**	**$1,359,749**	**$45,302**	**$7,023,495**	**$4,152,617**	**$16,170,483**

	LONG RANGE PERIOD FFY 2035-FFY 2045					PROJECTED FEDERAL	BALANCE FEDERAL
	CAPITAL NEEDS	FEDERAL	STATE	LOCAL	TOTAL	FUNDING	SHORTFALL
FFY 2040		$0	$0	$0	$0	**$900,000**	
	REPLACEMENT 4 2028 BUSES - HYBRIDS	$3,467,840	$839,217	$27,959	$4,334,800		
	REPLACE 2 2030 -SUPERVISORY VEHICLE	$88,000	$21,296	$710	$110,000		
	REPLACE 1 2030 -MAINTENANCE VEHICLE	$64,000	$15,488	$516	$80,000		
	OPS CENTER UPGRADES	$400,000	$96,800	$3,225	$500,000		
	REPLACE EMERGENCY GENERATOR OPS	$80,000	$19,360	$645	$100,000		
	REPLACE DISPLAY PANELS BTC	$80,000	$19,360	$645	$100,000		
	REPLACE BOCAT	$36,000	$8,712	$290	$45,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	UPGRADE TELEHONE SYSTEM	$40,000	$9,680	$323	$50,000		
	UPGRADE MAINT SOFTWARE	$40,000	$9,680	$323	$50,000		
	UPGRADE FINANCE SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE PARKING EQUIPMENT	$160,000	$38,720	$1,290	$200,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$4,900,645**	**$1,185,956**	**$39,511**	**$6,125,806**	**$4,152,617**	**$16,322,455**
FFY 2041	REPLACE 24-2036 - PARATRANSIT VANS	$2,724,078	$659,227	$21,963	$3,405,098	**$900,000**	
	REPLACE TWO COPIERS	$48,000	$11,616	$387	$60,000		
	MOBILE TICKETING UPGRADES	$480,000	$116,160	$3,870	$600,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$3,624,883**	**$877,222**	**$29,226**	**$4,531,104**	**$4,152,617**	**$17,750,189**
FFY 2042	REPLACE 19-2037 - PARATRANSIT VANS	$2,221,259	$537,545	$17,909	$2,776,573	**$900,000**	
	REPLACE 12 2030 HYBRID BUSES	$11,037,095	$2,670,977	$88,987	$13,796,369		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$13,663,158**	**$3,306,484**	**$110,159**	**$17,078,948**	**$4,152,617**	**$9,139,648**
FFY 2043	REPLACE 18-2038 - PARATRANSIT VANS	$2,167,481	$524,530	$17,475	$2,709,351	**$900,000**	
	REPLACE 12 2031 HYBRID BUSES	$11,368,208	$2,751,106	$91,656	$14,210,260		
	REPLACE EMERGENCY GEN - BTC	$100,000	$24,200	$806	$125,000		
	TDP UPDATE	$120,000	$29,040	$968	$150,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$14,128,493**	**$3,419,095**	**$113,911**	**$17,660,617**	**$4,152,617**	**$63,772**
FFY 2044	REPLACE 11-2039 - PARATRANSIT VANS	$1,364,309	$330,163	$11,000	$1,705,386	**$900,000**	
	REPLACE 6 2032 BUSES HYBRIDS	$5,854,627	$1,416,820	$47,203	$7,318,284		
	REPLACE PORTABLE LIFTS	$48,000	$11,616	$387	$60,000		
	REPLACE SCISSOR LIFT	$24,000	$5,808	$194	$30,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$7,695,741**	**$1,862,369**	**$62,047**	**$9,619,676**	**$4,152,617**	**-$2,579,352**

	LONG RANGE PERIOD FFY 2035-FFY 2045					PROJECTED FEDERAL	BALANCE FEDERAL
	CAPITAL NEEDS	**FEDERAL**	**STATE**	**LOCAL**	**TOTAL**	**FUNDING**	**SHORTFALL**
FFY 2045		$0	$0	$0	$0	**$900,000**	
	REPLACE 7 2033 BUSES HYBRIDS	$7,035,310	$1,702,545	$56,722	$8,794,138		
	REPLACE/UPGRADE AVL SYSTEM	$800,000	$193,600	$6,450	$1,000,000		
	UPGRADE RADIO COMMUNICATIONS	$280,000	$67,760	$2,258	$350,000		
	UPGRADE TELEHONE SYSTEM	$40,000	$9,680	$323	$50,000		
	UPGRADE MAINT SOFTWARE	$40,000	$9,680	$323	$50,000		
	UPGRADE FINANCE SOFTWARE	$40,000	$9,680	$323	$50,000		
	REPLACE DISPLAY PANELS	$80,000	$19,360	$645	$100,000		
	COMPUTER HARDWARE/SOFTWARE	$32,000	$7,744	$258	$40,000		
	ADA SERVICE	$372,805	$90,219	$3,006	$466,006		
	TOTAL	**$8,720,115**	**$2,110,268**	**$70,306**	**$10,900,144**	**$4,152,617**	**-$6,246,850**
	LONG RANGE TOTAL FFY 2035-2045	**$69,574,629**	**$16,837,060**	**$560,945**	**$86,968,287**		

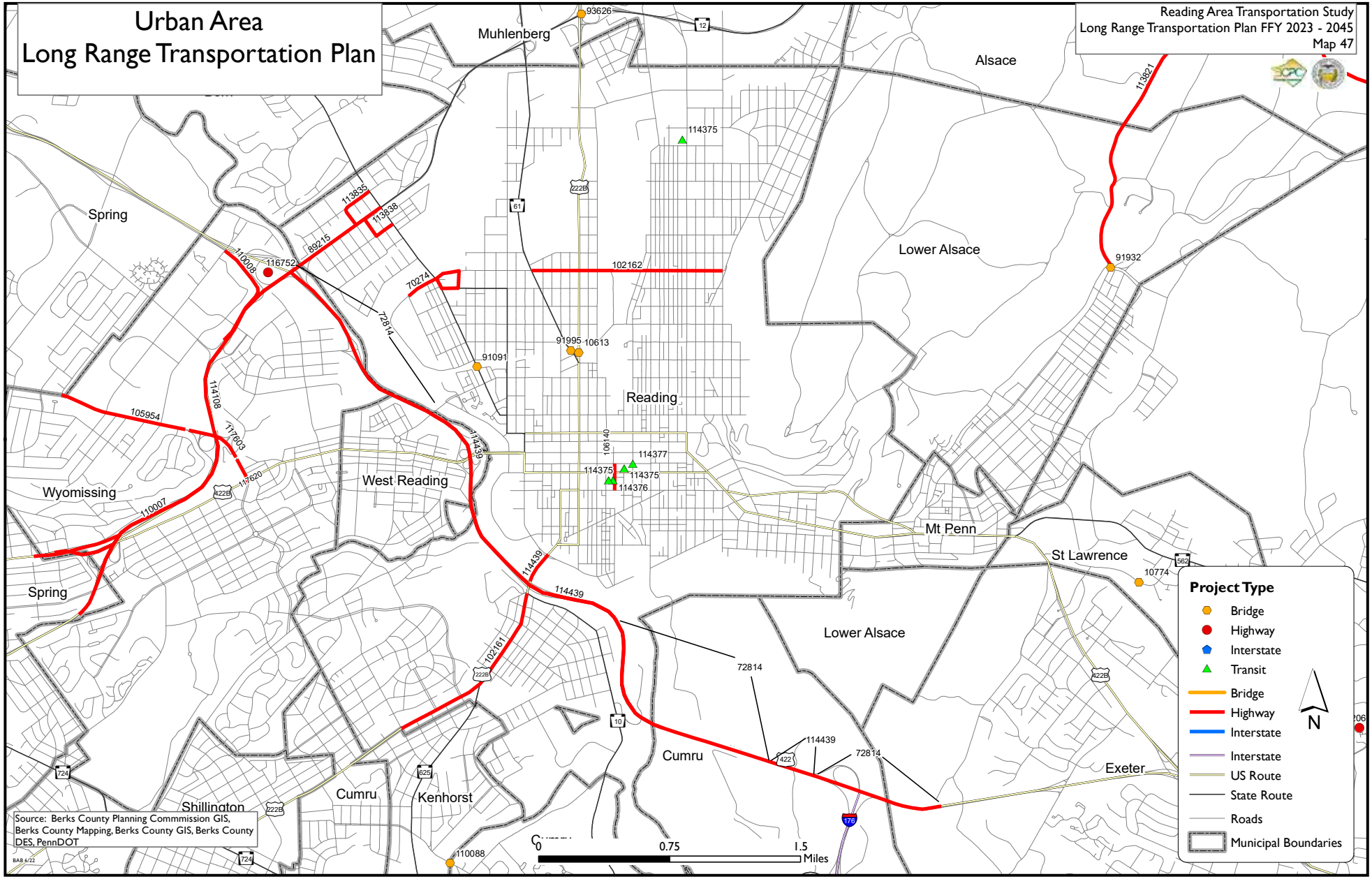
Berks County
Long Range Transportation Plan

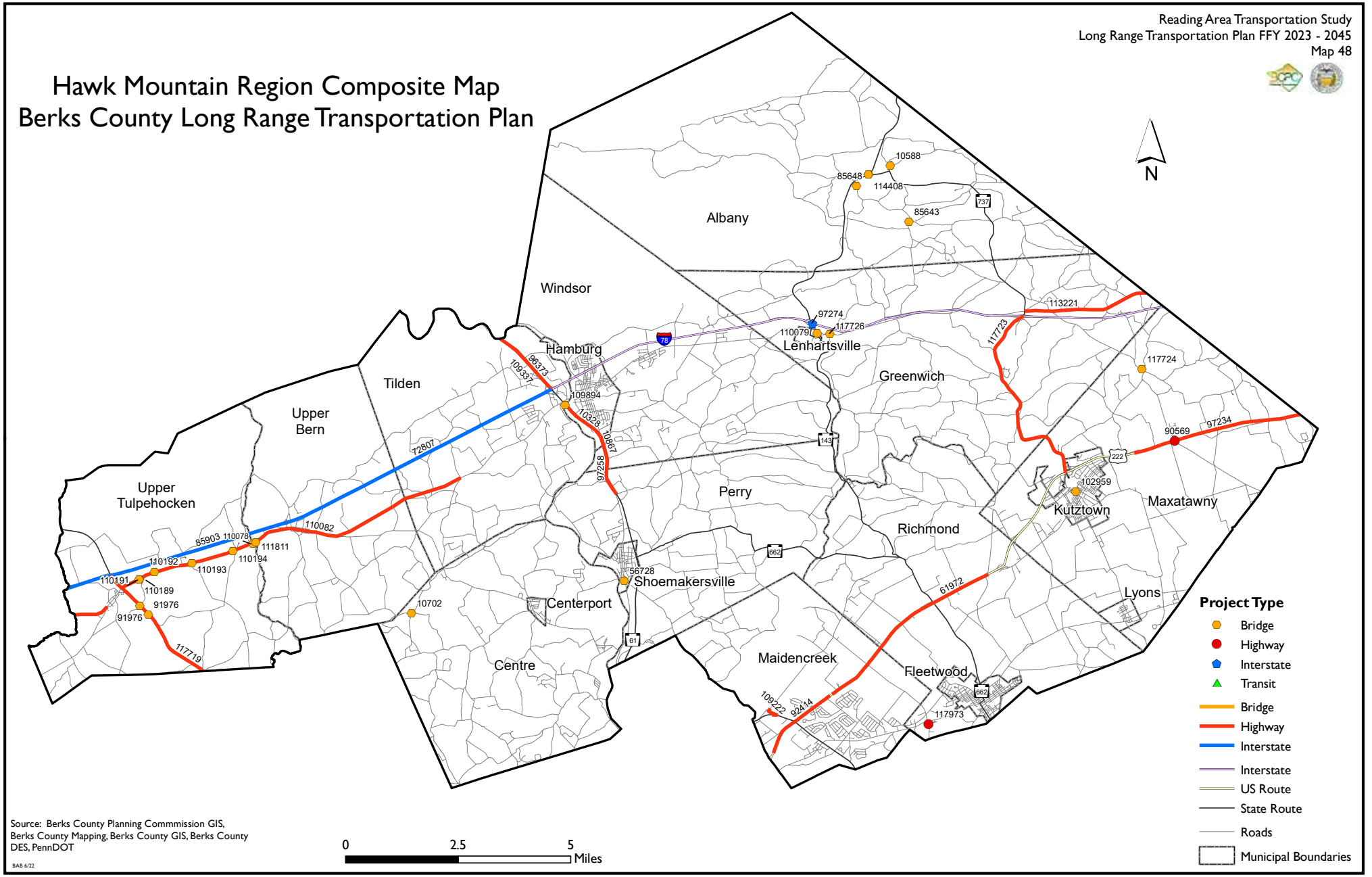


Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

BAB 6/22

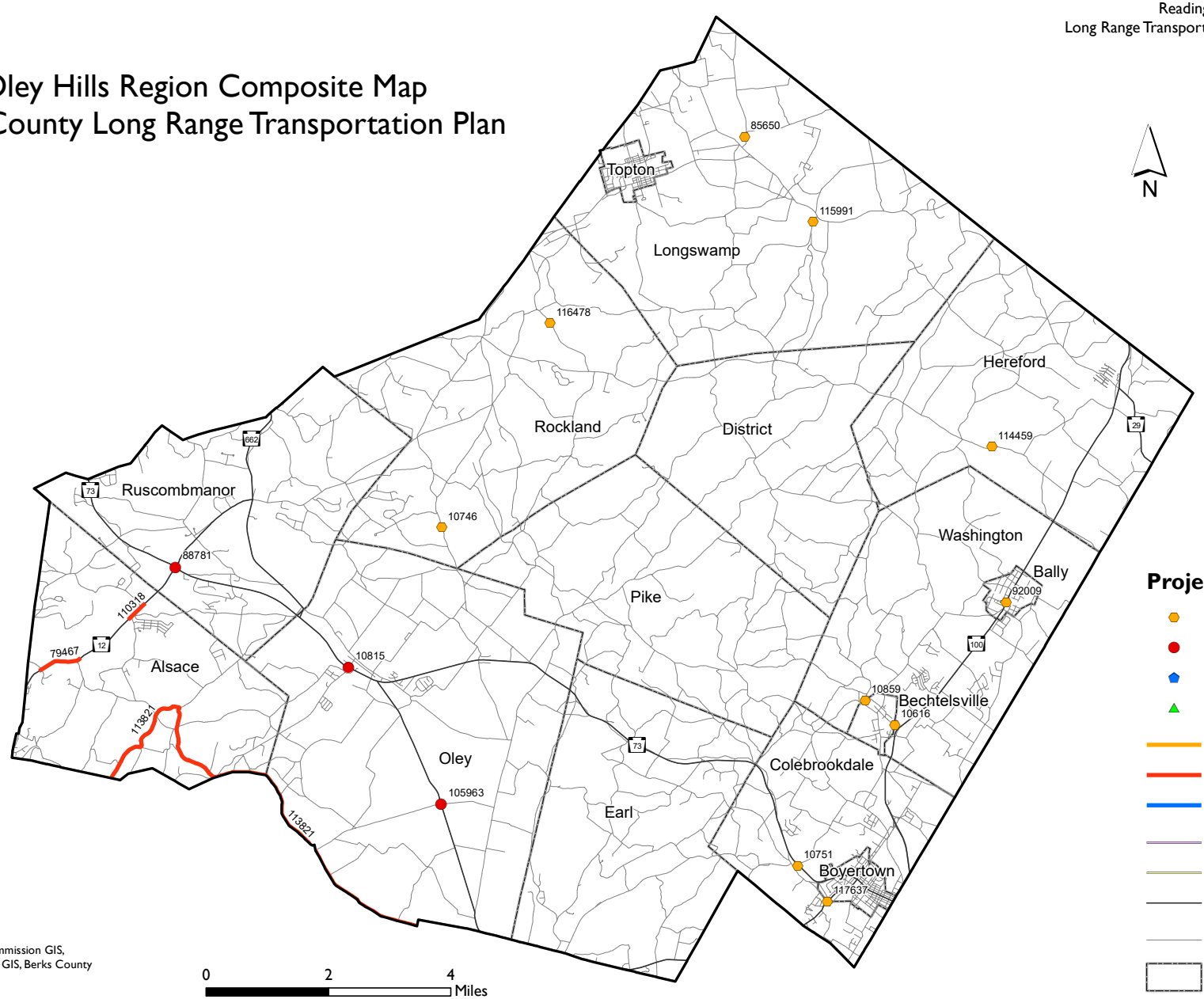
www.countyofberks.com/planning


Urban Area
Long Range Transportation Plan
Reading Area Transportation Study
Long Range Transportation Plan FFY 2023 - 2045
Map 47
Muhlenberg
Alsace
Spring
Lower Alsace
Reading
West Reading
Wyomissing
Mt Penn
St Lawrence
Cumru
Kenhorst
Shillington
Exeter
93626
114375
113821
113835
113838
89215
116752
110008
102162
70274
72814
91932
91995
10613
91091
105954
114108
117603
114439
106140
114377
114375
114376
117620
422B
110007
10774
562
102161
222B
10
422
176
724
625
110088
Project Type
Bridge
Highway
Interstate
Transit
Bridge
Highway
Interstate
Interstate
US Route
State Route
Roads
Municipal Boundaries
N
0
0.75
1.5
Miles
Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT
BAB 6/22


Reading Area Transportation Study
Long Range Transportation Plan FFY 2023 - 2045
Map 48
Hawk Mountain Region Composite Map
Berks County Long Range Transportation Plan
N
Albany
Windsor
Hamburg
Lenhartsville
Greenwich
Tilden
Upper Bern
Upper Tulpehocken
Perry
Richmond
Maxatawny
Kutztown
Shoemakersville
Centerport
Centre
Maidencreek
Fleetwood
Lyons
10588
85648
114408
85643
737
97274
117726
110079
113221
117723
117724
96373
109337
109894
10328
10867
97258
72807
143
90569
97234
222
102959
110082
85903
110078
111811
110194
110192
110193
110191
110189
91976
91976
117719
10702
56728
662
61
61972
109222
92414
117973
662
Project Type
Bridge
Highway
Interstate
Transit
Bridge
Highway
Interstate
Interstate
US Route
State Route
Roads
Municipal Boundaries
Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT
BAB 6/22
0
2.5
5
Miles

Reading Area Transportation Study
Long Range Transportation Plan FFY 2023 - 2045
Map 49

Oley Hills Region Composite Map
Berks County Long Range Transportation Plan



Project Type

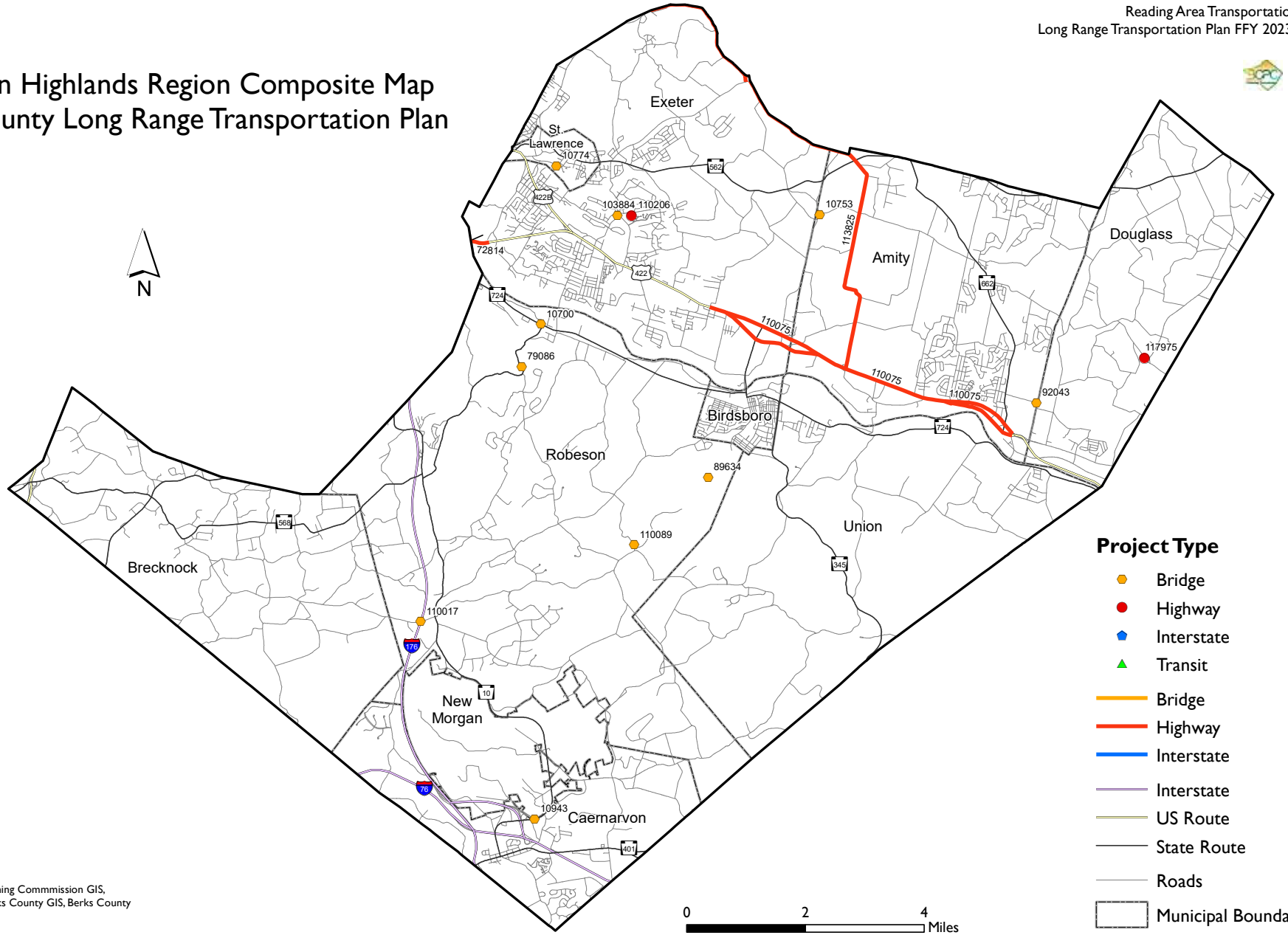
- Bridge
- Highway
- Interstate
- Transit
- Bridge
- Highway
- Interstate
- Interstate
- US Route
- State Route
- Roads
- Municipal Boundaries

Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

BAB 6/22

Reading Area Transportation Study
Long Range Transportation Plan FFY 2023 - 2045
Map 50

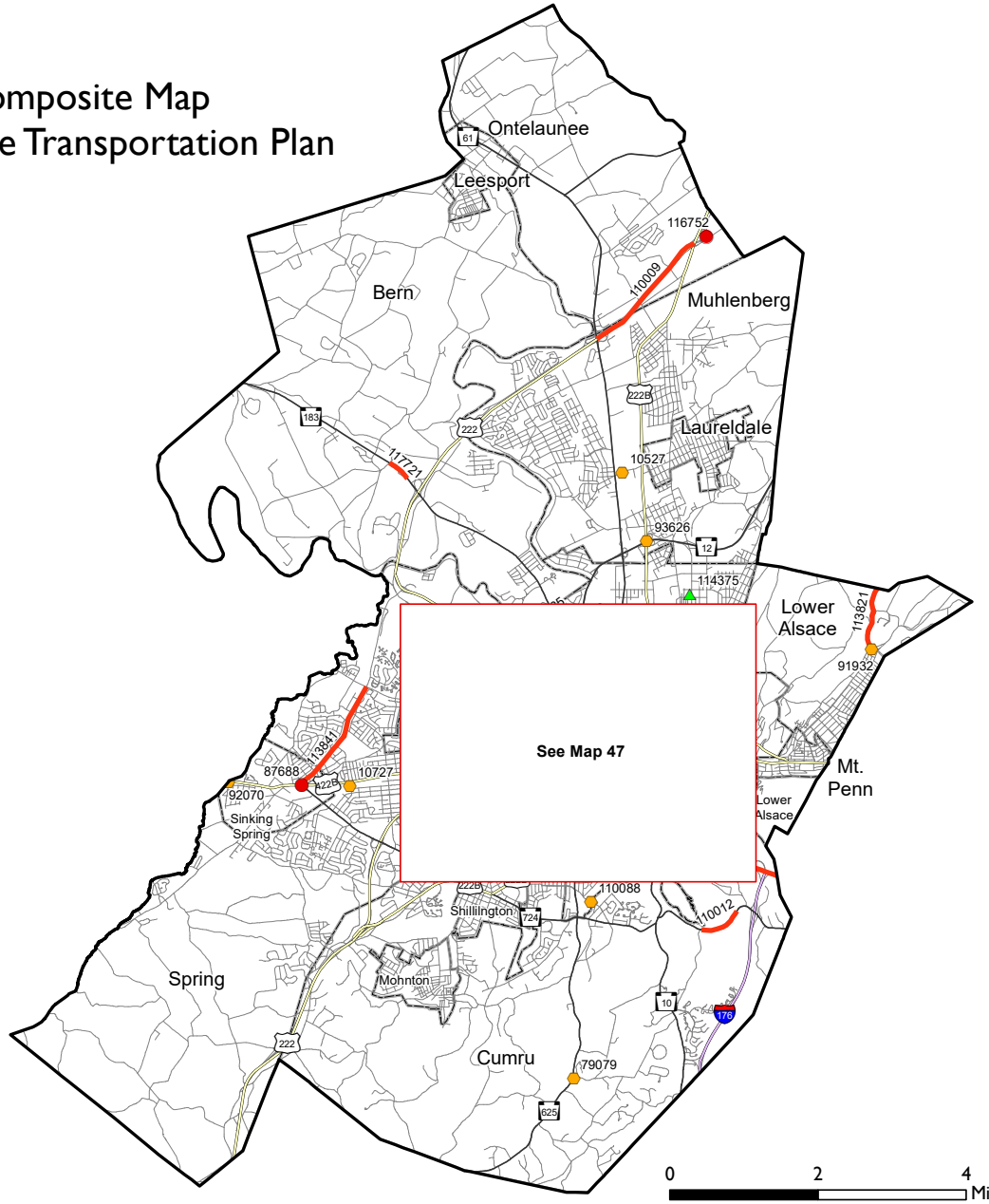
Southern Highlands Region Composite Map
Berks County Long Range Transportation Plan



Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

BAB 6/22

Metro Region Composite Map
Berks County Long Range Transportation Plan



Project Type

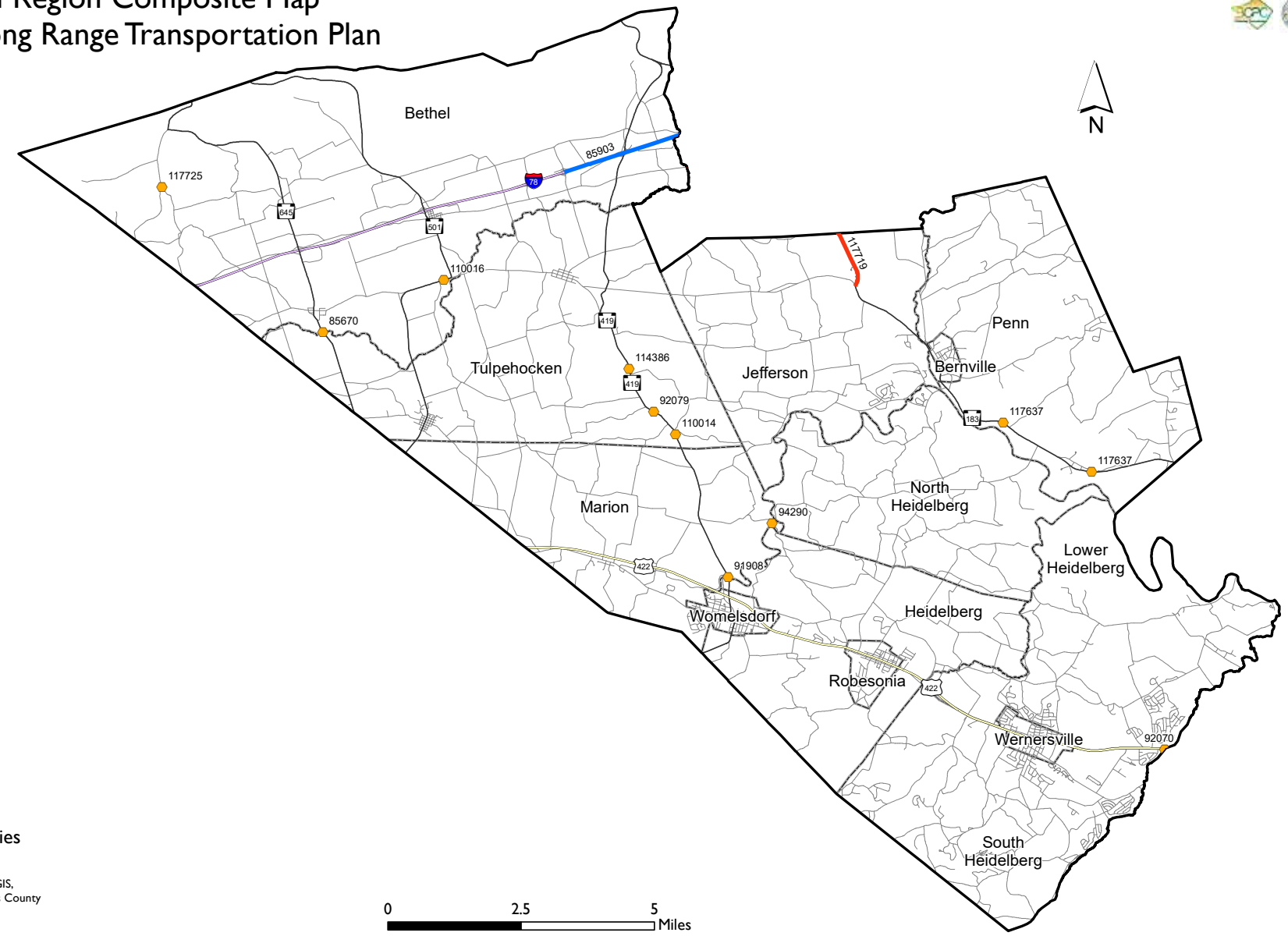
- Bridge
- Highway
- Interstate
- Transit
- Bridge
- Highway
- Interstate
- Interstate
- US Route
- State Route
- Roads
- Municipal Boundaries

Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

BAB 6/22

www.countyofberks.com/planning

Tulpehocken Region Composite Map
Berks County Long Range Transportation Plan



Project Type

- Bridge
- Highway
- Interstate
- Transit
- Bridge
- Highway
- Interstate
- Interstate
- US Route
- State Route
- Roads
- Municipal Boundaries

Source: Berks County Planning Commmission GIS, Berks County Mapping, Berks County GIS, Berks County DES, PennDOT

BAB 6/22

Financial Plan

Federal planning regulations require that a transportation plan "include a financial plan that demonstrates the consistency of proposed transportation investments with already available and projected sources of revenue." Cost and revenue projections are to reflect the existing situation and historic trends. The LRTP should be in accord with projections of future revenues.

The following sections document our methods for projecting future revenues, calculating future costs and reconciling the plan with projections of future revenues. Before proceeding, a few comments on the uncertainties of this process are in order. The process involves the calculation of costs and revenues over a twenty-plus year period. On the cost side, the estimates for the Mid- and Long-Range periods are made without the kind of engineering detail that is required for precise cost data. Secondly, costs reflect future rates of inflation that can only be estimated.

On the revenue side, estimates are based on projections of future revenues from federal and state funding legislation that only extends over the initial period of this plan. Our only guide for such action is past history. It is known that federal funding is the single greatest factor in financing transportation infrastructure. Traditionally, it accounted for approximately 75% of such revenues. Federal funding was nearly flat over the past several years as Congress attempts to redefine the role that it plays in financing infrastructure. The FAST Act, while ensuring five years of funding stability, provided only a nominal growth in funding and expired during the prior program. The approval of the IIJA in November of 2022 has provided a significant boost to overall federal funding for all types of transportation programs. Changes in federal regulations have blurred the lines between the use of federal dollars for highways and bridges. The federal split used in developing this plan is assumed to be 60% for highways and 40% for bridges.

Likewise, future revenues depend on money raised by the state from gas taxes, motor license fees, registrations, etc. These rates depend on future actions of the state legislature that we cannot predict. Legislative action by Pennsylvania, in the form of Act 89 of 2013, created a significant boost in state funding. This, combined with the flat federal levels has shifted the funding splits to approximately 60% federal and 40% state. Despite this gain, state funding levels peaked during the prior program and began to contract as resources were diverted to other programs and gas consumption and the resulting tax revenues went down due to a combination of negative economic conditions brought on by COVID and the expansion of the use of hybrid and alternative fueled vehicles. The growth of the IIJA federal funds will also place pressure on the state to generate sufficient local match to receive the full benefits of those new dollars. Additionally, a state revenue stream based on payments from the Pennsylvania Turnpike to PennDOT used to support public transportation is coming to an end and state legislators are being pressed to find suitable sources of replacement revenue.

Local revenues account for the remaining 2% of transportation infrastructure costs. It is assumed that the local share of costs will remain at roughly the same proportion to federal and state revenues.

A more detailed discussion of the funding programs may be found in the Appendix.

Future Revenues

The following table shows projections of future revenues by time period and category.

TRANSPORTATION PLAN ESTIMATED FUNDING SUMMARY ($000)				
Element	Short Range (2023-2026)	Mid Range (2027-2034)	Long Range (2035-2045)	Total
Highway Funds	$143,240	$861,073	$374,254	$1,378,568
Bridge Funds	$101,429	$191,150	$262,178	$554,757
Transit Funds	$70,650	$149,450	$210,593	$430,692
Total Funds	$315,319	$1,201,672	$847,025	$2,364,017

Short Range (2023 – 2026)

It is estimated that a total of $315,319 will be available to Berks County over the period extending from FFY 2023 through FFY 2026 for all transportation projects and programs covered under this plan. All federal, state and local funding anticipated in this period is included. The federal highway and bridge figures are based on a prorated share of Pennsylvania's allocations as included in the IIJA. The federal transit figures are also based on allocations to the Reading MPO (RATS) as included in the IIJA. The state contribution for both highway and transit is based on Act 89 of 2013.

Highway and Bridge Funding

Highway and bridge funding includes all federal and state capital funds anticipated for the four-year period covered by this program. The IIJA legislation included funding for the federal fiscal years 2022 through 2026. As such, Federal funding levels for throughout this period of the plan are based directly on the Act.

The distribution of federal funds from the state to the MPO follows previous formulas and policy decisions. Specifically, it continues to assume the practice of programming to the authorization level rather than the lower obligation level. Funding formulas have been revised to reflect the provisions of the IIJA.

The Interstate Management Program is run on a statewide basis. The proportion of the NHPP Funds that these miles/bridges represent, including the appropriate state match, will be programmed centrally by PennDOT in consultation with MPOs/RPOs. The priority for these funds will be for system preservation. Any capacity adding projects will be advanced through coordination with the MPO/RPO.

Discontinued for a number of years, additional highway and bridge funds have once again become available through a federal "earmarking" process. The Reading MPO received no earmarks during the initial cycle of this program but will continue to pursue funding in subsequent rounds. If a project received special funding allocations that were part of federal transportation legislation, or if dollars are allocated to a project from any of the Pennsylvania Secretary of Transportation's discretionary "spike" funds , those funds are considered "earmarked" to that project until either its completion or abandonment. Earmarked funds are funds that are over and above an area's formula allocation. For the purpose of this plan, only existing earmarks will be assumed.

Local and private funding may also be used to match state and federal funding and is considered additional funding. Private funding is only included in the program where currently committed.

The ultimate decisions regarding the distribution of "spike" and other discretionary funding are made by the Secretary of Transportation. For the purpose of this Plan, these funds are only included where currently committed.

Transit

Funding for transit improvements in Pennsylvania comes from a combination of federal, state and local sources. Similar to Highways and Bridges, federal Transit funding also comes from the IIJA. Federal funding levels used in the Short Range use those funds allocated to the Reading MPO (RATS) in the IIJA.

State funding is provided through the Public Transportation Trust Fund. In addition, state capital budget funding is released annually for capital improvements. As previously mentioned, a total of $25 million per year of the state's federal highway money is flexed to transit agencies for their projects as part of an agreement between the Commonwealth and the transit community during the enactment of Act 3. Federal funding is based on guaranteed authorizations only. An additional source of capital funding available to SCTA for use in the BARTA service area is a flex of the annual CMAQ highway funds as agreed to by RATS. SCTA has not requested CMAQ funding during the proposed Short Range period but will resume receiving those funds during the Mid-Range period.

As with the highway program, transit funding may also include specific earmarked and discretionary dollars that are over and above the region's allocation. For the purpose of this plan, only existing earmarks and discretionary funding is included in this period.

Mid-Range (2027 – 2034) and Long-Range (2035 – 2045)

Revenues for the Mid-Range years are projected to be $1,201,672,000 and $847,025,000 for the Long-Range years. These figures are substantially larger than the short-range period because they cover eight and ten year periods, respectively, rather than the four years in the short range. Additionally, the vast majority of the PennDOT 'spike" funding for the US 422 and US 222 corridor projects fall in the mid-range period. The Reading MPO will continue to rely on further allocations from these or other sources beyond our formula allocations to complete construction of these important corridors.

The following methods were used in calculating future revenues over the Mid- and Long-Range periods.

Since the IIJA expires at the end of FFY 2026, Federal funding to Pennsylvania was assumed to increase by zero (0) percent per year from that point forward. State funds were also assumed to remain flat. This is the most conservative approach available at this time.

The Berks County share of all revenues was assumed to remain consistent with the allocation in the final year of the current TIP. The funding splits across programs are assumed to remain at their current levels.

The following table provides a detailed breakdown of the projected funding for each year of the plan

Projected Reading MPO Transportation Funding By Year
($000)

READING MPO	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
HIGHWAY AND BRIDGE																							
Federal - NHPP (0.60)	9,395	8,870	8,397	7,933	7,025	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349	6,349
Federal - STP (0.60)	3,110	3,176	3,270	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365	3,365
State Highway	7,899	8,538	8,693	9,535	9,534	9,534	9,534	9,533	9,532	9,532	9,531	9,531	9,531	9,531	9,531	9,531	9,531	9,531	9,531	9,531	9,531	9,531	9,531
Federal - Urban (STU)	6,031	6,151	6,274	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400
Federal - Safety (HSIP)	3,331	3,432	3,536	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642	3,642
Federal - CMAQ	4,059	4,161	4,265	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372	4,372
Less RATS BARTA Flex					450	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Federal - CMAQ Total	4,059	4,161	4,265	4,372	3,922	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472	3,472
Federal - STP Set-Aside TAU	562	573	585	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597
Federal - Highway Freight*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal - Carbon Reduction*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal - PROTECT*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub Total Hwy	34,387	34,902	35,020	35,844	34,485	33,359	33,359	33,358	33,357	33,357	33,356	33,356	33,356	33,356	33,356	33,356	33,356	33,356	33,356	33,356	33,356	33,356	33,356
Local Hwy (2%)	688	698	700	717	690	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667	667
Highway Earmarks/Discretionary																							
Highway Spike	285	0	0	0	0	37,929	47,000	51,240	43,267	43,268	43,267	43,507	0	0	0	0	0	0	0	0	0	0	0
Private / Other	0	0	0	0	0	0	0	0	69,562	69,562	69,562	69,562	0	0	0	0	0	0	0	0	0	0	0
Total Highway	**35,359**	**35,600**	**35,720**	**36,561**	**35,175**	**71,955**	**81,026**	**85,265**	**146,853**	**146,854**	**146,852**	**147,092**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**	**34,023**
Federal Bridge - NHPP (0.40)	6,263	5,914	5,598	5,288	4,683	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232	4,232
Federal Bridge - STP (0.40)	2,073	2,118	2,180	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244
Federal Bridge - BOF	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043	4,043
Federal Bridge - BRIP	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743	6,743
State Bridge	6,246	6,132	6,132	6,109	6,108	6,108	6,108	6,107	6,107	6,106	6,106	6,105	6,105	6,105	6,105	6,105	6,105	6,105	6,105	6,105	6,105	6,105	6,105
Subtotal - Bridges	25,368	24,949	24,696	24,427	23,821	23,370	23,370	23,369	23,369	23,368	23,368	23,367	23,367	23,367	23,367	23,367	23,367	23,367	23,367	23,367	23,367	23,367	23,367
Local Bridge -2%	507	499	494	489	476	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467	467
Bridge Earmarks/Discretionary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bridge Spike			0	0																			
Total - Bridges	**25,876**	**25,448**	**25,190**	**24,916**	**24,297**	**23,837**	**23,837**	**23,836**	**23,836**	**23,835**	**23,835**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**	**23,834**
Total Highway & Bridge	**61,235**	**61,048**	**60,910**	**61,476**	**59,472**	**95,793**	**104,864**	**109,102**	**170,690**	**170,690**	**170,687**	**170,926**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**	**57,857**

*** funding for this program will be held in a statewide line item pending official guidance from State / FHWA**

Projected Reading MPO Transportation Funding By Year (Cont.)
($000)

READING MPO	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
TRANSIT																							
Federal Transit																							
FTA Formula - 5307	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728	3,728
FTA- 5310	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282	282
FTA- 5539	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425	425
Plus RATS BARTA Flex	0	0	0	0	450	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
Federal Total	4,435	4,435	4,435	4,435	4,885	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335	5,335
State Transit																							
Operating Assistance	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069	10,069
Shared Ride	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629	2,629
State Total	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698	12,698
Local Transit																							
Local Operating	469	493	517	543	570	599	629	660	693	728	764	802	842	884	929	975	1,024	1,075	1,129	1,185	1,245	1,307	1,372
Local Capital	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Local Total	493	517	541	567	594	623	653	684	717	752	788	826	866	908	953	999	1,048	1,099	1,153	1,209	1,269	1,331	1,396
Total Transit	**17,626**	**17,650**	**17,674**	**17,700**	**18,177**	**18,656**	**18,685**	**18,717**	**18,750**	**18,785**	**18,821**	**18,859**	**18,899**	**18,941**	**18,986**	**19,032**	**19,081**	**19,132**	**19,186**	**19,242**	**19,301**	**19,364**	**19,429**

SUMMARY

Short Range Totals		Mid-Range Totals		Long Range Totals		2023-2045 Totals	
Highway -	143,240	Highway -	861,073	Highway -	374,254	Highway -	1,378,568
Bridge -	101,429	Bridge -	191,150	Bridge -	262,178	Bridge -	554,757
Transit -	70,650	Transit -	149,450	Transit -	210,593	Transit -	430,692
Total -	315,319	Total -	1,201,672	Total -	847,025	Total -	2,364,017

Reading Regional Airport Capital Improvement Plan

The Reading Regional Airport receives capital funding from the federal and state governments which require a local match. The airport can also apply for federal and state discretionary funding to implement its capital improvement plan. Local funding comes primarily from airport operations. The following table includes the Capital Improvement Plan for the period FFY 2022 through FFY 2038.

While the Reading MPO has limited involvement in the allocation of these funds, we have included this table in acknowledgement of the Reading Regional Airport's important role in Berks County's transportation system and to document the approved slate of projects for reference in consideration of current and future grant application cycles.

Federal Aviation Administration

Capital Improvement Plan Spreadsheet

Harrisburg Airports District Office

LOCID:	**RDG** NPIAS No.: 42-0088	Airport:	**Reading Regional Airport**					State:	**PA**		Date of Submission:	**3/21/2022**				
				FEDERAL					Local							
FFY	**Description**	**Work Code**	**NPR**	**Entitlement**	**BIL**	**Discretionary**	**Total**	**STATE funds**	**PFC**	**Other**	**TOTAL**	**Environmental Status**	**Project Start (MM/DD/YY)**	**Project Completion (MM/DD/YY)**	**NPE Balance**	**BIL Balance**
2022				**$360,600**	**$261,000**	**$2,755,200**	**$3,376,800**	**$6,402,194**	**$0**	**$2,294,065**	**$12,073,059**	-$2,634,000			**$0.00**	**$502,000.00**
	Reconstruct Airfield Guidance Signs - Phase I, Design	RC OT SG	52	$150,000	$0	$55,200	$205,200	$11,400		$11,400	$228,000	Cat Ex Required	Jun-22	Jun-23		
	Construct Deicing Materials Storage Building	ST OT DI	38	$0	$225,000	$0	$225,000	$0		$25,000	$250,000	Cat Ex Required	Apr-22	Dec-22		
	Acquire Aqueous Film Forming Foam (AFFF) Input-Based Testing Equipment			$0	$36,000	$0	$36,000	$0		$4,000	$40,000	Cat Ex Required	Apr-22	Dec-22		
	Rehabilitate Taxiway Lighting B East, J, A, D South - Phase I, Design (194 MITLs)	RE TW LI	78	$127,800	$0	$0	$127,800	$0		$14,200	$142,000	Cat Ex Required	Jun-25	Jun-26		
	Rehabilitate Taxiway Lighting B West, C and F - Phase I, Design	RE TW LI	78	$82,800	$0	$0	$82,800	$0		$9,200	$92,000	Cat Ex Required	Jun-27	Jun-28		
	Construct MRO Hangar - Phase 1, Infrastructure (Capital Budget)	*ST BD MS*	*41*	*$0*	*$0*	*$0*	*$0*	*$6,240,794*		*$2,080,265*	*$8,321,059*	*Cat Ex Required*	*Apr-22*	*Mar-23*		
	Construct MRO Hangar Infrastructure - Phase 1	ST BD MS	41	$0	$0	$2,700,000	$2,700,000	$150,000		$150,000	$3,000,000	Cat Ex Required	Apr-22	Mar-23		
2023				**$450,000**	**$58,500**	**$2,201,400**	**$2,709,900**	**$150,550**	**$0**	**$150,550**	**$3,011,000**	-$684,000			**-$300,000.00**	**$1,206,500.00**
	Reconstruct Airfield Guidance Signs - Phase II, Construction	RC OT SG	52	$150,000	$0	$1,179,300	$1,329,300	$73,850		$73,850	$1,477,000	Cat Ex Required	Jun-23	Dec-23		
	Construct MRO Hangar - Phase 2, Hangar (Capital Budget)	*ST BD MS*	*41*	*$0*	*$0*	*$0*	*$0*	*$0*		*$0*	*$0*	*Cat Ex Required*	*Apr-23*	*Mar-24*		
	Rehabilitate Taxiway Lighting B East, J, A, D South - Phase II, Construction	RE TW LI	78	$150,000	$0	$653,700	$803,700	$44,650		$44,650	$893,000	Cat Ex Required	Jun-26	Dec-26		
	Rehabilitate Taxiway Lighting B West, C and F - Phase II, Construction	RE TW LI	78	$150,000	$0	$368,400	$518,400	$28,800		$28,800	$576,000	Cat Ex Required	Jun-28	Dec-28		
	Rehabilitate Terminal Parking Lot - Phase 1, Design	OT OT PA	29	$0	$58,500	$0	$58,500	$3,250		$3,250	$65,000	Cat Ex Required	Apr-23	Dec-23		
2024				**$150,000**	**$1,440,000**	**$541,200**	**$2,131,200**	**$118,400**	**$0**	**$118,400**	**$2,368,000**	$82,000			**-$300,000.00**	**-$83,500.00**
	Rehabilitate North Taxilane - Phase I, Design	RE TW IM	78	$0	$0	$151,200	$151,200	$8,400		$8,400	$168,000	Cat Ex Required	Jun-24	Jun-25		
	Rehabilitate Terminal Parking Lot - Phase 2, Construction	OT OT PA	29	$0	$540,000	$0	$540,000	$30,000		$30,000	$600,000	Cat Ex Required	Apr-24	Dec-24		
	Acquire ARFF Vehicle	SA EQ RF	98	$150,000	$0	$390,000	$540,000	$30,000		$30,000	$600,000	Cat Ex Required	Apr-24	Dec-24		
	Construct Hangar Infrastructure	OT RV HG	27	$0	$900,000	$0	$900,000	$50,000		$50,000	$1,000,000	Cat Ex Required	Apr-24	Mar-25		
2025				**$87,600**	**$2,700,000**	**$895,200**	**$3,682,800**	**$2,204,600**	**$0**	**$2,204,600**	**$8,092,000**				**-$237,600.00**	**-$2,633,500.00**
	Rehabilitate North Taxilane - Phase II, Construction	RE TW IM	78	$22,200	$0	$738,300	$760,500	$42,250		$42,250	$845,000	Cat Ex Required	Jun-25	Dec-25		
	Taxiway G Demolition and Construct Taxiway C Extension - Phase I, Design	CA TW EX	78	$65,400	$0	$156,900	$222,300	$12,350		$12,350	$247,000	Cat Ex Required	Jun-29	Dec-29		
	Construct MRO Hangar Infrastructure - Phase 1	ST BD MS	41	$0	$2,700,000	$0	$2,700,000	$150,000		$150,000	$3,000,000	Cat Ex Required	Mar-00	Mar-01		
	Construct Hangars (Capital Budget)	*OT RV HG*	*27*	*$0*	*$0*	*$0*	*$0*	*$2,000,000*		*$2,000,000*	*$4,000,000*	*Cat Ex Required*	*Apr-25*	*Mar-26*		
2026				**$0**	**$0**	**$0**	**$0**	**$150,000**	**$0**	**$50,000**	**$200,000**				**-$87,600.00**	**-$2,483,500.00**
	Taxiway G Demolition and Construct Taxiway C Extension - Phase II, Construction	CA TW EX	78	$0	$0	$1,055,700	$1,055,700	$58,650		$58,650	$1,173,000	Cat Ex Required	Jun-30	Dec-30		
	Rehabilitate Mid Atlantic Air Museum Apron, Phase I-Design	*OT RV HG*	*27*	*$0*	*$0*	*$0*	*$0*	*$150,000*		*$50,000*	*$200,000*	*Cat Ex Required*	*Apr-26*	*Mar-27*		
2027				**$150,000**	**$0**	**$30,000**	**$180,000**	**$10,000**	**$0**	**$10,000**	**$200,000**				**-$87,600.00**	**-$2,333,500.00**
	Construct Airfield Maintenance Building - Phase I, Design	ST BD MS	41	$150,000	$0	$30,000	$180,000	$10,000		$10,000	$200,000	Cat Ex Required	Jun-27	Dec-27		
	Rehabilitate Mid Atlantic Air Museum Apron, Phase II-Construction	*OT RV HG*	*27*	*$0*	*$0*	*$0*	*$0*	*$750,000*		*$250,000*	*$1,000,000*	*Cat Ex Required*	*Apr-27*	*Mar-28*		
2028				**$0**	**$0**	**$900,000**	**$900,000**	**$50,000**	**$0**	**$50,000**	**$1,000,000**				**$62,400.00**	**-$2,183,500.00**
	Construct Airfield Maintenance Building - Phase II, Construction	ST BD MS	41	$0	$0	$900,000	$900,000	$50,000		$50,000	$1,000,000	Cat Ex Required	Jun-28	Dec-28		
2029				**$84,600**	**$0**	**$0**	**$84,600**	**$4,700**	**$0**	**$4,700**	**$94,000**				**$127,800.00**	**-$2,033,500.00**
	Rehabilitate Runway 13-31 Lighting - Phase I, Design	RE RW LI	83	$84,600	$0	$0	$84,600	$4,700		$4,700	$94,000	Cat Ex Required	Jun-29	Jun-30		
2030				**$150,000**	**$0**	**$257,700**	**$407,700**	**$22,650**	**$0**	**$22,650**	**$453,000**				**$127,800.00**	**-$1,883,500.00**
	Rehabilitate Runway 13-31 Lighting - Phase II, Construction	RE RW LI	83	$150,000	$0	$257,700	$407,700	$22,650		$22,650	$453,000	Cat Ex Required	Jun-30	Dec-30		
2031				**$150,000**	**$0**	**$255,000**	**$405,000**	**$22,500**	**$0**	**$22,500**	**$450,000**				**$127,800.00**	**-$1,733,500.00**
	Construct Taxiway C West Extension - Phase I, Design	CA TW CO	79	$150,000	$0	$75,000	$225,000	$12,500		$12,500	$250,000	Cat Ex Required	Jun-31	Jun-32		
	Construct Taxiway A Extension/Demo Taxiway J - Phase I, Design	CA TW CO	79	$0	$0	$180,000	$180,000	$10,000		$10,000	$200,000	Cat Ex Required	Jun-31	Dec-31		
2032				**$150,000**	**$0**	**$3,450,000**	**$3,600,000**	**$200,000**	**$0**	**$200,000**	**$4,000,000**				**$127,800.00**	**-$1,583,500.00**
	Construct Taxiway C West Extension - Phase II, Construction	CA TW CO	79	$150,000	$0	$2,100,000	$2,250,000	$125,000		$125,000	$2,500,000	Cat Ex Required	Jun-32	Dec-32		
	Construct Taxiway A Extension/Demo Taxiway J - Phase II, Construction	CA TW CO	79	$0	$0	$1,350,000	$1,350,000	$75,000		$75,000	$1,500,000	Cat Ex Required	Jun-32	Dec-32		
2033				**$58,500**	**$0**	**$0**	**$58,500**	**$3,250**	**$0**	**$3,250**	**$65,000**				**$219,300.00**	**-$1,433,500.00**
	Rehabilitate Runway 18-36 Lighting- Phase I, Design	RE RW LI	83	$58,500	$0	$0	$58,500	$3,250		$3,250	$65,000	Cat Ex Required	Jun-33	Jun-34		

2034				**$241,500**	**$0**	**$113,100**	**$354,600**	**$19,700**	**$0**	**$19,700**	**$394,000**				**$127,800.00**	**-$1,283,500.00**
	Rehabilitate Runway 18-36 Lighting - Phase II, Construction	RE RW LI	83	$241,500	$0	$113,100	$354,600	$19,700		$19,700	$394,000	Cat Ex Required	Jun-34	Dec-34		
2035				**$150,000**	**$0**	**$327,000**	**$477,000**	**$26,500**	**$0**	**$26,500**	**$530,000**				**$127,800.00**	**-$1,133,500.00**
	Construct T-Hangar Taxiways - Phase I, Design	CA TW CO	79	$150,000	$0	$32,700	$182,700	$10,150		$10,150	$203,000	Cat Ex Required	Jun-35	Jun-36		
	Obstruction Removal - Phase IIA, Short Environmental Assessment	SA OT OB	58	$0	$0	$294,300	$294,300	$16,350		$16,350	$327,000	Short EA Required	Jun-35	Dec-35		
2036				**$150,000**	**$0**	**$3,805,050**	**$3,955,050**	**$1,684,225**	**$0**	**$1,684,225**	**$7,323,500**				**$127,800.00**	**-$983,500.00**
	Construct T-Hangar Taxiways - Phase II, Construction	CA TW CO	79	$150,000	$0	$1,029,000	$1,179,000	$65,500		$65,500	$1,310,000	Cat Ex Required	Jun-36	Dec-36		
	Obstruction Removal - Phase IIB, Property Access, and Land/Easement Acquisition Services	SA OT OB	58	$0	$0	$1,298,250	$1,298,250	$72,125		$72,125	$1,442,500	Short EA Required	Jun-36	Jun-37		
	Obstruction Removal, Phase III - Easement Acquisition	SA OT OB	58	$0	$0	$1,477,800	$1,477,800	$82,100		$82,100	$1,642,000	Short EA Required	Jun-36	Jun-37		
	Construct T-Hangars (Capital Budget)	*ST BD MS*	*41*	*$0*	*$0*	*$0*	*$0*	*$1,464,500*		*$1,464,500*	*$2,929,000*	*Cat Ex Required*	*Apr-36*	*Mar-37*		
2037				**$150,000**	**$0**	**$661,890**	**$811,890**	**$45,105**	**$0**	**$45,105**	**$902,100**				**$127,800.00**	**-$833,500.00**
	Rehabilitate Runway 13-31 - Phase I, Design	RE RW IM	83	$150,000	$0	$165,000	$315,000	$17,500		$17,500	$350,000	Cat Ex Required	Jun-37	Dec-37		
	Obstruction Removal, Phase IV - Design and Bidding	SA OT OB	58	$0	$0	$496,890	$496,890	$27,605		$27,605	$552,100	Short EA	Jun-37	Dec-37		
2038				**$150,000**	**$0**	**$10,976,610**	**$11,126,610**	**$618,145**	**$0**	**$618,145**	**$12,362,900**				**$127,800.00**	**-$683,500.00**
	Rehabilitate Runway 13-31 - Phase II, Construction	RE RW IM	83	$150,000	$0	$5,700,000	$5,850,000	$325,000		$325,000	$6,500,000	Cat Ex Required	Jun-38	Dec-38		
	Obstruction Removal - Phase V, Construction	SA OT OB	58	$0	$0	$5,096,610	$5,096,610	$283,145		$283,145	$5,662,900	Short EA	Jun-38	Dec-38		
	Prepare Airport Safety Management System (SMS)	PL MA MS	64	$0	$0	$180,000	$180,000	$10,000		$10,000	$200,000	Cat Ex Required	Jun-38	Dec-38		

Future Costs

This plan uses a number of techniques for projecting future project costs. All costs included in the short and mid-range are based on current cost estimates adjusted by 3% per year to account for year of expenditure.

For projects included in the long-range part of the plan, estimated costs from completed studies were used where available. All costs in the long-range section of the plan were calculated at present value and then inflated at a rate of 3% per year compounded. Since it is impossible to predict the actual year within long range plan in which a project will be completed, inflation rates were applied up to the mid-year within the time frame. This calculated to an inflation factor for the long-range projects of 1.7024 (3% inflation compounded and averaged over the 12-year period). As such, projects constructed in the first half of the range will probably be less costly than projected while those in the latter half will be more expensive.

In the Highway, Bridge and Transit Projects table, "line items" appear within the project lists. Each line item is discussed below. Where special cost estimating procedures have been used, it is noted.

- Future Expressway Maintenance – This item is set aside for major restoration project(s) on non-Interstate, limited access highways.
- Congestion Mitigation Program (CMAQ) Line Item – Projects will be based on recommendations from future updates of the Congestion Management Process (CMP) developed in accordance with the federal planning requirements.
- RATS Safety Line Item – Projects will be developed from safety studies conducted in accordance with the federal planning requirements and funded under the HSIP.
- Urban Line Item – Under an agreement between RATS and the Berks County Industrial Development Authority (BCIDA), these funds will be identified for use in support of regional economic development projects to be identified by the BCIDA. In the event that there are no pending projects, these funds may be reallocated to other federal-aid eligible projects to avoid their lapsing.
- RATS Transportation Alternatives Program Line Item – This item is intended to fund future projects developed through the Transportation Alternatives Program. Funds listed match those available under the Transportation Alternative Program over the life of this plan.
- Bridge Preventative Maintenance (PM) – This item sets aside funding for bridge work that does not involve a complete rehabilitation or replacement.
- Future Bridge Projects – This line item is intended to be used for bridge repairs that have not yet been identified in the bridge program.

Future Updates and Plan Implementation

Federal regulations require compliant LRTPs to be updated on a four-year cycle and must fully comply with all planning provisions. Based on these factors, this LRTP must be updated again by July, 2026 for the FFY 2027 program. Subsequent updates would then follow in four-year intervals or less.

It is important to note that once the plan is adopted, it is not a static document. As mentioned above, this plan must be regularly updated. During full updates, project schedules, costs and priorities will be reviewed and may change. In addition, supplements to this plan may be produced in the interim years. The supplements will report on pertinent information relating to plan assumptions, socio-economic and development issues, project status, and newly identified needs. References have been made throughout this document to ongoing planning efforts to identify projects to be funded by resources placed in the reserve line items. As needs are identified in the future, project priorities could be revisited as well. Significant changes in funding assumptions could also spark revisions to the plan.

Implementation steps for projects contained in the LRTP have been standardized on a statewide basis. Projects must either be specifically identified in the LRTP or generated from a program supported by the LRTP and move up to the MPO and State Transportation Improvement Programs as their priority increases. The project must also be included in the State Transportation Commission's Twelve-Year Program. Each project must follow PennDOT's project development process. This process includes documenting project need, identifying alternatives, evaluating alternatives against project need, assessing impacts to the built and natural environment and selecting the best alternative. As projects go through this process, some will drop out for a variety of reasons such as impacts being too great, lack of community support, or simply lack of funding. As successful projects meet these requirements, the funding for the project must be placed in the TIP, which serves as the local capital plan for transportation projects.

Inclusion of a project on either the LRTP or the TIP is not a commitment of funds, an obligation of funds, or a grant of funds. The time frame shown is the "best estimate" at the time of the plan development. Projects quite often cannot maintain the schedule included in the plan and need to be readjusted in later plan updates. Unforeseen problems may arise, such as engineering obstacles, environmental permit conflicts, a change in priorities, and additional financial constraints. These problems can slow a project, cause it to be postponed, or even dropped from further consideration.

Unfunded Projects

The Unfunded Projects table contains an extensive list of projects that have not been explicitly included in this plan. These serve as a basis for determining unfunded highway and transit capital needs. Some can be funded in future TIPs using the line item reserves. At the present time, many would remain unfunded but are used to help determine future needs to address the vision, goals and objectives of this plan. Inclusion on this list does not constitute a formal element of this plan. Projects on this list, by their very nature, do not fall under the financial constraint requirements. Additionally, these projects have not been evaluated for consistency with national air quality standards or budgets. As any of these projects move from this list to the formal plan, consistency with all federal and state requirements must be determined. All costs indicated are estimates in 2022 dollars. The actual cost of these studies or projects will be dependent on their placement in any future plan update.

Unfunded Highway, Bridge and Transit Projects (All Costs are Estimates in FFY 2022 Dollars) June, 2022		
INTERSTATE AND EXPRESSWAY IMPROVEMENTS		
PROJECT NAME	**MUNICIPALITY**	**Estimated Cost**
Interstate 78 / Grimes Interchange Closure	Bethel	$11,900,000
Interstate 78 / Midway Rd Interchange Upgrade	Bethel	$11,950,000
Interstate 78 / PA 419 Interchange Upgrade	Bethel	$11,950,000
Interstate 78 / PA 183 Interchange Upgrade	Upper Tulpehocken	$11,950,000
Interstate 78 Shartlesville Interchange Upgrade	Upper Bern	$11,950,000
Interstate 176 / PA 724 Interchange Reconstruction	Cumru	$18,000,000
US 422 West Shore Bypass Upgrade	Exeter	$56,300,000
PA 12 / PA 61 Interchange Upgrade	Muhlenberg	$93,800,000
PA 12 / PA 183 Interchange Upgrade	Reading	$44,400,000
	SUBTOTAL	**$272,200,000**
NEW / EXPANDED FACILITIES		
PROJECT NAME	**MUNICIPALITY**	**Estimated Cost**
PA 61 Widening (Tuckerton to SR 12)	Muhlenberg	$44,400,000
US 422 East Reconfiguration	Amity	$41,800,000
Crosstown Connector SR 422 to SR 562	Exeter	$23,900,000
	SUBTOTAL	**$110,100,000**
SAFETY PROJECTS		
PROJECT NAME	**MUNICIPALITY**	**Estimated Cost**
PA 12 @ PA 662	Ruscombmanor	$4,223,000
PA 183 Safety Improvements (SR 4016 to I-78)	Jefferson, Upper Tulpehocken	$12,065,000
PA 419 Safety Improvements (SR 422 to I-78)	Heidelberg, Marion, Tulpehocken, Bethel	$9,570,000
PA 562 Safety Improvements (SR 2021 to SR 73)	St. Lawr., Exeter, Amity, Earl, Douglass	$31,700,000
PA 568 Safety Improvements (SR 724 to SR 10)	Robeson	$10,200,000
PA 662 Safety Improvements (US 422 to SR 562)	Amity	$14,350,000
PA 662 Safety Improvements (US 222 to SR 61)	Richmond, Perry	$19,100,000
PA 724 Safety Improvements (SR 345 to Chester Co.)	Birdsboro, Union	$17,100,000
PA 737 Safety Improvements (US 222 to I-78)	Kutztown, Maxatawny, Greenwich	$23,900,000
SR 2033 Safety Improvements (US 422 to SR 562)	Exeter	$17,925,000
	SUBTOTAL	**$160,133,000**

Unfunded Highway, Bridge and Transit Projects (All Costs are Estimates in FFY 2018 Dollars) June, 2018		
MOBILITY, CONGESTED CORRIDORS AND ITS PROJECTS		
		Estimated
PROJECT NAME	**MUNICIPALITY**	**Cost**
PA 23 Corridor Study (Chester Co. to Lancaster Co.)	Caernarvon	$1,125,000
PA 23 Corridor Implementation	Caernarvon	$14,930,000
PA 100 Corridor Study (Montgomery Co. to Lehigh Co.)	Colebrookdale, Washington, Bally, Hereford	$1,690,000
PA 100 Corridor Implementation	Colebrookdale, Washington, Bally, Hereford	$48,165,000
PA 183 Widening - US 222 to SR 3051	Bern	$3,600,000
Rural ITS Coverage	Various	$3,600,000
SR 1010 Corridor	Ontelaunee to Topton	$23,900,000
SR 2011 (Heisters Lane) Widen to 4-lanes	Reading	$19,100,000
SR 2016 (Bellevue Ave) Widening - PA 61 to Mall Drive	Muhlenberg	$6,400,000
SR 3023 (State Hill Rd) Widening	Spring	$7,200,000
SR 3055 (Van Reed Road) @ Dwight Street	Spring	$3,600,000
	SUBTOTAL	**$133,310,000**
Bridge Projects		
		Estimated
PROJECT NAME	**MUNICIPALITY**	**Cost**
New Bridge on Krick Lane over NS RR	South Heidelberg	$8,450,000
All Unprogrammed SD State Bridges	Various	TBD
All Unprogrammed SD Local Bridges >20'	Various	TBD
	SUBTOTAL	**$8,450,000**
TRANSIT PROJECTS		
		Estimated
PROJECT NAME	**MUNICIPALITY**	**Cost**
Passenger Rail Service	Reading to Philadelphia	TBD
	SUBTOTAL	
	TOTAL	**$684,193,000**

TRAVEL DEMAND MODELING

Since 1997, the Berks County Planning Commission has been using a computerized Travel Demand Forecasting Model. The travel demand model estimates roadway volumes based on input demographic forecasts and expected changes to the transportation roadway network. Outputs from the travel demand model are used as inputs to an air quality model (MOVES2014) provided by the U. S. Environmental Protection Agency (USEPA). As an area with air quality concerns addressed by the Clean Air Act Amendments, Berks County must use these tools to ensure that future roadway projects do not further degrade air quality.

The travel demand model follows the basic "four-step" travel demand forecasting process and uses the Cube BASE (TP+) software platform. The model consists of 673 Traffic Analysis Zones (TAZ's), approximately 16,000 links, and approximately 9,000 nodes. The network contains attributes such as distance, number of lanes, area type, facility type, free flow speed, capacity of the lane, and location of traffic signals. TAZ attributes include household population, households, employment, school enrollments, and economic information.

The regional travel model was updated in 2015. The updates included enhancing the network and zone structure, and validating the model to a 2015 base year. Using the projected traffic volume data from the model, conditions were evaluated for all applicable future analysis years. All significant air quality projects from the TIP and LRTP were coded into the travel demand model.

Transit data was also generated as part of the travel demand model. Existing fixed transit routes and their associated attributes (i.e., stops, headways, fares, and speeds) are included within a transit subroutine. Ridership estimates generated by this subroutine are fed back into the model stream as part of the overall network processing.

Traffic forecasts were projected based on the socioeconomic and land use data projections developed by Berks County Planning Commission. This data includes total population, households, and employment. The travel model network and assigned traffic volumes are further processed to prepare the traffic inputs needed to run the MOVES2014a emission model. The results from the MOVES2014a emission model are used to ensure that planned roadway projects help the area attain air quality goals.

AIR QUALITY CONFORMITY

Air Quality Conformity

The Clean Air Act Amendments of 1990 (CAAA) mandate improvements in the nation's air quality. The CAAA directs the U.S. Environmental Protection Agency (EPA) to implement regulations that will provide for reductions in pollutant emissions. The Berks County area was originally designated under the CAAA as a moderate non-attainment area for ground level ozone. Ozone is a secondary pollutant, which means that it is not emitted directly into the atmosphere but, rather, is created by the reaction of several pollutants in the presence of sunlight. Oxides of Nitrogen (NOx) and Volatile Organic Compounds (VOC) are the two precursor pollutants that that take part in that reaction. Ground level ozone is an eye and lung irritant that has been shown to cause difficulties in the elderly, very young, and those with weakened respiratory systems.

1997 and 2008 8-hour Ozone NAAQS

The EPA published the 1997 8-hour ozone NAAQS on July, 18, 1997, (62 FR 38856), with an effective date of September 16, 1997. An area was in nonattainment of the 1997 8-hour ozone NAAQS if the 3-year average of the individual fourth highest air quality monitor readings, averaged over 8 hours throughout the day, exceeded the NAAQS of 0.08 parts per million (ppm). On May 21, 2013, the EPA published a rule revoking the 1997 8-hour ozone NAAQS, for the purposes of transportation conformity, effective one year after the effective date of the 2008 8-hour ozone NAAQS area designations (77 FR 30160). As of July 20, 2013, Berks County no longer needs to demonstrate conformity to the 1997 8-hour ozone NAAQS. However, future SIP revisions must address EPA's anti-backsliding requirements.

The EPA published the 2008 8-hour ozone NAAQS on March 27, 2008, (73 FR 16436), with an effective date of May 27, 2008. EPA revised the ozone NAAQS by strengthening the standard to 0.075 ppm. Thus, an area is in nonattainment of the 2008 8-hour ozone NAAQS if the 3-year average of the individual fourth highest air quality monitor readings, averaged over 8 hours throughout the day, exceeds the NAAQS of 0.075 ppm. Berks County was designated as a marginal nonattainment area under the 2008 8-hour ozone NAAQS, effective July 20, 2012 (77 FR 30088).

2015 8-hour Ozone NAAQS

In October 2015, based on its review of the air quality criteria for ozone and related photochemical oxidants, the EPA revised the primary and secondary NAAQS for ozone to provide requisite protection of public health and welfare, respectively (80 FR 65292). The EPA revised the levels of both standards to 0.070 ppm, and retained their indicators, forms (fourth-highest daily maximum, averaged across three consecutive years) and averaging times (eight hours). Under the Clean Air Act, the EPA administrator is required to make all attainment designations within two years after a final rule revising the NAAQS is published. However, the deadline for EPA to issue designations for the 2015 NAAQS for ozone passed on October 1, 2017. Once designations are final, transportation conformity would be required within 12 months for any areas designated nonattainment under the standard.

1997 Annual PM2.5 and 2006 24-hour PM2.5 Standards

The EPA published the 1997 annual PM2.5 NAAQS on July 18, 1997, (62 FR 38652), with an effective date of September 16, 1997. An area is in nonattainment of this standard if the 3 year average of the annual mean PM2.5 concentrations (for designated monitoring sites within an area) exceed 15.0 micrograms per cubic meter (µg/m3). Berks County was designated as a nonattainment area under the 1997 annual PM2.5 NAAQS, effective April 5, 2005 (70 FR 944).

The EPA published the 2006 24-hour PM2.5 NAAQS on October 17, 2006, (71 FR 61144), with an effective date of December 18, 2006. The rulemaking strengthened the 1997 24-hour standard of 65 µg/m3 (62 FR 38652) to 35 µg/m3 and retained the 1997 annual PM2.5 NAAQS of 15 µg/m3. An area is in nonattainment of the 2006 24-hour PM2.5 NAAQS if the 98th percentile of the annual 24-hour concentrations, averaged over three years, is greater than 35 µg/m3. Berks County was designated as attainment under the 2006 24-hour PM2.5 NAAQS, effective December 14, 2009 (74 FR 58688).

A redesignation request and maintenance plan applicable to the 1997 annual PM2.5 NAAQS was approved by EPA and effective December 22, 2014 (79 FR 76251). The maintenance plan includes 2017 and 2025 PM2.5 and NOX mobile vehicle emission budgets (MVEBs) for transportation conformity purposes.

Since the last conformity determination was completed, EPA took final action on the "Fine Particulate Matter National Ambient Air Quality Standards: State Implementation Plan Requirements" rule on August 24, 2016 (81 FR 58010 effective on October 24, 2016). In that rulemaking, EPA finalized the option that revokes the 1997 primary annual PM2.5 NAAQS in areas that have always been designated as attainment and in maintenance of that NAAQS. After revocation, areas no longer have to expend resources on CAA air quality planning and conformity determination requirements associated with the 1997 annual PM2.5 NAAQS.

2012 Annual PM2.5 Standard

The EPA published the 2012 annual PM2.5 NAAQS on January 15, 2013, (78 FR 3086), with an effective date of March 18, 2013. The EPA revised the annual PM2.5 NAAQS by strengthening the standard from 15 µg/m3 to 12 µg/m3. An area is in nonattainment of this standard if the 3 year average of the annual mean PM2.5 concentrations for designated monitoring sites in an area is greater than 12.0 µg/m3. On December 18, 2014, EPA issued final designations for the standard that were revised on April 7, 2015 (80 FR 18535). Berks County is designated in attainment of the standard and, as such, no longer has to perform emission testing for fine particulates.

Analysis Results

Transportation conformity analyses of the TIP and LRTP has been completed for Berks County. The analyses were performed according to the requirements of the Federal transportation conformity rule at 40 CFR Part 93, Subpart A. The analyses utilized the methodologies, assumptions and data as presented in previous sections. Interagency consultation has been used to determine applicable emission models, analysis years and emission tests.

Emission Tests

There are currently no approved SIP MVEBs for Berks County under 2008 8-hour ozone NAAQS. However, the County has an approved SIP revision establishing MVEBs under the 1997 8-hour ozone NAAQS. The MVEBs were originally approved on January 14, 2008 (73 FR 2162) and subsequently revised on March 31, 2014 (79 FR 17875). As required, the latest revised budgets are used for the ozone conformity test. The ozone conformity analysis has been conducted to evaluate emissions in comparison to the applicable ozone MVEBs summarized in **Exhibit 9**.

EXHIBIT 9: 8-HOUR OZONE MOTOR VEHICLE EMISSION BUDGETS

County / Pollutant	2009 Budget (tons/day)	2018 Budget (tons/day)
VOC	13.1	7.5
NO_x	29.0	14.9

Analysis Years

Section 93.119(g) of the Federal Transportation Conformity Regulations requires that emissions analyses be conducted for specific analysis years as follows:

- A near-term year, one to five years in the future.
- The MPO's horizon year for long range planning.
- All established MVEB years.
- Attainment year of the standard if within timeframe of the conformity analysis.
- An intermediate year or years such that if there are two years in which analysis is performed, the two analysis years are no more than ten years apart.

All analysis years were determined through the interagency consultation process. Exhibit 10 provides the analysis years used for this conformity analysis.

EXHIBIT 10: TRANSPORTATION CONFORMITY ANALYSIS YEARS

Analysis Year	Description
2025	Interim Year
2035	Interim Year
2045	LRTP Horizon Year

Regionally Significant Highway Projects

For the purposes of conformity analysis, model highway networks are created for each analysis year. Regionally significant projects from the TIP were coded onto the networks. Detailed assessments were only performed for those new projects which may have a significant effect on emissions in accordance with 40 CFR Parts 51 and 93. Only those projects which would increase capacity or significantly impact vehicular speeds were considered. Projects such as bridge replacements and roadway restoration projects, which constitute the majority of the TIP, have been excluded from consideration since they are considered exempt under 40 CFR 93.126-127. A list of highway projects is shown in **Attachment A**.

Analysis Results

An emissions analysis has been completed for the 2008 8-hour ozone NAAQS. **Exhibit 11** summarizes the Berks County ozone emission results for a summer weekday in each analysis year. All years are lower than the applicable conformity budgets established in the regional maintenance plan for the 1997 ozone NAAQS. A detailed emission summary is also provided in **Attachment B**. Example MOVES importer (XML) and run specification (MRS) files are provided in **Attachment C.**

The Following Table: Ozone Emission Analysis Results and Conformity Test (Summer Weekday)				
Pollutant	**2018 MVEB (tons/day)**	**2025 (tons/day)**	**2035 (tons/day)**	**2045 (tons/day)**
VOC	7.5	3.9	2.6	2.4
No_x	14.9	8.1	5.9	6.7
Conformity Result	n/a	Pass	Pass	Pass

Conformity Determination

Financial Constraint

The planning regulations, Sections 450.324(f)(11) and 450.326(j), require the TIP and LRTP to be financially constrained while the existing transportation system is being adequately operated and maintained. Only projects for which construction and operating funds are reasonably expected to be available are included. The RATS MPO, in conjunction with PennDOT, FHWA and FTA, has developed an estimate of the cost to maintain and operate existing roads, bridges and transit systems in Berks County and has compared the cost with the estimated revenues and maintenance needs of the new roads over the same period. The TIP and LRTP has been determined to be financially constrained.

Public Participation

The TIP and LRTP has addressed the public participation requirements as well as the comment and response requirements according to the procedures established in compliance with 23 CFR Part 450, RATS Public Participation Plan, and Pennsylvania's Conformity SIP. The draft documents were made available for a 30-day public review and comment period.

Conformity Statement

The conformity rule requires that the TIP and LRTP conform to the applicable SIP(s) and be adopted by the MPO/RPO before any federal agency may approve, accept, or fund projects. Conformity is determined by applying criteria outlined in the transportation conformity regulations to the analysis.

The RATS MPO TIP and LRTP are found to conform to the applicable air quality SIP(s) or EPA conformity requirements. This finding of conformity positively reflects on the efforts of the RATS MPO and its partners in meeting the regional air quality goals, while maintaining and building an effective transportation system.