

**2017-2020
Transportation Improvement
Program for Southwestern
Pennsylvania**

July 2016



Southwestern Pennsylvania Commission

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1. Introduction

The Southwestern Pennsylvania Commission (SPC) is the federally-designated metropolitan planning organization (MPO) responsible for the region's transportation planning process that supports the effective operations, maintenance and improvement of a regional transportation system, including the movement of people and goods, protection and enhancement of communities and the environment, and continuing development of the regional economy.

SPC's transportation planning area encompasses the ten counties of Southwestern Pennsylvania and their connection to points beyond the region. The planning process addresses transportation needs for roadways, bridges and public transportation; travel by automobile, truck, buses, trains, bicycle or walking; issues with traffic congestion and safety; and, access to work, school, shopping, recreation and, of course, our homes.

The Transportation Improvement Program (TIP) is one of the core products of SPC's cooperative, coordinated and comprehensive (3c) metropolitan transportation planning process. The 2017-2020 TIP for Southwestern Pennsylvania specifically identifies the region's highest priority transportation projects programmed for advancement over the next four years. The TIP includes a variety of transportation investments, including improvements made to the roadway system, public transportation, rail and other intermodal projects, as well as bicycle and pedestrian facilities. The TIP document is amended regularly to reflect the most current funding and project information and is updated comprehensively every two years.

The TIP represents a significant investment of public funding and is developed in accordance with federal and state legislation and guidance, which are discussed in Section 2, and with extensive input from the public and our planning partners. Projects identified in the TIP are funded in three basic ways: TIP Formula Funds, State Managed Programs, and Discretionary or Other Programs. The TIP is fiscally-constrained, indicating that anticipated revenues for the four-year TIP period are sufficient to fund the identified projects. When projects are funded through State Managed Programs or Discretionary or Other Programs, external program revenues are added to the TIP along with the project. Where noted, many discretionary projects are included in the TIP for planning purposes only (public review or air quality testing), but the original funding agency retains project management responsibility. The TIP Financial Summary table can be found in Appendix 3.

The region's transit agencies provide financial analyses that demonstrate their capacity to implement the budgeted programs. The included Transit Financial Capacity documentation certifies that the agencies have the financial capacity to deliver the projects identified in their programs without affecting current operations / service levels (Appendix 4).

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2. Transportation Program Planning Framework

Federal and state legislation provides much of the planning framework for the region's TIP development process, including statutory regulations and requirements, as well as funding levels and distribution formulas. Based on federal and state regulations, statewide planning partners have jointly developed financial and procedural guidance to support TIP development across the state's planning regions.

For the SPC region, *Mapping the Future: The Southwestern PA Plan* – the region's adopted long range transportation plan - provides additional program guidance consistent with federal and state legislation. *Mapping the Future* defines the policies, strategies, and overall vision for the region. The TIP is the primary implementation vehicle for *Mapping the Future*.

Federal and State Planning Framework

Federal and state legislation provides much of the planning framework and funding for the region's transportation program development process and the 2017-2020 TIP. The Fixing America's Surface Transportation (FAST) Act of 2015, the Clean Air Act of 1970, and the Civil Rights Act of 1964 provide substantial federal context for the region's transportation program. PA Act 120 (1970), PA Act 44 (2007) and PA Act 89 (2013) provide the legislative context for the state transportation program.

Federal Transportation Legislation

Federal metropolitan planning regulations ([23 CFR §450.324](#)) guide the development of the TIP as well as the documents that are required to demonstrate that the TIP is meeting the requirements of the Clean Air Act (Air Quality Conformity Determination), Title VI of the Civil Rights Act and other nondiscrimination statutes (Benefits and Burdens Analysis/Environmental Justice Report). With the adoption of the TIP, metropolitan planning organizations are required to self-certify that the metropolitan transportation planning process is being carried out in accordance with all of the applicable federal requirements ([23 CFR §450.334](#)). These requirements and how SPC is meeting them can be found in SPC's Self-Certification Resolution and Programmatic Checklist (Appendix 1).

FAST Act

The 2017-2020 TIP was developed in accordance with the FAST Act legislation, which was signed into law on December 4, 2015. The FAST Act is a five-year bill (2016-2020), which provides stable, long-term federal funding commitments over the life of the 2017-2020 TIP. The bill authorizes \$305 billion nationally in spending over the five-year period and also continues to emphasize performance-based planning and programming that was introduced in MAP-21.

Approximately 74% of the FAST Act's funding authorizations are for roadway and bridges (\$225 billion), 16% for transit (\$48.7 billion), 8% for other appropriations (\$24 billion), and 2% for motor carrier safety (\$7 billion). These authorizations represent a 15% increase nationwide over funding levels in MAP-21.

The FAST Act retains the majority of the highway program structure from MAP-21, but also adds flexibility to a number of the core federal funding programs. The changes to the structure of the highway program include:

- National Highway Performance Program (NHPP): funds can now be expended on non-National Highway System (NHS) bridges on the federal-aid system.
- Surface Transportation Program (STP): renamed as the Surface Transportation Block Grant Program (STBGP), the population based sub-allocation (STP-Urban) will be increasing by one percent per year from 51% of the total STBGP funds in 2016 to 55% of the funds in 2020.
- Transportation Alternatives Program (TAP): the TAP program is being folded into the STBGP and renamed as an "STBGP set-aside" and up to 50% of the sub-allocated portion of the STBGP set-aside can be transferred for broader STBGP eligibilities.
- National Highway Freight Program: new program, distributed by highway apportionment formula to the states to fund freight improvements on the NHS.

The FAST Act also includes funding for Bus Rapid Transit (BRT) in the Small Starts program and a new component to the new Bus and Bus Facilities that includes competitive funding for no/low emissions buses.

The Clean Air Act

The Clean Air Act establishes National Ambient Air Quality Standards (NAAQS) and assigns certain responsibilities to state and local governments to meet these standards. The U.S. Environmental Protection Agency has promulgated transportation conformity regulations to address Clean Air Act requirements. SPC is responsible under these regulations for testing its long range plan and TIP to ensure that these programs will not deteriorate regional air quality. A summary of SPC's conformity process and findings are presented in a later section of this report, and are explained in detail in the Air Quality Conformity Determination for the 2017-2020 TIP.

Civil Rights Act and Environmental Justice

The 2017-2020 Transportation Improvement Program Environmental Justice Report documents that no identifiable population segment or geographic areas are disproportionately benefitted (served) or burdened (disrupted and/or inconvenienced) as a result of the proposed transportation investments in the 2017-2020 TIP.

State Transportation Legislation

PA Act 120 of 1970 established the State Transportation Commission and requirements for a PA Twelve Year Transportation Program. PA Act 44 of 2007 established a number of state programs, including several of the current transit programs. PA Act 89 was enacted in November 2013 as a state multimodal funding measure.

Act 89 allocated additional revenues to metropolitan and rural planning regions in the state highway and bridge programs. The significant highway and bridge increases also enabled a transfer to the transit programs of Act 44 (former) highway/bridge monies. Act 89 also had a substantial impact on program design for State Managed Programs such as the Interstate Program and the Secretary's Discretionary Highway (Spike) Program.

Generally, Act 44 transportation revenues are generated by Turnpike Commission tolls and are used to support state transit programs. Act 89's other state revenue increases support the expanded state highway and bridge programs.

Over the years, separate federal- and state-legislated program requirements have been aligned such that a single planning process meets the requirements of both federal and state transportation programs.

Federal and State Transportation Funding Programs

Federal and state transportation programs can be separated into three basic categories, depending on the project selection processes used to identify projects for inclusion into the TIP: TIP Formula Funds, State Managed Programs and Other Discretionary Programs.

TIP Formula Funds

Multiple federal and state programs provide funding to statewide planning regions (large urban, small urban, rural). This formula funding is distributed to metropolitan and rural regions based on defined needs-based formulas and criteria. Regional planning agencies manage these funds through their regional TIPs using established planning processes. Funding sources can be either federal or state, highway or transit programs. Pennsylvania's 2017 Transportation Program Financial Guidance further describes these programs and funding formulas.

SPC manages the TIP development process for the ten-county Pittsburgh Transportation Management Area, including performance-based project evaluation and selection decisions for these TIP Formula Funds. State formula funding includes the State Highway and State Bridge categories, and federal funding programs that are distributed through regional TIPs include:

- National Highway Performance Program (NHPP)
- Surface Transportation Block Group Program (STP)

- Surface Transportation Block Group Program-Urban (STU)
- Surface Transportation Block Group Program Set-Aside (TAP)
- Congestion Mitigation and Air Quality Program (CMAQ)
- Highway Safety Improvement Program (HSIP)
- Off System Bridges (BOF)

There are several categories of federal formula funding for public transportation, the largest of which is the Section 5307 urban area program. Many of the region's transit operators qualify for this funding and use it for capital improvements such as buses, stations and maintenance facilities. Some small urban transit operators are authorized to use a portion of this funding for transit operating assistance. Section 5307 funding is allocated to the urban area. The transit agencies that serve the Pittsburgh and Monessen urbanized areas agree to share this funding through a formula administered by SPC that closely parallels the federal formula, but also accounts for maintenance of the busway network. Federal formula funding requires a 20% non-federal match, most of which is provided by the Commonwealth, along with a local contribution.

Federal rural area funding—Section 5311—is administered directly by PennDOT on a statewide basis.

State Managed Programs

There are several programs that utilize state and federal funds that are managed in PennDOT's Central Office in Harrisburg. PennDOT shares project information with the regional planning partners for public information purposes, but makes project selection and management decisions. Projects are then included in the SPC TIP. These include the Interstate Maintenance (IM) Program, which identifies and prioritizes improvements to the Interstate Highway system. These projects are often significant investments and are of statewide or national significance. Other programs managed from PennDOT Central Office include the Railway-Highway Safety Crossing Program (RRX), statewide Highway Safety Improvement Program (HSIP) and the statewide Transportation Alternatives Program (TAP.) Both the HSIP and TAP have state components that parallel formula-funded programs managed at the regional level. A new National Highway Freight Program, established by the FAST Act, will also be managed at the state level.

The [Pennsylvania Rapid Bridge Replacement Program](#) (RBR), a Public Private Partnership (P3) approved in PA Act 89, is a statewide initiative intended to address Pennsylvania's 4,000 structurally deficient bridges. The Rapid Bridge Replacement (RBR) program will be funded as a statewide program for the first two years of the 2017-2020 TIP. For the second two years of the 2017-2020 TIP, the statewide program will cover 50% of the costs of the RBR Program with the remaining 50% coming from each region's formula funding based on the percent share of RBR associated bridge deck in their area. The source of the regional share is split evenly between state bridge funding and state highway (capital) funding. These funds are deducted from each

region's formula distribution and are reserved in a separate item for the statewide program. The SPC region's funding deduction for the RBR is \$9.68 million in both Fiscal Years 2019 and 2020 for a total regional reservation of \$19.36 million. The RBR program will replace 193 structurally deficient bridges in the SPC region over the next four years.

PennDOT maintains a discretionary program: the Secretary's Discretionary Highway Program, commonly known as the "Spike Program" that is funded through a combination of set-asides from the NHPP, STP and State Highway/Bridge funding categories. The Pennsylvania Secretary of Transportation makes project selection decisions, but projects are managed through the regional transportation programs. The Spike Program increases PennDOT's capacity to address projects that can be difficult to fund within a region's allocation of TIP Formula Funds. Project selection is based on asset management principles with a priority on pavement and bridge preservation, and fixing poor pavements and structurally deficient (SD) bridges.

The Interstate Maintenance (IM) Program project lists are found in Appendix 7. The statewide funding levels for these programs are outlined in Pennsylvania's 2017 Transportation Program Financial Guidance.

Other Discretionary Programs and Private Funding

Along with the longstanding federal TIGER discretionary funding program, which is funded for \$800 million nationwide in FY2016, the FAST Act introduced two new federal discretionary funding programs. The Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) Program provides financial assistance to freight and highway projects of national or regional significance. The FASTLANE Program is authorized for \$4.5 billion over the life of the FAST Act. The \$800 million authorization for federal fiscal year 2016 grows steadily to \$1.0 billion in 2020. Additionally, the FAST Act also introduced the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Program. The ATCMTD Program was established to make competitive grants for the development of model deployment sites for large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment. The program is authorized at \$60 million per year through 2020 nationwide.

The program funding sources for these projects are typically distinct from regular TIP or State Discretionary funding sources. Program cycles may be separated from the TIP cycle or may be irregular, active only on the occasion that funding becomes available. As with other discretionary funding, the projects generally appear in the TIP as planning information, except when noted. The SPC TIP does not manage the funding program. SPC updates project information only as new status reports are received from the project managers.

As illustrated in Appendix 3 (TIP Financial Summary), there are two federal earmark projects totaling \$1.8 million in federal earmarks that are currently being delivered. This funding is

separate from U.S. DOT's recently issued guidance to repurpose approximately \$2 billion in unused earmarks, nationwide. Preliminary estimates show that there are approximately \$22 million in unused earmarks in the Southwestern Pennsylvania region is under review. SPC will amend the TIP when projects are identified for this repurposed funding.

Also listed for illustrative purposes in Appendix 3, is the funding for the Pennsylvania Turnpike Commission (PTC), and local or privately-funded projects.

Appendix 8 includes a listing of the all of the PTC capital maintenance projects and descriptions of PTC expansion projects, as well as projects funded through other discretionary programs and local or private funds.

Pennsylvania's 2017 Transportation Program Financial Guidance/General and Procedural Guidance

Pennsylvania's Planning Partners – MPOs, RPOs, FHWA, FTA, the State Transportation Commission and PennDOT-- collaborate in the development of the Financial Guidance and the General and Procedural Guidance, establishing a framework for the statewide TIP development process. This guidance includes useful background information, policies established for use by the partners in the development of regional transportation programs, and program assumptions.

The General and Procedural Guidance identifies the purpose of the planning program and the roles and responsibilities of various intergovernmental planning partners. It also identifies the procedures necessary in developing a TIP that is consistent statewide for the formation of the Statewide Transportation Improvement Program, commonly known as the STIP.

Pennsylvania's 2017 Transportation Program Financial Guidance describes the procedures and formulas for distributing financial allocations of available federal and state transportation funding. It identifies set-asides for State Managed and State Discretionary Programs, as well as develops funding formulas and distribution tables allocating funding to metropolitan and rural planning organizations. Where program funding is allocated by formula, the guidance identifies the weighted criteria and their usage. Several federal and state discretionary programs are also identified along with general provisions for their use. Projects introduced by the Pennsylvania Turnpike Commission are separate from TIP Formula Funds, State Managed Programs or Discretionary Programs.

SPC's Long Range Transportation Plan

Federal law requires that each MPO develop a regional long range transportation plan with at least a 20-year horizon. *Mapping the Future: The Southwestern PA Plan* was developed and adopted on June 29, 2015 as the region's official long range transportation plan for

Southwestern Pennsylvania. *Mapping the Future* sets the overall long-term vision for the region:

“Transportation and land use that supports and enhances the regional economy and the communities within it.”

Mapping the Future includes 16 regional policy goals designed to emphasize mutually supportive regional activities, places and connections. The long range transportation plan forms the foundation of all of the plans and programs undertaken at SPC. The TIP is the main implementation vehicle for the long range transportation plan.

Mapping the Future continued to place an emphasis on investing in the maintenance and preservation of existing transportation system assets; a theme that is clearly articulated as the top priority in the 2017-2020 TIP. Other significant investments are made in safety and operations, as well as improvements that foster economic growth, enhance livability and connectivity in communities throughout the region, and provide sustainable, multimodal transportation choices.

Mapping the Future represents significant progress in implementing performance-based planning and programming. The plan, through a rigorous public involvement process, developed 40 performance measures that track a wide range of indicators across four categories: Safety and Reliability, Maintenance, Economy, and Community. As discussed in Section 5: Implementing the Regional Vision, this TIP makes significant investments in addressing structurally deficient bridges (which was identified by survey respondents as the number one priority for investment in *Mapping the Future*), providing safe reliable public transportation, and upgrading/modernizing the regional Interstate System. Other significant investments are made in safety and operations improvements, as well as the provision of bicycle and pedestrian facilities, also identified as top regional goals in the long range transportation plan.

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3. Regulatory Compliance

As part of the TIP development process, MPOs are responsible for reviewing their transportation planning processes to ensure they are being carried out in accordance with all applicable federal requirements, and that local processes to enhance the participation of the general public, including the transportation disadvantaged, have been followed in the development of the TIP and long range transportation plan update. SPC has conducted this process review and included a Self-Certification Resolution and a Programmatic Checklist to certify the transportation planning process (Appendix 1).

Federal Clean Air Act Requirements

The U.S. Environmental Protection Agency (EPA) has designated several areas within Southwestern Pennsylvania that are not in attainment of one or more National Ambient Air Quality Standards (NAAQS). The designated nonattainment and maintenance areas in the region include:

- PM₁₀ (1987 NAAQS – one designated area – five municipalities within Allegheny County)
- Carbon monoxide (1971 NAAQS – one designated area – City of Pittsburgh’s Central Business District and certain other high traffic density areas in and near the City’s Oakland neighborhood)
- Ozone (2008 8-hour NAAQS – one designated area covering seven of the ten counties within SPC’s planning area)
- PM_{2.5} (1997 Annual NAAQS – three separate areas that, combined, cover five entire counties and parts of four other counties within SPC’s planning area)
- PM_{2.5} (2006 Daily NAAQS – the same three areas designated nonattainment for the PM_{2.5} 1997 annual NAAQS)
- PM_{2.5} (2012 Annual NAAQS – one designated area covering all of Allegheny County)

A companion document to this report, the Air Quality Conformity Determination for the Pittsburgh Transportation Management Area, documents the process used by SPC for making the transportation-related conformity determination for the TIP and long range transportation plan. It also demonstrates that SPC’s adopted transportation plans, programs, and projects within each nonattainment and maintenance area conform to the provisions of the federal Clean Air Act and the applicable criteria and procedures of the Transportation Conformity Rule.

Environmental Justice

Executive Order 12898 mandates federal agencies to incorporate environmental justice (EJ) analysis in their policies, programs and activities. Building from the framework of Title VI of the Civil Rights Act of 1964, which ensures nondiscrimination in federal programs, EJ directives address how low-income and minority populations are affected by the actions of the federal

government. In their publication, *An Overview of Transportation and Environmental Justice*, the U.S. Department of Transportation (U.S. DOT) outlines their three main objectives stemming from this mandate:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
- Prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations.

SPC prepares a Report on Environmental Justice as a companion document to the TIP report. The report summarizes multiple analyses, outcomes and activities that are part of the region's planning process, including both a participatory component and a technical component. A review of SPC's public outreach and opportunities for the residents of the Southwestern Pennsylvania region to participate in transportation planning is included in this report, with further information detailed in SPC's Public Participation Report. The report also evaluates the distributive effects of the 2017-2020 TIP by assessing the geographic distribution of the benefits and burdens of the regional transportation system to low-income and minority populations.

TIP Fiscal Constraint / Transit Financial Capacity

Federal regulations require a fiscally-constrained transportation program (23 CFR Part 450.324 and FTA Circular 7008.1A). There must be a reasonable expectation that sufficient revenue (federal, state and local matching funds) will be available to cover the total cost of projects identified in the TIP. Pennsylvania's 2017 Transportation Program Financial Guidance identifies for multiple federal and state funding sources the amounts expected to be available in the 2017-2020 TIP. Regarding local funding, project sponsors must document funding sources for projects and phases proposed for TIP years 1 and 2 before they can be considered as TIP candidates.

Fiscal constraint for the Highway Component of the TIP is reviewable at the state level in the State Transportation Improvement Program (STIP). A financial summary of the fiscally-constrained SPC Highway Program is presented in Appendix 3.

Transit guidance requires sponsors of local transit projects to determine their financial capacity to undertake projects involving the acquisition, operation and maintenance of facilities and equipment partially funded by the federal government, and that such improvements can be managed in addition to operating and maintaining the existing transit system. Transit service providers in the SPC region document this financial capacity in Appendix 4. Transit project sponsors use SPC's public participation process as the required public comment period for their financial capacity documents.

Public Participation

The SPC public participation process is detailed in its Public Participation Plan. Documentation of public outreach activities associated with development of the 2017-2020 TIP is included in the TIP Public Participation Report, which is produced upon conclusion of the public comment period. For the 2017-2020 TIP, this public comment period was held May 4th to June 3rd, 2016. The Public Participation Report includes the public meeting schedule and meeting locations, and copies of public advertisements identifying provisions for persons with disabilities and/or needs related to sight, hearing or language. The report also includes a summary of the public comments submitted, SPC's response to these comments and the full text of all written and electronic comments received through the public participation process.

The materials presented for public review included The Draft 2017-2020 Transportation Improvement Program, and two companion documents: the draft Air Quality Conformity Determination for the Pittsburgh Transportation Management Area; and the draft Benefits and Burdens Assessment (Report on Environmental Justice). Also included was an Amendment to the region's transportation plan, *Mapping the Future: The Southwestern PA Plan*, to reflect project phasing and cost information included in Draft 2017-2020 TIP. This complete set of TIP resources was available for review on the SPC website (www.spcregion.org), at SPC's offices, through member planning agencies and at many public libraries across the region. A list of libraries participating in SPC's public document review network is available in SPC's Public Participation Plan.

On an ongoing basis, SPC also conducts targeted outreach to groups serving persons with disabilities, public transportation-dependent populations, and other groups with particular transportation needs (elderly, low-income groups). Public Participation Panels and member planning departments are instrumental in providing referrals for the additional outreach.

TIP Modification Procedures

The transportation program must be responsive to necessary programming changes after TIP adoption in order to ensure that scarce public resources are being utilized to their fullest extent. Changes to the TIP are enacted through the STIP MOU (State TIP Memorandum of Understanding), and SPC's TIP Modification Procedures, adopted at both the regional and state levels. The SPC TIP Modification Procedures and STIP MOU are included in Appendix 2. A process flow diagram is also provided to help project sponsors determine how specific modification requests will be administered. These modification requests are processed through SPC's Transportation Technical Committee (TTC) and the Transit Operators Committee (TOC).

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4. Transportation Improvement Program Development Process

The 2017-2020 TIP is the culmination of a continuing, comprehensive and cooperative planning process involving the public, SPC member governments and planning partners, PennDOT, transit providers and other interested parties. This process has produced a fiscally-constrained, prioritized list of transportation improvement projects and strategies that advances the Regional Vision and policy goals of *Mapping the Future: The Southwestern PA Plan* as well as the PennDOT Twelve Year Program (TYP). The TIP is the first four-year period for both the TYP and LRTP. Projects are funded by phase, often over multiple years; in order maximize limited financial resources.

Carryover Projects

The preliminary TIP is developed using a process where projects that were initiated but not fully completed in the preceding TIP have first priority for funding in the draft TIP. The cost of advancing each of these continuing projects is updated and, if funding is available, the full costs for completing the subsequent project phase(s) are provided for in the TIP. A review is performed to ensure project sponsors do not carry over to the next TIP any project that is no longer a priority and that the cost and schedule for the carryover project is realistic. Projects are reviewed to ensure that the local match is available. Project sponsors may voluntarily drop lower-priority projects from the program to create capacity to cover cost increases for other existing projects or to add a new higher-priority project.

New Candidate Roadway and Bridge Projects

In each TIP update, a large number of candidate transportation projects are proposed to SPC for inclusion in the program. These candidate projects come from public input, our members, the region's long range transportation plan, other SPC planning efforts such as Road Safety Audits and corridor studies, as well as other sources such as the TYP, PennDOT District plans, local capital improvement plans, county comprehensive plans and related studies, etc. The region's planning partners, through regional TIP Workgroup meetings (4 held in each PennDOT District and one regional meeting), screen the new proposals to assure consistency with the long range transportation, determine if they advance the long range transportation plan's Regional Vision, policy goals and performance measures, and whether they satisfy relevant funding program requirements.

The 2017-2020 TIP was developed in conjunction with the PennDOT Twelve Year Program. Early in the development process, the Pennsylvania State Transportation Commission (STC) developed a web based public survey mapping tool that allowed the public to place comments

and project ideas (grouped by type of project) at specific locations on a map, as well as to rank their top 5 priorities in terms of investment categories. The top five categories mirrored that of the top priorities found in *Mapping the Future* (Bridge and Pavement Condition, Safety Public Transportation and Biking/Walking). This survey yielded over 2,000 pieces of input for the Southwestern Pennsylvania region. This input identified areas that are in need of routine maintenance; suggestions to remedy operational issues such as traffic signal timing; changes to address larger, non site specific policy issues; and, location specific capital improvements. In locations where the transportation issues could be addressed through PennDOT, county or municipal maintenance activities, comments were forwarded to the respective owner of the infrastructure. For input related to capital improvement needs, SPC staff evaluated each one of the comments, with support from each of the respective PennDOT District TIP Workgroups, for possible projects to include in the TIP. There were 18 candidate projects that came from public comment, 7 of which were carried forward and found to be consistent with SPC, county and PennDOT priorities and are included in the 2017-2020 TIP.

Roadway and bridge projects are prioritized and recommended for inclusion into the fiscally-constrained program based on a number of factors such as bridge and pavement condition, safety factors and data from the SPC Congestion Management Process, as well as considerations on how well each project advances the long range transportation plan and addresses established performance metrics.

For a detailed illustration of the TIP development process, refer to Figure 1, the TIP Process Flow Diagram.

SPC's Transportation Technical Committee (TTC) reviews the project lists and recommends them for inclusion into the TIP for approval by the Commission. Frequently, large or complex projects or specific project phases are deferred to subsequent TIPs or cash-flowed over several years due to limited fiscal capacity.

Transit Projects

SPC's Transit Operators Committee (TOC) member transit service providers generate project requests within the fiscal limits of separate urban and rural financial program guidance for each respective agency. The TOC compiles and reviews project submissions that are included in the TIP for approval by the Commission. Urban program guidance is provided through a special work group that reports to the TOC. The work group translates Pennsylvania's 2017 Transportation Program Financial Guidance for urban program formula funding (Section 5307) into agency-specific estimates that are useful in preparing urban operating budgets and capital project lists. Rural Section 5311 budgets for individual rural transit service providers are determined by the PennDOT Bureau of Public Transportation (BPT) and transmitted directly to the rural providers.

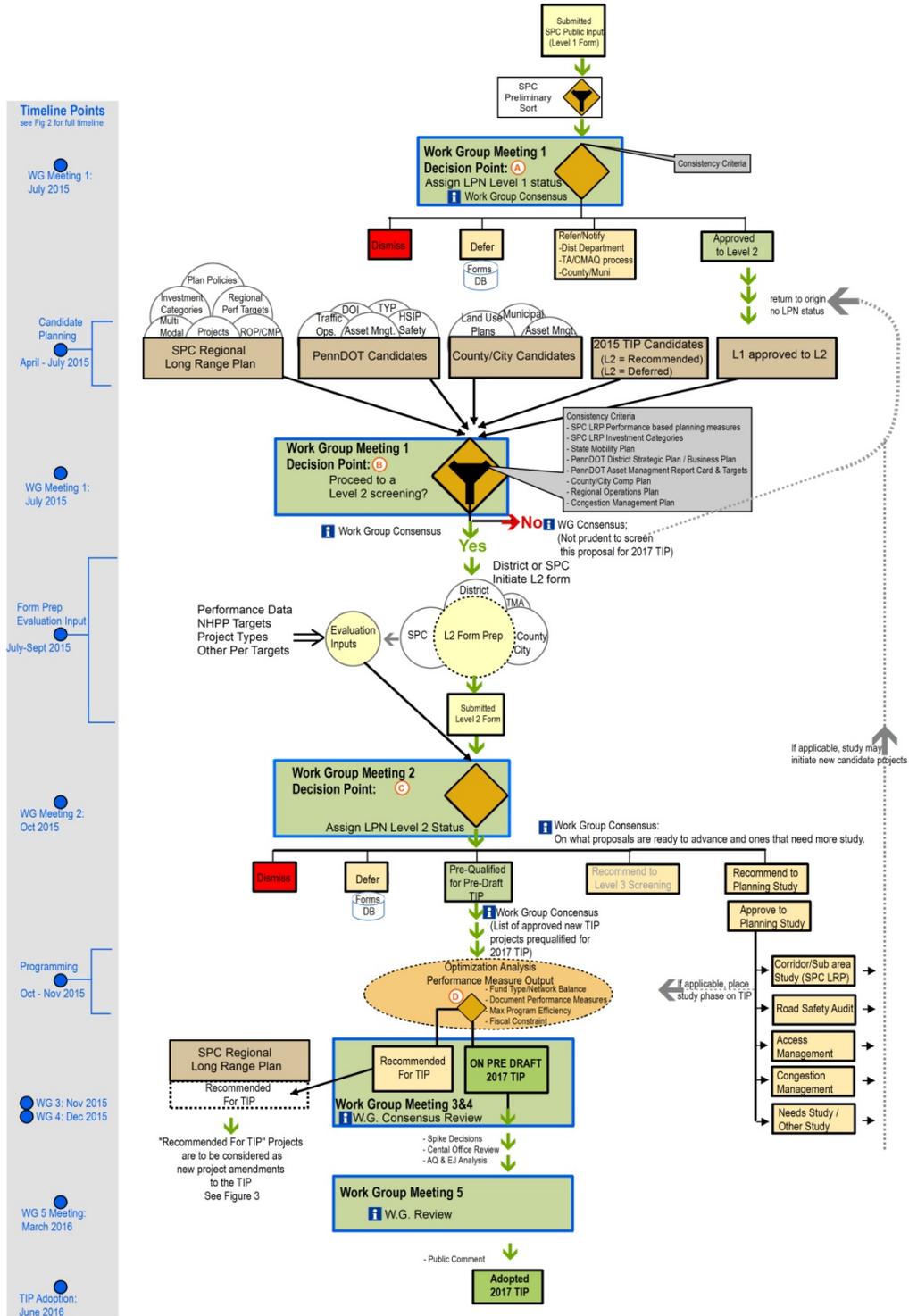
For eligible transit projects competing for highway program funding, the TTC selects the projects or line items and recommends them to the Commission for approval.

Each project also includes a proposed amount of state matching funds and local agency share. The BPT manages the final project selection by deciding the level of state funding to commit to each identified project. The Public Transportation Program projects are listed in Appendix 6.

Figure 1

2017 TIP Update: Process Flow Diagram
 SPC Region
 (Work Group Meetings 1 - 5)

6/11/15



SPC Competitive Funding Programs

In addition to the project prioritization and selection that takes place during the TIP Workgroup meetings for roadway and bridge projects, SPC conducts its own competitive funding processes for its regional allocations of federal Congestion Mitigation and Air Quality (CMAQ) and Transportation Alternatives Program (TAP) funding. Similarly, SPC reserves a portion of its STP-U funding to support the Livability through Smart Transportation (SMART) Program. The programmatic requirements as well as project evaluation and selection procedures are detailed in each respective program's guidelines. Once program recommendations are made, the SPC Transportation Technical Committee endorses project lists for each program to be included in the draft TIP.

For the 2017-2020 TIP, SPC staff was responsible for evaluating the technical aspects of the candidate projects in each competitive funding program, while each respective program committee (CMAQ/TAP/SMART) was responsible for evaluating the deliverability of the candidate projects. This was carried through all of SPC's competitive funding processes. Decision Lens™ (decision support software, licensed through PennDOT) was used in order to dynamically evaluate the projects to determine which projects provide the best return on investment metrics and advance the Regional Vision and policy goals of *Mapping the Future: The Southwestern PA Plan*.

All of the projects selected in SPC's competitive funding programs are included in the Highway Program project list (Appendix 5).

Congestion Mitigation and Air Quality (CMAQ) Program

Projects programmed for Congestion Mitigation and Air Quality (CMAQ) funding were evaluated and recommended through the CMAQ Evaluation Committee (CEC). An open call for projects was held in the fall of 2015. The process (as described in the CMAQ Program Guidance) used a number of air quality related performance-based metrics to analyze project benefits as well as other factors to gauge a project's consistency with adopted SPC plans and policies. The CEC includes representatives from SPC's standing committees (Transit Operators Committee and Transportation Technical Committee) local air quality regulatory agencies, pedestrian-bicycle interests, freight industry representatives, and the region's Transportation Management Associations (the Pittsburgh Downtown Partnership, Oakland Transportation Management Association, and Airport Corridor Transportation Association). The CEC solicited, reviewed and prioritized candidate projects proposed for CMAQ funding.

Transportation Alternatives Program (TAP)

An open call for projects was held in the fall of 2015 for the 2017-2018 SPC Transportation Alternatives Program (TAP). For the first time, SPC developed a program separate from that of the Commonwealth. Similar in structure to the CMAQ program, the process (as described in the

TAP Program Guidance) used a number of performance-based metrics to analyze multimodal benefits to communities and the region as a whole, by connecting community activity centers, public transportation and recreational facilities to the communities in which they serve. As in the CMAQ process, other factors were considered in order to evaluate each potential project's consistency with adopted SPC plans and policies. SPC's Transportation Technical Committee participated in the evaluation of these projects.

Livability through Smart Transportation (SMART) Program

The SMART Program also used a similar methodology and structure as the CMAQ and TAP processes. A call for projects for this program was held through the city and county planning departments in the spring of 2016. The process (as described in the SMART Program Guidance) utilized a number of metrics designed to select projects that increase the livability and sustainability of the region through encouraging partnering with both public and private stakeholders and coordinating land use and transportation planning. As in the CMAQ and TAP processes, other factors considered each potential project's consistency with adopted SPC plans and policies. Projects selected for 2017-2018 SMART funding will be amended into the TIP after projects are selected, before the beginning of Federal Fiscal Year 2017.

TIP Approval

At the conclusion of a required 30-day public comment period, all comments will be documented, reviewed and responded to by SPC staff. During the Southwestern Pennsylvania Commission's regularly scheduled June 2016 meeting, a public hearing will be held and SPC will consider the 2017-2020 TIP and its companion documents for approval. Once the TIP has been approved at the regional level, it is submitted to PennDOT for approval by the Governor, as well as to the U.S. DOT. Federal regulations also require that the regional TIP be incorporated into a state TIP (or STIP), which is a compilation of projects from throughout the Commonwealth. As discussed in the previous section, as project schedules and cost estimates change, SPC makes adjustments in the TIP periodically through the Transportation Technical Committee and Transit Operators Committee. This ensures that the region's limited federal and state funding is being used to the fullest extent.

5. Implementing the Vision

Since the enactment of MAP-21 in 2012, Pennsylvania and its MPO and RPO planning partners have been on the forefront of developing robust, data-driven, performance-based planning programs that are used to inform and monitor investment strategies and priorities. Examples of these types of programs can be found across the state, including the Congestion Management Process; operations and safety planning; asset management planning; and, multimodal project selection/prioritization methodologies.

With an extensive peer and stakeholder outreach component, SPC developed a set of performance measures that are clear, concise and represent indicators that monitor the attainment of the shared Regional Vision developed during its Project Region scenario planning initiative, which is outlined in *Mapping the Future: The Southwestern PA Plan*. Scenario planning explores alternative land use and transportation investment strategies and the impacts and trade-offs in each scenario. This extensive scenario planning process evaluated trends and alternative scenarios for regional development with policy level goals and strategies to achieve a **Regional Vision for Transportation and land use that supports and enhances the regional economy and the communities within it.**

Mapping the Future includes 16 regional policy goals designed to emphasize mutually supportive regional activities, places and connections. The region's long range transportation plan forms the foundation of all of the plans and programs undertaken at SPC. The TIP is the main implementation vehicle for the long range transportation plan.

MAP-21 established seven national performance goals:

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

As discussed above and in Section 2: Transportation Planning Framework, *Mapping the Future: The Southwestern PA Plan*, the region's long range transportation plan, developed the framework for performance-based planning and programming in the SPC region. This framework, based on the seven national performance goals and input from a rigorous public involvement process, established the basis for gauging performance of the 2017-2020 TIP. Additional performance guidance from PennDOT set targets for the amount of investment to be dedicated to state-owned structurally deficient bridges (both by deck area and count) as well as pavement condition on the National Highway System.

In order to ensure the TIP, the primary mechanism that advances the Regional Vision and policy goals of *Mapping the Future*, is working to advance the aspirations of the region; all new candidate projects (440 in total) that were considered for inclusion into the 2017-2020 TIP were screened against regional performance measures relating to transportation investments. It is evident that the 2017-2020 TIP makes significant investments in the same functional areas that the long range transportation plan identified as top priorities for the region, thereby establishing a direct link between long range planning and short term programming for Southwestern Pennsylvania.

This section will demonstrate how investments made in the 2017-2020 TIP directly work to implement *Mapping the Future* by correlating investments and performance metrics to specific regional policy goals as they relate to the seven national performance goals.

Safety

Mapping the Future Policy Goal

1. Transportation and development choices will reflect a priority on safe and secure multimodal and intermodal networks for both people and goods.

Implementation

A significant investment (\$440 million) will be made to make the region's roadway system safer for all users over the life of the 2017-2020 TIP. These improvements include upgrades such as ADA accommodations (\$8 million); at-grade railway crossing upgrades (\$8.3 million); intersection and interchange improvements (\$164.2 million); roadway realignments (\$85.4 million); and, landslide remediation (\$27.2 million). Additionally, there are 10 safety projects (\$23.6 million) programmed in designated High Crash Corridors throughout the region. Specific examples of safety improvements in the region include:

- Freedom Road Realignment and Reconstruction (Beaver County)
- U.S. 422 Wray Road Cut Realignment (Armstrong County)
- I-376 Banksville Interchange Upgrade (City of Pittsburgh)
- U.S. 119 McClure Road Intersection Improvements (Fayette County)

The aforementioned safety projects are in addition to the region's dedicated allocation of Highway Safety Improvement Program (HSIP) funding. The region receives approximately \$9 million per year in HSIP funds. Projects are selected yearly via a cooperative process between PennDOT, SPC and its planning partners. In order to receive HSIP funding, projects are rigorously evaluated based on expected safety benefit and historic crash data.

Infrastructure Condition

Mapping the Future Policy Goals

1. Maintenance of the existing transportation system will be a regional priority.
2. Revitalization and redevelopment of the region's existing communities is a priority.

Implementation

Investment in maintaining the region's existing infrastructure is the top priority in the region's long range transportation plan, as well as PennDOT's 2017-2020 TIP Investment Plan. Maintaining the existing system is the top priority in the 2017-2020 TIP for Southwestern Pennsylvania. Investing in existing infrastructure promotes sustainability in terms of long-term system preservation and also reinforces SPC's commitment to revitalizing the region's existing communities to promote growth and economic development.

Over 47% (\$789 million) of the region's \$1.67 billion in TIP funds are invested in reducing the number of structurally deficient (SD) bridges and the square footage of SD deck area in Southwestern Pennsylvania. This investment in the region's bridges will reduce the number of SD bridges by 183 bridges, reduce the square footage of SD bridge deck area by 529,432 square feet, and reduce the number of weight posted bridges by 10%. An additional 129 SD bridges, reducing SD deck area by another 857,702 square feet will be in various stages of project development in the 2017-2020 TIP, to be completed in the 2019-2022 TIP.

The state managed Pennsylvania Rapid Bridge Replacement (RBR) Program will replace an additional 193 SD bridges in the region, reducing the SD deck area by an additional 276,243 square feet.

Investing in structurally deficient bridges has been a top priority for a number of years for the Commonwealth and the region. Some notable examples of major bridge rehabilitation to begin work over the next four years include:

- Seventh and Ninth Street Bridges (City of Pittsburgh)
- Elizabeth Bridge (Allegheny County)
- Koppel Bridge (Beaver County)

- U.S. 119 Three Bridges (Indiana County)
- Crawford Avenue Bridge (Fayette County)

Investments in roadway condition will rebuild and rehabilitate 294 miles of the region's highway system. This investment will ensure the longevity of the region's highway system and foster economic growth through the safe and efficient movement of people and goods throughout the region. Major roadway rehabilitation projects in the region include:

- Liberty Tunnel Rehabilitation Phase 5 (City of Pittsburgh)
- U.S. 19/West End Bypass Reconstruction (Allegheny County)
- U.S. 119 Reconstruction (Fayette/Westmoreland County)
- S.R. 228 Three Degree Road Intersection (Butler County)
- S.R. 65 Crows Run Road Restoration (Beaver County)

Similarly, the public transportation system also needs to be maintained to ensure the safety of its users and the longevity of the system. Over \$319 million (shown by investment type below) of state and federal public transportation funding is dedicated maintaining the public transportation system.

- Fixed Guideway Capital Maintenance - \$156 million
- Capital Bus Facilities and Equipment - \$162 million
- Bus Signal and Communications Equipment - \$812 thousand
- Bus Stop and Terminal Maintenance - \$325 thousand

Congestion Reduction and Reliability

Mapping the Future Policy Goals

1. Investment in infrastructure improvements will be coordinated and targeted at the corridor level to optimize the impact of the investment.
2. The region's transportation system will be actively managed and operated to allow the system to function at its full potential.
3. The region's transit system will connect people with resources throughout the entire region.

Implementation

Closely associated with condition of the infrastructure and safety of the transportation system is ensuring that the system is efficient and reliable for all users. A region's transportation system, like any complex system, cannot operate safely, efficiently, and reliably unless it is well maintained; but often, maintaining the system is simply not enough. This is particularly true as the environment in which that system resides continues to change and evolve. Older designs need to be upgraded or enhanced to keep up with changes in travel patterns, modal preferences, and advances in transportation technology and innovative design in order to keep the system safe, efficient and reliable.

Planning and programming transportation investments at the corridor level enables SPC, PennDOT and our planning partners to take a coordinated approach to identifying system deficiencies. For example, the TIP invests over \$187.2 million (34 projects) in identified regional Congestion Management Corridors. Similarly, the Interstate Maintenance Program (Appendix 7) invests over \$455 million in funding on the SPC Interstate Highway System; a large portion of which is dedicated for the implementation of a plan to completely modernize Interstate 70 in Washington and Westmoreland Counties. Examples of projects that alleviate congestion and improve reliability include:

- S.R. 28/Highland Park Bridge Improvements (Allegheny County)
- S.R. 286/U.S. 422 Interchange Improvements (Indiana County)
- S.R. 228 Balls Bend Realignment (Butler County)

Investments in public transportation and ridesharing also assist in relieving congestion of the region's roadway system. As illustrated in Appendix 6, the Public Transportation Program, region-wide, will purchase 342 buses used for fixed route transit service (including 34 compressed natural gas buses and 17 diesel/electric hybrid buses) and 65 para-transit vehicles. To further support the reliability and efficiency of these transit investments, there are 133 highway and bridge projects (\$684.8 million) located on current public transportation routes. In addition, the Port Authority of Allegheny County plans to invest \$25 million over the next four years to maintain bridges and tunnels used by the light rail system and the busways.

Reducing congestion, along with improving air quality, are the main goals of the federal CMAQ program. The 36 CMAQ funded projects (\$75.4 million) in the TIP are estimated to reduce vehicle trips by 969 trips per day and vehicle miles traveled (VMT) by 27,528 miles per day, primarily through the expansion of park-n-ride facilities and commuter transit service.

Freight and Economic Vitality

Mapping the Future Policy Goals

1. Revitalization and redevelopment of the region's existing communities is a priority.
2. The region's transportation system will be actively managed and operated to allow the system to function at its full potential.
3. Transportation and development choices will reflect a priority on safe and secure multimodal and intermodal networks for both people and goods.

Implementation

The safe and efficient movement of freight throughout Southwestern Pennsylvania and beyond is a top priority for the long term economic vitality of the region. Investing in the regional freight network increases access to many of the region's communities, which enhances opportunities for job creation and reinvestment in Southwestern Pennsylvania. The 2017-2020 TIP invests nearly \$412 million (85 projects) in projects that are within 1 mile of regional freight facilities (industrial, manufacturing, distribution, intermodal facilities, etc.). These investments will allow for more efficient movement of freight throughout the region, which will strengthen existing communities and create opportunities for additional community investment. Notable examples of projects that will enhance freight movement and economic vitality in the region include:

- Bus Rapid Transit Signal Priority (Allegheny County)
- I-376/S.R. 18 Interchange Reconfiguration (Beaver County)
- Interstate 70 Modernization (Washington and Westmoreland Counties)
- Thorn Run Road Interchange (Allegheny County)
- Southern Beltway, U.S. 22 to I-79 Segment (Washington County)
- S.R. 228 Widening (Butler County)

The implementation of adaptive traffic signal networks on critical corridors throughout the region are also assisting in the movement of freight as well as moving people. Adaptive signal control systems coordinate control of traffic signals along arterial corridors. Advanced signal systems allow proactive traffic management by allowing traffic conditions to be actively monitored and adapted based on prevailing traffic conditions across all modes. Adaptive traffic signals also assist in fulfilling regional policy goals related to congestion reduction and reliability as well as environmental sustainability. Segments of US Routes 19, 22, and 30, as well as State Routes 8 and 60 are scheduled to be upgraded to adaptive systems over the next four years.

The provision of bicycle and pedestrian facilities and improvements play an important role in the economic vitality of communities, both large and small, across the region. Improving bicycle

and pedestrian facilities in the region's communities can support local business and bolster tourism via intraregional connections such as the Three Rivers Heritage Trail and the Great Allegheny Passage. The 2017-2020 TIP dedicates \$3.4 million in Transportation Alternatives Program (TAP) funding to expand the bicycle and pedestrian network by adding over 10 miles of facilities, such as bike lanes and shared use paths to connect or further expand existing facilities. Additionally, the SPC SMART Program will allocate an additional \$3.5 million in funds to increase the sustainability and livability of communities in the region. This is a competitive funding program and projects will be added to the TIP as they are selected.

Environmental Sustainability

Mapping the Future Policy Goal

1. The region's infrastructure system will be designed to protect and enhance public health and the environment.

Implementation

The protection and preservation of the natural environment is a consideration that is taken into account early in the project development process. PennDOT's Linking Planning and NEPA (LPN) initiative focuses on identifying the most critical transportation infrastructure needs in planning and providing a consistent method of collecting information relating to purpose and need, project limits and characteristics, public participation, and potential environmental resource impacts that will provide a better understanding of the issues that may affect the project delivery schedule and budget. Through the state's established LPN process, SPC screens each candidate project during the TIP development process. SPC's practices in this field have been recognized as a best practice in the Commonwealth for the LPN process.

Along with congestion reduction, the other main component of SPC's Congestion Mitigation and Air Quality (CMAQ) program is the selection of projects that contribute to attainment or maintenance of the national ambient air quality standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter (PM). The CMAQ program in the 2017-2020 TIP funds projects including traffic signal upgrades, intersection improvements, multimodal transportation facilities, park-n-ride expansions, the purchase of CNG transit vehicles, and marine diesel engine retrofits.

In addition to the congestion reduction benefits discussed previously in the Congestion Reduction and Reliability Section, CMAQ projects provide benefits to the air quality in the region by reducing:

- Ozone
 - Volatile Organic Compounds (VOC) by 267.8 kg/day
 - Nitrogen Oxides (NOx) by 900 kg/day
- Carbon Monoxide (CO) by 1,312 kg/day
- Fine Particulate Matter (PM_{2.5}) by 30 kg/day

Reducing Delays in Project Delivery

Mapping the Future Policy Goal

1. The region will support initiatives designed to improve both the quality and quantity of the region's workforce to meet emerging industry demands.

Implementation

Ensuring that projects are delivered in a timely manner helps to reduce costs associated with the project development and delivery process and allows for the maximum utilization of state and federal resources. SPC actively tracks the progress of projects and meets with local project sponsors to ensure they are fully aware of their roles and responsibilities in the project development process in order to meet their project development and obligation deadlines. During the fall of 2015, SPC held a series of Project Delivery Workshops throughout the region. These workshops outlined the requirements and of administering a state or federal-aid transportation project. Additionally, SPC also provides assistance to local project sponsors by procuring consultant assistance in order to expedite the project delivery process for its TAP and SMART programs.