Air Quality Conformity Determination
Pittsburgh Transportation Management Area

for the

8-Hour Ozone Air Quality Standards
PM 2.5 Air Quality Standards
CO and PM 10 Air Quality Standards

Companion Document for Amendments
to the
2021-2024 Transportation Improvement Program
and
SmartMoves for a Changing Region

Draft Report
For Public Review and Comment
July 12, 2021 thru August 13, 2021

Southwestern Pennsylvania Commission

2021

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Marathi:

हा दस्तऐवज विनंतीनुसार पर्यायी स्वरूपांमध्ये उपलब्ध आहे. विनंतीनुसार SPC भाषांतर आणि अर्थविवरण सेवा विनामूल्य प्रदान करेल. अधिक माहितीसाठी कृपया SPC ला (412) 391-5590 येथे कॉल करा.

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Table of Contents

List of Maps

List of Figures

List of Tables

Appendices

I. Introduction

The Southwestern Pennsylvania Commission (SPC) is the designated Metropolitan Planning Organization (MPO) for a 10-county region within Southwestern Pennsylvania. MPOs are responsible for making transportation conformity determinations for both their short range Transportation Improvement Program (TIP) and their long range transportation plan. This report documents the process used by SPC in the spring of 2021 to make its transportation-related conformity determination for proposed regionally significant amendments to the region's 2021-2024 Transportation Improvement Program and the 2045 Long Range Transportation Plan (*SmartMoves for a Changing Region)*. The conformity determination is required by the federal Clean Air Act (CAA). SPC's conformity finding is based upon criteria and procedures described in the federal Environmental Protection Agency's (EPA) Transportation Conformity Rule (40 CFR Part 93). The conformity finding was conducted consistent with procedures outlined in the EPA-approved Pennsylvania Conformity State Implementation Plan (SIP), which has an effective date of June 29, 2009, and satisfies all applicable conformity process requirements in the Transportation Conformity Rule for designated nonattainment and maintenance areas under federal air quality standards for ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and carbon monoxide (CO).

On November 15, 1990, amendments to the federal Clean Air Act were enacted. The Clean Air Act (as amended) specifies how the EPA designates air quality nonattainment areas and how it defines the geographic boundaries of those areas. Nonattainment areas for three criteria pollutants (ozone, carbon monoxide and fine particulate matter) are classified in accordance with the severity of the area's air pollution problem. Assignment of an area to one of the nonattainment classifications triggers various planning requirements which the area must comply with in order to meet the standard. The requirements vary by pollutant and increase in number and stringency with the severity of pollution.

The EPA promulgated regulations on November 23, 1993 (Transportation Conformity Rule – 40 CFR Part 93) regarding criteria and procedures for demonstrating and assuring conformity of transportation plans, programs and projects with the Clean Air Act. The EPA has periodically revised and amended the Transportation Conformity Rule. All conformity findings must be based on criteria and procedures outlined in the current version of the Rule.

A regional conformity assessment and new conformity finding for the regional transportation Plan and Program is required before MPO adoption, acceptance, approval, or support of a regional Plan, TIP, or amendments to those documents; or the approval, funding, or implementation of transportation projects. Conformity findings must be approved by the MPO before the regional Plan or TIP, or amendments to those documents are approved by the MPO or accepted by United States Department of Transportation (USDOT). The Transportation Conformity Rule cites a number of project types which may be excluded from the regional conformity analysis. The "exempt" project types are listed in Appendix A.

The most recent conformity finding for the region's fiscally constrained TIP and Plan was approved by SPC on January 25, 2021 in conjunction with amendments to the 2021-2024 TIP

and updates to SPC's 2045 Long Range Transportation Plan (*SmartMoves for a Changing Region)* to move implementation of regionally significant from the out years of the Plan to the TIP period. The United States Department of Transportation, in consultation with EPA, concurred with SPC's conformity finding on May 6, 2021.

Regionally significant amendments to the 2021-2024 TIP and 2045 Long Range Transportation Plan have been proposed, triggering the need for a new finding of conformity. The new conformity finding is needed prior to SPC's adoption of the amended 2021-2024 TIP and Plan, and before any federal action on the proposed, regionally significant projects.

Travel simulation work and other relevant quantitative analysis for this demonstration of conformity began on May 17, 2021, the date that SPC staff transmitted information about the proposed TIP and Plan amendments to Pennsylvania's transportation air quality Interagency Consultation Group (ICG). The ICG includes representatives from DEP, EPA, FHWA, FTA, and PennDOT. The planning assumptions used in this conformity assessment are current as of that date. The major planning assumptions for this conformity assessment are briefly summarized below. As appropriate, the planning assumptions used in the analysis are further detailed in subsequent Sections of the report.

- Three regionally significant, major amendments to the adopted TIP and Transportation Plan have been proposed, necessitating a new conformity assessment.

  SR 356 Improvements – Widening of SR 356 in Buffalo Township, Butler County from 2 lanes to 5-lanes (four travel lanes and one center turn lane), for approx. 1.1 miles, from just north of T-666 (Harbison Road) to a point approximately 2,200 feet north of the Bear Creek Rd. intersection. Other improvements include widening, relocation, and/or realignment of approaches to SR 356 (Monroe Road, Cole Road, Bear Creek Road, Locust Drive); installation of sidewalks and ADA ramps at strategic locations along the corridor; replacement of three traffic signals; and replacement of storm water drainage. (MPMS# 106486; Project cost – $21,000,000; Project completion – 2026).

  Market Place District Improvements, Phase 1 – Adding a through lane between Fedex Drive and Market Place Blvd. in Moon Township, Allegheny County. Other improvements include the addition of turn lanes; implementing bicycle and pedestrian connections; and improving intersections at the I-376 Interchange, at Market Place Blvd, and at FedEx Drive. (MPMS# 115555; Project cost – $6,210,000; Project completion – 2024).

  I-79 Widening Project – I-79 3rd lane widening in the existing median from Alpine Road to Prestley Road for an approximate length of 2.5 miles in South Fayette Township, Allegheny County. Improvements include mainline I-79 bridge widening / replacement / preservation; Bridgeville Interchange reconfiguration; SR 50 improvements and traffic signal upgrades between S.R. 3003 (Washington Pike) and the Hickory Grade Road intersection to accommodate ramp and bridge improvements; and new retaining walls

and replacement of six existing sign structures are proposed along I-79. (MPMS# 104325; Project cost – $155,500,000; Project completion – 2024).

- In accord with EPA guidance and Pennsylvania's interagency consultation process, all emission estimates were derived using EPA's MOVES 2014a emissions model running in "inventory" mode.

- Data for vehicle registrations and vehicle miles traveled (VMT) distribution is from 2017 PennDOT information. The same PennDOT data from 2017 was used in the conformity determination approved on June 29, 2020.

- The current vehicle inspection/maintenance (I/M) programs for southwestern Pennsylvania are reflected in the analysis. Information about the I/M programs is presented in Section V.

- The Pennsylvania Clean Vehicles (PCV) Program, adopted in 1998, incorporates the California Low Emission Vehicle Program (CA LEV) by reference although it allowed automakers to comply with the National Low Emission Vehicle (NLEV) program as an alternative to this Pennsylvania program until model year (MY) 2006. Beginning with MY 2008, "new" passenger cars and light-duty trucks with a gross vehicle weight rating (GVWR) of 8,500 pounds or less that are sold or leased and titled in Pennsylvania must be certified by the California Air Resources Board (CARB) or be certified for sale in all 50 states. For this program, a "new" vehicle is a qualified vehicle with an odometer reading less than 7,500 miles. The Pennsylvania Department of Environmental Protection (DEP) and PennDOT worked with the automobile manufacturers, dealers and other interested business partners and finalized procedures for complying with these new requirements. DEP is focusing its outreach with the manufacturers and dealers on what they can offer for sale and how to certify that the vehicles are compliant. PennDOT's role is to ensure paperwork procedures for title and registrations include these certifications of compliance or that the vehicle owner qualifies for an exemption to the requirements. In all cases, DEP will use information obtained during PennDOT's title and registration process to oversee and audit, as needed, certain vehicle title transactions to determine compliance to the program. The impacts of this program are modeled for all analysis years beyond 2008.

- SPC's Cycle 11 forecast of population, employment and households was developed in the spring of 2019 and was adopted with the 2045 Plan on June 24, 2019. The Cycle 11 forecast replaced the Cycle 10a forecast which was adopted in 2016. The base year for the Cycle 11 forecast is 2015. The horizon year is 2045. The Cycle 11 forecast was used to generate trips for the travel demand model for this conformity assessment. The Cycle 11 forecast was also used in the conformity determination approved on January 25, 2021. Information about SPC's modeling and forecasting process is presented in Section IV.

- SPC's travel demand model is configured for the Cube Voyager modeling software package. The travel model covers SPC's entire 10-county planning region. All of the

estimates of vehicle miles traveled (VMT) and emissions projections are based on results from SPC's travel model.

- SPC's 10-county travel model was validated to 2018 conditions with available data in the spring of 2020 in preparation for the conformity assessment that was approved on June 29, 2020. The Cube Voyager software platform was used for travel demand modeling for this conformity assessment. Section IV includes a discussion of the model validation process.

- SPC's travel demand model is sensitive to road and bridge tolls. Toll rates are coded on highway network links to reflect tolls charged by the Pennsylvania Turnpike Commission (PTC). Once toll rates are coded, the rates remain constant for all analysis years (essentially assuming that tolls will increase at the same rate as inflation).

- SPC's travel demand model includes a mode split component. Current transit operating plans and service levels are incorporated into the future year networks and augmented with facilities and service identified in the TIP and Plan. SPC's mode split model is sensitive to transit fares. The transit fare structure in effect in late 2016 is built into the model. Fare rates are held constant for all analysis years (essentially assuming that fares will increase at the same rate as inflation). Transit person trips are summarized by trip purpose and analysis year in Table 12.

- Motor vehicle emission budgets (MVEB) are available to SPC for use in the conformity assessment for the Pittsburgh-Beaver Valley 8-hour ozone nonattainment area under the 2008 8-hour ozone NAAQS. That area consists of seven counties within SPC's planning area (Allegheny, Armstrong, Beaver, Butler, Fayette, Washington, and Westmoreland). On April 22, 2004, DEP submitted SIP revisions to EPA that contained MVEBs for VOC and NOx developed with the MOBILE6.2 emissions model. EPA approved the MVEBs for use in conformity assessments on December 10, 2004 (78 FR 71712). These motor vehicle emission budgets were approved for demonstrating conformity under the 1-hour ozone standard. The Transportation Conformity Rule requires that they are to be used for conformity assessments under the 8-hour ozone standard until new MVEBs for the 8-hour ozone standard are approved by EPA for the Pittsburgh-Beaver Valley nonattainment area. The approved 1-hour ozone MVEBs for VOC and NOx are used for the conformity demonstration in Section VII for the Pittsburgh-Beaver Valley 8-hour ozone nonattainment area.

- Greene and Indiana counties were designated as nonattainment areas under the 1997 8-hour ozone NAAQS. They were designated as attainment areas under the 2008 8-hour ozone NAAQS. EPA subsequently revoked the 1997 NAAQS. EPA guidance (*Transportation Conformity Guidance for the South Coast II Court Decision,* EPA-420-B-18-050), issued in November, 2018 addresses how transportation conformity determinations should be made in areas that were nonattainment or maintenance for the 1997 ozone NAAQS when the 1997 ozone NAAQS was revoked, but were designated attainment for the 2008 ozone NAAQS. EPA's guidance does not require regional

emissions analysis for these counties. Other conformity requirements, including latest planning assumptions, interagency and public consultation, and fiscal constraint still need to be addressed in the conformity assessment under the 8-hour ozone NAAQS for Greene and Indiana counties. The same analysis process was required for these counties for the conformity assessment that was approved on January 25, 2021.

- Motor vehicle emission budgets are available to SPC for use in the conformity assessment for the Pittsburgh-Beaver Valley $PM_{2.5}$ nonattainment area under the 1997 annual $PM_{2.5}$ NAAQS and the 2006 daily $PM_{2.5}$ NAAQS. That area consists of four complete counties within SPC's planning area (Beaver, Butler, Washington, and Westmoreland), part of Allegheny County (not including the separate Liberty-Clairton nonattainment area), and parts of Armstrong, Greene and Lawrence counties. EPA approved the $PM_{2.5}$ and NOx MVEBs for use in conformity assessments for the Pittsburgh Area in a final rule published in Federal Register on October 2, 2015 (80 FR 59624).

- Motor vehicle emission budgets for $PM_{2.5}$ and its precursors have been approved by EPA for use in conformity assessments for the Allegheny County $PM_{2.5}$ nonattainment area. On September 30, 2019 the Allegheny County Health Department submitted an attainment demonstration to EPA (*Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan: Attainment Demonstration for the Allegheny County, PA PM2.5 Nonattainment Area, 2012 NAAQS*). The SIP Revision included proposed MVEBs for the nonattainment area. To address deficiencies in the proposed MVEBs, a supplemental SIP was submitted on October 2, 2020. In a Final Rule published in the Federal Register on May 14, 2021 (86 FR 26388), EPA approved these MVEBs for use in conformity assessments.

  The values that were used in prior conformity assessments, in lieu of approved MVEBs, and were agreed to in May 2015 by PennDOT, USDOT, EPA, DEP, and SPC through the interagency consultation process are no longer being used.

- The EPA approved an "insignificance finding" that $PM_{2.5}$ nonattainment in the Liberty-Clairton $PM_{2.5}$ area was primarily the result of industrial stationary sources and motor vehicles were not an important contributor to the nonattainment problem. That finding was approved by EPA in a rulemaking published in the Federal Register on October 2, 2015 (80 FR 59615). With approval of this finding by EPA, no additional quantitative analysis for transportation-related $PM_{2.5}$ impacts is required for conformity purposes for the Liberty-Clairton $PM_{2.5}$ area. Interagency consultation and public review is still required.

- No regionally significant projects have been completed in the region since the conformity assessment for the 2021-2024 TIP and 2045 Long Range Plan was prepared in the fall of 2020. So, no new projects were added to the existing (2021 base year) transportation network for this conformity assessment.

Section II of this report presents an overview of pertinent provisions of the Clean Air Act and the Transportation Conformity Rule. It also describes the areas of the region designated as nonattainment under the 1997 8-hour ozone national ambient air quality standard (NAAQS), 2008 8-hour ozone NAAQS, the 1997 and 2012 Annual $PM_{2.5}$ NAAQS, the 2006 24-hour $PM_{2.5}$ NAAQS, the 1971 carbon monoxide (CO) NAAQS, and the 1987 PM_{10} NAAQS. The 2045 Plan and 2021-2024 TIP are summarized in Section III. Section IV discusses SPC's transportation modeling process. The methods used to develop emissions estimates for this conformity determination are highlighted in Section V. Section VI presents the travel simulations developed for this conformity determination. Section VII highlights the conformity findings and conclusions. The conformity determinations under the 8-hour ozone standard, the $PM_{2.5}$ and PM_{10} air quality standards, and the carbon monoxide standard are also made in Section VII. The public review process is outlined in Section VIII. A series of appendices, described in the text, appear at the end of this report.

The conformity findings and conclusions in this report are based on VMT, average speed, and emissions for five analysis years: 2021 – the base year for the conformity tests, also a budget year for the 2012 Annual $PM_{2.5}$ NAAQS; 2024 – the horizon year for the 2021-2024 TIP; 2025 – interim year to satisfy the Transportation Conformity Rule requirement that analysis years be not more than ten years apart, also a budget year for the $PM_{2.5}$ air quality standards; 2035 – interim year to satisfy the Transportation Conformity Rule requirement that analysis years be not more than ten years apart; and 2045 – the horizon year for the Long Range Transportation Plan.

II. Regional Implications of the 1990 Clean Air Act Amendments and Overview of Conformity Criteria

Criteria and procedures required for demonstrating conformity of transportation plans and programs are specified in EPA's Transportation Conformity Rule. The applicable conformity criteria and procedures are summarized below:

1) A determination should be made that the endorsed transportation plan and program will be consistent with the MVEBs in the approved control strategy SIP or redesignation request. Prior to EPA approval of MVEBs, a determination should be made that the transportation plan and program are consistent with the most recent estimates of mobile source emissions.

2) An assurance should be given that no goals, directives, recommendations or projects identified in the transportation plan and program contradict in a negative manner any specific requirements or commitments of the applicable SIP.

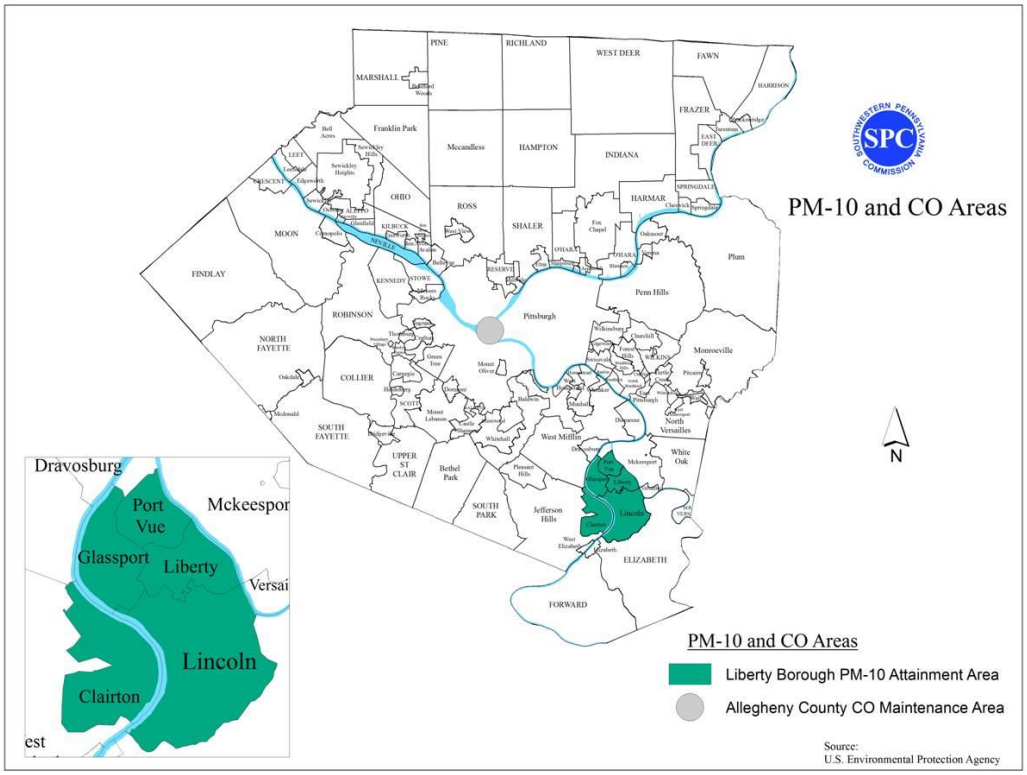
3) Transportation plans and programs should provide for the expeditious implementation of transportation control measures in the applicable SIP.

4) Transportation plan and program conformity determinations will be based on the most recent emissions estimates which in turn are to be based on the most recent population, employment, travel and congestion estimates as determined by the MPO or other authorized agency.

5) A determination should be made that the transportation plans and programs contribute to reductions in emissions in nonattainment areas and that the transportation plans and programs do not increase the frequency or severity of existing violations of the applicable NAAQS.

In accord with the federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) has designated several nonattainment areas within Southwestern Pennsylvania for seven separate NAAQS. The seven air quality standards are: (1) the 1987 PM_{10} NAAQS (one designated area, covering five municipalities within Allegheny County) – Map 1, (2) the 1971 carbon monoxide NAAQS (one designated area, covering the City of Pittsburgh's Central Business District and certain other high traffic density areas in and near the City's Oakland neighborhood) – Map 1, (3) the 1997 8-hour ozone NAAQS (two designated areas, covering Greene and Indiana counties within SPC's planning area) – Map 2, (4) the 2008 8-hour ozone NAAQS (one designated area, covering seven of the ten counties within SPC's planning area) – Map 2, (5) the 1997 $PM_{2.5}$ annual NAAQS (three separate areas that, combined, cover five entire counties and parts of four other counties within SPC's planning area) – Map 3, (6) the 2006 $PM_{2.5}$ 24-hour NAAQS (the same three areas designated nonattainment for the $PM_{2.5}$ annual standard) – Map 3, and (7) the 2012 $PM_{2.5}$ annual NAAQS (one designated area, covering all of Allegheny County) – Map 3. Transportation conformity must be addressed by SPC for each nonattainment and maintenance area.

This report addresses conformity for all of the designated nonattainment areas and applicable NAAQS.



Map 1 **SPC Jun 2021**

PM_{10}

In accord with the federal Clean Air Act, the EPA designated a moderate nonattainment area for particulate matter under the 1987 PM_{10} NAAQS within Allegheny County (56 FR 11105), effective on May 14, 1991. That area includes the City of Clairton and the Boroughs of Glassport, Liberty, Lincoln and Port Vue (Map 1). PM_{10} nonattainment in that area stemmed primarily from industrial sources in the area and not from mobile sources. This nonattainment area was not required to have a PM_{10} transportation conformity budget. Because the PM_{10} violations were primarily caused by industrial stationary sources and motor vehicles were not an important contributor to the nonattainment problem, no additional quantitative analysis for transportation-related PM_{10} impacts is required for conformity purposes. Interagency consultation, fiscal constraint, and public review are still required.

On January 6, 1994, the Allegheny County Health Department (ACHD) submitted a PM_{10} Attainment Plan to EPA for review and approval. That was followed on July 12, 1995 with submittal of contingency measures that would be enforced if the area failed to attain the PM_{10} standard. On September 8, 1998, EPA's final approval of those documents was announced in the Federal Register (63 FR 47434) and EPA declared that the area had attained the PM_{10} standard.

On October 28, 2002, a request to redesignate the area as attainment for PM_{10} was submitted to EPA by ACHD. EPA's approval of the redesignation request, and the formal redesignation of the area from nonattainment to attainment of the PM_{10} NAAQS, was announced in the Federal Register on September 11, 2003 (68 FR 53515).

The 2021-2024 TIP and the 2045 Plan will not worsen the PM_{10} emissions in that area, nor will they interfere with the expeditious implementation of mitigation measures to control those emissions. Three projects are identified on the 2021-2024 TIP and the 2045 Plan in those five municipalities. They are: 1). PA 837 Slide Remediation – Slide remediation work on North State Street (PA 837) in the City of Clairton and West Mifflin Borough, $477,000 (MPMS#114193); 2). SR 2010 Slide Remediation – Slide remediation work on Lovedale Road (SR 2010) in Lincoln Borough and Elizabeth Township, $3,500,000 (MPMS#114194); 3). Wylie Run Bridge No. 8 (WY08) – Bridge replacement over Wylie Run at the intersection of Lovedale Road and Liberty Way in Lincoln Borough, $1,480,000 (MPMS#114946). The total cost programmed on the 2021-2024 TIP and 2045 Plan for these three projects is $5,457,000.

Carbon Monoxide

While the region has not exceeded the 1971 carbon monoxide NAAQS since March 1986, the City of Pittsburgh's central business district and high traffic density areas in and near the City's Oakland neighborhood were designated by EPA as an "unclassified" nonattainment area for carbon monoxide (43 FR 40513), effective on September 12, 1978 (Map 1). In August 2001, ACHD submitted a redesignation request to DEP asking that it be forwarded to EPA with a recommendation for approval. That redesignation request was subsequently approved by EPA and announced in the Federal Register on November 12, 2002 (67 FR 68521). A limited carbon monoxide maintenance plan is part of that approved redesignation for Allegheny County. That maintenance plan ensured maintenance of the CO NAAQS until January 2013. On July 18, 2011 DEP, on behalf of ACHD, submitted as a SIP revision a second 10-year CO maintenance plan. EPA approved the second 10-year limited maintenance plan effective on May 27, 2014 (79 FR 17054). The maintenance demonstration shows that the Pittsburgh area will continue to maintain the CO NAAQS during the second 10-year maintenance period, which extends to 2022.

Under limited maintenance plans, EPA policy does not require a carbon monoxide emission budget test for conformity determinations. Emission budgets in limited maintenance plan areas are considered to be not constraining for the length of the maintenance period. Therefore, conformity for carbon monoxide is demonstrated in the county. No quantitative analysis for transportation-related CO impacts is required for conformity purposes. Interagency consultation, fiscal constraint, and public review are still required.

Ozone

The EPA published the 1997 8-hour ozone NAAQS on July 18, 1997 (62 FR 38856). Three nonattainment areas were designated in the SPC planning area under the 1997 8-hour ozone NAAQS (69 FR 23858) effective June 15, 2004. These areas are:

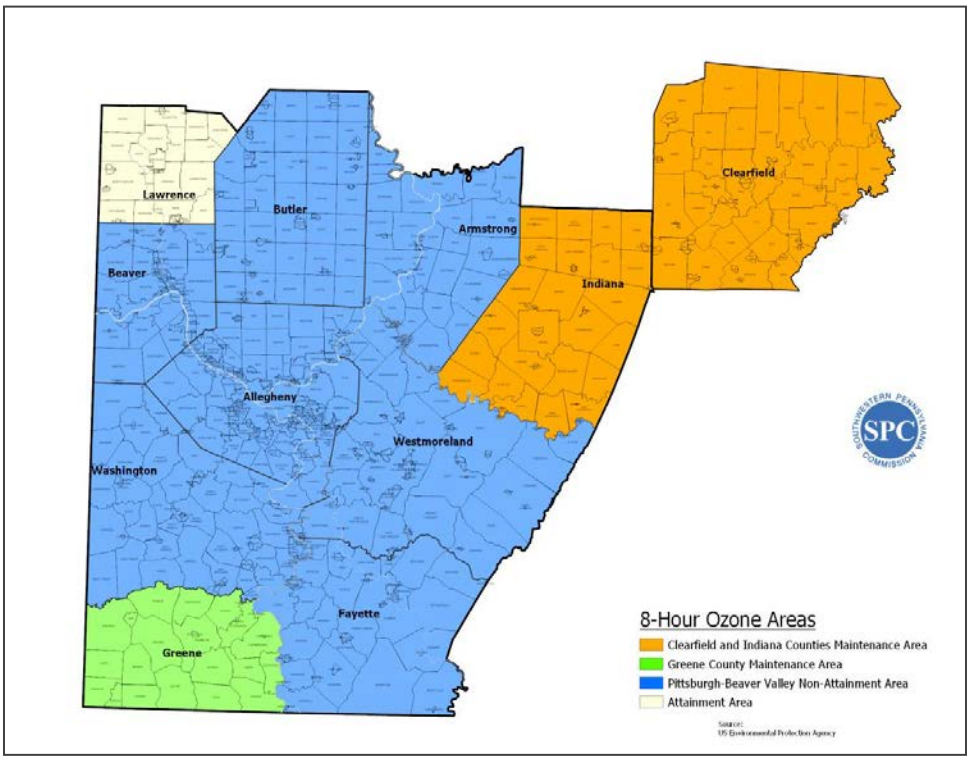
- Pittsburgh - Beaver Valley. This area includes seven counties within SPC's planning area (Allegheny, Armstrong, Beaver, Butler, Fayette, Washington, and Westmoreland).
- Clearfield and Indiana counties. This area includes all of Indiana County which is within SPC's planning area, and all of Clearfield County which is outside of SPC's planning area.
- Greene County. This area includes all of Greene County which is within SPC's planning area.

The EPA published the 2008 8-hour ozone NAAQS on March 27, 2008 (73 FR 16436). One nonattainment area was designated in the SPC planning area under the 2008 8-hour ozone NAAQS (77 FR 30088) effective July 20, 2012. That area is:

- Pittsburgh - Beaver Valley. This area includes the same seven counties within SPC's planning area that were included under the 1997 8-hour ozone NAAQS (Allegheny, Armstrong, Beaver, Butler, Fayette, Washington, and Westmoreland).

Greene and Indiana counties were designated as attainment areas under the 2008 8-hour ozone NAAQS. Nevertheless, the Clean Air Act's "anti-backsliding" measures require that transportation conformity continue to be demonstrated for those two areas. EPA guidance does not require regional emissions modeling for them, but does require demonstration of fiscal constraint, public review, interagency consultation, and implementation of TCMs in the SIP.

Map 2 shows the boundaries of the three designated 8-hour ozone areas under the 1997 and 2008 NAAQS.



Map 2 **SPC Jun 2021**

The EPA published the 2015 8-hour ozone NAAQS on October 26, 2015 with an effective date of December 28, 2015 (80 FR 65292). Subsequently, EPA published air quality designations under the 2015 ozone NAAQS on November 16, 2017 (82 FR 54232). All areas of the SPC region were designated as attainment areas under the 2015 Ozone NAAQS. A conformity finding under the 2015 ozone NAAQS is not required.

Ozone is formed through chemical reactions induced when sunlight reacts with volatile organic compounds (VOCs, principally "hydrocarbons"), and nitrogen oxides (NOx). A major source of VOCs and NOx is the incomplete combustion of fossil fuels. Transportation-related activities are a major contributor of these pollutants. Since heat speeds the reactions, ozone levels are typically highest during hot summer days. For ozone nonattainment areas, reductions in both VOC and NOx are required in order to demonstrate conformity.

The Transportation Conformity Rule requires that the conformity determination for transportation plans and programs be based on comparisons to established VOC and NOx MVEBs, provided that the budgets are established in a control strategies State Implementation Plan and that EPA has declared the MVEBs to be adequate for transportation conformity purposes. The MVEBs establish a cap on emissions which cannot be exceeded by predicted highway and transit vehicle emissions. The conformity analysis should demonstrate reduced VOC and NOx emissions in a future year for the transportation plan or program when compared to the established MVEBs. The analysis must estimate total transportation-related emissions within the ozone nonattainment area for certain future years, and may include the effects of any emission control programs which are already adopted or committed to in the applicable State Implementation Plan.

MVEBs for VOC and NOx were established in the Maintenance Plan for the Pittsburgh-Beaver Valley Ozone Area (*Pittsburgh-Beaver Valley Area Ozone Maintenance Plan and Request for Redesignation as Attainment for Ozone*). This is the Maintenance Plan and Attainment SIP approved for this area by EPA under the 1979 1-hour ozone NAAQS. It will remain in effect until the state submits, and EPA approves, an attainment demonstration and MVEBs for the 8-hour ozone NAAQS. The MVEBs from this SIP are based on analysis using EPA's MOBILE6.2 emissions model. The budgets were approved by EPA on December 10, 2004 for use in conformity assessments (69 FR 71712). These budgets are, therefore, available to SPC for use in demonstrating 8-hour ozone transportation conformity. The approved emissions budgets for the Pittsburgh – Beaver Valley Ozone Area are presented in Table 17 and are shown graphically in Figures 9 (VOC) and 10 (NOx) in Section VII.

EPA guidance (*Transportation Conformity Guidance for the South Coast II Court Decision*, EPA-420-B-18-050, November, 2018) addresses how transportation conformity determinations can be made in areas that were nonattainment or maintenance for the 1997 ozone NAAQS when the 1997 ozone NAAQS was revoked, but were designated attainment for the 2008 ozone NAAQS in EPA's original designations for this NAAQS. This situation applies to both Greene and Indiana counties. EPA's guidance does not require regional emissions analysis for these counties. Other conformity requirements, including latest planning assumptions,

interagency and public consultation, and fiscal constraint still need to be addressed in the conformity assessment under the 8-hour ozone NAAQS for Greene and Indiana counties.

The process used to develop the emission factors needed for the 8-hour ozone conformity assessment is presented in Section V. Results of the analysis, and the conformity determination for the Pittsburgh – Beaver Valley Ozone Area, are found in Section VII.

Lawrence county is designated as an air quality attainment area under the 1997, 2008, and 2015 8-hour ozone NAAQS. A transportation conformity assessment is not needed for Lawrence County under the 8-hour ozone NAAQS.

$PM_{2.5}$

The EPA published the 1997 Annual $PM_{2.5}$ NAAQS on July 18, 1997 (62 FR 38653). Three nonattainment areas were designated in the SPC planning area under the 1997 Annual $PM_{2.5}$ NAAQS (70 FR 944) effective April 5, 2005. These areas are:

- Johnstown. This area includes all of Cambria County (which is outside of the SPC planning area), plus five municipalities within Indiana County (West Wheatfield, Center, and East Wheatfield townships, and Armagh and Homer City boroughs).
- Liberty – Clairton. This area includes five municipalities within Allegheny County (Glassport, Liberty, Lincoln, and Port Vue boroughs, and Clairton City).
- Pittsburgh - Beaver Valley. This area includes all or part of eight counties within SPC's planning area as follows: Allegheny County (remainder not included in the Liberty – Clairton area); Armstrong County (Plumcreek and Washington townships, and Elderton Borough); Beaver County (entire county); Butler County (entire county); Greene County (Monongahela Township); Lawrence County (portions of Taylor Township south of New Castle City); Washington County (entire county); and Westmoreland County (entire county).

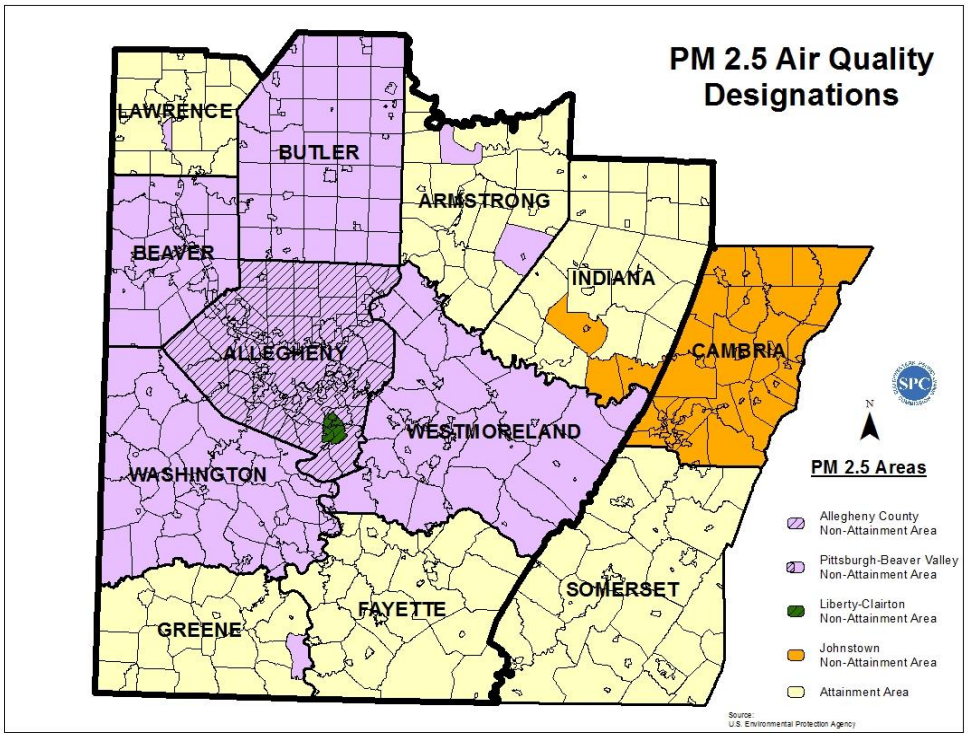
The EPA published the 2006 24-hour $PM_{2.5}$ NAAQS on October 17, 2006 (71 FR 61144). Three nonattainment areas were designated in the SPC planning area under the 2006 24-hour $PM_{2.5}$ NAAQS effective December 14, 2009 (74 FR 58688). The boundaries of the three nonattainment areas designated under the 2006 24-hour $PM_{2.5}$ NAAQS are identical to the three nonattainment areas designated under the 1997 Annual $PM_{2.5}$ NAAQS.

Map 3 shows the boundaries of the three 1997/2006 $PM_{2.5}$ nonattainment areas in southwestern Pennsylvania. These three areas are designated nonattainment for both the 1997 Annual $PM_{2.5}$ NAAQS and the 2006 24-hour $PM_{2.5}$ NAAQS.

The remainder of the SPC planning area is designated as an attainment area under both the 1997 Annual and 2006 24-hour $PM_{2.5}$ NAAQS. The attainment area includes all of Fayette County and the remainder of Armstrong, Greene, Indiana, and Lawrence counties.

The Transportation Conformity Rule requires that the conformity determination for transportation plans and programs be based on comparisons to approved emission budgets,

provided that the budgets are established in a control strategies State Implementation Plan and that EPA has declared the MVEBs to be adequate for transportation conformity purposes. The MVEBs establish caps on emissions which cannot be exceeded by predicted highway and transit vehicle emissions. The conformity analysis should demonstrate reduced emissions in a future year for the transportation plan or program when compared to the approved emission budgets. The analysis must estimate total transportation-related emissions within the nonattainment area for certain future years, and may include the effects of any emission control programs which are already adopted or committed to in the applicable SIP.



Map 3 **SPC Jun 2021**

MVEBs for $PM_{2.5}$ and NOx were approved by EPA under the 2006 24-hour $PM_{2.5}$ NAAQS and the 1997 Annual $PM_{2.5}$ NAAQS for the Pittsburgh – Beaver Valley $PM_{2.5}$ Area in a final rule published in the Federal Register on October 2, 2015 (80 FR 59624). These MVEBs are based on analysis using EPA's MOVES emissions model. These budgets are, therefore, available to SPC for use in demonstrating transportation conformity for the Pittsburgh Area under both the Annual and the 24-hour $PM_{2.5}$ NAAQS. The approved MVEBs are expressed as annual values in EPA's approval. EPA guidance indicates that they apply to both the annual and daily NAAQS and that conformity assessments are to be based on the annual emissions. If conformity is demonstrated for the annual NAAQS, it is also demonstrated for the daily NAAQS. The annual values for the MVEBs for the Pittsburgh – Beaver Valley $PM_{2.5}$ Area are presented in Table 14 and are shown graphically in Figures 3 ($PM_{2.5}$) and 4 (NOx) in Section VII.

MVEBs for $PM_{2.5}$ and NOx were approved by EPA under the 2006 24-hour $PM_{2.5}$ NAAQS and the 1997 Annual $PM_{2.5}$ NAAQS for the Indiana County portion of the Johnstown $PM_{2.5}$ nonattainment area in a final rule published in the Federal Register on July 16, 2015 (80 FR

42046). These MVEBs are based on analysis using EPA's MOVES emissions model. These budgets are, therefore, available to SPC for use in demonstrating transportation conformity for the Indiana County portion of the Johnstown $PM_{2.5}$ nonattainment area under both the annual and the daily $PM_{2.5}$ NAAQS. The approved MVEBs are expressed as annual values in EPA's approval. EPA guidance indicates that they apply to both the annual and daily NAAQS and that conformity assessments are to be based on the annual emissions. If conformity is demonstrated for the annual NAAQS, it is also demonstrated for the daily NAAQS. The annual values for the MVEBs for the Indiana County portion of the Johnstown $PM_{2.5}$ nonattainment area are presented in Table 15 and shown graphically in Figures 5 ($PM_{2.5}$) and 6 (NOx) in Section VII.

The ACHD submitted, on May 13, 2014, a supplement to its Attainment Demonstration SIP for the Liberty – Clairton area under the 1997 annual $PM_{2.5}$ NAAQS and the 2006 daily $PM_{2.5}$ NAAQS requesting an "insignificance finding" from EPA that nonattainment was primarily the result of industrial stationary sources and motor vehicles were not an important contributor to the nonattainment problem. That finding was approved by EPA in a rulemaking published in the Federal Register on October 2, 2015 (80 FR 59615) and effective December 1, 2015. With approval of this finding by EPA, no additional quantitative analysis for transportation-related $PM_{2.5}$ impacts is required for conformity purposes. Interagency consultation, fiscal constraint, and public review are still required.

The 2045 Plan and 2021-2024 TIP will not worsen the $PM_{2.5}$ emissions in that area, nor will they interfere with the expeditious implementation of mitigation measures to control those emissions. The three projects identified on the 2021-2024 TIP and the 2045 Plan in the Liberty – Clairton $PM_{2.5}$ Area are listed in the PM_{10} discussion above.

The EPA published the 2012 Annual $PM_{2.5}$ NAAQS on January 15, 2013 (78 FR 3086), with an effective date of March 18, 2013. One nonattainment area, covering all of Allegheny County, was designated in the SPC planning area under the 2012 Annual $PM_{2.5}$ NAAQS effective April 15, 2015 (80 FR 2206 and 80 FR 18535). Map 3 shows the boundaries of that nonattainment area.

The other nine counties in the SPC planning area are designated as attainment areas under the 2012 Annual $PM_{2.5}$ NAAQS.

MVEBs for $PM_{2.5}$ and NOx were approved by EPA under the 2012 Annual $PM_{2.5}$ NAAQS for the Allegheny County $PM_{2.5}$ Area in a final rule published in the Federal Register on May 14, 2021 (86 FR 26388). These MVEBs are based on analysis using EPA's MOVES emissions model. These budgets are, therefore, available to SPC for use in demonstrating transportation conformity for the Pittsburgh Area under the 2012 Annual $PM_{2.5}$ NAAQS. The annual values for the MVEBs for the Allegheny County 2012 Annual $PM_{2.5}$ Area are presented in Table 16 and are shown graphically in Figures 7 ($PM_{2.5}$) and 8 (NOx) in Section VII.

$PM_{2.5}$ emissions (fine particulates) are emitted directly by motor vehicles as a result of the fuel combustion process (tailpipe emissions) and as a result of brake and tire wear. $PM_{2.5}$ emissions are contained in re-entrained road dust and transportation construction dust. $PM_{2.5}$ emissions are

also formed through reactions in the atmosphere among several precursor emissions including VOC, NOx, ammonia (NH_3) and sulfates (SOx). Under EPA conformity regulations:

- Direct $PM_{2.5}$ tailpipe, brake wear, and tire wear emissions must be analyzed.
- Re-entrained road dust is included only if EPA or the Pennsylvania DEP determines that it is a significant contributor to $PM_{2.5}$ in the nonattainment area, or is named in a $PM_{2.5}$ SIP and a MVEB is established for this item.
- Transportation construction dust is encompassed in regional transportation conformity if it is named in a $PM_{2.5}$ SIP and a MVEB is established for this item.
- NOx must be analyzed in the period prior to SIP submission and budget adequacy determination or approval, unless EPA and DEP determine it is not a significant contributor.
- VOC, NH_3 and SOx analysis is not required in the period prior to SIP submission unless EPA or DEP determines one or more of these precursors to be a significant contributor.

As a result of the interagency consultation process required by the Transportation Conformity Rule, and in the absence of a SIP and attendant emission budgets, and in the absence of EPA and DEP significance determinations, SPC's $PM_{2.5}$ conformity analysis encompasses the following pollutants: Direct $PM_{2.5}$ emissions (tailpipe, brake wear, tire wear); and NOx precursor emissions.

The process used to develop the emission factors needed for the $PM_{2.5}$ conformity assessments is presented in Section V. Results of the analysis, and the conformity determinations for the $PM_{2.5}$ nonattainment areas within the SPC planning area, are found in Section VII.

III. Transportation Networks Developed for Conformity Assessment

SPC's process for this conformity determination for amendments to the 2021-2024 TIP and the 2045 Plan called for use of five Cube Voyager-based transportation networks. Each transportation network consists of separate highway and transit components covering SPC's entire ten county planning area which includes Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington and Westmoreland counties.

This section provides an overview of the facilities included in each of the networks and how the networks were used in the conformity determination. An overview of the Cube Voyager transportation modeling software and SPC's modeling process is presented in Section IV. Figure 1 presents a synopsis of the five networks and the major new facilities each includes.

EPA's Transportation Conformity Rule cites a number of project types which may be excluded from the regional emissions analyses required to determine conformity of transportation plans and programs. The project types categorized as "exempt" in the Transportation Conformity Rule are listed in Appendix A (Pages A-2 and A-3). "Exempt" projects were excluded from the regional emissions analysis.

The five networks developed specifically for use in this conformity process were: 1). 2021 network – representing the base year for the conformity tests, also a 2012 Annual $PM_{2.5}$ NAAQS budget year; 2). 2024 network – the horizon year for the amended 2021-2024 TIP, 3). 2025 network – an interim year to satisfy the Transportation Conformity Rule requirement that the analysis years be not more than ten years apart, also a budget year for both the 1997 and 2012 Annual $PM_{2.5}$ NAAQS; 4). 2035 network – a second interim year to satisfy the Transportation Conformity Rule requirement that analysis years be not more than ten years apart, and 5). 2045 network – the horizon year for the amended Long Range Plan.

The 2021-2024 TIP is the fiscally constrained program of projects for federal fiscal years 2021 through 2024 (October 1, 2020 through September 30, 2024) that reflect the region's transportation priorities. It was adopted by SPC on June 29, 2020, and amended in January 2021 to add regionally significant projects. The SPC report *2021-2024 Transportation Improvement Program for Southwestern Pennsylvania* (SPC, as amended through January, 2021) provides more information about the projects currently programmed on the TIP. For purposes of this conformity assessment it was presumed that all projects programmed on the 2021-2024 TIP for construction would be completed by 2024. Section I details the proposed TIP amendments that were included for this conformity assessment. Appendix A lists the projects on the 2021-2024 TIP and highlights the proposed amendments.

The adopted 2045 Long Range Plan (2045 Plan) is the region's fiscally constrained long-range transportation plan. The SPC report *SmartMoves for a Changing Region* (SPC, as amended through January, 2021), identifies the specific projects included in the Plan for SPC's 10-county planning area. It was adopted by SPC on June 24, 2019. Significant changes to the Plan were approved with 2021-2024 TIP adoption to address changes to fiscal projections that result in substantial reductions to estimates of funding available through 2045. The modified Plan was

adopted by SPC on June 29, 2020 and then further amended in January 2021 to reflect changes to the list of regionally significant projects. Section I details the proposed Plan amendments that were included for this conformity assessment. Appendix B lists the projects on the 2045 Plan and highlights the proposed amendments.

"Non-exempt" projects and facilities listed in Figure 1 were coded into the Cube Voyager-based transportation networks to define the transportation system for the 2021 network. The projects and facilities are those listed as completed from 1990 through 2021. The network was used to develop 2021 emissions estimates for the "existing" (2021) transportation system.

"Non-exempt" projects and facilities listed in Figure 1 for completion by 2024 were added to the 2021 network to define the transportation system for the 2024 network. The 2024 (TIP Year) network is a Cube Voyager-based representation of the region's highway and transit system as it will appear upon completion of every project programmed for construction on the 2021-2024 TIP. This network was used to develop emissions estimates for the TIP year (2024).

"Non-exempt" projects and facilities listed in Figure 1 for completion in 2025 were added to the 2024 network to define the 2025 "interim year" network. The 2025 network was used to develop emissions estimates for the 2025 "interim year" and $PM_{2.5}$ NAAQS 2025 budget year.

"Non-exempt" projects and facilities listed in Figure 1 for completion between 2025 and 2035 were added to the 2025 network to define the 2035 "interim year" network. The 2035 network was used to develop emissions estimates for the 2035 "interim year" analysis scenario.

"Non-exempt" projects and facilities listed in Figure 1 for completion between 2035 and 2045 were added to the 2035 network to define the 2045 Long Range Plan network. The 2045 network was used to develop emissions estimates for the Long Range Plan.

Of all the highway and transit projects programmed on the amended 2021-2024 TIP and 2045 Transportation Plan, only those identified in Figure 1 were coded into the travel demand model for the conformity analysis as "non-exempt", regionally significant projects subject to regional emissions analysis. A number of additional "non-exempt" projects are programmed for completion in that time period. Due to their nature (small isolated park-n-ride lots, roadway relocation with no capacity increase, traffic signal coordination, etc.), they could not be coded on the travel model networks. These projects are addressed in Section VII.

Appendix A contains a one-line summary of every highway, transit, and Pennsylvania Turnpike project identified on the amended 2021-2024 TIP within SPC's 10-county region. Appendix B contains a brief summary of every highway, transit, and Pennsylvania Turnpike project identified on the fiscally constrained portion of the 2045 Plan within SPC's 10-county region. The project summaries in Appendices A and B identify whether the projects have been categorized as "exempt". The "non-exempt", regionally significant projects which could be coded on highway and transit networks are also listed on Figure 1. The effect of highway and transit projects which cannot be reflected on coded transportation networks is discussed in Section VII.

Figure 1. Facilities Included on Highway and Transit Networks

1. Base Year (2002) Transportation System

- 1990 Transportation System plus:
  Facilities completed between 1990 and 2002

Allegheny County:

1. West Busway (Downtown Pittsburgh to Carnegie)
2. First Avenue Station – (New Light Rail Transit Station) – [Downtown Pittsburgh]
3. Ohio River Boulevard Extension / West End Bridge Interchange
4. Airport Southern Expressway
5. I-279 Southbound Widening to 3 lanes (McKnight Road to North Avenue)
6. Coraopolis Bridge – (Replace 2-lane bridge with 3-lane bridge on new alignment)
7. Smithfield St. Bridge Widening (Convert trolley right-of-way to third traffic lane)
8. North Fayette/Robinson Interchange (Parkway West)
9. West Main Street Widening to 4 lanes – [Carnegie Borough]
10. West End Bypass Widening to 5 lanes – [City of Pittsburgh]
11. West End Bridge ramp to Route 65 – (Widen to 2 lanes) – [City of Pittsburgh]
12. Hookstown Grade/Ewing Road @ Business Route 60 (Construct interchange)
13. Banksville Road/Parkway West Interchange Improvements
14. Liberty Tunnel South Portal Grade Separation (Route 51 @ West Liberty Avenue)
15. Hot Metal Bridge Reconstruction (East Carson St. to Second Ave.) – [City of Pittsburgh]

Armstrong County:

16. Kittanning Bypass (Route 66 to Route 28)

Beaver County:

17. Beaver Valley Expressway

Butler County:

18. Route 228 Bridge over I-79 (New structure with additional lanes)
19. I-79/Route 228 Interchange (Construct missing ramps)

Fayette County:

20. Uniontown Bypass (Hopwood to Route 119 South)
21. Mon-Fayette Expressway (Uniontown to Fairchance)
22. TR 51 Star Junction Intersection
23. Route 982 / 31 Intersection and Approaches (Laurelville)
24. Mon-Fayette Expressway (Fairchance to West Virginia)

Indiana County:

25. Route 422 Indiana Bypass (SR 119 to SR 286)
26. Route 422 Indiana Bypass (SR 286 to Business 422)

Lawrence County:

27. New Castle Area Transit Authority (NCATA) – Bus Replacements / Fleet Expansion (16 Transit Vehicles)
28. NCATA – Service Expansion (New Route between New Castle and Pittsburgh)
29. NCATA – Construction of New Maintenance Facility / Administration Building (New Castle)
30. Beaver Valley Expressway (Toll 60) – Beaver County Line to Route 422 Bypass
31. Route 422 / 388 Intersection – Traffic Signal Upgrade

Washington County:

32. I-79 Interchange - Western Center (Southpointe)
33. Donora Industrial Access Road - Phase 1 (Route 837 to Industrial Park)

Westmoreland County:

34. Greensburg Bypass – (New Stanton to Delmont)
35. Route 22 Reconstruction/widening to 4 lanes (Delmont to Route 819)
36. Route 22 Reconstruction/widening to 4 lanes (Route 819 to Shieldsburg)

Figure 1. Facilities Included On Highway and Transit Networks (cont.)

2. 2008 Transportation System

- 2002 Transportation System plus:

  Facilities completed between 2002 and 2008

Allegheny County:

1. East Busway Extension - (Wilkinsburg to Rankin)
2. Wilkinsburg Park-N-Ride Facility
3. South Hills Light Rail Transit - (Stage II – Overbrook Line)
4. Wabash Tunnel HOV Facility - (Woodruff Street to East Carson Street)
5. I-279 / I-376 Connector – (Direct ramp from Fort Duquesne Bridge to Parkway East)
6. Mon Fayette Expressway (I-70 to Route 51)
7. Duncan Avenue Extension (East) – [McCandless Twp.]
8. Cargo Road @ Business Route 60 (New interchange) – [Moon Twp.]
9. Frazer (Pgh) Mills Interchange (Rt.28 @ Tawney Run Rd. /Galleria Blvd.) – [Frazer Twp.]
10. Settlers Cabin Interchange (Rt. 22/30 Parkway West @ Ridge Rd.) – [Robinson Twp.]
11. Industry Drive Extension (Phase 1) – [Findlay Twp.]
12. Moon-Clinton Interchange completion - (Add missing ramps north of SR 3089)
13. Southern Beltway (Findlay Connector) – 4 lanes (Airport Southern Expressway to Route 22)
14. Rt. 8 Widening to 4 lanes (Kittanning St. to Saxonburg Blvd.) – [Etna]
15. Route 28 Widening to 3 lanes northbound (Harmar to Creighton)
16. Rt.28 Southbound to I-279 Southbound Connector (Construct new ramp) – [City of Pittsburgh]
17. Cherrington Parkway Extension – (2 Lane Access Road) – [Moon Twp.]

Butler County:

18. I-79/Route 19/Turnpike Exit 28 Interchange (Cranberry Connector)

Fayette County:

19. Route 119 / Walnut Hill Interchange – (Construct two missing ramps to complete interchange)
20. Wayland Smith Drive – New 2-lane Connector (Route 40 to Matthew Dr. Extension)
21. Matthew Drive Extension (Route 40 to New Salem Road [SR 4006])

Greene County:

22. Kiwi Road Extension (Near Greene County Airport [Route 21 to Rolling Meadows Road])

Indiana County:

23. Route 22 @ Route 119 Interchange Completion
24. Route 22 Gas Center – Widen to 4 lanes (Armagh Bypass to Cambria County Line)
25. Route 22 Penn View Summit – Widen to 4 lanes (Route 119 Interchange to Mount Taber Church)
26. Route 119 South – Widen to 4 lanes (SR 22 to SR 56 [Homer City])

Washington County:

27. Donora Industrial Access Road - Phase 2 (Industrial Park to 14th Street)

Westmoreland County:

28. Route 22 Reconstruction/widening to 4 lanes (Shieldsburg to New Alexandria)
29. Route 22 Reconstruction/widening to 4 lanes (Murrysville to Export)
30. Rt. 366 Widening to 4 lanes (Tarentum Bridge to Leechburg Road)
31. I-76 PA.Turnpike Mainline Widen to 3 lanes (Eastbound only) – New Stanton Int. to Somerset Co.
32. Center Avenue - Relocation (near New Stanton)
33. Route 119 @ Sony Corp. – Construct new interchange (near New Stanton)
34. Route 22 Reconstruction/widening to 4 lanes (Export to Delmont)
35. Route 31 - Widen to 4 lanes (3 Mile Hill - Laurelville to Laurel Summit)

3. Existing (2021) Transportation System

- 2008 Transportation System plus:

  Facilities completed between 2008 and 2021

Figure 1. Facilities Included On Highway and Transit Networks (cont.)

Allegheny County:

1. North Shore Connector Project (LRT) Gateway Line – [City of Pittsburgh]
2. I-79 @ I-376 (Parkway West) Interchange - (Construct missing ramps and widen US 22/30 (Parkway West) to 6 lanes – I-79 @ I-376 Interchange to Campbell's Run Road Interchange
3. West End Circle Reconstruct/Realign – (South approach to W. End Bridge) – [City of Pittsburgh]
4. East Carson Street - widened to 4 lanes (25th St. to 33rd St.) – [City of Pittsburgh]
5. Allegheny Circle Improvement – Convert from single direction traffic flow to bi-directional traffic flow – [City of Pittsburgh]
6. Etna Interchange Bridges Phase 4 – (SR 28 NB mainline widened to 2 lanes)
7. Brighton Road Ext. – New 2 lane Connector (General Robinson to N. Shore Dr.) – [City of PGH]
8. Penn Circle Improvement – Convert from multi-lane, single directional traffic flow to bi-directional traffic flow – [City of Pittsburgh]
9. Route 28 Widening (I-579 to Millvale) – [City of Pittsburgh]
10. Hulton Bridge Replacement (New 4 lane bridge over Allegheny River) – [Oakmont to Harmar]
11. Corrigan Drive Upgrade/Road Diet (Reduce from 4 to 2 lanes through South Park)
12. I-76 PA.Turnpike Mainline (Construct New Bridge over Allegheny River) 6 lanes
13. I-76 PA.Turnpike Mainline Widen to 6 lanes (Pine Twp. to Route 8 Interchange)
14. I-76 PA. Turnpike Mainline Widen to 6 lanes (SR 8 Interchange to Allegheny Valley Interchange)

Beaver County:

15. I-76 PA. Turnpike Mainline Widened to 6 lanes (Ohio State Line to I-376 Interchange)
16. Freedom Road Upgrade (Crows Run) -Route 65 to Route 989

Butler County:

17. I-79 Exit 88 Interchange Completion (SR 3025 at Seneca Valley High School)
18. SR 228 Mars Railroad Bridge - Replace existing 2 lane bridge with 4 lane bridge (SR 228 over CSX RR and Breakneck Creek) – [Adams Twp.]
19. Moraine State Park North Shore Access - Interchange Completion (SR 422 @ West Park Road)

Fayette County:

20. Matthew Drive - Widen to 4 lanes (Uniontown)
21. Mon-Fayette Expressway (MFE) (Uniontown to Brownsville) – Phase 1
22. SR 4049 Northgate Highway – New 4 lane Connector (Rt.40 to Rt.51) – Part of MFE Plan Phase 1
23. Mon-Fayette Expressway (Uniontown to Brownsville) – Phase 2
24. Mon-Fayette Expressway (Fairchance to I-68 – West Virginia)
25. Masontown Bridge - Replace existing 2 lane bridge with 4 lane bridge (Rt.21 over Mon. River)
26. Route 21 (Sec. J10) - Widen to 4 lanes (Thompson Crossroads to Rt.119)

Greene County:

27. US 19 Safety Improvements – Widen to 4 lanes (Morrisville Corridor Ph-1– Waynesburg [High St to SR2026])

Indiana County:

28. Route 22 Clyde – Widen to 4 lanes (Mount Taber Church to Armagh Bypass)

Washington County:

29. Union Twp. Park-N-Ride facility (MMVTA - 100-space commuter parking lot)
30. I-79 Meadowlands Interchange - (Construct missing ramps)
31. I-70 Widening to 6 lanes (I-79 North Junction to SR 136 Interchange [Beau St.])
32. I-70 Widening to 6 lanes (SR 136 Interchange [Beau St.] to I-79 South Junction)

Westmoreland County:

33. Route 22 Reconstruction/widening to 4 lanes (New Alexandria to Route 982)
34. Route 22 Reconstruction/widening to 4 lanes (Route 982 to Westinghouse)
35. Route 22 Reconstruction/widening to 4 lanes (Westinghouse to Indiana Co.)
36. Route 30 Widening (St. Vincent's College to Mt. Laurel Shopping Ctr.)
37. Route 981 Widening (North and south approaches to Route 30 intersection)
38. Parnassus Triangle Phase 2 - SR 366 widening to 4 lanes – (Bridge St. to 7th St.)

Figure 1. Facilities Included On Highway and Transit Networks (cont.)

39. I-76 PA. Turnpike Mainline Widened to 6 lanes (Irwin Interchange to New Stanton Interchange)
40. New Stanton Interchange Improvements (I-70)

4. TIP Year (2024) Transportation System

- 2021 Transportation System plus:

Facilities on 2021-2024 TIP for Construction by 2024

Allegheny County:

1. Bus Rapid Transit (BRT) Project (Downtown – Oakland – East End) [City of Pittsburgh]
2. I-79 widening to 3 lanes northbound (Southpointe to Alpine Road)
3. Stevenson Mill Connector [Moon Twp.]
4. Rouser Road Connector [Moon Twp.]
5. I-76 PA. Turnpike Mainline Widened to 6 lanes (Cranberry Interchange to Pine Twp.)

Amendments – Projects added to TIP

|| **6. Market Place District Improvements – Montour Run Rd. – add through lane between**
|| **FedEx Drive and Market Place Blvd (Moon Twp).**
|| **7. I-79 Widening – (Widen to 6 lanes) – Alpine Rd. to Prestley Rd. (S. Fayette Twp).**

Beaver County:

8. I-76 PA. Turnpike Mainline (Construct New Bridge over Beaver River) 6 lanes

Butler County:

9 Freedom Road (SR 3020) Bridge Replacement (Widen to 6 lanes) – Over PA. Turnpike (I-76)
10. Freedom Road (SR 3020) Improvements – Widen to 4 lanes (Haine School Road to Commonwealth Drive)
11. SR 228 Corridor Improvements (Widening to 3 lanes Eastbound only) I-79 to SR 3021 Franklin Road
12. SR 228 Balls Bend - Widen to 4 lanes (Three Degree Rd. to SR 8)
13. SR 228 Three Degree Road – Widen SR 228 to 4 lanes; Intersection improvements
14. Freedom Road Improvements – Widen to 4 lanes (Powell Rd. to Haine School Rd.)
15. Freedom Road Improvements – Widen to 4 lanes (Lovi Rd. to Powell Rd.)

Indiana County:

16. SR 286 – Widen to 4 Lanes (US 422 Interchange to Rustic Lodge Road)

Washington County:

17. Southern Beltway - New 4-lane limited-access toll Expressway (Route 22 to I-79)

5. Interim Year #1 (2025) Transportation System

- 2024 Transportation System plus:

Facilities on 2045 Long Range Plan for Construction between 2024 and 2025

No projects scheduled for completion between 2024 and 2025

Figure 1. Facilities Included On Highway and Transit Networks (cont.)

6. Interim Year #2 (2035) Transportation System

- 2025 Transportation System plus:

Facilities on 2045 Long Range Plan for Construction between 2025 and 2035

Allegheny County:

1. Beaver Avenue Conversion to bi-directional traffic flow [City of Pittsburgh]
2. Painter's Run Road - Widening to 4 lanes (Bower Hill Road to Rob Hollow Road)
3. Route 286 Improvements (Phase 2) – Widening to 4 lanes (Sagamore Hill Dr. to Sandune Dr.)
4. I-79 @ SR 910 Interchange - Widening and installation of additional travel lane
5. Campbell's Run Road Improvements - Widen to 4 lanes - [Robinson Twp.]
6. I-376 Parkway West @ Banksville Interchange improvements
7. PA 28 Highland Park Bridge Interchange Improvements
8. Pa Turnpike – Mon Fayette Project – New 4-lane toll Freeway (Large to Duquesne)
9. Pa Turnpike – Mon Fayette Project – New 4 lane toll Freeway (East Pittsburgh to Monroeville)

Butler County:

10. SR 228 Mars RR Bridge West - Widening to 4 lanes (SR 3015 [Mars-Valencia Road] to SR 3021[Franklin Road])

Amendment – Project added to Long Range Plan

|| **11. SR 356 Improvements – Widen 1.1 mile section to 5-lanes, including center turn lane,**
|| **Harbison Rd. to north of Bear Creek Rd. intersection (Buffalo Twp).**

Fayette County:

12. PA 21 Widening to 4 lanes (Masontown Bridge to Village of Revere)

7. Long Range Plan Horizon Year (2045) Transportation System

- 2035 Transportation System plus:

Facilities on 2045 Long Range Plan for Construction between 2035 and 2045

Allegheny County:

1. Pa Turnpike – Mon Fayette Project – New 4-lane toll Freeway (East Pittsburgh to Duquesne)

All "non-exempt" projects on TIP or Long Range Plan and not listed above could not be coded. Their effect on emissions and conformity determination is qualitatively described in Section VII.

IV. Travel Estimation Process

The travel demand estimates that were used in this conformity analysis are the end result of a model chain that begins by forecasting and distributing population, households and employment for the SPC region. The model chain is iterative in nature. Estimates from the travel demand models are periodically cycled back as inputs to the socio-economic forecasting models.

SPC completed its eleventh cycle of population, household and employment forecasts in the spring of 2019 (Cycle 11 forecast). The Cycle 11 forecast was adopted with the 2045 Plan on June 24, 2019. The Cycle 11 forecast replaced the Cycle 10a forecast which was adopted in 2016. The base year for the Cycle 11 forecast is 2015. The horizon year is 2045. The Cycle 11 forecast was the basis for the highway and transit trip forecasts used in the travel demand model for this conformity assessment. With each cycle, models are revised to take advantage of the latest data and to incorporate evolving modeling techniques.

SPC uses an integrated economic-demographic forecasting model to develop regional estimates of future population and employment. That model, known as REMI (Regional Economic Models, Inc.), integrates an economic forecast with a demographic forecast for economic sub-regions of the United States. An updated REMI model is provided annually. SPC first used the REMI model for forecasting in 1992, when the Cycle 4a forecasts were produced.

Based on historical analysis of the regional economy and a forecast of the U.S. economy, REMI forecasts regional employment, production, and other regional economic variables. REMI also utilizes historical data on population to forecast regional population growth or decline based on a traditional cohort-survival model. Then, based on the economic forecast, REMI determines the amount of migration in or out of the region for workers and their dependents to produce a complete population forecast. The model is recursive in nature. The population forecast is used to revise the employment estimate. The new employment estimate is then used to allow for further changes in economic migration. This cycle continues within the model until the economic and demographic forecasts balance out.

In 1992-93, SPC developed the initial version of its Mature Economic Region Land Use Allocation Model (MERLAM) to allocate regional forecasts of population, households and employment to the traffic analysis zones in the region. The allocation model uses simple algorithms and an extensive database to allocate population and employment. The model's algorithms include a number of policy-sensitive variables. The database includes land use and attractiveness measures. The land use database provides essential baseline information on each traffic analysis zone.

REGIONAL POPULATION

COUNTY	2015	2045	CHANGE 2015-2045	% CHANGE 2015-2045
Allegheny	1,231,145	1,400,888	+169,743	+13.8%
Pittsburgh City	*305,928*	*357,154*	*+51,226*	*+16.7%*
non-Pittsburgh	*925,217*	*1,043,734*	*+118,517*	*+12.8%*
Armstrong	67,979	64,156	-3,823	-5.6%
Beaver	169,785	180,383	+10,598	+6.2%
Butler	185,689	222,117	+36,428	+19.6%
Fayette	134,851	128,468	-6,383	-4.7%
Greene	37,938	38,341	+403	+1.1%
Indiana	87,895	95,804	+7,909	+9.0%
Lawrence	89,162	90,583	+1,421	+1.6%
Washington	208,226	241,574	+33,348	+16.0%
Westmoreland	361,251	394,643	+33,392	+9.2%
TOTAL	2,573,921	2,856,957	+283,036	+11.0%

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TABLE 1 **SPC Jun 2021**

2015 and 2045 population estimates based on REMI forecast.

REGIONAL HOUSEHOLDS

COUNTY	2015	2045	CHANGE 2015-2045	% CHANGE 2015-2045
Allegheny	529,534	617,503	+87,969	+16.6%
Pittsburgh City	*132,468*	*159,173*	*+26,705*	*+20.2%*
non-Pittsburgh	*397,066*	*458,330*	*+61,264*	*+15.4%*
Armstrong	28,524	27,651	-873	-3.1%
Beaver	70,079	76,453	+6,374	+9.1%
Butler	74,476	93,322	+18,846	+25.3%
Fayette	53,997	52,019	-1,978	-3.7%
Greene	14,394	15,318	+924	+6.4%
Indiana	34,061	38,684	+4,623	+13.6%
Lawrence	36,435	38,221	+1,786	+4.9%
Washington	83,739	98,910	+15,171	+18.1%
Westmoreland	151,173	170,375	+19,202	+12.7%
TOTAL	1,076,412	1,228,456	+152,044	+14.1%

TABLE 2 **SPC Jun 2021**

2015 and 2045 household estimates based on REMI forecast.

REGIONAL EMPLOYMENT

	2015				
COUNTY	RETAIL	MANU-FACTURING	SERVICES	OTHER	TOTAL
Allegheny	136,973	38,145	639,453	74,778	889,349
Pittsburgh City	*30,694*	*7,656*	*299,568*	*16,778*	*354,696*
non-Pittsburgh	*106,279*	*30,489*	*339,885*	*58,000*	*534,653*
Armstrong	4,071	2,210	13,611	5,052	24,944
Beaver	13,374	6,957	44,256	7,058	71,645
Butler	20,488	12,830	66,232	15,922	115,472
Fayette	10,817	3,995	33,348	7,177	55,337
Greene	2,650	396	8,802	7,692	19,540
Indiana	7,921	2,416	25,331	10,145	45,813
Lawrence	6,814	3,921	25,248	5,239	41,222
Washington	19,051	9,478	69,515	23,173	121,217
Westmoreland	36,817	18,488	102,926	23,936	182,167
TOTAL	258,976	98,836	1,028,722	180,172	1,566,706

	2045				
COUNTY	RETAIL	MANU-FACTURING	SERVICES	OTHER	TOTAL
Allegheny	149,849	29,670	776,944	80,771	1,037,234
Pittsburgh City	*35,092*	*6,020*	*363,751*	*18,746*	*423,609*
non-Pittsburgh	*114,757*	*23,650*	*413,193*	*62,025*	*613,625*
Armstrong	3,993	1,537	15,215	4,538	25,283
Beaver	13,147	4,830	49,164	6,949	74,090
Butler	22,436	9,219	78,674	15,765	126,094
Fayette	10,177	2,973	37,415	6,682	57,247
Greene	2,491	290	9,405	6,750	18,936
Indiana	8,125	1,801	28,598	10,715	49,239
Lawrence	6,669	3,088	28,582	4,722	43,061
Washington	20,650	7,177	84,430	26,085	138,342
Westmoreland	37,705	13,608	121,626	23,891	196,830
TOTAL	275,242	74,193	1,230,053	186,868	1,766,356

	PERCENT CHANGE 2015-2045				
COUNTY	RETAIL	MANU-FACTURING	SERVICES	OTHER	TOTAL
Allegheny	9.4%	-22.2%	21.5%	8.0%	16.6%
Pittsburgh City	*14.3%*	*-21.4%*	*21.4%*	*11.7%*	*19.4%*
non-Pittsburgh	*8.0%*	*-22.4%*	*21.6%*	*6.9%*	*14.8%*
Armstrong	-1.9%	-30.5%	11.8%	-10.2%	1.4%
Beaver	-1.7%	-30.6%	11.1%	-1.5%	3.4%
Butler	9.5%	-28.1%	18.8%	-1.0%	9.2%
Fayette	-5.9%	-25.6%	12.2%	-6.9%	3.5%
Greene	-6.0%	-26.8%	6.9%	-12.2%	-3.1%
Indiana	2.6%	-25.5%	12.9%	5.6%	7.5%
Lawrence	-2.1%	-21.2%	13.2%	-9.9%	4.5%
Washington	8.4%	-24.3%	21.5%	12.6%	14.1%
Westmoreland	2.4%	-26.4%	18.2%	-0.2%	8.0%
TOTAL	6.3%	-24.9%	19.6%	3.7%	12.7%

TABLE 3 **SPC Jun 2021**

2015 and 2045 employment estimates based on REMI forecast.

The attractiveness measures are used to determine each zone's relative attractiveness for different types of development. By varying the attractiveness measures and by altering the values of the model's policy variables, MERLAM is able to estimate the impact of various regional land use and development scenarios. SPC has updated the databases and streamlined the MERLAM allocation process several times since the initial version was completed. The most recent update occurred in 2018 during development of the Cycle 11 forecasts. The regional population and employment estimates that are output from the latest REMI model served as the basis for the Cycle 11 forecasts. These REMI outputs were then allocated to traffic zones through the use of MERLAM.

SPC's Cycle 11 2015 base year estimates and 2045 forecasts of population, employment, and households were used to estimate regional travel demand for this conformity assessment. SPC developed its travel estimation models to take full advantage of the capabilities of the Cube Voyager software package. Cube Voyager is a library of programs used for transportation planning and travel demand modeling.

Travel simulations for the ten-county SPC travel model region are produced with a standard four-step chain of transportation models developed by SPC and adapted for Cube Voyager processing. The four steps include trip generation, trip distribution, modal split and travel assignment models. Travel was simulated for 2015 and 2045 based on socio-economic data from SPC's Cycle 11 forecasts. County-level socio-economic data is shown in Table 1 (population), Table 2 (households), and Table 3 (employment). The travel model was validated in the spring of 2020 during development of the conformity assessment that was completed for adoption of the 2021-2024 TIP in June. Simulated 2020 travel was validated with 2018 Census data; and 2018 and 2019 traffic counts, VMT, and 2019 transit ridership data.

SPC's trip generation model estimates person trip productions and attractions for three trip purposes (home-based work, home-based other, and non-home based) and truck trip productions and attractions for three truck classes (light, medium, and heavy). Person trip productions are estimated by applying household trip rates to Cycle 11 household data in a cross-classification model stratified by household size and auto ownership. Person trip attractions are estimated by applying trip rates stratified by households and by three employment categories. In some instances, attraction trip rates are further stratified by area. Home-based work trip control totals are averaged production and attraction totals. Home-based other attractions were balanced to match productions. Non-home based person trips and truck trips are estimated by applying trip rates stratified by employment category. These rates are applied to Cycle 11 employment data.

Gravity models were calibrated to distribute person trips and truck trips by each trip generation category. Impedances are a weighted sum of highway travel time and distance to reflect out-of-pocket trip cost. Travel time includes running time, terminal time, and a penalty for major river crossings. Home-based work trips were distributed with peak-period impedances; all other trips were distributed with off-peak impedances.

A control total of average daily air passenger-related travel to and from the Pittsburgh International Airport was derived from historic data available from USDOT and the Bureau of

Transportation Statistics. A gravity model to distribute these trips was calibrated with air enplanement data reported for 2018. These trips were then added to home-based other trips.

The home-based work component of the mode split model was initially developed by SPC in 1995 when calibration of a home-based work trip auto occupancy and mode split model was completed. In addition to estimating the number of person trips using transit, the home-based work mode split model also stratifies non-transit trips by four levels of auto occupancy (drive alone, two person carpools, three person carpools, and vehicles with four or more occupants). Based on those stratifications the model then converts home-based highway person trips into vehicle trips for use in highway assignment. The model is sensitive to the presence of high-occupancy vehicle (HOV) facilities in the highway network. The 2014-2018 Census American Community Survey (ACS) Journey-to-Work (JTW) data reported that, regionwide, 9.7 percent of persons traveling to work were in HOVs (vehicles with two or more occupants). Table 4 compares actual JTW percentages with the model simulation by trip attraction districts. Actual numbers of trips, while shown in the table, should not be compared because JTW data only represents persons working at their primary job rather than all home-based work trips. The SPC model estimates that 10.5 percent of 2020 work trips travel in HOVs.

The auto occupancy component of the mode split model could not be used for non-work trips because the JTW survey data includes only work trips. There are no locally available data sources for calibration of non-work trips. Non-work highway person trips were converted to vehicle trips by applying vehicle occupancy rates developed by SPC and stratified by trip purpose and attraction district.

Three components of travel impedance by auto and transit modes are included in the mode split model. These are run time (total in-vehicle time), "excess" time (total out-of-vehicle time), and cost (out-of-pocket cost). For home-based work trips the impedances are based on restrained highway travel times and peak period transit service. For home-based other and non-home based trips, impedances are based on free-flow highway times and mid-day transit service.

Table 5 compares observed and simulated transit route trips. Simulated network assignment summaries for 2020 and observed data for an average month (May) in 2019 were used for the comparisons. The route trip data and corridor definitions were obtained from Port Authority of Allegheny County and other transit providers in the region. Table 5 shows that, regionally, simulated route trips are within two percent of observed data.

Overall, it was determined that transit mode split and transit assignment results were reasonably close to observed data.

HOV MODEL VALIDATION
Auto Person Trip Attractions

County	2014-2018 Census ACS		2020 SPC Simulated		Percent HOV	
	SOV	HOV	SOV	HOV	ACS	SPC
ALLEGHENY	512,459	60,555	680,913	87,958	10.6%	11.4%
ARMSTRONG	14,657	1,422	45,744	6,776	8.8%	12.9%
BEAVER	47,077	5,323	112,513	13,708	10.2%	10.9%
BUTLER	79,357	7,266	136,073	13,889	8.4%	9.3%
FAYETTE	33,663	2,927	85,299	8,426	8.0%	9.0%
GREENE	12,649	1,120	23,931	2,505	8.1%	9.5%
INDIANA	28,786	3,273	56,261	5,297	10.2%	8.6%
LAWRENCE	25,640	2,870	59,617	5,460	10.1%	8.4%
WASHINGTON	78,021	7,478	141,618	16,387	8.7%	10.4%
WESTMORELAND	123,014	10,914	250,051	27,032	8.1%	9.8%
OUTSIDE ALLEG	442,864	42,593	911,107	99,480	8.8%	9.8%
GRAND TOTAL	955,323	103,148	1,592,020	187,438	9.7%	10.5%

TABLE 4 **SPC Jun 2021**

TRANSIT ROUTE TRIP VALIDATION BY CORRIDOR

SUB-CORRIDOR NAME	ACTUAL May 2019	ASSIGNMENT 2020	ASSIGN / ACTUAL
ALLEGHENY VALLEY	2,506	1,502	0.60
NORTH HILLS	18,110	16,539	0.91
HOV LANE EXPRESS	2,823	5,981	2.12
OHIO VALLEY	6,270	7,534	1.20
TOTAL NORTH HILLS	29,709	31,556	1.06
WEST END - CARNEGIE	9,676	10,177	1.05
BANKSVILLE - GREENTREE	4,037	6,794	1.68
SOUTH HILLS LRV	26,514	25,173	0.95
AIRPORT SERVICE	3,058	3,356	1.10
WEST LIBERTY AVENUE	3,398	4,148	1.22
MT. WASHINGTON - HILLTOP	1,323	213	0.16
SAW MILL RUN - SOUTH BUSWAY	5,319	7,903	1.49
SOUTHSIDE	12,440	8,696	0.70
TOTAL SOUTH HILLS - WEST END	65,765	66,460	1.01
SECOND AVENUE	4,073	3,680	0.90
MON VALLEY EXPRESS	704	923	1.31
HOMESTEAD LOCAL AND EXPRESS	5,906	6,216	1.05
MCKEESPORT LOCAL	608	338	0.56
MONROEVILLE - EAST PITTSBURGH	0	0	----
TOTAL SOUTHEAST	11,291	11,157	0.99
FIFTH AVENUE	22,271	32,551	1.46
FORBES AVENUE - SQUIRREL HILL	23,109	15,876	0.69
EAST SUBURBAN - BLVD OF ALLIES	9,771	5,252	0.54
EAST BUSWAY	15,202	25,651	1.69
BIGELOW BLVD - PENN HILLS	7,504	7,476	1.00
HILL DISTRICT - CENTER AVENUE	8,826	3,079	0.35
BUTLER STREET - EAST LIBERTY	4,965	2,498	0.50
HOMEWOOD - PENN / LIBERTY	7,142	3,114	0.44
TOTAL EAST END	98,790	95,497	0.97
INCLINES	809	1,436	1.78
OTHER PORT AUTHORITY	5,644	7,813	1.38
TOTAL PORT AUTHORITY SYSTEM	212,008	213,919	1.01
NON-PORT AUTHORITY ROUTES	9,918	11,761	1.19
TOTAL TRANSIT NETWORK	221,926	225,680	1.02

TABLE 5 **SPC Jun 2021**

A gravity model was calibrated for distributing internal/external vehicle trips (trips with one end inside and one end outside the region). To generate the internal/external trips, relationships were initially developed between internal person trip ends by county and census 2010 journey to work data for work trips destined to the region from the external area. These trip patterns were factored to match PennDOT and SPC traffic count data by external cordon segment as shown on Map 4. Table 6 compares simulated external cordon segment volumes to PennDOT and SPC traffic count data from various years and factored to a 2019 value using factors supplied by PennDOT. The total simulated 2020 volume regionwide is about two percent higher than the observed volume.

An estimate of through trips (vehicle trips with both ends outside the region) is the final component of trips needed for the regional trip matrices. Results from SPC's 2006 External Cordon Survey provided traffic volume estimates for the major travel corridors crossing the region's boundary. These traffic volumes were factored to a 2019 value using factors supplied by PennDOT. The growth in through trips for forecast years is based on the increase in trips in the modeled area (all except Allegheny) for the appropriate time period.

SPC assigns vehicle trips to the Cube Voyager-based highway networks with a multi-iteration equilibrium assignment process which includes capacity restraint after each iteration. The impedances used for capacity restraint are highway based costs which include weighted values of time and distance. Through trips and medium and heavy-duty truck trips are pre-loaded on the network with a one pass assignment that attracts these vehicles to high-level facilities in the network and keeps them there through iterations of capacity restraint. Also, the highway assignment procedure permits only HOV trips to use HOV facilities. The accuracy of the travel estimation process was validated with 2018 traffic counts at PennDOT's permanent traffic count stations in the region and 2018 highway VMT data.

SPC initially collected traffic counts on the bridges crossing the Allegheny, Monongahela, and Ohio rivers in 2007. More recent traffic counts were collected for some of the bridges in 2017, 2018 and 2019. All of the traffic counts were factored to 2018 values using factors supplied by PennDOT. Table 7 compares simulated river crossing volumes to the factored SPC traffic count data. Map 6 illustrates the river crossing segments reported in Table 7. The total simulated 2020 volume regionwide is about ten percent higher than the factored 2018 volume.

PennDOT maintains eleven permanent traffic count stations in the region as shown on Map 4. A comparison of 2018 traffic counts to assigned 2020 link volumes at each location is made in Table 8. The total simulated volume for all eleven stations is about fifteen percent lower than the observed volume.

VMT, stratified by functional class and county, from a 2020 traffic assignment was compared to 2018 VMT estimates made by PennDOT. Regionwide, there was a five percent difference between observed and simulated VMT. That comparison is shown in Table 9.

Overall, it was determined that highway assignment results were reasonably close to the observed data.

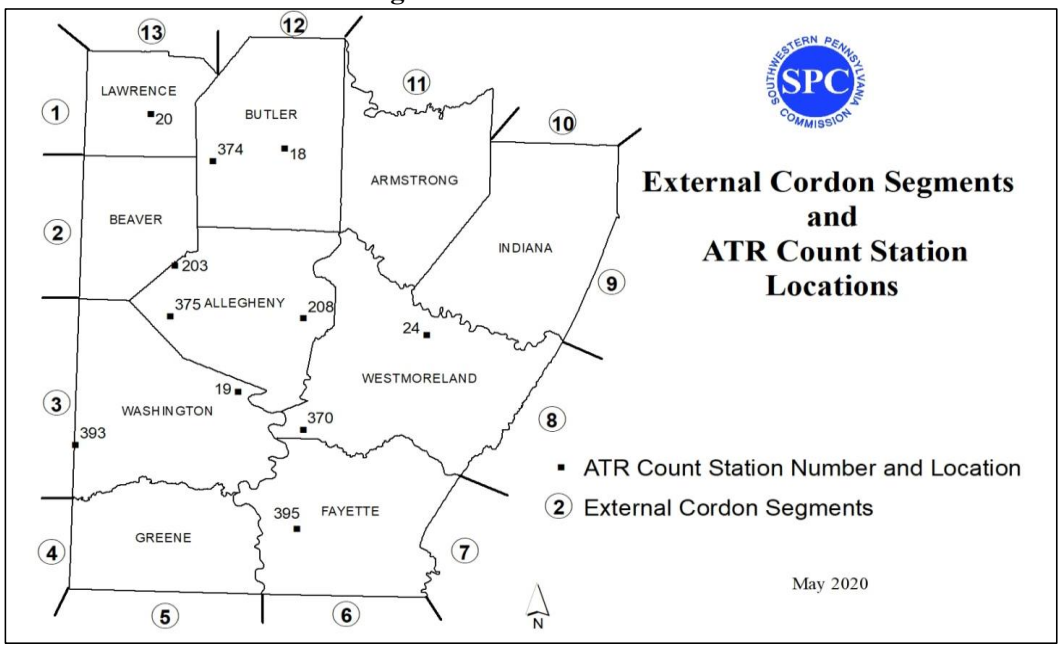
TRAVEL MODEL VALIDATION
External Cordon Volume Comparisons

CORDON SEGMENT	COUNTY	OBSERVED VOLUME	SIMULATED VOLUME	SIMULATED / OBSERVED
1	Lawrence	38,615	37,463	0.97
2	Beaver	23,164	29,527	1.27
3	Washington	63,225	62,973	1.00
4	Greene	1,267	2,384	1.88
Western Boundary Total		**126,271**	**132,347**	**1.05**
5	Greene	34,890	28,308	0.81
6	Fayette	18,518	18,526	1.00
Southern Boundary Total		**53,408**	**46,834**	**0.88**
7	Fayette	8,207	11,460	1.40
8	Westmoreland	48,420	35,592	0.74
9	Indiana	27,264	27,551	1.01
Eastern Boundary Total		**83,891**	**74,603**	**0.89**
10	Indiana	11,125	11,433	1.03
11	Armstrong	13,312	19,200	1.44
12	Butler	20,466	27,804	1.36
13	Lawrence	53,720	57,135	1.06
Northern Boundary Total		**98,623**	**115,572**	**1.17**
TOTAL		**362,193**	**369,356**	**1.02**

Table 6 **SPC Jun 2021**

Observed volume is from SPC 2005 - 2006 external cordon counts, factored to 2019 values, and from factored PennDOT data.
Simulated volume from SPC assigned 2020 trips.

TRAVEL MODEL VALIDATION
External Cordon Segments and ATR Count Station Locations



Map 4 **SPC Jun 2021**

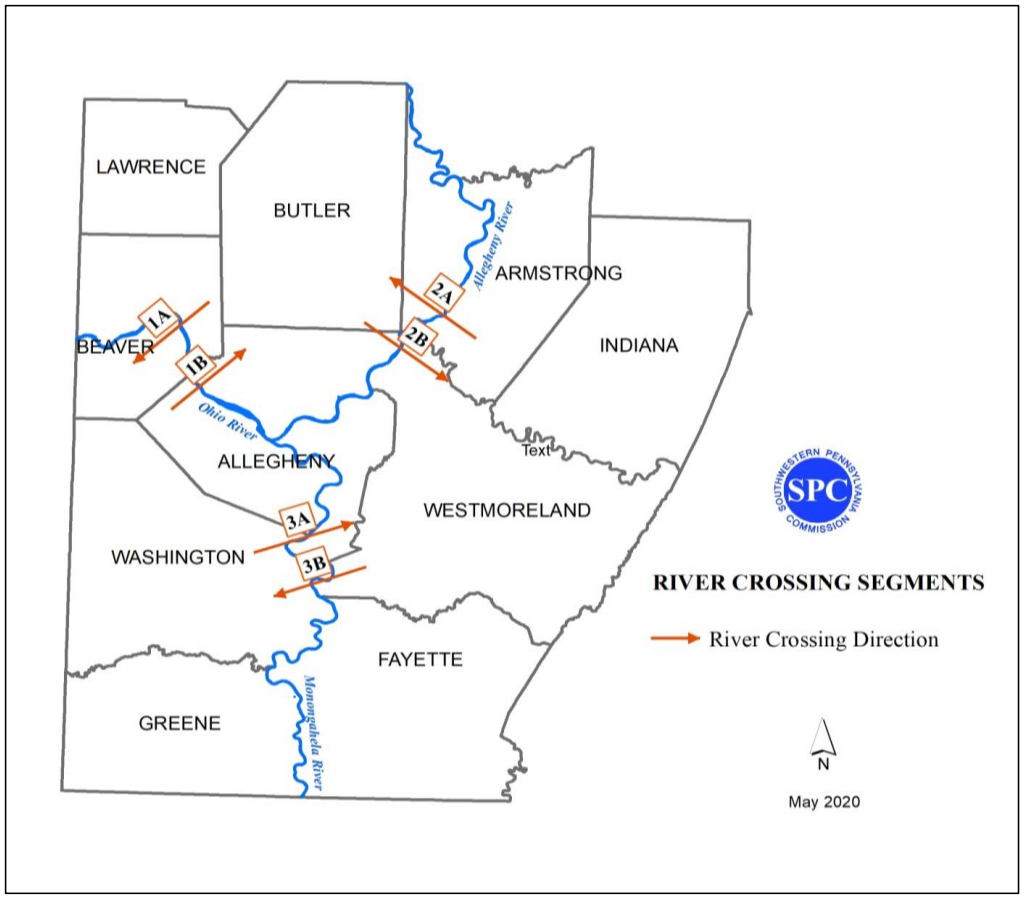
TRAVEL MODEL VALIDATION
River Crossing Volume Comparisons

RIVER CROSSING SEGMENT	OBSERVED VOLUME	SIMULATED VOLUME	SIMULATED / OBSERVED
1A	122,427	133,405	1.09
1B	115,607	125,625	1.09
Ohio River Total	**238,034**	**259,030**	**1.09**
2A	221,708	236,189	1.07
2B	230,885	232,535	1.01
Allegheny River Total	**452,593**	**468,724**	**1.04**
3A	252,006	293,827	1.17
3B	248,689	290,669	1.17
Monongahela River Total	**500,695**	**584,496**	**1.17**
TOTAL	**1,191,322**	**1,312,250**	**1.10**

Table 7 **SPC Jun 2021**

Observed volume is from SPC 2007 Bridge count, factored to 2018 values,
and from more recent SPC and PennDOT counts factored to 2018 volumes.
Simulated volume from SPC assigned 2020 trips.

TRAVEL MODEL VALIDATION
River Crossing Segments



Map 5 **SPC Jun 2021**

TRAVEL MODEL VALIDATION
Traffic Volume Comparisons - ATR Stations

COUNT STATION	COUNTY	ROUTE	OBSERVED VOLUME	SIMULATED VOLUME	SIM/ OBS
18	Butler	PA 38	6,172	7,380	1.20
19	Washington	PA 88	5,656	8,468	1.50
20	Lawrence	PA 65	6,947	9,160	1.32
24	Westmoreland	US 22	21,787	20,519	0.94
203	Allegheny	PA 65	20,299	19,562	0.96
208	Allegheny	I-376	94,814	75,740	0.80
370	Westmoreland	I-70	31,294	14,595	0.47
374	Butler	I-79	30,731	20,471	0.67
375	Allegheny	US 22/30	26,285	30,857	1.17
393	Washington	I-70	35,219	32,727	0.93
395	Fayette	PA 21	10,088	4,980	0.49
		TOTAL	289,292	244,459	0.85

Table 8 **SPC Jun 2021**

Observed volume is "Average Weekday Traffic" from 2018 PennDOT data.
Simulated volume from SPC assigned 2020 trips.

TRAVEL MODEL VALIDATION
VMT Comparisons

	Observed VMT (000)			
COUNTY	INTERSTATE	ARTERIAL	COLLECTOR LOCAL	TOTAL
Allegheny	6,440	11,804	4,764	23,008
Armstrong	0	1,043	426	1,469
Beaver	970	1,586	994	3,549
Butler	1,190	2,490	1,737	5,416
Fayette	0	1,736	1,085	2,821
Greene	621	417	472	1,510
Indiana	0	1,235	739	1,974
Lawrence	583	717	694	1,993
Washington	2,677	2,272	1,252	6,201
Westmoreland	2,177	4,145	2,496	8,818
TOTAL	14,657	27,444	14,659	56,761

	Simulated VMT (000)			
COUNTY	INTERSTATE	ARTERIAL	COLLECTOR LOCAL	TOTAL
Allegheny	4,179	13,940	4,540	22,660
Armstrong	0	930	608	1,538
Beaver	323	2,390	1,079	3,791
Butler	753	2,353	1,767	4,874
Fayette	0	1,521	853	2,374
Greene	343	335	600	1,279
Indiana	0	1,369	842	2,211
Lawrence	248	1,203	666	2,118
Washington	1,454	2,056	1,714	5,225
Westmoreland	1,352	3,706	2,613	7,670
TOTAL	8,653	29,804	15,282	53,739

	Simulated/Observed VMT			
COUNTY	INTERSTATE	ARTERIAL	COLLECTOR LOCAL	TOTAL
Allegheny	0.65	1.18	0.95	0.98
Armstrong	---	0.89	1.43	1.05
Beaver	0.33	1.51	1.09	1.07
Butler	0.63	0.95	1.02	0.90
Fayette	---	0.88	0.79	0.84
Greene	0.55	0.81	1.27	0.85
Indiana	---	1.11	1.14	1.12
Lawrence	0.43	1.68	0.96	1.06
Washington	0.54	0.91	1.37	0.84
Westmoreland	0.62	0.89	1.05	0.87
TOTAL	0.59	1.09	1.04	0.95

TABLE 9 **SPC May 2020**

Observed VMT from 2018 PennDOT data.
Simulated VMT from SPC-assigned 2020 link VMT.

The above models were used in this conformity assessment to produce regional person trip matrices for 2020 from the Cycle 11 base year estimates. In addition, trip productions and attractions were generated for 2045 from the Cycle 11 2045 forecast. Prior to trip distribution, productions and attractions for 2021, 2024, 2025, and 2035 were developed by interpolating between 2020 and 2045. Trip distribution for each scenario was based on the characteristics of the transportation network defined for the scenario.

Free-flow highway speeds and link capacities are selected from a look-up table that is stratified by roadway facility type and area type. SPC has developed a model to calculate area type based on population and employment densities. In general, free-flow speed and capacity will decrease with increased development density. The area type model provides an automated procedure for updating area type codes in the network based on changes in existing and future development densities. The area type model was applied for each scenario using Cycle 11 population and employment densities estimated for the scenario year.

Modal split model runs were made for each scenario using appropriate combinations of trip tables and transportation networks. Modal split results for the 2021 network are presented in Table 10. The 2045 network modal split results are shown in Table 11. Table 12 summarizes regional trips by purpose and mode for each of the five scenarios defined for this conformity assessment of the 2021-2024 TIP and updated 2045 Plan. Table 13 summarizes modeled HOV trips for each scenario.

2021 MODAL SPLIT SUMMARY

	2021 Person Trip Attractions				2021 Auto Trip Attractions				2021 Transit Trip Attractions				2021 Transit/2021 Total Person			
DISTRICT	HBW	HBO	NHB	TOT	HBW	HBO	NHB	TOT	HBW	HBO	NHB	TOT	HBW	HBO	NHB	TOT
CBD	136898	79137	34432	250467	61869	42770	24806	129445	59583	13208	4030	76821	43.52%	16.69%	11.70%	30.67%
PGH E	167880	282894	108650	559424	132611	167897	77053	377561	27020	18014	7756	52790	16.09%	6.37%	7.14%	9.44%
PGH S	40591	61625	23085	125301	36661	38281	17237	92179	1789	1293	369	3451	4.41%	2.10%	1.60%	2.75%
PGH N	50499	106696	46779	203974	45720	71009	36580	153309	2275	1803	797	4875	4.51%	1.69%	1.70%	2.39%
PGH TOT	258970	451215	178514	888699	214992	277187	130870	623049	31084	21110	8922	61116	12.00%	4.68%	5.00%	6.88%
ALG E	135259	420813	119292	675364	126879	273614	82196	482689	1795	2356	698	4849	1.33%	0.56%	0.59%	0.72%
ALG N	197436	573553	165434	936423	185635	370713	113753	670101	2191	2636	514	5341	1.11%	0.46%	0.31%	0.57%
ALG S	146918	465258	135951	748127	137798	299838	93530	531166	2633	3570	1006	7209	1.79%	0.77%	0.74%	0.96%
ALG W	135317	385704	108043	629064	126350	262424	78009	466783	1591	2594	463	4648	1.18%	0.67%	0.43%	0.74%
ALG TOT	614930	1845328	528720	2988978	576662	1206589	367488	2150739	8210	11156	2681	22047	1.34%	0.60%	0.51%	0.74%
OUTSIDE ALG	878134	2352653	634206	3864993	835272	1569999	453577	2858848	2987	3872	1205	8064	0.34%	0.16%	0.19%	0.21%
GRAND TOTAL	1888932	4728333	1375872	7993137	1688795	3096545	976741	5762081	101864	49346	16838	168048	5.39%	1.04%	1.22%	2.10%

TABLE 10

SPC Jun 2021

2045 MODAL SPLIT SUMMARY

	2045 Person Trip Attractions				2045 Auto Trip Attractions				2045 Transit Trip Attractions				2045 Transit/2045 Total Person			
DISTRICT	HBW	HBO	NHB	TOT	HBW	HBO	NHB	TOT	HBW	HBO	NHB	TOT	HBW	HBO	NHB	TOT
CBD	159308	93540	40326	293174	71624	49333	23835	144792	69616	17402	11089	98107	43.70%	18.60%	27.50%	33.46%
PGH E	197584	331088	125162	653834	150471	195678	80126	426275	37725	22197	20211	80133	19.09%	6.70%	16.15%	12.26%
PGH S	42826	66784	24698	134308	38681	41535	18345	98561	1835	1408	519	3762	4.28%	2.11%	2.10%	2.80%
PGH N	56608	121137	52222	229967	51190	80594	40656	172440	2619	2094	1129	5842	4.63%	1.73%	2.16%	2.54%
PGH TOT	297018	519009	202082	1018109	240342	317807	139127	697276	42179	25699	21859	89737	14.20%	4.95%	10.82%	8.81%
ALG E	144795	453764	125976	724535	135732	294977	86567	517276	1811	2528	1097	5436	1.25%	0.56%	0.87%	0.75%
ALG N	221726	655106	182801	1059633	208826	423661	125614	758101	2141	2643	705	5489	0.97%	0.40%	0.39%	0.52%
ALG S	164181	519244	148613	832038	154198	334527	102105	590830	2807	4017	1285	8109	1.71%	0.77%	0.86%	0.97%
ALG W	158795	451284	123715	733794	148588	307716	89460	545764	1579	2763	593	4935	0.99%	0.61%	0.48%	0.67%
ALG TOT	689497	2079398	581105	3350000	647344	1360881	403746	2411971	8338	11951	3680	23969	1.21%	0.57%	0.63%	0.72%
OUTSIDE ALG	940148	2563251	671145	4174544	895294	1709927	479542	3084763	3045	4008	1207	8260	0.32%	0.16%	0.18%	0.20%
GRAND TOTAL	2085971	5255198	1494658	8835827	1854604	3437948	1046250	6338802	123178	59060	37835	220073	5.91%	1.12%	2.53%	2.49%

TABLE 11

SPC Jun 2021

TRAVEL MODEL RESULTS
Trips By Purpose and Mode

YEAR	SCENARIO	- - - Total Person Trip Attractions - - - HBW	HBO	NHB	TOTAL
2021	2021 Existing Year	1,888,932	4,728,333	1,375,872	7,993,137
2024	2024 TIP Year	1,913,614	4,794,256	1,390,797	8,098,667
2025	2025 Interim Year #1	1,921,770	4,816,151	1,395,687	8,133,608
2035	2035 Interim Year #2	2,003,872	5,035,638	1,445,164	8,484,674
2045	2045 Long Range Plan Year	2,085,971	5,255,198	1,494,658	8,835,827

YEAR	SCENARIO	--- Auto Vehicle Trip Attractions --- HBW	HBO	NHB	TOTAL
2021	2021 Existing Year	1,688,795	3,096,545	976,741	5,762,081
2024	2024 TIP Year	1,703,001	3,137,996	974,147	5,815,144
2025	2025 Interim Year #1	1,710,054	3,152,241	977,531	5,839,826
2035	2035 Interim Year #2	1,783,059	3,295,024	1,011,869	6,089,952
2045	2045 Long Range Plan Year	1,854,604	3,437,948	1,046,250	6,338,802

YEAR	SCENARIO	--- Transit Person Trip Attractions --- HBW	HBO	NHB	TOTAL
2021	2021 Existing Year	101,864	49,346	16,838	168,048
2024	2024 TIP Year	111,377	52,510	34,055	197,942
2025	2025 Interim Year #1	112,084	52,804	34,245	199,133
2035	2035 Interim Year #2	117,105	56,029	36,066	209,200
2045	2045 Long Range Plan Year	123,178	59,060	37,835	220,073

YEAR	SCENARIO	--- Transit / Total Person Trips --- HBW	HBO	NHB	TOTAL
2021	2021 Existing Year	5.39%	1.04%	1.22%	2.10%
2024	2024 TIP Year	5.82%	1.10%	2.45%	2.44%
2025	2025 Interim Year #1	5.83%	1.10%	2.45%	2.45%
2035	2035 Interim Year #2	5.84%	1.11%	2.50%	2.47%
2045	2045 Long Range Plan Year	5.91%	1.12%	2.53%	2.49%

TABLE 12 **SPC Jun 2021**

HOV MODEL RESULTS

Vehicle Trips By Vehicle Occupancy Level

(Home-Based Work Trips Only)

YEAR	SCENARIO	- - - HBW Vehicle Trips by Vehicle Occupancy - - -				
		1	2	3	4+	TOTAL
2021	2021 Existing Year	1,598,824	83,296	5,361	1,318	1,688,799
2024	2024 TIP Year	1,612,230	84,014	5,420	1,320	1,702,984
2025	2025 Interim Year #1	1,618,913	84,355	5,442	1,322	1,710,032
2035	2035 Interim Year #2	1,688,206	87,789	5,661	1,391	1,783,047
2045	2045 Long Range Plan Year	1,755,690	91,553	5,917	1,462	1,854,622

TABLE 13 **SPC Jun 2021**

V. Development of Emission Factors

This section summarizes how EPA's MOVES 2014a emissions model was used to develop emission factors for this conformity determination.

MOVES 2014a (Motor Vehicle Emissions Simulator) is EPA's official model for estimating emissions from highway vehicles for SIP emission inventories and transportation conformity. The methodologies incorporated into MOVES for estimating emissions are based on methods and research conducted by EPA. EPA requires its use in conformity assessments to estimate emissions.

The analysis methodology and data inputs for this analysis were developed through interagency consultation and are based on information from available EPA guidance documents including: *Policy Guidance on the Use of MOVES 2014 and Subsequent Minor Revisions for State Implementation Plan Development, Transportation Conformity, and Other Purposes*, US EPA Office of Transportation and Air Quality, EPA-420-B-14-008, July 2014; *MOVES 2014 and MOVES 2014a Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity.* US EPA Office of Transportation and Air Quality, EPA-420-B-15-093, November 2015; *MOVES 2014a User Guide*, US EPA Office of Transportation and Air Quality, EPA-420-B-14-095; November 2014.

MOVES emission estimates depend on a mix of local and default (internal to MOVES) data that are used in the analysis. Local data is used for data items that have a significant impact on emissions, including: vehicle miles of travel (VMT), vehicle population, congested speeds, and vehicle type mix, as well as environmental and fuel assumptions. Local data inputs to the analysis process reflect the latest available planning assumptions using information obtained from PennDOT, DEP and other local and national sources.

The methodology used for this analysis includes the use of custom software (PPSUITE) to calculate hourly speeds and prepare key traffic input files from outputs of SPC's travel model, for input to the MOVES emission model. PPSUITE consists of a set of programs that analyzes highway operating conditions, calculates highway speeds, compiles VMT and vehicle type mix data, and prepares MOVES runs and processes MOVES outputs. PPSUITE is a widely used and accepted tool for estimating speeds and processing emissions rates. The PPSUITE tool has been used for developing on-road highway mobile source inventories in SIP revisions, control strategy analyses, and conformity analyses in other states. The software was developed to utilize accepted transportation engineering methodologies. The PPSUITE process is integral to SPC's conformity analysis to produce traffic-related input files to the MOVES emission model, based on the outputs from SPC's travel demand model.

Other MOVES input files are prepared externally to the PPSUITE software, including vehicle population, vehicle age, environmental, and fuel input files. The CENTRAL software is also used in this analysis. CENTRAL is a menu-driven software platform that executes the PPSUITE and MOVES processes in batch mode. The CENTRAL software allows users to execute runs for a variety of input options and integrates custom MYSQL steps into the process. CENTRAL

provides important quality assurance and quality control (QA/QC) steps, including file naming conventions and file storage automation.

A large number of inputs to MOVES are needed to fully account for the numerous vehicle and environmental parameters that affect emissions. These inputs include traffic flow characteristics, vehicle descriptions, fuel parameters, I/M program parameters and environmental variables. MOVES includes a default national database of meteorology, vehicle fleet, vehicle activity, fuel, and emission control program data for every county in the country. EPA, however, cannot certify that the default data is the most current or best available information for any specific area. As a result, local data, where available, is recommended for use when conducting a regional conformity analysis. A mix of local and default data is used for this analysis.

Emission rates within MOVES vary significantly by vehicle type. MOVES produces emission rates for thirteen vehicle source input types. The emissions estimation process includes a method to disaggregate the traffic volumes output from SPC's travel demand model to the thirteen vehicle source types. Vehicle type pattern data is used by PPSUITE to distribute the hourly roadway segment volumes among the thirteen vehicle source types. Similar to the 24-hour pattern data, this data contains percentage splits to each source type for every hour of the day. The vehicle type pattern data is developed from several sources including PennDOT truck percentages from PennDOT's statewide Roadway Management System (RMS) database, hourly distributions for trucks and total traffic compiled by PennDOT's Bureau of Planning and Research (BPR), transit data from PennDOT and the National Transit Database Transit Profiles, and school bus registration data from PennDOT's Bureau of Motor Vehicles Registration Database.

Vehicle type percentages are also input into the capacity analysis section of PPSUITE to adjust the speeds in response to truck volume. Larger trucks take up more roadway space compared to an equal number of cars and light trucks, which is accounted for in the speed estimation process by adjusting capacity using information from the Transportation Research Board's fifth edition of the *Highway Capacity Manual*.

Vehicle age distributions are input to MOVES for each of the thirteen source types. These distributions reflect the percentage of the vehicle fleet falling under each vehicle model year (MY), to a maximum age of 31 years. The vehicle age distributions by county were prepared from the most recently available registration download from PennDOT's Bureau of Motor Vehicles Registration Database. Information for light duty vehicles from those sources was used as local data for MOVES inputs. Due to local source data limitations, the internal MOVES national default data information for heavy-duty vehicle characteristics was used for this analysis.

The vehicle population information, including the number and age of vehicles, impacts the forecasted vehicle start and evaporative emissions within MOVES. Similar to vehicle ages, MOVES requires vehicle populations for each of the thirteen source type categories. County vehicle registration data was used to estimate vehicle population for light-duty vehicles, transit buses, and school buses. Other heavy-duty vehicle population values were based on VMT for

each source type using the vehicle mix and pattern data discussed previously. PPSUITE automatically applies MOVES default ratios of VMT and source type population (e.g. the number of miles per vehicle by source type) to the local VMT estimates to produce vehicle population.

Average monthly humidity values as well as monthly minimum and maximum temperature values are consistent with the regional State Implementation Plan (SIP) modeling conducted by DEP.

The MOVES default fuel formulation and fuel supply data were reviewed and updated based on available local volumetric fuel property information. Values were updated for the market penetration rates for gasoline/ethanol blends (gasohol) and for fuel Reid Vapor Pressure (RVP). MOVES default data was used for the remaining parameters.

The default vehicle emissions inspection and maintenance (I/M) program parameters included in MOVES were examined for each county in the SPC region. Necessary changes were made to the MOVES default parameters to match the actual local program. A basic I/M program was begun by Pennsylvania in 1984 and applied to virtually all light-duty gasoline powered cars and trucks newer than the 1967 model year that were registered within designated areas of the state. A computerized analysis of vehicle tailpipe exhaust emissions with the engine idling (idle test) was performed annually. The test was conducted by licensed inspection facilities where repairs on inspected vehicles could also be performed. Within the Southwestern Pennsylvania region, the basic I/M program applies only to pre-1981 model year vehicles registered in four counties (Allegheny, Beaver, Washington and Westmoreland). Estimates of failure rates, test waiver rates, and compliance rates for the basic I/M program are also are specified in the I/M program parameters.

Pennsylvania implemented an enhanced I/M program in 1997 for the Southwestern Pennsylvania region. That program applies to virtually all gasoline powered cars and trucks between model years 1981 and 1995 that are registered in Allegheny, Beaver, Washington and Westmoreland counties. The enhanced I/M program employs a more precise emissions test. As with basic I/M, the test is conducted annually by licensed inspection facilities where repairs to inspected vehicles can also be performed. The test measures tailpipe emissions at two engine speeds. One test is made while the engine is idling and the second test occurs after completion of a 30 second, 2,500 rpm cycle. Estimates of failure rates, test waiver rates and compliance rates for the enhanced I/M program are also specified.

Further enhancements to the I/M program were implemented in 2003 for the Southwestern Pennsylvania region. That new program utilizes On-Board Diagnostics (OBD) technology and applies to 1996 model year and newer gasoline powered cars and light trucks. This annual test is conducted by licensed inspection facilities where repairs to inspected vehicles can also be performed. When a vehicle is taken to a service center or repair shop, the diagnostic trouble codes stored in the vehicle's computer memory are retrieved. The diagnostic trouble codes identify failures, malfunctions, or deterioration of the vehicle's emissions control components.

Estimates of failure rates, test waiver rates, and compliance rates for the OBD I/M program are also specified.

Scenarios that specify the enhanced or OBD I/M programs also include an anti-tampering program consisting of a visual inspection of the emissions control system components to detect tampering and other damage. The program mandates the repair or replacement of defective or missing components.

The Pennsylvania Clean Vehicles (PCV) Program, adopted in 1998, incorporates the California Low Emission Vehicle Program (CA LEV, as amended) by reference although it allowed automakers to comply with the National Low Emission Vehicle (NLEV) program as an alternative to this Pennsylvania program until model year (MY) 2006. Beginning with MY 2008, "new" passenger cars and light-duty trucks with a gross vehicle weight rating (GVWR) of 8,500 pounds or less that are sold or leased and titled in Pennsylvania must be certified by the California Air Resources Board (CARB) or be certified for sale in all 50 states. For this program, a "new" vehicle is a qualified vehicle with an odometer reading less than 7,500 miles. DEP and PennDOT worked with the automobile manufacturers, dealers, and other interested business partners and finalized procedures for complying with these requirements. DEP is focusing on its outreach with the manufacturers and dealers on what they can offer for sale and how to certify that the vehicles are compliant. PennDOT's role is to ensure paperwork procedures for title and registrations include these certifications of compliance or that the vehicle owner qualifies for an exemption to the requirements. In all cases, DEP will use information obtained during PennDOT's title and registration process to oversee and audit, as needed, certain vehicle title transactions to determine compliance to the program. The impacts of this program are modeled for all analysis years beyond 2008.

After computing speeds and aggregating VMT and VHT, PPSUITE prepares traffic-related inputs needed to run EPA's MOVES software. Additional required MOVES inputs are prepared externally from the processing software and include temperatures, I/M program parameters, fuel characteristics, vehicle fleet age distributions, and source type population. The MOVES county importer file (movesimporter.xml) is created and run in batch mode. This program converts all data files into the MYSQL format used by the MOVES model. At that point, a MOVES run specification file (*.mrs) is created which specifies options and key data locations for the run. The MOVES run is then executed by PPSUITE in batch mode. MOVES can be executed using either an inventory or rate-based approach. For this analysis, MOVES is applied using the inventory-based approach. Using this approach, actual VMT and vehicle population are provided as inputs to the model; MOVES is responsible for producing the total emissions for the region.

Sample MOVES 2014a data importer files (*.xml) and run specification files (*.mrs) are provided in Appendix C.

VI. Transportation Model Application and Results

Five scenarios were defined by selectively assigning the 2021, 2024, 2025, 2035, and 2045 trip tables described in Section IV to the transportation networks defined in Section III. The highway and transit assignment results were used to develop an emission level for each scenario. The five scenarios included:

1. Existing Year and $PM_{2.5}$ NAAQS Budget Year (2021 network, 2021 trips)
2. TIP Build Year (2024 network, 2024 trips)
3. Interim Year #1 and $PM_{2.5}$ NAAQS Budget Year (2025 network, 2025 trips)
4. Interim Year #2 (2035 network, 2035 trips)
5. Long Range Plan (2045 network, 2045 trips)

Highway and transit assignments for each scenario were produced using the methodology described in Section IV. For each scenario, highway assignment summaries were developed and stratified by county and functional class. Separate summaries were developed for each nonattainment area. These summaries include vehicle miles of travel (VMT) and weighted average speed. For purposes of the conformity process, assignment summaries for the network centroid connectors served as a partial surrogate for local (non-network) travel characteristics. An estimate of intrazonal travel was also developed from each highway assignment and included in the local travel summary. Transit assignment summaries were used to estimate bus vehicle miles and bus average speed for peak and off-peak conditions. Peak and off-peak vehicle miles and speed of automobile trips to park-and-ride facilities were also estimated from transit assignments. The VMT that was output from highway assignments was seasonally adjusted, using adjustment factors developed by PennDOT, to appropriately represent a typical day for each analysis month.

While not explicitly addressed in the conformity assessment, implementation of the Transportation Demand Management (TDM) strategies defined in Figure 2 can produce modest reductions (2 to 3 percent) in forecasted regional VMT. Funding for TDM strategies is included as a line item in the 2045 Plan under the Traffic Operations and Safety Investment Strategy.

Funding in the adopted 2021-2024 TIP is programmed for the specific TDM projects listed below:

- Transportation Management Association Funding (2021-2022) –ACTA, OTMA, PDP, $1,500,000 (MPMS#94882)
- Transportation Management Association Funding (2023-2024) –ACTA, OTMA, PDP, $1,500,000 (MPMS#28172)
- Expansion of RideACTA Last Mile Service – ACTA, $351,000 (MPMS#110381)
- PA 837 Pedestrian Bridge – City of Pittsburgh, $7,250,000 (MPMS#27991)
- Pittsburgh Bus Rapid Transit – PAAC, $119,500,000 (MPMS#110895)
- Pittsburgh BRT Establish Bus & Bike Lanes – PAAC, $2,919,000 (MPMS#114280)
- Pittsburgh BRT Downtown Improvements – PAAC, $10,705,000 (MPMS#114283)
- Park-N-Ride Space Availability System – PAAC, $569,000 (MPMS#115279)
- TDM Coordinator and Outreach Program – City of Pittsburgh, $526,000 (MPMS#110378)
- Allegheny River Green Boulevard – City of Pittsburgh, $3,500,000 (MPMS#114290)
- Bus Shelters/Mobility Hubs – City of Pittsburgh, $3,240,000 (MPMS#114294)
- Healthy Ride Electrified – City of Pittsburgh, $1,458,000 (MPMS#114296)
- Ross Park-N-Ride Expansion – PAAC, $9,660,000 (MPMS#100307)
- Carnegie Park-N-Ride Expansion – PAAC, $3,588,390 (MPMS#106594)
- Mellon Terrace Multimodal Center – PAAC, $1,000,000 (MPMS#115893)
- South Hills Junction Improvements – PAAC, $1,250,000 (MPMS#115479)
- Allegheny Station Bike Locker – PAAC, $75,000 (MPMS#115480)
- Multi-Modal Project – BTA, $3,210,721 (MPMS#114531)
- Bus Shelters – BTA, $120,000 (MPMS#83836)
- Rt.68 Park and Ride Program - BTA, $3,750,000 (MPMS#114742)
- SR 356 Park-N-Ride Lot – PennDOT 10-0, $1,600,000 (MPMS#116127)
- North Country Trail Safety TAP – Shenango Twp., $920,000 (MPMS#111421)
- Trolley Bus – Washington City Transit Authority, $200,000 (MPMS#114539)
- Bus Shelters – Washington City Transit Authority, $220,130 (MPMS#107255)
- Bus Shelter & Stop Enhancements – MMVTA, $400,000 (MPMS#119348) replaces #114534

The total cost identified in the 2021-2024 TIP for these eighteen projects is $179,012,241. A similar level of funding for TDM projects is available for programming on future TIPs from the Traffic Operations and Safety line item in the 2045 Plan.

The TDM strategies in Figure 2 include regional transit and ridesharing promotional programs, compressed work week and telecommuting, as well as direct subsidies by employers to employees who commute by transit, carpool or vanpool.

Information from SPC's travel model was input into the MOVES 2014a model and used in the calculation of emissions for each nonattainment and maintenance area for each analysis year. The resulting VMT, average speed, and emissions are presented in Section VII (Tables 14 through 17).

Summaries of VMT and emissions by county and roadway type appear in Appendix D for each $PM_{2.5}$ and 8-hour ozone nonattainment and maintenance area. The summaries were compiled from MOVES model outputs.

Travel Demand Management Strategies

Strategy	Example
Increased efforts to promote ridesharing and transit	- Ride matching services - Preferential (more convenient, lower cost) parking - Flexible work schedules
Programs to deter single occupant vehicle work trips	- Employer-sponsored commuter benefit programs for employees who carpool, vanpool, and/or ride transit to work
Flexible Work Hours, Staggered Work Hours, Compressed Work Weeks	- Aggressive promotion with region's employers
Telecommuting	- Work with employers and government agencies to promote concept and infrastructure
Intelligent Transportation Systems (ITS)	- Work to implement projects that provide transportation system users with better information on existing system conditions, congestion and travel choices

Figure 2 **SPC Jun 2021**

VII. Conformity Determination

$PM_{2.5}$ Nonattainment Areas

Conformity determinations for transportation plans and programs under the $PM_{2.5}$ NAAQS are based, as appropriate, on build/no-build analyses, comparisons to an emissions budget, and/or comparison to emissions levels from a base year.

As described in Section II, quantitative analysis of emissions under the 1997 Annual $PM_{2.5}$ NAAQS and the 2006 daily $PM_{2.5}$ NAAQS is not required for the Liberty-Clairton nonattainment area.

The appropriate conformity test for the Indiana County portion of the Johnstown nonattainment area under the 1997 Annual $PM_{2.5}$ NAAQS and the 2006 daily $PM_{2.5}$ NAAQS is a comparison of future year emissions to approved $PM_{2.5}$ and NOx MVEBs. This analysis should demonstrate reduced emissions in a future year under the build condition when compared with the appropriate emissions budget.

The appropriate conformity test for the Pittsburgh – Beaver Valley nonattainment area under the 1997 Annual $PM_{2.5}$ NAAQS and the 2006 daily $PM_{2.5}$ NAAQS is a comparison of future year emissions to approved $PM_{2.5}$ and NOx MVEBs. This analysis should demonstrate reduced emissions in a future year under the build condition when compared with the appropriate emissions budget.

The appropriate conformity test for the Allegheny County nonattainment area under the 2012 Annual $PM_{2.5}$ standard is a comparison of future year emissions to approved $PM_{2.5}$ and NOx MVEBs. This analysis should demonstrate reduced emissions in a future year under the build condition when compared with the appropriate emissions budget.

Pittsburgh – Beaver Valley $PM_{2.5}$ Nonattainment Area

As noted in Section II, MVEBs have been established for use in conformity assessments for the 1997 Annual $PM_{2.5}$ and 2006 daily $PM_{2.5}$ NAAQS for the Pittsburgh – Beaver Valley $PM_{2.5}$ nonattainment area. The $PM_{2.5}$ and NOx emission factors from the MOVES model, in combination with the highway and transit assignment results from the five scenarios described in Section III, were used to develop the annual emission levels for the nonattainment area.

The total **annual** VMT, the $PM_{2.5}$ and NOx emission estimates, and MVEB values for the nonattainment area are presented in Table 14 for each analysis year. The estimated emissions and MVEB values are plotted on Figures 3 ($PM_{2.5}$) and 4 (NOx). VMT and emissions by county and facility type for each scenario are presented in Appendix D.

Conformity for the Pittsburgh – Beaver Valley nonattainment area under the 1997 Annual $PM_{2.5}$ and 2006 daily $PM_{2.5}$ standard is demonstrated if future **annual** emissions are less than MVEB levels. In all analysis years, as Table 14 and Figures 3 and 4 demonstrate, future annual

emissions are less than the MVEB. The analysis shows that the criteria for conformity under the 1997 Annual $PM_{2.5}$ and 2006 daily $PM_{2.5}$ standard have been satisfied.

No goals, directives, recommendations or projects identified in the 2021-2024 TIP or the 2045 Plan contradict in a negative manner any specific requirements or commitments of the applicable state implementation plan. There are no transportation control measures in the applicable state implementation plan.

Indiana County Portion of the Johnstown $PM_{2.5}$ Nonattainment Area

As noted in Section II, emission budgets have been established for use in conformity assessments for the 1997 Annual $PM_{2.5}$ and 2006 daily $PM_{2.5}$ NAAQS for the Indiana County portion of the Johnstown $PM_{2.5}$ nonattainment area. The $PM_{2.5}$ and NOx emission factors from the MOVES model, in combination with the highway and transit assignment results from the five scenarios described in Section III, were used to develop the annual emission levels for the nonattainment area.

The total **annual** VMT, the $PM_{2.5}$ and NOx emission estimates, and MVEB values for the nonattainment area are presented in Table 15 for each analysis year. The estimated emissions and MVEB values are plotted on Figures 5 ($PM_{2.5}$) and 6 (NOx). VMT and emissions by facility type within the nonattainment portion of the county for each scenario are presented in Appendix D.

Conformity for the Indiana County portion of the Johnstown $PM_{2.5}$ nonattainment area is demonstrated if future **annual** emissions are less than MVEB levels. In all analysis years, as Table 15 and Figures 5 and 6 demonstrate, future annual emissions are less than the MVEB. The analysis shows that the criteria for conformity under the 1997 Annual $PM_{2.5}$ and 2006 daily $PM_{2.5}$ standard have been satisfied.

No goals, directives, recommendations or projects identified in the 2021-2024 TIP or the 2045 Plan contradict in a negative manner any specific requirements or commitments of the applicable state implementation plan. There are no transportation control measures in the applicable state implementation plan.

Allegheny County $PM_{2.5}$ Nonattainment Area

As noted in Section II, MVEBs have been established for the 2012 Annual $PM_{2.5}$ NAAQS for the Allegheny County $PM_{2.5}$ nonattainment area. The $PM_{2.5}$ and NOx emission factors from the MOVES model, in combination with the highway and transit assignment results from the five scenarios described in Section III, were used to develop the annual emission levels for the nonattainment area

The total **annual** VMT, the $PM_{2.5}$ and NOx emission estimates, and MVEB values for the nonattainment area are presented in Table 16 for each analysis year. The emission estimates and MVEB values are plotted on Figures 7 ($PM_{2.5}$) and 8 (NOx). VMT and emissions by facility type for each scenario are presented in Appendix D.

Conformity for the Allegheny County nonattainment area under the 2012 Annual $PM_{2.5}$ standard is demonstrated if future **annual** emissions are less than the MVEB levels. In all analysis years, as Table 16 and Figures 7 and 8 demonstrate, future annual emissions are less than the MVEB. The analysis shows that the criteria for conformity under the 2012 Annual $PM_{2.5}$ standard have been satisfied.

No goals, directives, recommendations or projects identified in the 2021-2024 TIP or the 2045 Plan contradict in a negative manner any specific requirements or commitments of the applicable state implementation plan. There are no transportation control measures in the applicable state implementation plan.

8-Hour Ozone Nonattainment and Maintenance Areas

Conformity determinations for transportation plans and programs under the 8-hour ozone NAAQS are based, as appropriate, on build/no-build analyses, comparisons to an emissions budget, and/or comparison to emissions levels from a base year.

The appropriate test for the Pittsburgh – Beaver Valley 8-hour ozone nonattainment area is a comparison of future year emissions to established VOC and NOx emissions budgets. The analysis should demonstrate reduced emissions in a future year under the build condition when compared with the appropriate emissions budget.

As described in Section II, EPA guidance does not require regional emissions modeling in the conformity demonstration for the Greene County 8-hour ozone nonattainment area and the Indiana County portion of the Clearfield and Indiana counties 8-hour ozone nonattainment area.

Pittsburgh – Beaver Valley 8-Hour Ozone Nonattainment Area

As noted in Section II, MVEBs have been established for use in conformity assessments for the 2008 8-hour ozone NAAQS for the Pittsburgh – Beaver Valley ozone nonattainment area. The VOC and NOx emission factors from the MOVES model, in combination with the highway and transit assignment results from the five scenarios described in Section III, were used to develop the annual emission levels for the nonattainment area.

The daily VMT, the daily VOC and NOx emission estimates, and MVEB values for the nonattainment area are presented in Table 17 for each analysis year. The estimated emissions and MVEB values are plotted on Figures 9 (VOC) and 10 (NOx). VMT and emissions by county and facility type for each scenario are presented in Appendix D.

Conformity for the Pittsburgh – Beaver Valley nonattainment area under the 2008 8-hour ozone NAAQS is demonstrated if future daily emissions are less than MVEB levels. In all analysis years, as Table 17 and Figures 9 and 10 demonstrate, future annual emissions are lower than the MVEB. The analysis shows that the criteria for conformity under the 2008 8-hour ozone NAAQS have been satisfied.

No goals, directives, recommendations or projects identified in the 2021-2024 TIP or the 2045 Plan contradict in a negative manner any specific requirements or commitments of the applicable state implementation plan. There are no transportation control measures in the applicable state implementation plan.

Indiana and Greene Counties 8-Hour Ozone Nonattainment Areas

As noted in Sections I and II, the Greene County 8-hour ozone nonattainment area and the Indiana County portion of the Clearfield and Indiana counties 8-hour ozone nonattainment area were designated as nonattainment areas under the 1997 8-hour ozone NAAQS, but were designated as attainment areas under the 2008 8-hour ozone NAAQS. Under those circumstances, EPA's November, 2018 guidance does not require regional emissions modeling as part of the conformity demonstration. Other conformity criteria still must be satisfied, including demonstration of fiscal constraint, public review, and implementation of TCMs in the SIP. This report demonstrates that the applicable conformity criteria for these two areas have been satisfied.

No goals, directives, recommendations or projects identified in the 2021-2024 TIP or the 2045 Plan contradict in a negative manner any specific requirements or commitments of the applicable state implementation plan. There are no transportation control measures in the applicable state implementation plan.

Allegheny County Carbon Monoxide Maintenance Area

As noted in Section II, EPA approved a second limited carbon monoxide maintenance plan for this area which demonstrates that the Pittsburgh area will continue to maintain the 1971 CO NAAQS. Under limited maintenance plans, EPA policy does not require a carbon monoxide emission budget test for conformity determinations. Emission budgets in limited carbon monoxide maintenance plan areas are considered to be not constraining during the maintenance period. The applicable conformity criteria for carbon monoxide have, therefore, been satisfied.

Liberty – Clairton PM_{10} and $PM_{2.5}$ Maintenance Areas

As noted in Section II, EPA has determined that PM_{10} and $PM_{2.5}$ nonattainment in the Liberty – Clairton area stems primarily from industrial sources in the area and not from mobile sources. This nonattainment area was not required to have PM_{10} or $PM_{2.5}$ transportation conformity budgets. Because the PM_{10} and $PM_{2.5}$ violations were primarily caused by industrial stationary sources and motor vehicles were not an important contributor to the nonattainment problem, no additional quantitative analysis for transportation-related PM_{10} or $PM_{2.5}$ impacts is required for conformity purposes. Other conformity criteria still must be satisfied, including demonstration of fiscal constraint, public review, and implementation of TCMs in the SIP. This report demonstrates that the applicable conformity criteria for the Liberty – Clairton PM_{10} and $PM_{2.5}$ Maintenance Areas have been satisfied.

Qualitative Analysis of Non-Codable Regionally Significant Projects

Due to their nature, a number of regionally significant projects in the 2021-2024 TIP and 2045 Plan could not be coded on Cube Voyager-based transportation networks and were therefore not included in the quantitative assessment which was used to develop the information in Tables 14 through 17. Those excluded projects fall into two general categories: 1) highway/bridge relocations with no increase in capacity; and 2) projects like small, isolated park-and-ride lots, Intermodal Transportation Centers, and traffic signal coordination projects. To include the non-codable, regionally significant projects in the conformity assessment required a separate, qualitative assessment of their impacts on regional air quality.

Some of the regionally significant projects identified in the 2021-2024 TIP and the 2045 Plan involve new highway facilities on new right-of-way. For most of the projects of that type there was enough of a difference between the build and no-build conditions that the difference (change in capacity, miles of highway, etc.) could be reflected, and coded, onto the Cube Voyager-based highway networks. A few of the highway projects that involve new right-of-way would simply replace a deficient or unsafe facility with a comparable facility (no change in length or capacity) constructed to current design standards in a new location. The design of those new facilities would include features such as easier grades and curves, wider lanes, better sight distance and wider shoulders. Those design improvements cannot be reflected in the quantitative analysis. Those design elements would, nevertheless, tend to result in fewer accidents, reduce delay and promote a more uniform travel speed on the facility. Those kinds of improvements in traffic operations generally have a positive effect on emissions. Implementation of the "non-codable" highway and bridge relocation projects should not worsen the region's air quality.

A number of small, isolated park-and-ride lots, Intermodal Transportation Centers, and traffic signal coordination projects are identified in the 2045 Plan and the 2021-2024 TIP. The 2045 Plan also includes strategies to implement projects of these types. The identified TIP projects were assessed by SPC for their emissions reduction potential. An approved evaluation methodology, developed by PennDOT for determining eligibility for CMAQ (Congestion Mitigation and Air Quality Program) funding, was used by SPC in those project-level assessments. Regionally significant projects assessed with the CMAQ model which could not be coded on Cube Voyager-based transportation networks are listed below. The CMAQ model assessments were conducted with project information provided by the project sponsors. Each of the projects tested with the CMAQ model demonstrated a potential to reduce ozone and $PM_{2.5}$ precursor emissions. The effect on regional emissions from implementation of these projects was not included in the quantitative analysis detailed on Tables 14 through 17 and Figures 3 through 10. Nevertheless, implementation of the regionally significant, non-codable projects identified in the 2045 Plan and the 2021-2024 TIP will not worsen the region's air quality.

Non-Codable Regionally Significant Projects

A. Programmed on 2021-2024 TIP for Completion by 2024

Pittsburgh South Side Signals - MPMS#105603 [City of Pittsburgh – Allegheny Co.]
Liberty Avenue Safety Improvements - MPMS#106773 [City of Pittsburgh – Allegheny Co.]
Smart Spines (ATCMTD) – MPMS#109691 [City of Pittsburgh - Allegheny Co.]
I-376 Parkway East Active Traffic Management – MPMS#94651 [Allegheny Co.]

CBD Signal Upgrade Phase-4 – MPMS#63378 [City of Pittsburgh –Allegheny Co.]
Penn Avenue Signal Improvements – MPMS#114288 {City of Pittsburgh - Allegheny Co.]
PAAC-Transit Signals BRT - MPMS#100316 [City of Pittsburgh – Allegheny Co.]
PAAC-Carnegie Park-N-Ride - MPMS#106594 [Allegheny Co.]
PAAC-Ross Park-N-Ride - MPMS#100307 [Allegheny Co.]
Pittsburgh BRT-Establish Bus and Bike Lanes – MPMS#114280 [City of Pittsburgh – Allegheny Co.]
Pittsburgh BRT-Downtown Improvements – MPMS#114283 [City of Pittsburgh – Allegheny Co.]
SR 3003 Washington Pike Improvements – MPMS#114287 [Allegheny Co.]
SR 19 Washington Rd. Adaptive Traffic Signal System – MPMS#26454 [Allegheny Co.]
SR 50 Chartiers St. – MPMS#100607 [Allegheny Co.]
SR 19 Banksville Rd. Adaptive Traffic Signal System – MPMS#109556 [Allegheny Co.]
SR 51 Clairton Blvd. Adaptive Traffic Signal System – MPMS#110369 [Allegheny Co.]
SR 1001 Freeport Rd. Adaptive Traffic Signal System – MPMS#110372 [Allegheny Co.]
SR 3069 Washington Rd. Adaptive Traffic Signal System – MPMS#110374 [Allegheny Co.]
SR 2040 Lebanon Church Road Adaptive Traffic Signal System – MPMS#106507 [Allegheny Co.]
SR 50 Upgrades - Thom's Run Road to Mayer St. - MPMS#28010 [Allegheny Co.]
McLaughlin Run Rd.@ Lesnett/McMillian Rd. Intersection – MPMS#100963 [Allegheny Co.]
Multi-Modal Project – MPMS#114531 [Butler Co.]
SR 68 Park-N-Ride Program - MPMS#114742 [Butler Co.]
SR 68 Corridor Improvements - MPMS#106568 [Butler Co.]
SR 356 Moraine Pt. Signals – MPMS#110462 [Butler Co.]
SR 8 Main St. Signals – MPMS#110464 [Butler Co.]
D10 4c SINC-UP Project – MPMS#112713 [Butler Co.]
SR 119 Connellsville Signals – MPMS#110402 [Fayette Co.]
FACO Signals-1 – MPMS#94953 [Fayette Co.]
SR 88 Charleroi – MPMS#110399 [Washington Co.]
SR 18 Signal Upgrades – MPMS#88829 [Washington Co.]
PA 18 – Main St. to Third St. – MPMS#114561 [Washington Co.]
SR 19 Corridor Signal & Safety Upgrades – MPMS#107432 [Washington Co.]
Valleybrook Rd. @ Bebout Rd. Intersection – MPMS#109242 [Washington Co.]
Bebout Rd. @ E. McMurray Rd. Intersection – MPMS#109025 [Washington Co.]
119 SW Greensburg CMAQ – MPMS#114560 [Westmoreland Co.]
30 Hempfield on Corridor 95 – MPMS#114563 [Westmoreland Co.]
D12 4c SINC-UP Project – MPMS#114210 [Westmoreland Co.]
SPC Regional Traffic Signal Program Cycle IV – MPMS#100382 [10-County Region]

B. Listed on 2045 Long Range Plan for Completion after 2024

I-376 Parkway East Corridor Transportation Network Ph2 – MPMS#99874 [Allegheny Co.]
SR 286 Improvements Ph-3 Widening (Sandune Dr. to SR 380) – MPMS#27505 [Allegheny Co.]
PA 50–I-79 to Thoms Run Road – MPMS#109640 [Allegheny Co.]
City of Pittsburgh Traffic Signal Updates Phase-4 – No MPMS# [City of Pittsburgh – Allegheny Co.]
City of Pittsburgh Traffic Signal Updates Phase-5 – No MPMS# [City of Pittsburgh – Allegheny Co.]
SR 21 Operations & Safety – No MPMS# [Fayette Co.]
SR 119 Operations & Safety – No MPMS# [Fayette Co.]
SR 19 Corridor and Intersection Improvements – No MPMS# [Washington Co.]
I-70 Interstate Detour Improvement Plan & Implementation – No MPMS# [Washington Co.]
I-79 Interstate Detour Improvement Plan & Implementation – No MPMS# [Washington Co.]
SR 1002 McMurray Road (SR19 to Morganza Road) – No MPMS# [Washington Co.]
SR 1025 Weavertown Road Corridor (SR 19 to Morganza Road) – No MPMS# [Washington Co.]
SR 1032 Southpoint Blvd. (I-79 to Morganza Road) – No MPMS# [Washington Co.]
SR 30 @ Georges Station Intersection – MPMS#114390 [Westmoreland Co.]
SR 30 Interchange with Donohoe Road – No MPMS# [Westmoreland Co.]
SR 1026 Donohoe @ Georges Station Intersection – No MPMS# [Westmoreland Co.]
SPC Regional Traffic Signal Program Cycle V – MPMS#106593 [10-County Region]

Conclusion

In conclusion, the region's amended 2021-2024 TIP and 2045 Plan are in conformance with the federal Clean Air Act, as amended. This finding of conformity is based upon both quantitative and qualitative analyses designed to address the conformity criteria outlined in EPA's Transportation Conformity Rule for the nonattainment and maintenance areas within SPC's planning region designated under the 1997 8-hour ozone NAAQS, the 2008 8-hour ozone NAAQS, the 2006 daily $PM_{2.5}$ NAAQS, the 1997 Annual $PM_{2.5}$ NAAQS, the 2012 Annual $PM_{2.5}$ NAAQS, the 1987 PM_{10} NAAQS, and the 1971 carbon monoxide NAAQS. This report has documented the process used by SPC in the fall of 2020 to make its finding of conformity for amendments to the 2021-2024 Transportation Improvement Program and the 2045 Plan.

SPC's conformity process demonstrates that the amended 2021-2024 TIP and the 2045 Plan satisfy all applicable conformity criteria under the 1997 8-hour ozone NAAQS, the 2008 8-hour ozone NAAQS, the 2006 daily $PM_{2.5}$ NAAQS, the 1997 Annual $PM_{2.5}$ NAAQS, the 2012 Annual $PM_{2.5}$ NAAQS, the 1987 PM_{10} NAAQS, and the 1971 carbon monoxide NAAQS.

Conformity Assessment

Pittsburgh-Beaver Valley PM2.5 Nonattainment Area

Annual VMT and Emissions (Tons/Year)

Entire Nonattainment Area

	2021	2024	2025	2035	2045
Annual VMT	171,257,742,223	17,413,548,232	17,386,973,524	17,962,172,174	18,687,759,358
PM 2.5 MVEB	700.000	700.000	537.000	537.000	537.000
PM 2.5	492.060	406.890	381.860	251.740	222.070
NOx MVEB	17,584.000	17,584.000	10,709.000	10,709.000	10,709.000
NOx	10,751.490	7,658.400	6,878.970	3,526.850	3,145.750

TABLE 14 **SPC Jun 2021**

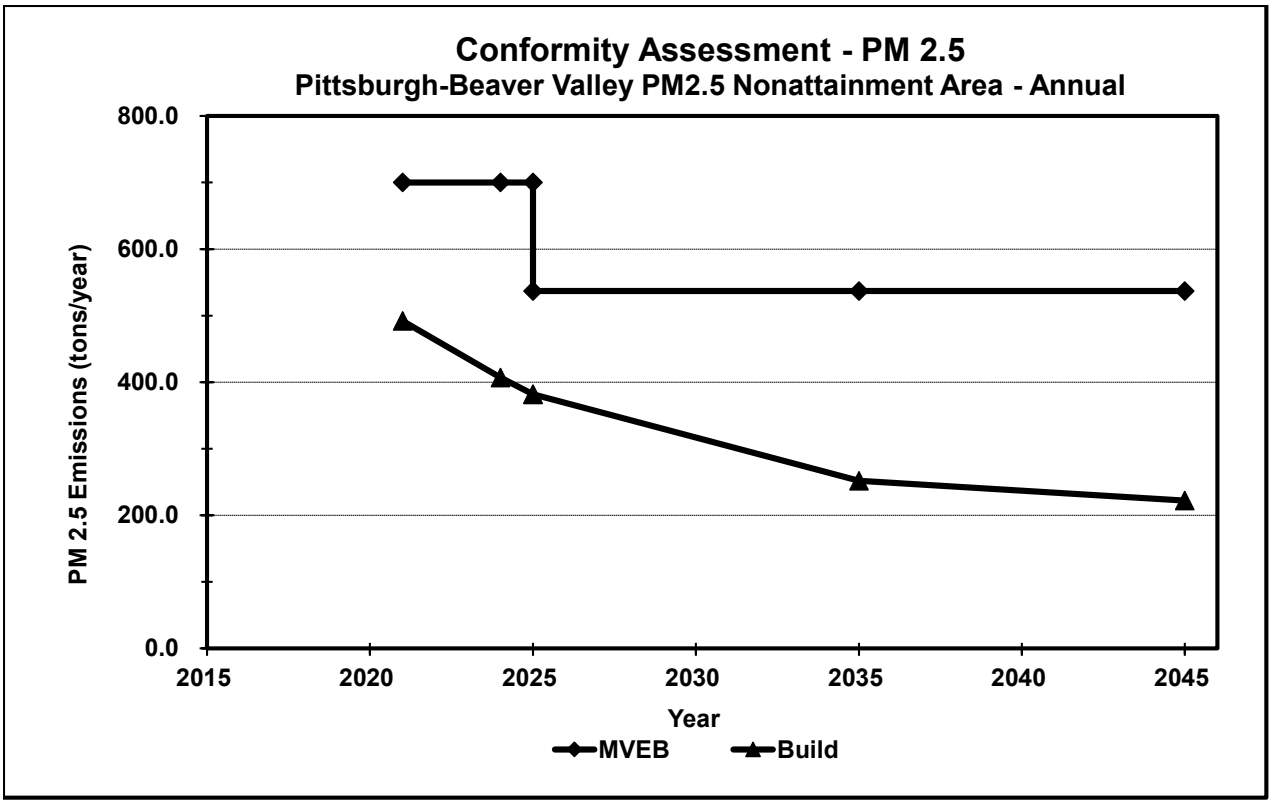


Figure 3 SPC Jun 2021

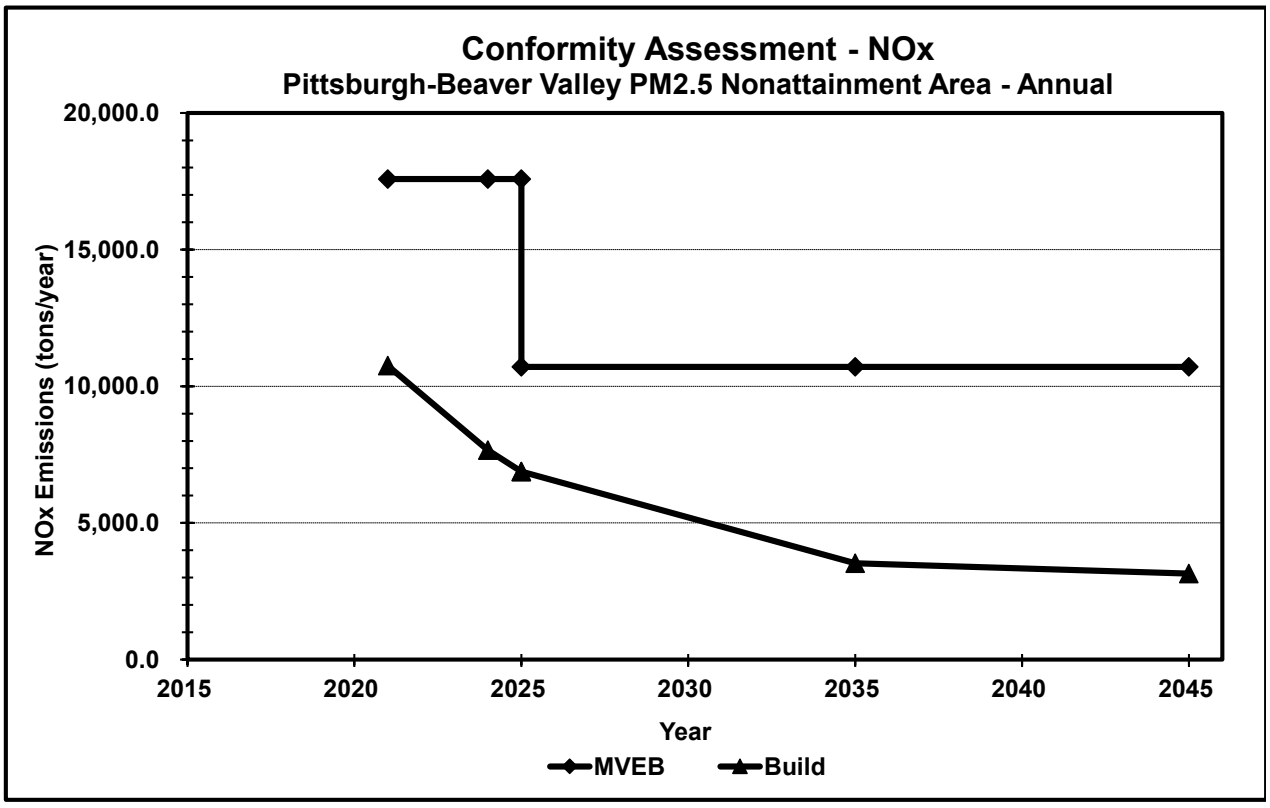


Figure 4 SPC Jun 2021

Conformity Assessment

Indiana County Portion of Johnstown PM2.5 Nonattainment Area

Annual VMT and Emissions (Tons/Year)

Indiana County Portion of Nonattainmnet Area

	2021	2024	2025	2035	2045
Annual VMT	147,787,203	149,396,435	148,894,966	153,263,921	15,287,096
PM 2.5 MVEB	7.950	7.950	4.380	4.380	4.380
PM 2.5	3.728	2.948	2.707	1.584	1.317
NOx MVEB	238.500	238.500	120.980	120.980	120.980
NOx	111.992	78.173	69.207	32.524	27.520

TABLE 15 **SPC Jun 2021**

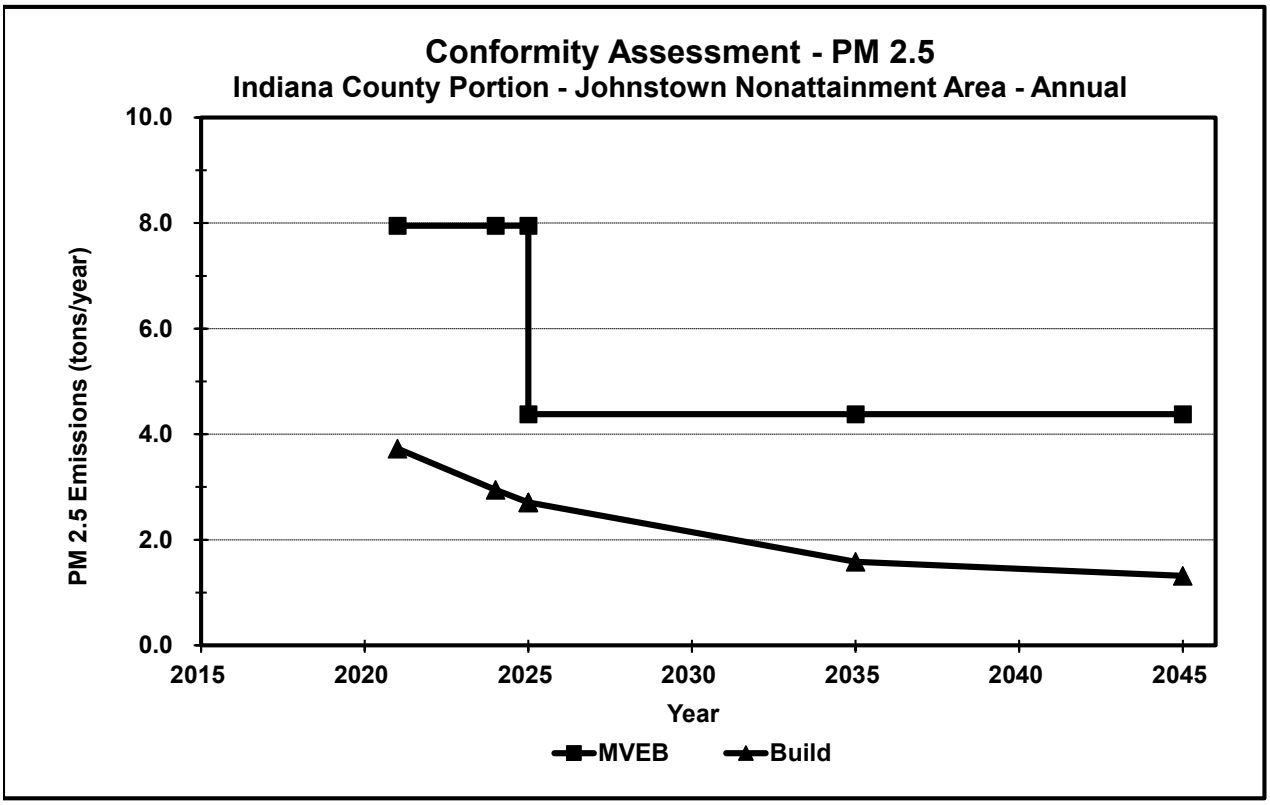


Figure 5 SPC Jun 2021

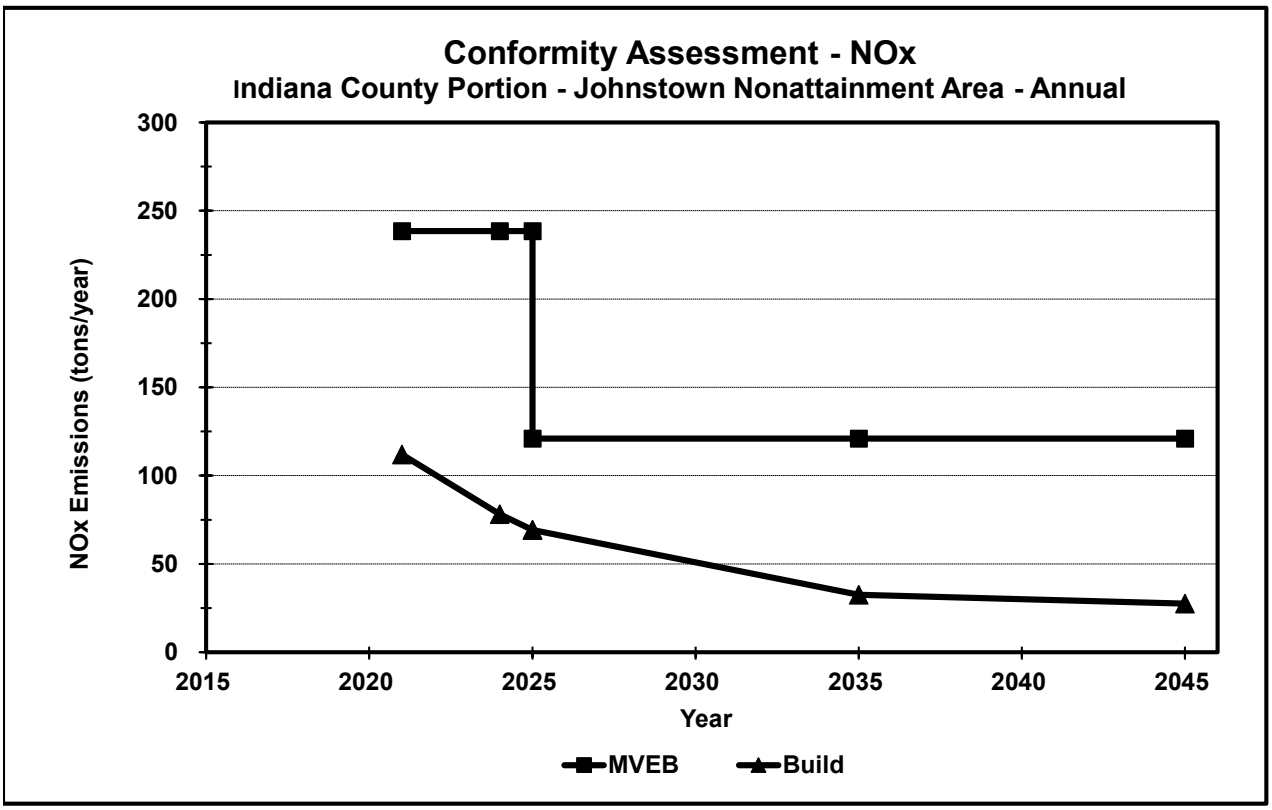


Figure 6 SPC Jun 2021

Conformity Assessment

Allegheny County PM2.5 Nonattainment Area

Annual VMT and Emissions (Tons/Year)

Entire Nonattainment Area

	2021	2024	2025	2035	2045
Annual VMT	8,392,671,073	8,516,184,189	8,505,037,081	8,823,678,690	9,257,564,241
PM 2.5 MVEB	266.000	266.000	266.000	266.000	266.000
PM 2.5	247.200	207.650	196.010	133.650	118.940
NOx MVEB	5,708.000	5,708.000	5,708.000	5,708.000	5,708.000
NOx	4,962.790	3,530.380	3,171.270	1,596.570	1,422.020

TABLE 16 **SPC Jun 2021**

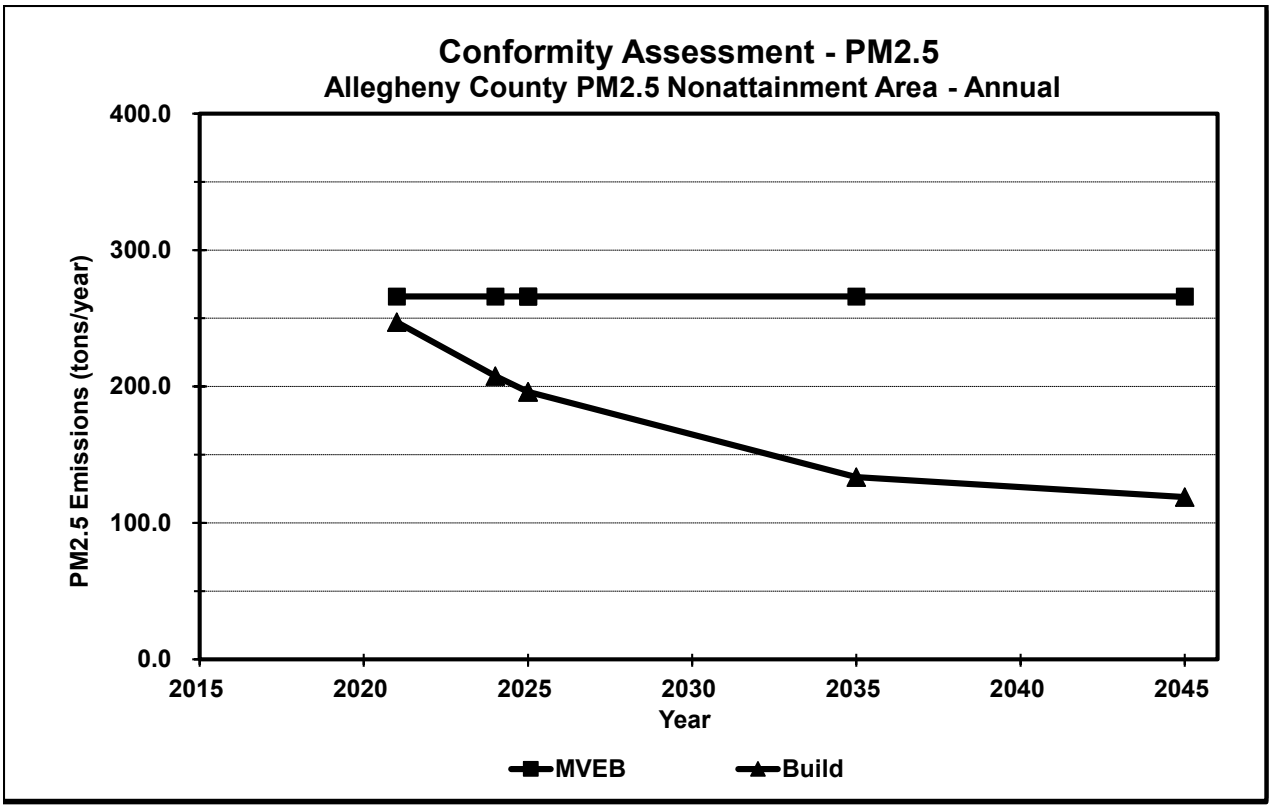


Figure 7 SPC Jun 2021

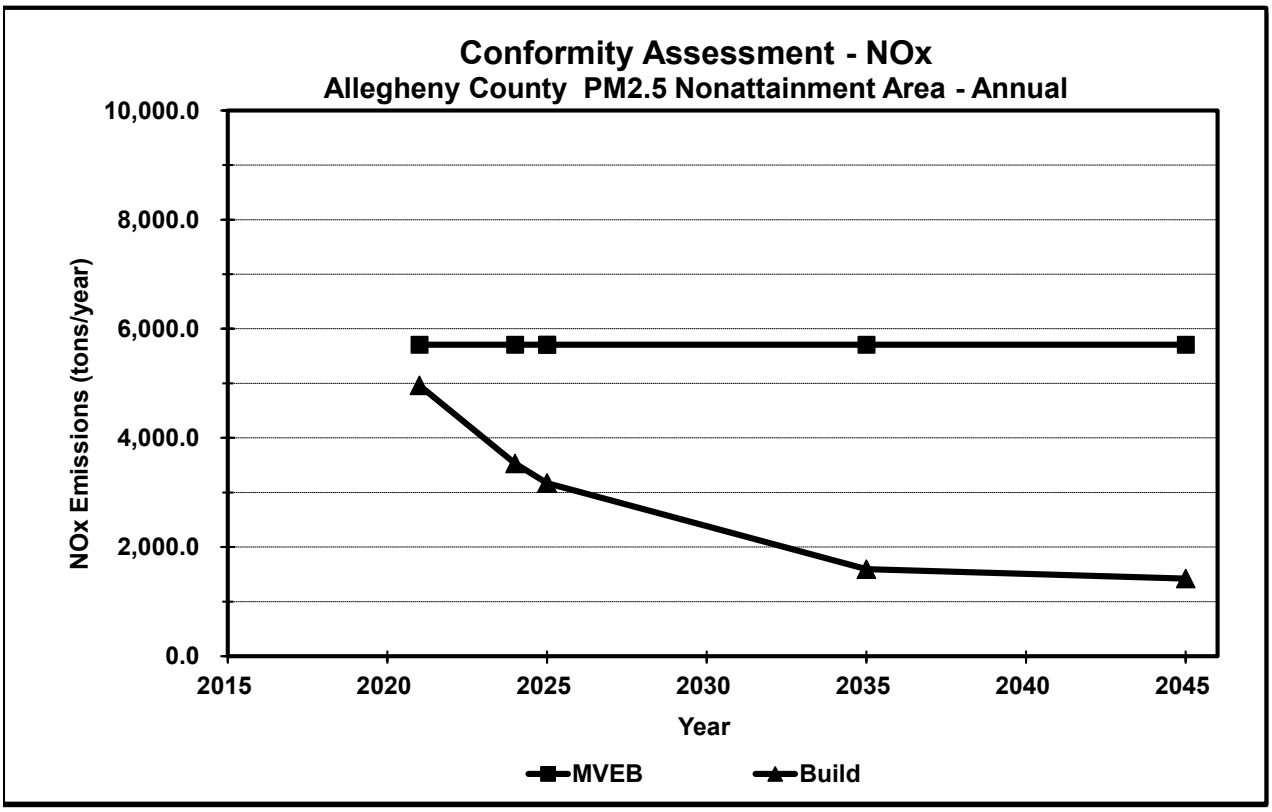


Figure 8 SPC Jun 2021

8-Hour Ozone Conformity Assessment

Pittsburgh-Beaver Valley

Daily VMT and Emissions (Tons/Day)

	2021	2024	2025	2035	2045
Daily VMT	61,636,204	62,285,536	62,505,329	64,438,386	66,888,942
VOC MVEB	45.680	45.680	45.680	45.680	45.680
VOC	21.690	16.278	15.116	9.550	7.927
NOx MVEB	77.090	77.090	77.090	77.090	77.090
NOx	33.681	23.607	21.246	10.336	8.980

TABLE 17 **SPC Jun 2021**

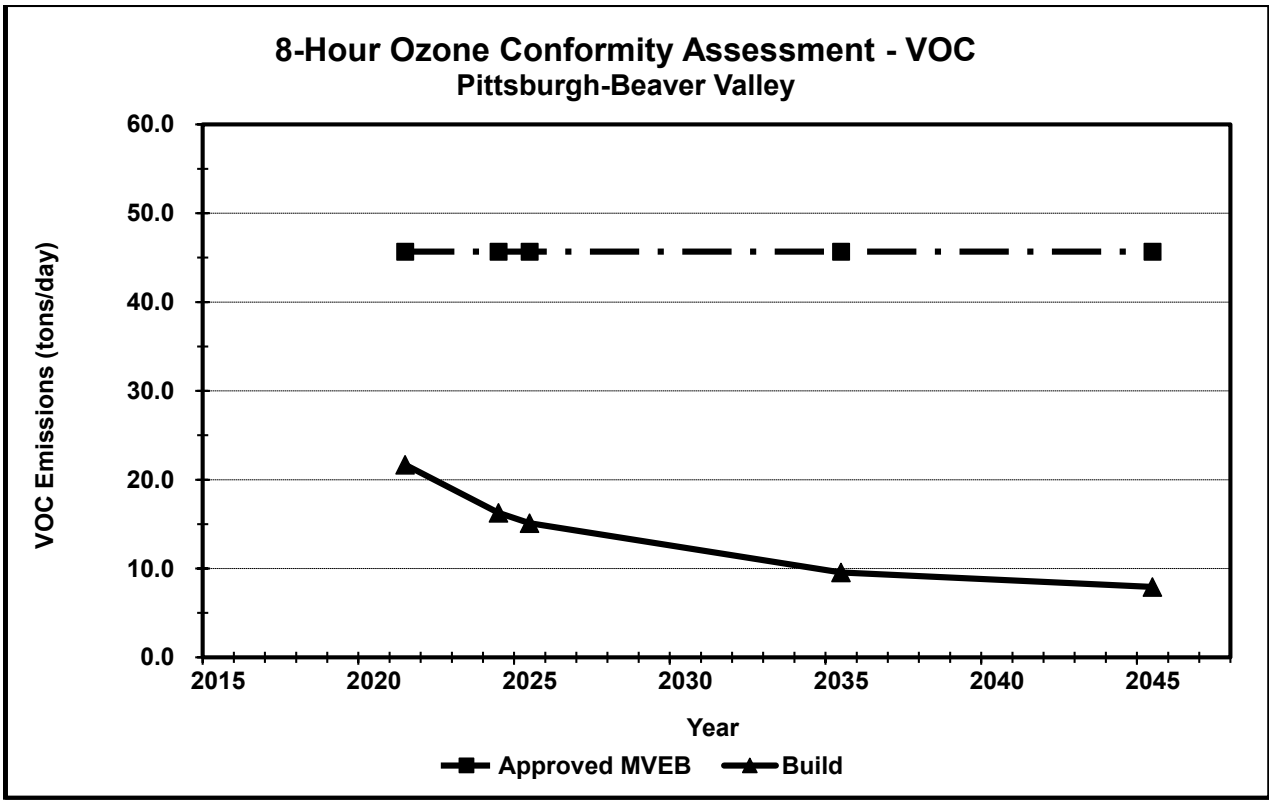


Figure 9 SPC Jun 2021

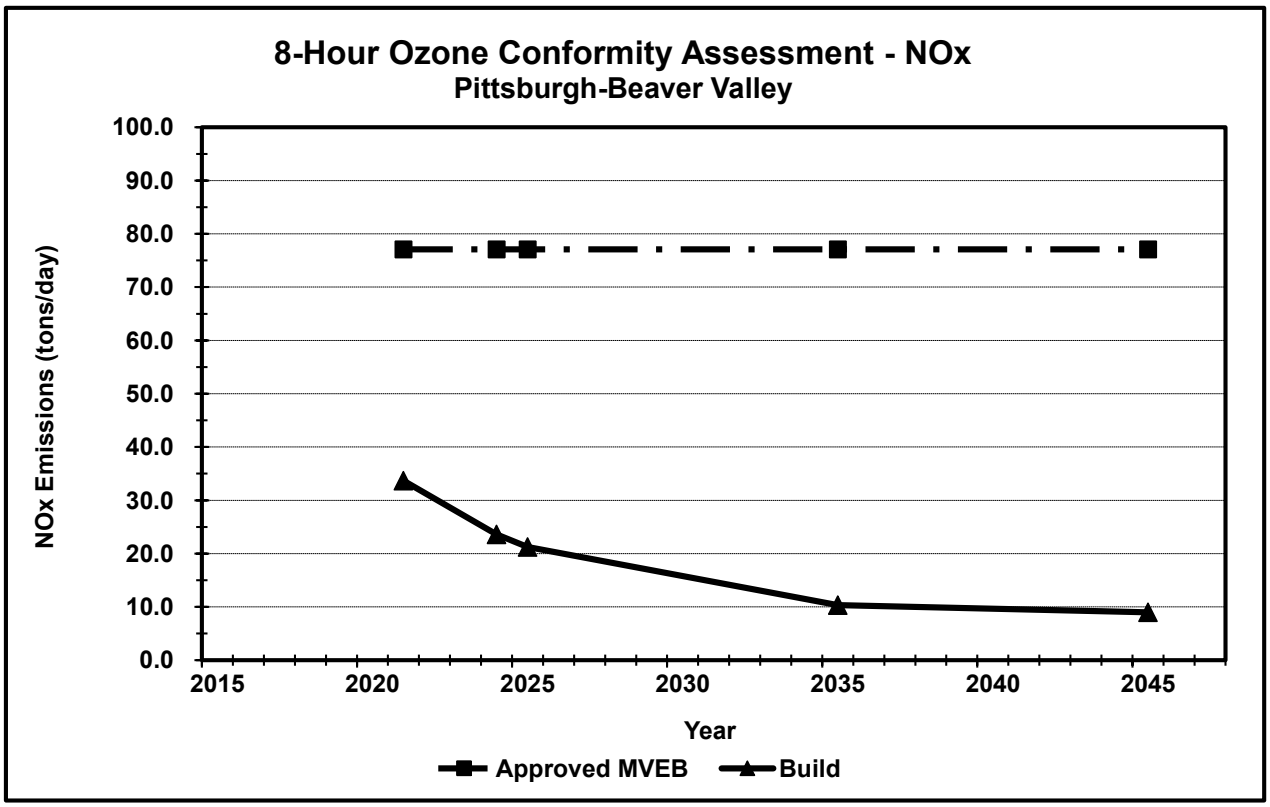


Figure 10 SPC Jun 2021

VIII. Public Review and Comment

The draft *Air Quality Conformity Determination for the Pittsburgh Transportation Management Area* is available for public review and comment from Monday, July 12, 2021 through Friday, August 13, 2021. Electronic copies of the draft Air Quality Conformity Determination and background information about the proposed amendments to *SmartMoves for a Changing Region* (2045 Plan) and the *2021-2024 Transportation Improvement Program (TIP)* are available online at www.spcregion.org.

Due to the COVID-19 pandemic and restrictions on gatherings, SPC is not holding in-person public meetings at this time. One virtual public meeting, and other online public participation opportunities, are being provided for interested parties to review and comment on the draft documents.

The virtual public meeting will be held:

Wednesday, July 28, 2021
6:00 p.m. to 7:00 p.m.
Meeting Access: www.spcregion.org

For individuals without access to the internet, paper copies of draft materials will be mailed upon request. To request paper copies, please contact Shannon O'Connell at (412) 391-5590, ext. 343 or soconnell@spcregion.org. SPC will respond to requests for paper copies as soon as possible

Comments on the draft documents will be accepted by SPC representatives during the virtual public meeting. Written comments may also be submitted to comments@spcregion.org, by mail to SPC Comments, Two Chatham Center, Suite 500, 112 Washington Place, Pittsburgh, PA 15219, or by fax to (412) 391-9160.

More information about the public review and comment period and the virtual public meetings is available on SPC's website https://www.spcregion.org/news-events/.

All comments must be received at SPC by 4:00pm Friday, August 13, 2021.

Following the comment period, SPC will document the public review process and respond to the public comments. SPC, in its role as MPO for the Southwestern Pennsylvania region, will consider an action at its August 30, 2021 meeting to formally make the finding of conformity required under EPA's Transportation Conformity Rule, and to amend the 2021-2024 TIP and the 2045 Transportation Plan for Southwestern Pennsylvania.

APPENDIX A

Identification of Exempt and Regionally Significant Projects
Included in the 2021-2024 TIP

Project Exempt Codes and Classification Codes

The EPA Transportation Conformity Rule (40 CFR Part 93) cites a number of project types which may be excluded from the regional emissions analysis required to determine conformity. Because of their nature, the exempt projects will not affect the outcome of regional emissions analysis, nor will they add substance to the analysis.

A standardized system of codes was cooperatively developed by Pennsylvania's MPOs and PennDOT to document a project's exempt status and to classify regionally significant projects. The exempt project types are listed in the Transportation Conformity Rule (40 CFR 93 Section 126 Tables 2 and 3) The exempt codes and project classification codes are defined on pages A–2 and A–3.

The remainder of Appendix A contains a one-line summary of every highway, transit, and Pennsylvania Turnpike project identified on the 2021-2024 TIP within SPC's 10-county region. Up to two codes appear for each project under the Exempt Codes heading. The code on the left is the project's exempt code. The code on the right is the project's classification status code. The projects for which no codes appear are the non-exempt, regionally significant TIP projects which were assessed for this conformity determination. These projects are described more fully in the 2021-2024 TIP. They are also listed in Figure 1 along with the non-exempt, regionally significant projects that appear on the 2045 Long Range Plan Update.

The proposed projects that were added to the TIP project list for this conformity assessment are highlighted on pages A–5, A–8, and A–14.

Appendix B contains a brief summary and exempt codes for every highway, transit, and Pennsylvania Turnpike project identified on the fiscally constrained portion of the 2045 Plan Update within SPC's 10-county region.

The proposed project that was added to the Long Range Plan project list for this conformity assessment is highlighted on page B–1.

Project Exempt Codes and Classification Codes

Project Classification Code

Blank	Regionally significant
EX	Exempt
NA	Project is in an attainment area
NS	Not exempt, but not regionally significant

Project Exempt Code

Blank	Project is not exempt
——	Project is in an attainment area

Safety

S1	Railroad/Highway Crossing
S2	Projects that correct, improve, or eliminate a hazardous location or feature
S3	Safer non-Federal-aid system roads
S4	Shoulder improvements
S5	Increasing sight distance
S6	Highway safety improvement program implementation
S7	Traffic control devices and operating assistance other than signalization projects
S8	Railroad/highway crossing warning devices
S9	Guardrails, median barriers, crash cushions
S10	Pavement resurfacing and/or rehabilitation
S11	Pavement marking
S12	Emergency relief (23 U.S.C. 125)
S13	Fencing
S14	Skid treatments
S15	Safety roadside rest areas
S16	Adding medians
S17	Truck climbing lanes outside of urbanized area
S18	Lighting improvements
S19	Widening narrow pavements or reconstructing/rehabilitating bridges (no additional travel lanes)
S20	Emergency truck pullovers

Mass Transit

M1	Operating assistance to transit agencies
M2	Purchase of transit support vehicles
M3	Rehabilitation of transit vehicles
M4	Purchase of office, shop, and operating equipment for existing transit facilities
M5	Purchase of operating equipment for transit vehicles (e.g., radios, fareboxes, lifts, etc.)
M6	Construction or renovation of power, signal, and communications systems
M7	Construction of small transit passenger shelters and information kiosks
M8	Reconstruction or renovation of transit buildings and structures
M9	Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way
M10	Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet
M11	Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR Part 771

Project Exempt Codes and Classification Codes

Project Exempt Code

Air Quality

A1 Continuation of ride-sharing and van-pooling promotion activities at current levels
A2 Bicycle facilities
A2 Pedestrian facilities

Other

X1 Specific activities which do not involve or lead directly to construction, such as: federal-aid systems revisions, planning and technical studies; grants for training and research programs; planning activities conducted pursuant to Title 23 and Title 49 U.S.C.
X2 Grants for training and research programs
X3 Planning activities conducted pursuant to Title 23 and 49 U.S.C.
X4 Federal-aid systems revisions
X5 Engineering to assess social, economic, and environmental effects of the proposed action or alternatives
X6 Noise attenuation
X7 Emergency or hardship advance land acquisitions (23 CFR 712.204(d))
X8 Acquisition of scenic easements
X9 Plantings, landscaping, etc.
X10 Sign removal
X11 Directional and informational signs
X12 Transportation enhancement activities (except for rehabilitation and operation of historic transportation buildings, structures, or facilities)
X13 Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational, or capacity changes

Exempt From Regional Emissions Analysis

R1 Intersection improvements and channelization projects
R2 Intersection signalization projects at individual intersections
R3 Interchange reconfiguration projects
R4 Changes in vertical and horizontal alignment
R5 Truck size and weight inspection stations
R6 Bus terminals and transfer points

2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
ALCO	27492	Painters Run- Bower Hill to Cedar Blvd		E	COUNTY	S10	EX
ALCO	28172	TDM Line Item - FFY 2023/24			TMA	A1	EX
ALCO	75341	Betterment Reserve Allegheny		C	PADOT	S10	EX
ALCO	75669	Slide Line Item		C	PADOT	S2	EX
ALCO	76430	SPC Reg. Safety Line Item		C	PADOT	S6	EX
ALCO	76458	Bridge - Allegheny County		C	PADOT	S19	EX
ALCO	77273	PAAC Bus Procurement		C	TRANS	M10	EX
ALCO	82754	SPC Region TAU Line Item		C	PADOT	X12	EX
ALCO	84078	SPC CMAQ Line Item		C	PADOT		NS
ALCO	86487	Allegheny Cty Local Rdwy		C	COUNTY	S10	EX
ALCO	87777	Allegheny Co Loc Br Pres.		C	COUNTY	S19	EX
ALCO	94698	SPC Smart Tr. Initiative		C	SPC	X1	EX
ALCO	94882	TMA Funding 21-22			TMA	A1	EX
ALCO	100382	SPC - Traffic Signal 4		C	SPC		
ALCO	106073	McElheny Road Crossing (AVRR)		C	PADOT	S8	EX
ALCO	106080	Smart Transportation/TAP Admin		E	SPC	X12	EX
ALCO	106593	SPC - Traffic Signal 5		E C	SPC		
ALCO	108118	Bridge Street RR Etna (NS)		C	OTHER	S8	EX
ALCO	109353	2021 ADA Curb Ramp Project		C	PADOT	A2	EX
ALCO	109357	2022 ADA Curb Ramp Project		C	PADOT	A2	EX
ALCO	109517	AWPM 2021		C	PADOT	S11	EX
ALCO	109518	AWPM 2022		C	PADOT	S11	EX
ALCO	110381	Expansion of RideACTA Last Mile Service			OTHER	M1	EX
ALCO	114214	Stevenson Mill/Rouser Road Offsites		E	MUNIC		
ALCO	114242	Guiderail Upgrades		C	PADOT	S9	EX
ALCO	115277	Western Regional TMC Upgrade 2021		C	PADOT	S7	EX
ALCO	115279	PAAC-PNR space availability System		C	TRANS	X11	EX
ALCO	26454	US 19/Washington Rd (South Hills) Adaptive Signal	19	C	PADOT		
ALCO	109388	Washington Road	19	C	PADOT	S10	EX
ALCO	27445	22/30 over the Parkway West	22	ER	PADOT	S19	EX
ALCO	105449	US 22 / PA 48 to Westmoreland Co Line	22	C	PADOT	S10	EX
ALCO	74255	PA 28 over Yutes Run	28	E	PADOT	S19	EX
ALCO	91845	PA 28/Highland Park Br Interchange	28	C	PADOT		
ALCO	92273	PA 28/Etna Bypass - Highland Pk Br	28	C	PADOT	S10	EX
ALCO	92276	PA 28: Harmarville-Russelton	28	C	PADOT	S10	EX
ALCO	110617	Noble Street Slide	28	C	PADOT	S2	EX
ALCO	28155	Ardmore Blvrd Br over Falls Run	30	C	PADOT	S19	EX
ALCO	28593	US 30 over Falls Run	30	C	PADOT	S19	EX
ALCO	100604	Ardmore Blvrd Br ov Br. Falls Run	30	C	PADOT	S19	EX
ALCO	113415	Ardmore Blvd/Brinton Road - Bevington Road	30	C	PADOT	S10	EX
ALCO	100606	Jacks Run Rd Br ov Jacks R	48	ERC	PADOT	S19	EX
ALCO	28010	PA 50 -I79-Vanadium	50	C	PADOT		
ALCO	100607	PA 50/Chartiers Street	50	C	PADOT		
ALCO	109640	PA 50: I-79 to Thoms Run	50	E	PADOT		
ALCO	110369	PA 51-Clairton Blvd-Adaptive Traffic Signal System	51	C	PADOT		
ALCO	109510	Thornburg Bridge	60	ERC	PADOT	S19	EX
ALCO	97934	PA 65/Emsworth to Sewickley Br	65	E C	PADOT	S10	EX
ALCO	28281	Southern Beltway Connector	79	C	PADOT		
ALCO	104328	I-79 at PA 910 Interchange	79	ERC	PADOT		
ALCO	112621	I-79 South DMS Installation	79	C	PADOT	X11	EX

NOTE: Projects without "exempt codes" are the non-exempt projects included in the Conformity Assessment for the 2021-2024 TIP. The assessment of the non-exempt projects is described in Section VII.

2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
ALCO	110061	PA 130, Tri Boro Expressway	130	E C	PADOT	S10	EX
ALCO	100618	PA 136 Rainbow Run ov Beckets	136	ERC	PADOT	S19	EX
ALCO	63306	Tarentum Bridge Ramp 'A'	366	C	PADOT	S19	EX
ALCO	100624	Tarentum Bridge ov NS RR	366	ERC	PADOT	S19	EX
ALCO	78441	Eighth Ave ov Homestead Run	837	C	PADOT	S19	EX
ALCO	96559	Seventh Ave/W. Eighth Ave.	837	C	PADOT	S10	EX
ALCO	100629	Kennywood Park Bridge	837	C	PADOT	S19	EX
ALCO	114193	PA 837 Slide Remediation	837	E	PADOT	S2	EX
ALCO	106388	2020 ADA Curb Ramp Project	885	C	PADOT	A2	EX
ALCO	100635	PA 910 over Rawlins Run	910	ERC	PADOT	S19	EX
ALCO	109557	PA 910 over Deer Creek 3	910	ERC	PADOT	S19	EX
ALCO	109558	PA 910 over Deer Creek 2	910	ERC	PADOT	S19	EX
ALCO	63330	Bateman Road Bridge	978	ER	PADOT	S19	EX
ALCO	100636	Millers Run ov Dolphin Rn	978	ERC	PADOT	S19	EX
ALCO	100637	Clinton Rd ov NB Robinson	978	ER	PADOT	S19	EX
ALCO	110372	SR 1001-Freeport Rd-Adaptive Traffic Signal System	1001	C	PADOT		
ALCO	109549	Highland Park Bridge	1005	ER	PADOT	S19	EX
ALCO	109533	Oak Manor Road Slide	1032	C	PADOT	S2	EX
ALCO	63515	New Kensington Bridge	1038	C	PADOT	S19	EX
ALCO	114194	SR 2010, Lovedale Road Slide Remediation	2010	E C	PADOT	S2	EX
ALCO	112417	SR 2017, Blythedale Road Slide	2017	C	PADOT	S2	EX
ALCO	89129	SR 2031 ov Long Run	2031	ERC	PADOT	S19	EX
ALCO	112404	SR 2035 McKee Road Slide	2035	C	PADOT	S2	EX
ALCO	26623	SR 2040/Buttermilk Hollow Rd - Ceco Dr	2040	C	PADOT	S10	EX
ALCO	28025	2040/Ceco Dr to Brownsville Rd	2040	C	PADOT	S10	EX
ALCO	106507	Lebanon Church Road Adaptive Traffic Signal System	2040	ERC	PADOT		
ALCO	91796	Streets Run Road	2046	E	PADOT	S10	EX
ALCO	89077	Verona Road Bridge	2058	E	PADOT	S19	EX
ALCO	113741	SR 2058, Verona Road Slide	2058	R	PADOT	S2	EX
ALCO	113742	SR 2064, Lime Hollow Road Slide	2064	R	PADOT	S2	EX
ALCO	78231	Indiana Drive Culvert	2070	E	PADOT	S19	EX
ALCO	28345	Jerome Street Bridge	2094	C	PADOT	S19	EX
ALCO	78232	Electric Ave ov Falls Run	2112	ER	PADOT	S19	EX
ALCO	63583	McKeesport Duqusne Bridge	2114	C	PADOT	S19	EX
ALCO	114287	SR 3003 (Washington Pike) Improvements	3003	RC	PADOT		
ALCO	63558	McLaughlin Run Rd #2	3004	E C	PADOT	S19	EX
ALCO	100963	McLaughlin Rn Rd@McMillia	3004	C	PADOT		
ALCO	28520	Mayview Road Bridge	3005	C	PADOT	R2	EX
ALCO	105451	SR 3015 ov Lick Run Creek	3015	ERC	PADOT	S19	EX
ALCO	114195	SR 3034, Chartiers St Slide Remediation	3034	E C	PADOT	S2	EX
ALCO	27219	Campbell's Run Road	3041	RC	COUNTY		
ALCO	112429	SR 3059 North Road Slide	3059	C	PADOT	S2	EX
Proposed Amendment – June 2021							
ALCO	115555	SR 3072 – Montour Run Rd – Market Place District Improvements	3072	ERC	MUNIC		

NOTE: Projects without "exempt codes" are the non-exempt projects included in the Conformity Assessment for the 2021-2024 TIP. The assessment of the non-exempt projects is described in Section VII.

2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
ALCO	110374	SR 3069 -Wash Rd/W. Liberty Ave Adaptive Traffic S	3069	C	PADOT		
ALCO	28344	McKees Rocks Bridge Phase 2	3104	ERC	PADOT	S19	EX
ALCO	111516	Stevenson Mill Connector	3109	ERC	MUNIC		
ALCO	111517	Rouser Road Connector	3109	ERC	MUNIC		
ALCO	89155	Rochester Road Culvert	4011	E	PADOT	S19	EX
ALCO	69076	Sewickley Bridge Preservation	4025	C	PADOT	S19	EX
ALCO	113629	Babcock Boulevard Culvert	4031	E	PADOT	S19	EX
ALCO	112428	SR 4032, Fern Hollow Road Slide	4032	C	PADOT	S2	EX
ALCO	91596	SR 4053/Wexford Run Road	4053	C	PADOT	S19	EX
ALCO	113631	Bakerstown Road Bridge	4068	E	PADOT	S19	EX
ALCO	78427	Wildwood Rd over BP RR	4070	C	PADOT	S19	EX
ALCO	109570	Glenfield Viaduct Bridge	4165	ERC	PADOT	S19	EX
ALCO	27770	SN02 Spring Run NO2	7103	C	COUNTY	S19	EX
ALCO	27322	Days Run Bridge No. 3 (DY03)	7104	C	COUNTY	S19	EX
ALCO	27316	AL Local BPRS Group 2	7113	C	COUNTY	S19	EX
ALCO	88401	CM06 Campbells Run	7115	C	COUNTY	S19	EX
ALCO	27513	Thompson Rn Rd Br TN02	7116	ERC	COUNTY	S19	EX
ALCO	27159	Pine Creek Br. #6 (PS06)	7118	C	COUNTY	S19	EX
ALCO	79894	MC07 McClarens Run #7	7203	RC	COUNTY	S19	EX
ALCO	79895	DE09 Deer Creek Br #9	7209	ERC	COUNTY	S19	EX
ALCO	28426	AL Local BPRS Group 5	7420	E C	COUNTY	S19	EX
ALCO	114946	Wylie's Run Bridge No. 8 (WY08)	7443	ERC	COUNTY	S19	EX
ALCO	76393	Dooker's Hollow Br (DK01)	7449	C	COUNTY	S19	EX
ALCO	93915	Talbot Ave Ramp Bridge	7456	E	COUNTY	S19	EX
ALCO	93917	Kenmawr Ave Ramp	7456	RC	COUNTY	S19	EX
ALCO	114945	Little Sewickley Creek SB Bridge No. 1 (SS01)	7459	ERC	COUNTY	S19	EX
ALCO	27543	Kenmawr Bridge over NS RR	7463	C	OTHER	S19	EX
ALCO	81710	PM06 Plum Creek #6	7466	C	COUNTY	S19	EX
ALCO	93371	Patton St Bridge (TL13)	7479	ERC	COUNTY	S19	EX
PGH	27491	Beck's Run Road		ERC	COUNTY	S10	EX
PGH	27493	Smithfield St Reconstruct, Ph 1		ERC	PGH	S10	EX
PGH	63378	CBD Signalization Upgrade- Ph 4		C	PGH		
PGH	68252	Pittsburgh City BPRSF Line Item		C	PGH	S19	EX
PGH	69839	Alleg. Co Local Br. (S/L)		C	COUNTY	S19	EX
PGH	83136	Penn Ave Resurf. Ph 2		ERC	PGH	S10	EX
PGH	105603	PGH - South Side Signals		C	PGH		
PGH	106773	Liberty Ave		E C	PGH		
PGH	109691	Smart Spines (ATCMTD)		C	PGH		
PGH	110378	TDM Coordinator and Outreach Program			PGH	A1	EX
PGH	111408	Critical Sidewalk Gap TAP		C	PGH	A2	EX
PGH	111422	Pittsburgh SRTS Coordinator TAP		C	PGH		NS
PGH	112115	MS-4 Storm Water Control		C	PGH		NS
PGH	114280	Pittsburgh BRT - Establish Bus & Bike Lanes		C	TRANS		
PGH	114283	Pittsburgh BRT - Downtown Improvements		RC	TRANS		
PGH	114288	Penn Avenue Signal Improvements		E C	PGH		
PGH	114290	Allegheny River Green Boulevard		ERC	PGH	S6	EX
PGH	114294	City of Pittsburgh Bus Shelters/Mobility Hubs		RC	PGH	M7	EX
PGH	114296	Healthy Ride Electrified		C	PGH	A2	EX
PGH	109556	US 19/Banksville Rd Adaptive Signal	19	C	PADOT		

NOTE: Projects without "exempt codes" are the non-exempt projects included in the Conformity Assessment for the 2021-2024 TIP. The assessment of the non-exempt projects is described in Section VII.

2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
PGH	92274	PA 28: Highland Park - RIDC	28	C	PADOT	S10	EX
PGH	113508	Freeway Service Patrol & Traffic Control	28	C	PADOT	S6	EX
PGH	91696	Lincoln Hwy/Lenox Ave - PA 48	30	C	PADOT	S10	EX
PGH	94651	Pkwy East Active Traffic Management	376	E C	PADOT		
PGH	97028	I-376/Banksville Interchange	376	ERC	PADOT		
PGH	105465	I-376 Above 2nd Ave Wall Replacement	376	C	PADOT	S2	EX
PGH	27991	PA 837 Pedestrian Bridge	837	C	PADOT	A2	EX
PGH	98105	PA 837, Carson Street	837	C	PADOT	S10	EX
PGH	93419	MA08 - Glenwood Bridge	885	C	COUNTY	S19	EX
PGH	28525	Smithfield Street Bridge	3027	C	PADOT	S19	EX
PGH	27300	West Ohio St/Ridge Ave Br's.	4084	C	PGH	S19	EX
PGH	27144	28th Street Bridge	7301	E C	PGH	S19	EX
PGH	27747	Swinburne Bridge	7301	ERC	PGH	S19	EX
PGH	76388	6th Street Bridge Rehab	7301	C	COUNTY	S19	EX
PGH	83137	South Negley Ave. Bridge	7301	ERC	PGH	S19	EX
PGH	91907	Charles Anderson Bridge	7301	ER	PGH	S19	EX
PGH	93394	AL Local BPRS Group 4	7301	E C	COUNTY	S19	EX
PGH	93922	AR01 - Armstrong Tunnel	7301	C	COUNTY		NS
PGH	106386	Larimer Avenue Bridge	7301	ERC	PGH	S19	EX
PGH	114150	Swindell Bridge	7301	E	PGH	S19	EX
PGH	114266	West Carson Street Bridge	7301	E	PGH	S19	EX
PGH	100728	Boulevard of Allies Ramps	8004	E C	PADOT	S19	EX
ARCO	24056	Poverty Hill Bridge	28	ERC	PADOT	S19	EX
ARCO	69141	Goheenville Dip	28	C	PADOT	R4	EX
ARCO	109610	Spaces Corners Resurfacing	28	C	PADOT	S10	EX
ARCO	109624	PA 28 Allegheny Valley Expressway PM	28	C	PADOT	S10	EX
ARCO	114843	Route 28 AVE ITS Project - TSMO	28	C	PADOT	X11	EX
ARCO	103146	PA 56 Apollo Group Bridges	56	C	PADOT	S19	EX
ARCO	99247	Forks Church Resurfacing	66	C	PADOT	S10	EX
ARCO	109622	1/112th Infantry Bridge/Graff Ramp Rehabilitation	66	E	PADOT	S19	EX
ARCO	111826	Armstrong Co. Department Force Bridge Maintenance	68	C	PADOT	S19	EX
ARCO	23978	Graff Bridge Preservation	422	E	PADOT	S19	EX
ARCO	85574	Margaret Rd Intersection	422	RC	PADOT	R4	EX
ARCO	110602	US 422 EB/WB Bridges over Pony Farm Road	422	C	PADOT	S19	EX
ARCO	113645	US 422 A-15 Concrete Preservation	422	E C	PADOT	S10	EX
ARCO	83245	Rural Valley Bridge #4	2001	RC	PADOT	S19	EX
ARCO	109614	South of Rural Valley Bridge #3	2003	C	PADOT	S19	EX
ARCO	24136	Brick Church Bridge #2	2005	ERC	PADOT	S19	EX
ARCO	91794	Fagley Run Bridge #2	2027	C	PADOT	S19	EX
ARCO	114236	Logansport Slide Repair	2029	RC	PADOT	S2	EX
ARCO	109617	Baker Hollow Bridge	2033	C	PADOT	S19	EX
ARCO	24145	Upper Mateer Bridge #2	2036	C	PADOT	S19	EX
ARCO	86017	Brady's Run Bridge #3	2063	RC	PADOT	S19	EX
ARCO	74208	Pony Farm Road Bridge #2	3005	RC	PADOT	S19	EX
ARCO	24159	Craigsville Bridge	4035	C	PADOT	S19	EX
ARCO	24211	T-763 West Hills Bridge	7207	C	PADOT	S19	EX
BECO	106078	NS RR Crossings in Darlington and Big Beaver		C	PADOT	S8	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
BECO	106494	Beaver Local Bridge Line Item		C	COUNTY	S19	EX
BECO	29094	PA 18 -7th Ave & 7th St. Bridge	18	C	PADOT	S10	EX
BECO	101165	Frankfort Road Bridge	18	ERC	PADOT	S19	EX
BECO	105441	PA 18 Bridge ov Beaver River	18	ERC	PADOT	S19	EX
BECO	109376	Rochester - Monaca Bridge	18	ERC	PADOT	S19	EX
BECO	29045	US 30 Upgrade	30	C	PADOT	S10	EX
BECO	81652	US 30/WV State Line to PA 168	30	C	PADOT	S10	EX
BECO	105454	Constitution Boulevard - B51	51	C	PADOT	S10	EX
BECO	109352	Constitution Boulevard - B53	51	C	PADOT	S10	EX
BECO	35156	PA 65, Country Club Bridge	65	ERC	PADOT	S19	EX
BECO	109390	Mercer Road Bridge	65	ERC	PADOT	S19	EX
BECO	109531	Bocktown Road Slide	151	C	PADOT	S2	EX
BECO	101173	PA 168 over Jordan Run	168	ER	PADOT	S19	EX
BECO	113607	I-376, ITS Installation - Beaver County	376	E	PADOT	S7	EX
BECO	112494	PA 588 - Bennett Run Rd Slide	588	RC	PADOT	S2	EX
BECO	93770	Pine Run Road Culvert	1021	E	PADOT	S19	EX
BECO	112403	SR 2006, Lovi Road Slide	2006	RC	PADOT	S2	EX
BECO	105453	SR 3007/Frankfort Rd - Allegheny Co Line	3007	E C	PADOT	S10	EX
BECO	113630	Century Farm Road Culvert	3034	E	PADOT	S19	EX
BECO	112426	SR 4018, Park Road Slide	4018	C	PADOT	S2	EX
BUCO	110766	Maple Avenue Crossing		C	PADOT	S8	EX
BUCO	112713	SPC - Traffic Signal 4 – SINC-UP Project		E C	SPC		
BUCO	24715	South of Cooperstown Br #1	8	C	PADOT	S19	EX
BUCO	24716	South of Cooperstown Br #2	8	C	PADOT	S19	EX
BUCO	24717	South of Cooperstown Br #3	8	C	PADOT	S19	EX
BUCO	109628	PA 8 Resurfacing - Allegheny to PA 228	8	C	PADOT	S10	EX
BUCO	110464	PA 8 Main Street Signal Improvements	8	C	PADOT		
BUCO	111827	Butler Co. Department Force Bridge Maintenance	8	C	PADOT	S19	EX
BUCO	113652	General Butler Bridge PM	8	E	PADOT	S19	EX
BUCO	109627	Cranberry North Resurfacing	19	C	PADOT	S10	EX
BUCO	106568	PA 68 Corridor Improvements	68	C	PADOT		
BUCO	110826	PA 68 Zelienople Curve	68	C	PADOT	S6	EX
BUCO	72378	PA 108/173/258 Slippery Rock Intersection	108	C	PADOT	R1	EX
BUCO	24682	Southwest of Euclid Bridge	138	ER	PADOT	S19	EX
BUCO	91286	Three Degree Road Intersection – Reconstruction / Widening	228	ERC	PADOT		
BUCO	91288	Balls Bend	228	C	PADOT		
BUCO	104231	PA 228/UPMC Enhancements	228	C	PADOT		
BUCO	105900	Ekastown West 3R	228	C	PADOT	S10	EX
BUCO	24759	PA 356 over Tributary to Coal Run	356	ERC	PADOT	S19	EX
BUCO	110462	PA 356 Moraine Pointe to Campus Ln Signal Upgrade	356	C	PADOT		

Proposed Amendment – June 2021

BUCO	106486	PA 356 Improvements – Reconstruction / Widening (Buffalo Twp)	356	ER	PADOT		

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
BUCO	116127	PA 356 Park-n-Ride Lot	356	ERC	PADOT		EX
BUCO	105905	Butler Bypass	422	C	PADOT	S10	EX
BUCO	114188	Butler Bypass Phase 2	422	C	PADOT	S10	EX
BUCO	98730	Portersville Bridge	488	ERC	PADOT	S19	EX
BUCO	24819	Rattigan Bridge #1	1021	ERC	PADOT	S19	EX
BUCO	78000	Saxonburg Boulevard Br #2	2007	C	PADOT	S19	EX
BUCO	89972	SR 3014 Callery Bridge	3014	ERC	PADOT	S19	EX
BUCO	83336	SR 3015 over Trib. to Breakneck Creek	3015	ERC	PADOT	S19	EX
BUCO	112755	Freedom Road Improvements – Powell Rd to Haine School Rd	3020	ERC	PADOT		
BUCO	112933	Freedom Road Improvements – Lovi Rd to Powell Rd	3020	ERC	PADOT		
BUCO	110783	10-2 SR 3021 Corridor Improvements	3021	ERC	PADOT	S6	EX
BUCO	95872	T-554 Brickyard Hill Bridge	7209	C	PADOT	S19	EX
BUCO	95875	T-573 Wylie & T-554 Brickyard Hill Bridges	7209	C	PADOT	S19	EX
GRCO	114211	D12 Stormwater Management		C	PADOT		NS
GRCO	105839	PA 18 ov Trib Enlow Fork Wheeling Ck- DFB	18	RC	PADOT	S19	EX
GRCO	76027	US 19 BR2 Dunkard Creek	19	ERC	PADOT	S19	EX
GRCO	113683	Waynesburg Betterment	19	C	PADOT	S10	EX
GRCO	30315	PA 21 over Grinnage Run	21	ERC	PADOT	S19	EX
GRCO	105306	PA 21 over Toll Gate Run	21	ERC	PADOT	S19	EX
GRCO	90646	PA 88 over Whiteley Creek	88	ERC	PADOT	S19	EX
GRCO	81849	PA 218 ov Br Smith Ck	218	ERC	PADOT	S19	EX
GRCO	105401	SR 1008 over Neel Run - DFB	1008	RC	PADOT	S19	EX
GRCO	81842	SR 1010 over Pumpkin Run	1010	ERC	PADOT	S19	EX
GRCO	30134	SR 3001 over Wheeling Ck	3001	ERC	PADOT	S19	EX
GRCO	89086	SR 3001 ov Crabapple Ck	3001	R	PADOT	S19	EX
GRCO	30306	SR 3007 over Br of Wheeling Crk - DFB	3007	RC	PADOT	S19	EX
GRCO	105402	SR 3011 over Br of Hargus Ck - DFB	3011	RC	PADOT	S19	EX
GRCO	79362	SR 3013 ov Br Pursley Ck-0240 - DFB	3013	RC	PADOT	S19	EX
GRCO	81796	SR 3018 over Br Blacks Ck - DFB	3018	RC	PADOT	S19	EX
GRCO	81985	SR 3022/N Fork Wheeling Ck - DFB	3022	RC	PADOT	S19	EX
GRCO	105403	SR 4006 over Br Maranda Run - DFB	4006	RC	PADOT	S19	EX
GRCO	81798	SR 4007 over Owens Run - DFB	4007	RC	PADOT	S19	EX
GRCO	105330	SR 4025 over Br Browns Ck - DFB	4025	RC	PADOT	S19	EX
GRCO	105394	SR 4033 over Garners Run - DFB	4033	RC	PADOT	S19	EX
GRCO	51393	Greene Co Bridge #15	7203	ERC	COUNTY	S19	EX
GRCO	86225	Greene County #75	7214	ER	PADOT	S19	EX
GRCO	112595	Greene County #73	7214	ER	PADOT	S19	EX
FACO	76508	Dist12 Hwy/Brdg Line Item		C	PADOT	S10	EX
FACO	81229	D12 Bridge Preservation Design		E	PADOT	S19	EX
FACO	92321	D12 Right of Way Line Item		R	PADOT		NS
FACO	101968	D12 Pvmt Presv Design		E	PADOT	S10	EX
FACO	105858	Districtwide DFB Line Item		E	PADOT	S19	EX
FACO	107869	Env Permit Coordination		E	PADOT	X1	EX
FACO	113705	2022 Slide Repairs		C	PADOT	S2	EX
FACO	113707	12-21 RPM		C	PADOT	S11	EX
FACO	113708	12-22 RPM		C	PADOT	S11	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

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FACO	114212	D12 Bridge Preservation		C	PADOT	S19	EX
FACO	114213	D12 Design/Build Prep		C	PADOT	S19	EX
FACO	114630	Bus Replacement - MMVTA			PADOT	M10	EX
FACO	79306	PA 21 over PA 166	21	C	PADOT	S19	EX
FACO	94953	FACO Signals - 1	21	C	PADOT		
FACO	96661	McClure/Kingview Road Interchange	119	ER	PADOT		
FACO	110402	US 119 Connellsville CMAQ	119	C	PADOT		
FACO	75991	PA 166 over Cats Creek - DFB	166	RC	PADOT	S19	EX
FACO	112941	2021 Slide Repairs	201	C	PADOT	S2	EX
FACO	90750	PA 281 over Pinkham Run - DFB	281	RC	PADOT	S19	EX
FACO	90754	PA 281 over Br Hall Run - DFB	281	RC	PADOT	S19	EX
FACO	76003	PA 381 ov Br Meadow Run - DFB	381	RC	PADOT	S19	EX
FACO	74342	PA 711 Crawford Ave Bridge	711	C	PADOT	S19	EX
FACO	105387	SR 1005 over Br Back Ck - DFB	1005	RC	PADOT	S19	EX
FACO	112312	Dunbar Business Park Trans Impvmts	1028	C	PADOT		NS
FACO	105323	SR 1034 over Whites Run - DFB	1034	RC	PADOT	S19	EX
FACO	76010	SR 1037 over Trump Run	1037	RC	PADOT	S19	EX
FACO	106060	Dawson Corridor	1041	C	PADOT	S8	EX
FACO	81956	SR 1051 ov Br Opossum Run - DFB	1051	RC	PADOT	S19	EX
FACO	89078	SR 1051 over Butler Run - DFB	1051	RC	PADOT	S19	EX
FACO	105390	SR 1051 over Spruce Run - DFB	1051	RC	PADOT	S19	EX
FACO	81947	SR 2003 over Chaney Run-1 - DFB	2003	RC	PADOT	S19	EX
FACO	91126	SR 2011 over Little Sandy Ck - DFB	2011	RC	PADOT	S19	EX
FACO	93507	SR 2040 over Redstone Ck	2040	RC	PADOT	S19	EX
FACO	76016	SR 4001 over Rush Run 0050-2 - DFB	4001	RC	PADOT	S19	EX
FACO	88878	SR 4001 over Rush Run 0050 - DFB	4001	RC	PADOT	S19	EX
FACO	74344	Cast Iron Bridge	4003	RC	PADOT	S19	EX
FACO	81801	SR 4003 over Cox Run - DFB	4003	RC	PADOT	S19	EX
FACO	81994	SR 4011 Br Washwater Run - DFB	4011	RC	PADOT	S19	EX
FACO	81192	Layton Bridge	4038	R	PADOT	S19	EX
FACO	76137	Moyer Road Bridges	7202	C	COUNTY	S19	EX
FACO	104643	Fayette County #73	7202	C	COUNTY	S19	EX
FACO	103208	York Avenue Bridge	7301	C	MUNIC	S19	EX
INCO	110997	Eisenhower Safe Sidewalks		C	PADOT	A2	EX
INCO	114230	Indiana County Slide Repair		RC	PADOT	S2	EX
INCO	114842	SR 22 ITS Enhancement Project - TSMO	22	C	PADOT	X11	EX
INCO	83213	Creekside Bridge #1	110	E	PADOT	S19	EX
INCO	95852	US 119 over Two Lick Ck.	119	E	PADOT	S19	EX
INCO	100118	US119-MarshallRd.toJeffCo	119	C	PADOT	S10	EX
INCO	101113	Stoney Run Bridge #1	119	E	PADOT	S19	EX
INCO	25596	PA 286 ovTrib to Cherry Rn	286	ERC	PADOT	S19	EX
INCO	104459	PA 286: US 422 Interchange East	286	C	PADOT		
INCO	106058	Philadelphia St Bridges Grp	286	C	PADOT	S19	EX
INCO	109638	Marion Center Bridge #1	403	ERC	PADOT	S19	EX
INCO	78101	Mentch Bridge EB/WB	422	E C	PADOT	S19	EX
INCO	111829	Indiana Co. Department Force Bridge Maintenance	553	C	PADOT	S19	EX
INCO	109649	Windows Bridge	954	C	PADOT	S19	EX
INCO	83364	Ramsey Run Bridge #1	1002	ERC	PADOT	S19	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
INCO	25781	SR 1004 over US 119 NB/SB	1004	C	PADOT	S19	EX
INCO	25791	Straight Run Bridge #2	1046	ERC	PADOT	S19	EX
INCO	83382	SR 3007 over Marshall Run #1	3007	RC	PADOT	S19	EX
INCO	25799	SR 3016 over Two Lick Creek	3016	RC	PADOT	S19	EX
INCO	100122	SR4005-PA954 to Oakland Ave	4005	C	PADOT	S10	EX
INCO	25752	Claypoole Heights Bridge	4422	RC	PADOT	S19	EX
INCO	111796	Indian Springs Road/Rustic Lodge Road Intersection	4422	ERC	PADOT	R2	EX
LACO	88428	Coffee Run Road Br T-567		C	MUNIC	---	NA
LACO	111421	North Country Trail Safety TAP		C	MUNIC	---	NA
LACO	78396	PA 18 ov Abandoned Plant Access Rd	18	E	PADOT	---	NA
LACO	91768	PA 65/East Washington Street	65	E C	PADOT	---	NA
LACO	100920	US 224/Youngstown Poland Rd	224	C	PADOT	---	NA
LACO	78367	Enon Road over Sugar Creek	551	RC	PADOT	---	NA
LACO	100743	East Washington Street Br	2006	C	PADOT	---	NA
LACO	29474	Tower Road Br/Funk Run	2009	C	PADOT	---	NA
LACO	29394	S. Main Street Bridge	3001	ERC	PADOT	---	NA
LACO	29541	Beaver Dam Road	3002	ERC	PADOT	---	NA
LACO	29327	Wallace Road Bridge T356	7203	C	COUNTY	---	NA
LACO	29528	Graceland Rd Br T462	7205	ER	MUNIC	---	NA
LACO	57104	T-341 Burkey Road Bridge	7206	C	MUNIC	---	NA
LACO	57106	Bartholomew Road Bridge	7206	C	MUNIC	---	NA
LACO	88721	Hickory View Drive Bridge	7206	ERC	MUNIC	---	NA
LACO	78357	Barkley Road Bridge #3	7207	ERC	MUNIC	---	NA
LACO	105601	McCartney Hollow Road Bridge T311	7207	ERC	MUNIC	---	NA
WACO	30986	Chartiers Bridge #58		ERC	PADOT	S19	EX
WACO	79365	PA 18 over Chartiers Ck-1	18	ERC	PADOT	S19	EX
WACO	88829	PA 18 Signal Upgrades	18	C	PADOT		
WACO	90685	PA 18 over Chartiers Creek-2	18	ERC	PADOT	S19	EX
WACO	114561	PA 18: Main Street to Third Sreet	18	C	PADOT		
WACO	107432	US 19 Corridor Signal Upgrade	19	C	PADOT		
WACO	113755	Districtwide Cable Median Guiderail	70	C	PADOT	S9	EX
WACO	115214	D12 I-70 Cameras Exit 39-43	70	C	PADOT	S7	EX
WACO	115218	D12 I-70 Fiber Installation-1	70	C	PADOT	S7	EX
WACO	115220	D12 I-70 Fiber Installation-2	70	C	PADOT	S7	EX
WACO	76050	PA 88 over Trib Mon River	88	ERC	PADOT	S19	EX
WACO	105426	Charleroi Betterment	88	C	PADOT	S10	EX
WACO	110399	PA 88 Charleroi CMAQ	88	C	PADOT		
WACO	112651	Maple Glenn Road and PA 88 RRX	88	C	PADOT	S8	EX
WACO	113757	SR 136/SR 1055 Flashing Beacon	136	C	PADOT	S7	EX
WACO	105914	PA 231 over Br Templeton Run - DFB	231	RC	PADOT	S19	EX
WACO	109025	Bebout Rd/ E McMurray Rd Intersection	1002	ERC	PADOT		
WACO	109242	Valleybrook/Bebout Rd Intersection	1010	ERC	PADOT		
WACO	31152	SR 1016 ov Br Mingo Ck	1016	ERC	PADOT	S19	EX
WACO	90690	SR 1061 over Froman Run	1061	RC	PADOT	S19	EX
WACO	105888	SR 2001/PA 18 Bridges over Catfish Creek	2001	ERC	PADOT	S19	EX
WACO	105407	SR 2013/Br Little Daniels Run - DFB	2013	RC	PADOT	S19	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

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WACO	90785	SR 2019 over Br Pigeon Creek - DFB	2019	RC	PADOT	S19	EX
WACO	105410	SR 2022/Br Patterson Run - DFB	2022	RC	PADOT	S19	EX
WACO	74230	SR 2026 over Trib Mon River - DFB	2026	RC	PADOT	S19	EX
WACO	98291	SR 2027 over I-70	2027	RC	PADOT	S19	EX
WACO	90824	SR 2047 over Sowers Run - DFB	2047	RC	PADOT	S19	EX
WACO	105406	SR 3021 ov Br Mid Wheel Creek - DFB	3021	RC	PADOT	S19	EX
WACO	79387	SR 3027 over Buffalo Ck	3027	C	PADOT	S19	EX
WACO	30822	SR 4012 over Robbs Run	4012	C	PADOT	S19	EX
WACO	81838	SR 4012 over Robinson Run-1 - DFB	4012	RC	PADOT	S19	EX
WACO	103142	SR 4015/ Br Raccoon Creek - DFB	4015	RC	PADOT	S19	EX
WACO	103058	SR 4031/Br So Fork Cross Creek - DFB	4031	RC	PADOT	S19	EX
WACO	89052	SR 4057 over Brush Run	4057	ERC	PADOT	S19	EX
WACO	30825	Chartiers Creek #53	7204	ERC	PADOT	S19	EX
WACO	65226	Chartiers Creek #30	7207	ERC	PADOT	S19	EX
WECO	31669	Fairwood Manor Br		C	PADOT	S19	EX
WECO	110463	Hillis Street Grade Crossing		C	PADOT	S8	EX
WECO	114210	SPC - Traffic Signal 4 – SINC-UP Project		E C	SPC		
WECO	113758	US 22/PA 819 Intersection Improvements	22	C	PADOT	R1	EX
WECO	114224	US 22 Concrete Repair	22	C	PADOT	S10	EX
WECO	110900	US 30 Corridor Impvmts - Western Section	30	ER	PADOT	S6	EX
WECO	114390	US 30 @ Georges Station Road	30	E	PADOT		
WECO	114563	30 Hempfield on Corridor 95	30	C	PADOT		
WECO	76105	US 119 over Crabtree Creek 2	119	ERC	PADOT	S19	EX
WECO	114560	119 SW Greensburg CMAQ	119	C	PADOT		
WECO	98869	West Newton Bridge	136	ERC	PADOT	S19	EX
WECO	81751	PA 356 over Pine Run	356	C	PADOT	S19	EX
WECO	96654	PA 356 Safety Improvement	356	C	PADOT	S6	EX
WECO	32059	PA 366 over Br Poke Run - DFB	366	RC	PADOT	S19	EX
WECO	105315	PA 366 ov Br Pucketa Creek - DFB	366	RC	PADOT	S19	EX
WECO	105316	PA 981 over Barren Run - DFB	981	RC	PADOT	S19	EX
WECO	107957	LVTIP: PA 819 to Norvelt (PA 981-Q20)	981	C	PADOT	R4	EX
WECO	108010	LVTIP: Norvelt to Pleasant Unity	981	ER	PADOT	R4	EX
WECO	108140	LVTIP: Pleasant Unity to Airport	981	ER	PADOT	R4	EX
WECO	98860	PA 982 ov Br Stony Run	982	ERC	PADOT	S19	EX
WECO	105414	SR 1005 over Br Shannon Run - DFB	1005	RC	PADOT	S19	EX
WECO	31634	SR 1015 over Hypocrite Creek - DFB	1015	RC	PADOT	S19	EX
WECO	81747	Salina Bridge	1060	ERC	PADOT	S19	EX
WECO	105415	SR 1071 over Br Hypocrite Creek (Seg 10) - DFB	1071	RC	PADOT	S19	EX
WECO	106047	SR 1071 over Br Hypocrite Creek (Seg 30) - DFB	1071	RC	PADOT	S19	EX
WECO	105413	SR 2019 over Br Sewickley Creek - DFB	2019	RC	PADOT	S19	EX
WECO	75972	SR 3007 over I-70	3007	RC	PADOT	S19	EX
WECO	90807	SR 3008 over Br Pollock Run - DFB	3008	RC	PADOT	S19	EX
WECO	32097	SR 3009 over Speers Run - DFB	3009	RC	PADOT	S19	EX
WECO	105416	SR 3010 over Br Sewickley Creek - DFB	3010	RC	PADOT	S19	EX
WECO	81991	SR 3016 over Br Sewickley Creek - DFB	3016	RC	PADOT	S19	EX
WECO	105332	SR 3017 over Br Cedar Creek - DFB	3017	RC	PADOT	S19	EX
WECO	112623	MS4 PRP Stream Bank Stabilization	3023	E	PADOT	X9	EX
WECO	90834	SR 3030 over US 30	3030	RC	PADOT	S19	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs

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WECO	112980	SR 3059 over Hunters Run - DFB	3059	RC	PADOT	S19	EX
WECO	77872	SR 3103 over Jacks Run	3103	RC	PADOT	S19	EX
WECO	81960	SR 4012 over Brush Creek	4012	ERC	PADOT	S19	EX
WECO	89066	SR 4019 over Brush Creek	4019	C	PADOT	S19	EX
WECO	112554	SR 4041 over Haymakers Run	4041	ERC	PADOT	S19	EX
WECO	31979	SR 4075 over Pucketa Creek-DFB	4075	ERC	PADOT	S19	EX
WECO	113267	New Kensington Cooridor	4087	C	PADOT	S8	EX
WECO	74265	SR 4089 over Br Chartiers Run - DFB	4089	RC	PADOT	S19	EX
WECO	106406	West Co Local Br Preservation	7204	C	PADOT	S19	EX
WECO	106405	Westmoreland County #29	7412	C	PADOT	S19	EX
WECO	31554	Fourth Street Bridge	7421	C	PADOT	S19	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title I Programs
Interstate Maintenance Projects

COUNTY	MPMS NUMBER		PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
ALCO	81931	I79	- Pavement Restoration – Campbells Run - Moon Run	79	ERC	PADOT	S10	EX
ALCO	87756	I-79	- Neville Island Bridge – Preservation	79	C	PADOT	S19	EX
ALCO	87765	I-376	- Pavement Restoration – I-376 Business to Tonidale	376	C	PADOT	S10	EX
ALCO	87767	I-376	- Pavement Restoration – Edgewood to Churchill	376	ERC	PADOT	S10	EX
ALCO	87778	I-376	- Resurface – Churchill to Monroeville	376	ERC	PADOT	S10	EX
ALCO	91565	I-79	- Reconstruct – Moon Run to Neville Island	79	C	PADOT	S10	EX
ALCO	94812	I-79	- Pavement Restoration – Neville Island to I-279	79	ERC	PADOT	S10	EX
ALCO	97027	I-376	- Carnegie Interchange - Improve / Reconfigure	376	ER	PADOT	R3	EX
ALCO	97029	I-376	- Greentree Interchange – Improve / Reconfigure	376	ER	PADOT	R3	EX
ALCO	114544	I-79	- 2020 Interstate Longitudinal Joint Rehabilitation	79	C	PADOT	S10	EX
ALCO	114545	I-79	- 2021 Interstate Longitudinal Joint Rehabilitation	79	C	PADOT	S10	EX
			Proposed Amendment – June 2021					
ALCO	104325	I-79	- Widening – Alpine Rd to Prestley Rd (S. Fayette Twp)	79	ERC	PADOT		
PGH	99874	I-376	- Corridor Safety Improvements – Downtown - Mnrvlle	376	ERC	PADOT		
PGH	105438	I-376	– Bridge Replacement – Commercial Street Bridge	376	ERC	PADOT	X1	EX
PGH	112249	I-376	- Drainage Improvements – Bath Tub	376	E	PADOT	X1	EX
PGH	113362	I-376	– Bridge Improvement – Frazier Street Bridge	376	E C	PADOT	S19	EX
LACO	87757	I-79	– Resurface - Butler Co. Line to Mercer Co. Line	79	ERC	PADOT	S10	EX
LACO	109287	I-376	– Resurface - SR 422 to SR 224	376	ERC	PADOT	S10	EX
WACO	91555	I-79	- Resurface – Marianna to Laboratory Hill	79	C	PADOT	S10	EX
WACO	106919	I-70	- Reconstruct – Belle Vernon Bridge to Bentleyville	70	ERC	PADOT	S10	EX
WECO	31895	I-70	- Yukon & Madison Interchanges Reconstruction	70	C	PADOT	S19	EX
WECO	75978	I-70	- PA 51 Interchange Reconstruction	70	ERC	PADOT	R3	EX
WECO	88508	I-70	- Arnold City Interchange Reconstruction	70	ERC	PADOT	R3	EX

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2021-2024 TIP
Projects Funded by Pennsylvania Turnpike Commission

COUNTY	MPMS NUMBER	PROJECT NAME	SR NUMBER	PHASE	PROJECT SPONSOR	"EXEMPT" CODES	
ALCO		Overlay/Resurface – Mainline at Rt. 8 Interchange (MP 38-40)	76	E C	TRPK	S10	EX
ALCO		Overlay/Resurface – Allegheny Valley Int. (MP 47.73)	76	C	TRPK	S10	EX
ALCO		Rt.8 Int. to Allegh.Valley Int. – Widen to 6 Lanes (MP 40-48)	76	C	TRPK		
ALCO		Pittsburgh Int. – Bridge Collision Repair (MP56.56)	76	C	TRPK	S19	EX
ALCO		Overlay/Resurface – Pgh. Int. to Irwin Int. (MP 57-67)	76	C	TRPK	S10	EX
ALCO		Pgh Int. to Irwin Int. – Widen to 6 Lanes (MP 57-62)	76	E	TRPK		
ALCO		Mon-Fayette Expressway (SR 51 [Large] to SR 837 [Duquesne])		ER	TRPK		
BECO		Replace Beaver River Bridge – Widen to 6 Lanes (MP 12.5–13.5)	76	E C	TRPK		
BECO		Overlay/Resurface – New Castle Int. east to MP 19 (MP 9–19)	76	C	TRPK	S10	EX
BECO		Overlay/Resurface – I-376 to Cranberry Int. (MP 19–31)	76	C	TRPK	S10	EX
BECO		Grinding / Concrete Repair – Beaver Val. Xway (MP B31-B35)	376	C	TRPK	S10	EX
BUCO		Overhead Bridge Replace/Widen (Freedom Rd. over Turnpike)	3020	C	TRPK		
BUCO		Cranberry Int. to Pine Twp. – Widen to 6 Lanes (MP 28–31)	76	C	TRPK		
FACO		Diamond Grinding – Mon Fayette Expressway (MP M13-M30)	43	E C	TRPK	S10	EX
LACO		Overlay/Resurface – SR 551 to MP 9.3 (MP 2.3-9.3)	76	E C	TRPK	S10	EX
WACO	96723	Southern Beltway (SR 22 to I-79) – New 4-lane highway	576	C	TRPK		
WACO		Resurface / Concrete Repair Mon-Fayette Xway (MP 34-M36)	43	C	TRPK	S10	EX
WACO		Resurface / Concrete Repair Mon-Fayette Xway (MP 39-M53)	43	E C	TRPK	S10	EX
WECO		Overlay/Resurface – SR 982 to Somerset County Line (MP 85-94)	76	E C	TRPK	S10	EX
WECO		Mile 99 to Westmoreland/Somerset Co. Line – Widen to 6 Lanes	76	E C	TRPK		

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2021-2024 TIP
Projects Funded Through FAST-Act Title III Programs

PROJECT SPONSOR	MPMS NUMBER	PROJECT NAME	"EXEMPT" CODES	
ACTA	106606	Operating Assistance	M1	EX
ACTS	114525	Purchase Small Transit Buses	M10	EX
ACTS	114526	Maintenance Equipment	---	EX
ACTS	114610	Support Vehicle	M2	EX
ACTS	114611	Bus Equipment	M5	EX
BCTA	65404	Purchase Paratransit Buses	M10	EX
BCTA	65590	Bus Replacement	M10	EX
BCTA	70708	Support Equipment	M4	EX
BCTA	83817	Computer Hardware and Software	M4	EX
BCTA	94986	Operating Asst. - Rural	M1	EX
BCTA	105099	Preventive Maintenance	M3	EX
BCTA	114400	Midlife Vehicle Overhaul	M3	EX
BTA	77852	Operating Assistance	M1	EX
BTA	83836	Bus Shelters	M7	EX
BTA	114527	Facility Improvements	M4	EX
BTA	114528	Computer Hardware/Software	M4	EX
BTA	114529	Support Facilities	M4	EX
BTA	114530	Truck and Car Replacement	M2	EX
BTA	114531	Multi-Modal Project		
BTA	114612	Farebox Improvements	M5	EX
BTA	114733	Station Improvements	M4	EX
BTA	114734	Office Equipment	M4	EX
BTA	114741	Bus Support Equipment	M4	EX
BTA	114742	Rt.68 Park-n-Ride Facilities		
FACT	65222	Operating Assistance	M1	EX
FACT	71083	Capital Assistance	M4	EX
FACT	90041	Bus Procurement	M10	EX
FACT	114532	Support Vehicles	M2	EX
FACT	114613	Communication Equipment	M5	EX
GREENE	114735	Facility Improvements	M8	EX
HHF	111095	Operating Assistance	M1	EX
ICTA	65421	Operating Assistance - Rural	M1	EX
ICTA	102337	CTC Vehicle Replacement	M10	EX
ICTA	111097	Asphalt Repair (Repair, reseal, stripe parking areas)	M8	EX
ICTA	111098	CNG Bus Procurement	M10	EX
ICTA	111101	Replace Vehicle Wash	M8	EX
ICTA	114533	CTC Mini Vans	M10	EX
ICTA	114614	Driver Communication System	M6	EX
ICTA	114615	CNG Bus Replacements	M10	EX
MDCO	83884	Operating Assistance	M1	EX
MDCO	106635	Fixed-Route Vehicle Replacement	M10	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title III Programs

PROJECT SPONSOR	MPMS NUMBER	PROJECT NAME	"EXEMPT" CODES	
MDOT	106640	Shared-Ride Vehicle Replacement	M10	EX
MDOT	111108	Workstation Equipment	M4	EX
MDOT	114736	Antenna Replacement	M6	EX
MDOT	114743	Ecolane Tablets	M5	EX
MDOT	114744	Server Upgrade	M4	EX
MMVTA	65428	Operating Assistance - Urban	M1	EX
MMVTA	107897	Extended Warranty	M5	EX
MMVTA	111109	HVAC Systems Upgrades	M8	EX
MMVTA	111111	Vehicle Maintenance Upgrades	M4	EX
MMVTA	114534	Shelter and Stop Enhancements	M7	EX
MMVTA	114616	Bus Replacement	M10	EX
MMVTA	114617	ITS System Upgrades	M6	EX
MMVTA	114618	Office Equipment	M4	EX
MMVTA	114619	Study/Planning	X1	EX
MMVTA	119348	Bus Shelter and Stop Enhancements	M7	EX
NCATA	65171	CNG Buses	M10	EX
NCATA	77860	Operating Assistance - Rural	M1	EX
NCATA	111115	Facility Maintenance	---	NA
NCATA	111118	Office Equipments	---	NA
NCATA	111120	Bus Equipment	M5	EX
NCATA	114731	Support Vehicle	M2	NA
NCATA	114737	Garage Equipment	---	NA
NCATA	114745	Bus Facility Maintenance	---	NA
PAAC	65465	Capital Cost of Contracting - Access	M1	EX
PAAC	65535	Preventive Maintenance - Bus	M3	EX
PAAC	65541	Support Vehicles	M2	EX
PAAC	65550	Vehicle Overhaul Program	M3	EX
PAAC	71148	Bus Procurement	M10	EX
PAAC	77757	PAAC Capital Bond Debt Service	M1	EX
PAAC	84311	Operating Assistance	M1	EX
PAAC	90171	Transit Security Grant		NS
PAAC	90349	Fixed Guideway Improvements	M8	EX
PAAC	95003	Fixed Facility Improvements	M8	EX
PAAC	95004	Fixed Guideway Bridge	M8	EX
PAAC	95005	IT Hardware/Software	M4	EX
PAAC	95006	Preventive Maintenance - Rail	M3	EX
PAAC	95007	Shop Equipment	M4	EX
PAAC	100307	Ross Park-n-Ride Expansion		
PAAC	106594	Carnegie Park-n-Ride Expansion		
PAAC	106644	Shared Ride	M1	EX
PAAC	110551	Electric Bus Purchase	M10	EX
PAAC	110895	Pittsburgh BRT		
PAAC	114536	Fixed Guideway Tunnel Improvements	M8	Ex
PAAC	115479	South Hills Junction Improvements	M8	Ex
PAAC	115480	Allegheny Station Bike Lockers	M7	Ex
SPC	71104	Capital Cost of Contracting - CommuteInfo	M1	EX

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2021-2024 TIP
Projects Funded Through FAST-Act Title III Programs

PROJECT SPONSOR	MPMS NUMBER	PROJECT NAME	"EXEMPT" CODES
WASH	90068	Operating Assistance	M1 EX
WASH	102353	Maint. Facility Construction	M11 EX
WASH	102576	Operating Assistance State	M1 EX
WASH	106645	Heavy-Duty Bus Replacement	M10 EX
WASH	106646	Small Transit Buses	M10 EX
WASH	106650	Office Equipment	M4 EX
WASH	107255	Bus Shelters	M7 EX
WASH	111123	Surveillance / Security System	M4 EX
WASH	111383	Replacement Paratransit vehicles	M10 EX
WASH	111123	Replacement Radio Equipment	M6 EX
WASH	111123	Trolley Bus	M10 EX
WASH	111123	Support Vehicles	M2 EX
WCTA	65572	Operating Assistance - Rural	M1 EX
WCTA	77739	Preventive Maintenance	M3 EX
WCTA	102359	State Operating Assistance	M1 EX
WCTA	111126	Replacement Commuter Buses	M10 EX
WCTA	114540	Shared Ride Vehicles	M10 EX
WCTA	111126	Office Equipment	M4 EX
WCTA	111126	Transit Center Equipment	M4 EX

Transit Program – Project Sponsors:

ACTA	Airport Corridor Transportation Association
ACTS	Allied Coordinated Transportation Services
BCTA	Beaver County Transit Authority
BTA	Butler Transit Authority
FACT	Fayette Area Coordinated Transportation
GREENE	Greene County Human Services
HHF	Heritage Health Foundation
ICTA	Indiana County Transit Authority (IndiGo)
MDCO	Mid-County Transit Authority (Town & Country Transit)
MMVTA	Mid-Mon Valley Transit Authority
NCATA	New Castle Area Transit Authority
PAAC	Port Authority of Allegheny County
SPC	Southwestern Pennsylvania Commission
WASH	Washington County Transportation Authority (Freedom Transit)
WCTA	Westmoreland County Transit Authority

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APPENDIX B

Identification of Exempt and Regionally Significant Projects
Included in the Fiscally Constrained Portion of the 2045 Plan

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
PA 28 Resurfacing	Armstrong	10	99933	2	Resurfacing to include milling of existing bituminous wearing courses, bituminous patching, paving, leveling, binder and wearing courses and minor drainage and guiderail upgrades along PA 28 from 0.56 miles west of the SR 1027 intersection to the T-810 (Calhoun Road) intersection in Boggs and Mahoning Townships	Exempt	S10
PA 28 Slabtown South	Armstrong	10	101134	2	Highway reconstruction along SR 28 between SR 1035 and T-821 (Heffelfinger Road) in Boggs Township	Exempt	S10
SR 28 Hays Run 3R	Armstrong	10	91262	2	Safety improvements including reconstruction, rehabilitation and resurfacing along SR 28 / SR 1028 (Anderson Creek Road) to T-535 (McAuley Falls Road) in Rayburn and Boggs Townships	Exempt	S10
Graff Bridge Preservation	Armstrong	10	23978	2	Preservation of the existing structure carrying US 422 over the Allegheny River in North Buffalo Township, Armstrong County	Exempt	S19
1/112th Infantry Bridge and Graff Ramp Rehabilitation	Armstrong	10	109622	2	Rehabilitation of the existing structure carrying SR 66 over US 422, SR 2025 (Garretts Run Road), and Garretts Run in Manor Township, Armstrong County	Exempt	S19
SR 422 Margaret Rd Intersection	Armstrong	10	85574	2	Intersection improvements including realignment of the existing roadway and construction and expansion of turning lanes at the existing at-grade intersection of US Route 422 and SR 2005 (Margaret Road) in Plumcreek Township, Armstrong County	Exempt	R4
SR 422 Dunbar Dip	Armstrong	10	98689	2	Resurfacing to include milling of existing bituminous wearing courses, bituminous patching, paving, leveling, binder and wearing courses and minor drainage and guiderail upgrades along US 422 from SR 2012 (Silvis Hollow Road) to T-590 (Simpson Church Road) in Kittanning Township	Exempt	S10
PA 8 General Butler Bridge PM	Butler	10	113652	2	Preservation of existing structure carrying State Route 8 over Connoquenessing Creek, Quarry Street and railroads in Butler City	Exempt	S19
PA 8 over Muddy Creek	Butler	10	24722	2	Replacement of existing structure carrying PA 8 over Muddy Creek in Clay Township	Exempt	S19
Karns Crossing Bridge	Butler	10	86105	2	Bridge rehabilitation/replacement (deck and barrier replacement, rehabilitation of the two main through truss spans, structural steel repairs, bearing rehabilitation and painting, and concrete repairs to the substructure units) of the existing structure carrying SR 68 over the Bessemer and Lake Erie and Buffalo and Pittsburgh Railroads and Connoquenessing Creek in Butler and Summit Townships, Butler County	Exempt	S19
SR68 Safety Improvements*	Butler	10	990041	2	Safety improvements along SR 68 in Forward, Connequenessing, and Butler Townships, Butler County	Exempt	S6
SR 228 Three Degree Rd Intersection	Butler	10	91286	2	Safety improvement, including through lanes, turn lanes, side road improvements, addition of service roads for access control, drainage and guide rail upgrades, signal replacement, signage and pavement markings, sidewalks, ADA ramps, and roundabout along PA 228 from 500 feet east of SR 3015 to 1.0 mile east of SR 3007 in Adams Townships	Regionally Significant	
SR 356 Reconstruction / Widening	**Butler**	**10**	**106486**	**2**	**Widening of SR 356 in Buffalo Township, Butler County from 2 lanes to 5-lanes (four travel lanes and one center turn lane), for approx. 1.1 miles, from just north of T-666 (Harbison Road) to a point approximately 2,200 feet north of the Bear Creek Rd. intersection.**	**Regionally Significant**	
SR 422, Interstate 79 West Resurf	Butler	10	100061	2	Resurfacing to include milling of existing bituminous wearing courses, bituminous patching, paving, leveling, binder and wearing courses and minor drainage and guiderail upgrades along US 422 from the Lawrence County Line to Interstate 79 in Muddy Creek Township	Exempt	S10
PA 528 over Lake Arthur	Butler	10	24241	2	Reconstruction of the existing structure carrying PA 528 over Lake Arthur in Franklin Township	Exempt	S19
PA 528 over Big Run	Butler	10	83323	2	Replacement of existing structure carrying State Route 528 over Big Run in Brady Township	Exempt	S19
SR 22 Armagh Bypass Reconstruct	Indiana	10	97102	2	Highway reconstruction along US 22 from the West Wheatfield Township line east to 0.12 miles east of the US 422/SR 403 Interchange in East Wheatfield Township	Exempt	S10
US 119 over SR 8001 bridges	Indiana	10	25621	2	Reconstruction of the existing structures carrying US 119 over SR 8001 in White Township	Exempt	S19
US 119 ovr Two Lick Creek	Indiana	10	95852	2	Rehabilitation of the existing structure carrying US 119 over Two Lick Creek in Center Township	Exempt	S19
US 119 Stoney Run Bridge #1	Indiana	10	101113	2	Replacement of the existing structure carrying US 119 over Stoney Run in Center Township	Exempt	S19
US 119 over Pine Run	Indiana	10	83227	2	Replacement of existing structure carrying US 119 over Pine Run in East Mahoning Township	Exempt	S19
SR 286 Oakland Avenue Ped Safety	Indiana	10	99709	2	Pedestrian safety improvements along SR 286 from IUP to Plaza Drive in White Township and Indiana Borough	Exempt	A2
Bridge to Nowhere EB PM &WB PM	Indiana	10	98811 98827	2	Preservation (preventative maintenance) of the existing structure carrying US 422 over SR 4422 (Ben Franklin Road), State Route 4005 (Indian Springs Road), State Route 3035 (Old US 119) and the Buffalo and Pittsburgh Railroad in White Township	Exempt	S19
US 422 over Two Lick Ck.	Indiana	10	25548	2	Rehabilitation of the existing structure carrying US 422 eastbound over Two Lick Creek in White Township	Exempt	S19
SR 4005 Mack Park Bridge	Indiana	10	105300	2	Replacement of existing structure carrying SR 4005 (Wayne Avenue) over Marsh Run in White Township	Exempt	S19
Bridge NON NHS Preservation Line Item (stage 2)	Districtwide	10		2	Non-NHS Bridge Preservation Reserve	Exempt	S19
Local/Off System Bridges (stage 2)	Districtwide	10		2	Local/Off System Bridge Reconstruction Reserve	Exempt	S19
Bridge NON NHS Reconstruction Line Item (stage 2)	Districtwide	10		2	Non-NHS Bridge Reconstruction Reserve	Exempt	S19
Efficiency & Operations NHS Line Item	Districtwide	10		2	NHS Efficiency and Operations Reserve	Exempt	X1
Roadway NHS Preservation (stage 2)	Districtwide	10		2	NHS Roadway Preservation Reserve	Exempt	S10
Roadway NON NHS Preservation (stage 2)	Districtwide	10		2	Non-NHS Bridge Preservation Reserve	Exempt	S10
Roadway NHS Reconstruction (stage 2)	Districtwide	10		2	NHS Roadway Reconstruction Reserve	Exempt	S10
Roadway NON NHS Reconstruction (stage 2)	Districtwide	10		2	Non-NHS Bridge Reconstruction Reserve	Exempt	S10
Safety Line Item	Districtwide	10		2	Safety Reserve	Exempt	S6
62nd Street Bridge*	Allegheny	11	100958	2	Bridge preservation on the 62nd Street Bridge in the City of Pittsburgh and Etna Borough	Exempt	S19

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
West End Bridge*	Allegheny	11	100956	2	Bridge preservation and painting of the West End Bridge (US 19) over the Ohio River and CSX Railroad in the City of Pittsburgh, Allegheny County	Exempt	S19
22/30 over the Parkway West	Allegheny	11	27445	2	Bridge restoration/replacement on US Route 22, Steubenville Pike Bridge over Parkway West in Robinson Township, Allegheny County	Exempt	S19
US Route 22 - Washington	Allegheny	11	100768	2	Milling and resurfacing on US 22 from the Washington County Line to McKee Road in North Fayette and Findlay Townships, Allegheny County	Exempt	S10
US 22 - US 30 to McKee Rd	Allegheny	11	100769	2	Concrete rehabilitation of US 22 from US 30 to McKee Road in North Fayette Township, Allegheny County	Exempt	S10
PA 28 NB over PA 910	Allegheny	11	100959	2	Bridge preservation on State Route 28 northbound over State Route 910 in Harmarville Interchange in Harmar Township, Allegheny County	Exempt	S19
PA 28: Harmarville-Russelton	Allegheny	11	92276	2	Milling and resurfacing on SR 28 - Harmarvillle to Russelton in East Deer, Frazer, Harmar and Springdale Townships, Allegheny County	Exempt	S10
PA 28/Etna Bypass - Highland Pk Br	Allegheny	11	92273	2	Mill and overlay and bridge preservation on SR 28 SB, from Etna Bypass to Highland Park Bridge in O'Hara Township and Sharpsburg Borough, Allegheny County	Exempt	S10
PA 28: Highland Park - RIDC	Allegheny	11	92274	2	Reconstruction of SR 28 from Highland Park to Regional Industrial Development Corporation (RIDC) Park in O'Hara Township, Fox Chapel, Aspinwall, and Sharpsburg Borough, and the City of Pittsburgh	Exempt	S10
SR 48 Mosside Blvd-PA 130 to Haymaker	Allegheny	11	100782	2	Resurfacing on Mosside Boulevard from SR 130 to Haymaker Road in Monroeville Borough, Allegheny County	Exempt	S10
PA 50-Wash County Line	Allegheny	11	100784	2	Rehabilitation of existing concrete pavement from Washington County Line to Miller's Run Road in South Fayette Township, Allegheny County	Exempt	S10
PA 50: I-79 to Thoms Run	Allegheny	11	109640	2	Roadway widening for additional lanes and intersection improvement of PA 50/I-79. Other work includes: new sidewalks, ADA upgrades, traffic signal upgrades, signing, and pavement marking updates along PA 50, from I-79 to Thoms Run Road in Collier Township, Allegheny County	Regionally Significant	
PA 51-Curry Hollow - SR 88*	Allegheny	11	100793	2	Resurface SR 51 from Lebanon Church Road to Edgebrook Avenue in the City of Pittsburgh, and Baldwin, Pleasant Hills, Whitehall and Brentwood Boroughs	Exempt	S10
Saw Mill Run Blvd: PA 88 to US 19*	Allegheny	11	100789	2	Reconstruction of Saw Mill Run Boulevard from SR 88 (Library Road) to US 19	Exempt	S10
Ohio River Blvd-Terrace Av*	Allegheny	11	100796	2	Resurfacing on Ohio River Boulevard from Terrace Avenue to River Avenue, in Kilbuck Township, Emsworth and Glenfield Borough	Exempt	S10
PA 65/Emsworth to I-79*	Allegheny	11	109349	2	Concrete pavement reconstruction on SR 65 (Ohio River Boulevard) from Emsworth to I-79 in Emsworth, Glenfield, Haysville and Glen Osborne, Allegheny County	Exempt	S10
PA 65: Fort Duquesne to Kendal*	Allegheny	11	79448	2	Reconstruction of Ohio River Boulevard from Fort Duquesne to Kendall Avenue, in the City of Pittsburgh	Exempt	S10
Ohio River Blvd-Ped Walkway*	Allegheny	11	100798	2	Resurfacing on SR 65, Ohio River Boulevard from the pedestrian walk way to 200 feet past Eckert Street Bridge in City of Pittsburgh	Exempt	S10
Ohio River Blvd-River Ave*	Allegheny	11	100797	2	Resurfacing on SR 65, Ohio River Boulevard from River Avenue to Edgeworth Lane in Edgeworth and Sewickley Boroughs	Exempt	S10
PA 65: Fort Duquesne Br to Cal Ave	Allegheny	11	92279	2	Concrete pavement restoration of SR 65 from the Fort Duquesne Bridge to California Avenue in the City of Pittsburgh Allegheny County	Exempt	S10
Tarentum Bridge ov NS RR*	Allegheny	11	100624	2	Bridge restoration/replacement on PA 366, Tarentum Bridge over Norfolk Southern Rail and Allegheny River, in Tarentum Borough, Allegheny County	Exempt	S19
Pkwy East Active Traffic Management	Allegheny	11	94651	2	Parkway East Corridor Transportation Network, arterial traffic signal and roadway improvements at thirteen (13) intersections on I-376 between Downtown Pittsburgh and Monroeville in Allegheny County	Regionally Significant	
I-376/Banksville Interchange (TYP second 4 yrs)	Allegheny	11	97028	2	Interchange improvements. Construct ramp and bridge, extend ramp. Located on I-376 from the Parkway Center Interchange (SR 8091) to the Fort Pitt Tunnel in the City of Pittsburgh, Allegheny County. Includes SR 19 (Banksville Road), SR 19/51 at Woodville ramps and Banksville Interchange Ramps (SR 8075)	Regionally Significant	
Boulevard of Allies Ramps*	Allegheny	11	100728	2	Bridge preservation on several ramps on SR 885 & SR 8004 over I-376 in the City of Pittsburgh, Allegheny County	Exempt	S19
I-79 at PA 910 Interchange	Allegheny	11	104328	2	Highway reconstruction, realignment, safety upgrade. Located on I-79, from SR 910 to I-279 split in Marshall Township, Allegheny County	Regionally Significant	
Highland Park Bridge	Allegheny	11	109549	2	Bridge preservation on SR 1005 (Highland Park) over Allegheny River, Norfolk Southern Railway and AVR Railroad in Sharpsburg Borough, Allegheny County	Exempt	S19
New Kensington Bridge*	Allegheny	11	63515	2	Bridge preservation on SR 1038 over Allegheny River in East Deer Township, Allegheny County	Exempt	S19
Streets Run Road	Allegheny	11	91796	2	Mill & overlay on SR 2046 (Streets Run Road) from Prospect Road to Baldwin Road in Baldwin and West Mifflin Boroughs, Allegheny County	Exempt	S10
Electric Ave ov Falls Run*	Allegheny	11	78232	2	Bridge restoration/replacement on SR 2112, Electric Avenue over Falls Run in East Pittsburgh and Turtle Creek Boroughs, Allegheny County	Exempt	S19
McKeesport Duquesne Bridge*	Allegheny	11	63583	2	Bridge preservation on SR 2114 (McKeesport-Duquesne Bridge) over the Monongahela River and railroad in the City of Duquesne and McKeesport, Allegheny County	Exempt	S19
McKees Rocks Bridge Phase 3*	Allegheny	11	100701	2	Bridge rehabilitation on State Route 3104 (McKees Rocks Bridge) over Ohio River and Norfolk Southern Railroad in the City of Pittsburgh	Exempt	S19
Larimer Ave Bridge*	Allegheny	11	106386	2	Bridge restoration/replacement on Larimer Avenue Bridge over Allegheny Valley Railroad in the City of Pittsburgh, Allegheny County; Project sponsor is Allegheny County	Exempt	S19
Charles Anderson Bridge*	Allegheny	11	91907	2	Bridge replacement/rehabilitation on Charles Anderson Bridge over Schenley Park, Bike Trail and CSX Railroad in the City of Pittsburgh, Allegheny County; Project sponsor is Allegheny County	Exempt	S19

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
Swinburne Bridge*	Allegheny	11	27747	2	Bridge rehabilitation on Swinburne Bridge, which carries Frazier Street over CSX RR and Saline Street in the City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh	Exempt	S19
Swindell Bridge*	Allegheny	11	114150	2	Bridge restoration/replacement on North Charles Street/Essen Street over I-279 and East Street, City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh	Exempt	S19
Talbot Avenue Ramp Bridge Rehabilitation*	Allegheny	11	93915	2	Bridge rehabilitation on Ramp located on Rankin Bridge to Talbot Ave, over Union RR, in Rankin Borough, Allegheny County	Exempt	S19
PGH Signal updates phase 4*	Allegheny	11		2	Central Business District signal upgrade/replacement project. Locations are Penn and 12th, Bigelow and Chatham Sq, Centre and Crawford, Bedford and Washington Pl, Bedford and Crawford, Bedford and Street No. 1; Project sponsor is City of Pittsburgh	Regionally Significant	
County Road Painters Run Rd*	Allegheny	11	20192029	2	(Sponsor = Allegheny County) Highway restoration and roadway improvements of Painters Run Road from Bower Hill Road in Upper St. Clair Township to Rob Hollow Road in the Municipality of Mt. Lebanon. Add a 350 foot left turn lane for westbound traffic from Painters Run Road onto Bower Hill Road. The WB left turn lane originates from a center turning lane near the Jim Jenkins Lawn and Garden Center. East of the Lawn and Garden Center, Painters Run Road will reduce from a 3 lane cross section to a 2 lane section prior to meeting the existing alignment and grade at the western end of the PA09. Realign McMillian Road to connect at Robb Hollow Road to for a 4-way intersection. A retaining wall to protect St. Clair Soccer Fields along with a culvert over Painters Run will be required for this improvement.	Regionally Significant	
Beck's Run Road	Allegheny	11		2	(Sponsor = Allegheny County) Highway reconstruction on Beck's Run Road from Brownsville Road to Carson Street.	Exempt	S10
Campbell's Run Road	Allegheny	11	27219	2	(Sponsor = Allegheny County) Highway reconstruction on Campbell's Run Road from McMichael Road to Keiner's Lane in Robinson and Collier Townships, Allegheny County. Roadway improvements contain approximately 7,000 feet of roadway reconstruction to provide a three lane section between McMichael Road and Keiners Lane. Auxiliary right turn lanes will be provided at Boyce Road and Penn Center West. Boyce Road and Parkway View Drive will be realigned to create 4-way signalized intersection. The bridge carrying Boyce Road over Campbells Run will be replaced and 12 retaining walls will be constructed.	Regionally Significant	
Smithfield St Reconstruct, Ph 1 & Ph 2*	Allegheny	11	27493	2	Highway reconstruction on Smithfield Street from Fort Pitt Boulevard to Sixth Avenue in the City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh	Exempt	S10
PA 18 Bridge ov Beaver River*	Beaver	11	105441	2	Bridge preservation on SR 18 over the Beaver River in Beaver Falls and New Brighton, Beaver County	Exempt	S19
Frankfort Road Bridge	Beaver	11	101165	2	Bridge rehabilitation/replacement on Frankfort Road over Raccoon Creek in Potter Township, Beaver County	Exempt	S19
PA 51/McKinley - Ohio State	Beaver	11	101232	2	Reconstruction of Constitution Boulevard from McKinley Road to the Ohio State Line in Chippewa Township, Beaver County	Exempt	S10
SR 3007, Broadhead Road, Frankfort Rd - Allegheny Co Line	Beaver	11	105453	2	Highway restoration/reconstruction on PA 3007, Broadhead Road from Frankfort Road to Allegheny County line in City of Aliquippa, Hopewell and Center Townships, Beaver County	Exempt	S10
PA 18 Resurfacing	Lawrence	11	100916	2	Resurface on PA 18 from the Beaver County Line to the Mahoning River in the City of New Castle, Neshannock and North Beaver Townships, and Wampum and New Beaver Boroughs, Lawrence County	Exempt	S10
Wilmington Road	Lawrence	11	100917	2	Mill and overlay on SR 18, Wilmington Road in Wilmington and Neshannock Townships, Lawrence County	Exempt	S10
PA 19: Perry Highway 2*	Lawrence	11	109386	2	Mill and Overlay on US 19, Perry Highway from segment 10 to segment 80 in Shenango and Slippery Rock Townships, Lawrence County	Exempt	S10
Benjamin Franklin Highway	Lawrence	11	92282	2	Mill and overlay on US 422 (Benjamin Franklin Highway) in Pulaski Township, Lawrence County	Exempt	S10
SR 956 Mercer Rd - New Wilm Twp line - Safety improvements*	Lawrence	11	20192018	2	Corridor and safety improvements along SR 956 from Mercer Road to the New Wilmington Township line in Wilmington Township, Lawrence County, including roadway reconstruction to accommodate 11 ft lanes and 8 ft shoulders	Exempt	S10
Bridge NON NHS Preservation Line Item	Districtwide	11		2	Non-NHS Bridge Preservation Reserve	Exempt	S19
Local/Off System Bridges	Districtwide	11		2	Local/Off System Bridge Reconstruction Reserve	Exempt	S19
Bridge NHS Reconstruction Line Item	Districtwide	11		2	NHS Bridge Reconstruction Reserve	Exempt	S19
Bridge NON NHS Reconstruction Line Item	Districtwide	11		2	Non-NHS Bridge Reconstruction Reserve	Exempt	S19
Roadway NHS Preservation (Stage 2)	Districtwide	11		2	NHS Roadway Preservation Reserve	Exempt	S10
Roadway NON NHS Preservation (Stage 2)	Districtwide	11		2	Non-NHS Roadway Preservation Reserve	Exempt	S10
Roadway NHS Reconstruction (Stage 2)	Districtwide	11		2	NHS Roadway Reconstruction Reserve	Exempt	S10
Roadway NON NHS Reconstruction(Stage 2)	Districtwide	11		2	Non-NHS Roadway Reconstruction Reserve	Exempt	S10
Local, County, and State Slide Remediation & Reconstruction	Districtwide	11		2	Funds anticipated for slide remediation and road reconstruction in Allegheny, Beaver, and Lawrence Counties	Exempt	S2
US 40: PA 281 to Yough Brdg	Fayette	12	98432	2	This project is for the resurfacing of US 40 from SR 281 to the Youghiogheny Dam Bridge in Henry Clay Township, Fayette County	Exempt	S10
US 40: PA 43 to Dearth Rd	Fayette	12	98505	2	This project is for betterment improvements to resurface US 40 from SR 4000 (Dearth Road) to SR 4039 (Northgate Highway) in Menallen and South Union Townships, Fayette County	Exempt	S10
SR 119 McClure/Kingview Road Interchange	Fayette	12	96661	2	This project is the review of the US 119 McClure Road intersection area in Upper Tyrone Township, Fayette County, to develop a proposal for projects that would update and modernize US 119 in this area. The project will eliminate two signalized intersections on US 119 with Kingview Road and McClure Road. A new full-access interchange would be constructed in between the two existing intersections. A new bridge carrying a new connector road would be constructed	Regionally Significant	
PA 166 ov George Crk	Fayette	12	98749	2	Bridge preservation on PA 166 over George Creek in Springhill and Nicholson Townships in Fayette County	Exempt	S19

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
PA 381: PA 711 to Imel Rd	Fayette	12	98427	2	This project is the resurfacing of SR 381 (Indian Creek Valley Road) from SR 711 to Imel Rd in Saltlick Township, Fayette County	Exempt	S10
PA 381: Melcroft to Co Line	Fayette	12	98429	2	This project is for the resurfacing of SR 381 (Indian Creek Valley Road) from the village of Melcroft to the Westmoreland County Line in Saltlick Township, Fayette County	Exempt	S10
SR 1027 ov Jacobs Crk	Fayette	12	98752	2	Bridge preservation on State Route 1027 over Jacobs Creek in Upper Tyrone and East Huntingdon Townships, Fayette County	Exempt	S19
SR 1028 over Gist Run	Fayette	12	88266	2	This project is for improvement to the structure carrying SR 1028 over Gist Run in Dunbar Township, Fayette County	Exempt	S19
Layton Bridge	Fayette	12	81192	2	This project is for the improvement of the Layton Bridge (SR 4038, Layton Street) over the Youghiogheny River and Great Allegheny Passage Trail in Perry Township, Fayette County	Exempt	S19
PA 18 ov S Fk 10 Mile Run	Greene	12	98588	2	Improvements to the structure carrying PA 18 over South Fork of Ten Mile Run in Center Township, Greene County	Exempt	S19
SR 19 Blairtown Bridge to High Street*	Greene	12	100495	2	This project is for the resurfacing of US 19 Northbound and Southbound from Blairtown Bridge to High Street in Waynesburg Borough, Greene County	Exempt	S10
PA 19/221 Ruff Creek Int*	Greene	12	105358	2	This project is the study to determine if improvements need to be made to the SR 19 (Washington Road) and SR 221 (Dunn Station Road/Lippencot Road) Intersection in Washington Township, Greene County	Exempt	X1
SR 3001 ov Crabapple Ck	Greene	12	89086	2	Replacement of the structure carrying SR 3001 (Wheeling Creek Road) over Crabapple Creek in Richill Township, Greene County	Exempt	S19
PA 18 ov Br Short Crk	Washington	12	98801	2	Bridge preservation on PA 18 over Branch of Short Creek in Morris Township, Washington County	Exempt	S19
PA 18: Old Scales Road to Oak Grove Road	Washington	12	100448	2	Resurfacing PA 18 from Old Scales Road to Oak Grove Road in North Franklin Township, South Franklin Township, and City of Washington, Washington County	Exempt	S10
PA 18: Oak Grove Road to PA 50	Washington	12	100467	2	Resurfacing PA 18 from Oak Grove Road to PA 50 in Canton Township, Chartiers Township, and Mount Pleasnt Township, Washington County	Exempt	S10
US 19: PA 519 to SR 1025	Washington	12	100396	2	This project is for betterment improvements on US 19 from SR 519 to SR 1025 (Weavertown Road) in North Strabane Township, Washington County	Exempt	S10
US 19: SR 1002 to Valley Brook Rd	Washington	12	100413	2	This project is for betterment improvements to US 19 from SR 1002 (McMurray Road) to SR 1010 (Valley Brook Road) in Peters Township, Washington County	Exempt	S10
US 19: SR 1025 to SR 1002*	Washington	12	100420	2	This project is for betterment improvements on US 19 from SR 1025 (Weavertown Road) to SR 1002 (McMurray Road) in North Strabane and Peters Townships, Washington County	Exempt	S10
US 40: I-79 to PA 519	Washington	12	98351	2	This project is for betterment improvements to US 40 from I-79 to SR 519 in Amwell Township, Washington County	Exempt	S10
B'ville High Level Brdg	Washington	12	98847	2	This project is for the preservation of the structure carrying US 40 over the Monongahela River, SR 88 (Blainsburg Hill Road), SR 4003 (Brownsville Road), SR 4035 (Market Street) and 2 railroads in West Brownsville Borough, Fayette County, and Brownsville Borough, Washington County	Exempt	S19
PA 88 ov Br Peters Crk	Washington	12	98799	2	Bridge preservation on PA 88 over Branch of Peters Creek in Unition Township, Washington County	Exempt	S19
I-70 Interstate Detour Improvement plan implementation-	Washington	12	20192121	2	This project is various pavement and intersection improvements to the ancillary State Routes that are used as detour routes for Interstate 70 in various municipalities in Washington County	Regionally Significant	
I-79 Interstate Detour Improvement plan implementation- -	Washington	12	20192122	2	This project is various pavement and intersection improvements to the ancillary State Routes that are used as detour routes for Interstate 79 in various municipalities in Washington County	Regionally Significant	
PA 844: PA 231 to Wellsburg Rd	Washington	12	98348	2	This project is for the resurfacing of SR 844 (Jefferson Avenue) from SR 231 to Wellsburg Road in Canton and Hopewell Townships, and West Middletown Borough, Washington County	Exempt	S10
US 30 Corridor Impvmts - Western Section	Westmoreland	12	110900	2	Safety improvements along US 30 in North Huntingdon Township, Westmoreland County	Exempt	S10
US 30 & Georges Station Intersection	Westmoreland	12	114390	2	This project is for efficiency and operations improvements to the US 30 (Lincoln Highway) corridor at the State Route 1053 (Georges Station Road) intersection in Hempfield Township, Westmoreland County	Regionally Significant	
West Newton Bridge*	Westmoreland	12	98869	2	This project is the replacement/rehabilitation of the structure carrying SR 136 (Main Street) over Youghiogheny River in West Newton Borough, Westmoreland County	Exempt	S19
PA 381: PA 31 to PA 130*	Westmoreland	12	101066	2	This project is for the resurfacing of SR 381 (Weavertown Road) from the intersection with SR 31 to the intersection with SR 130 in Donegal and Cook Townships, Westmoreland County	Exempt	S10
PA 381 - SR 2043 to US 30	Westmoreland	12	101067	2	This project is for the resurfacing of SR 381 (Linn Run Park Road) from the intersection with SR 2043 to the intersection with US 30 in Ligonier Township, Westmoreland County	Exempt	S10
PA 711: SR 1017 to Che Che Rd*	Westmoreland	12	98309	2	This project is to resurface SR 711 (Market Street Extension, Ligonier Street) from SR 1017 (Wilpen Road) to Che Che Road in Fairfield Township and New Florence Borough, Westmoreland County	Exempt	S10
PA 711: US 30 to Wilpen Rd*	Westmoreland	12	98337	2	This project is to resurface SR 711 (Market Street, Market Street Extension) from US 30 to Wilpen Road in Ligonier Borough and Fairfield Township, Westmoreland County	Exempt	S10
PA 981 ov Welty Run	Westmoreland	12	98710	2	Bridge preservation on PA 981 over Welty Run in Mount Pleasant Township, Westmoreland County	Exempt	S19
LVTIP: Norvelt to Pleasant Unity	Westmoreland	12	108010	2	This project is Phase 2 of the Laurel Valley Transportation Improvement Program, the new alignment of SR 981 from Norvelt to the Kennametal plant in Mount Pleasant and Unity Townships, Westmoreland County	Exempt	R4
LVTIP: Pleasant Unity to Airport	Westmoreland	12	108140	2	This project is Phase 3 of the Laurel Valley Transportation Improvement Program, the new alignment of SR 981 from Pleasant Unity to the Kennametal plant in Mount Pleasant and Unity Townships, Westmoreland County	Exempt	R4
Donohoe & Georges Station Intersection*	Westmoreland	12	20192117	2	This project is for efficiency and operations improvements to the intersection of State Route 1026 (Donohoe Road) and State Route 1053 (Georges Station Road) in Hempfield Township, Westmoreland County	Regionally Significant	
Salina Bridge	Westmoreland	12	81747	2	This project is for improvement to the structure (Salina Bridge) carrying State Route 1060 (Bridge Street) over the Kiskiminetas River and Norfolk Southern Railroad in Bell Township, Westmoreland County	Exempt	S19

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
NHS Betterments (19 in Waynesburg, 18 in Washington, 88 in Charleroi, 88 in Mon City)*	Districtwide	12	20192119	2	This project is for betterment improvements to various downtown city locations in various locations throughout the district; locations and roadway include US Route 19 (High Street and Morris Street) in the City of Waynesburg, Greene County, SR Route 18 (Jefferson Avenue) in the City of Washington, Washington County, SR Route 88 (McKean Avenue, Fallowfield Avenue) in the City of Charleroi, Washington County, and SR 88 (Main Street) in the City of Monongahela, Washington County	Exempt	S10
Local, County, and State Slide Remediation & Reconstruction	Districtwide	12		2	This project is the location of a line item for funds anticipated for slide remediation and road reconstruction in Fayette, Greene, Washington and Westmoreland Counties in the second stage of the Long Range Transportation Plan (Years 2025 to 2032)	Exempt	S10
Bridge NHS Preservation Line Item	Districtwide	12		2	NHS Bridge Preservation Reserve	Exempt	S19
Bridge NHS Reconstruction Line Item	Districtwide	12		2	NHS Bridge Reconstruction Reserve	Exempt	S19
Bridge NON NHS Preservation Line Item	Districtwide	12		2	Non-NHS Bridge Preservation Reserve	Exempt	S19
Bridge NON NHS Reconstruction Line Item	Districtwide	12		2	Non-NHS Bridge Reconstruction Reserve	Exempt	S19
Local/Off System Bridges	Districtwide	12		2	Local/Off System Bridge Reconstruction Reserve	Exempt	S19
Roadway NHS Preservation Line Item	Districtwide	12		2	NHS Roadway Preservation Reserve	Exempt	S10
Roadway NHS Reconstruction Line Item	Districtwide	12		2	NHS Roadway Reconstruction Reserve	Exempt	S10
Roadway Non NHS Reconstruction	Districtwide	12		2	Non-NHS Roadway Reconstruction Reserve	Exempt	S10
SR 28 Corridor Improvements - Kittanning to Clarion County Line	Armstrong	10	990038	3	Intersection improvements including addition of turning lanes at Dutch Ridge Road & US 422 in Elderton Borough, Armstrong County	Exempt	R1
SR 28 Hays Run 3R	Armstrong	10	91262	3	Safety improvements including reconstruction, rehabilitation and resurfacing along SR 28 / SR 1028 (Anderson Creek Road) to T-535 (McAuley Falls Road) in Rayburn and Boggs Townships	Exempt	S10
SR 28 AVE Reconstruction	Armstrong	10	112427	3	Highway reconstruction along SR 28 from the Allegheny/Butler County Line north to US 422 Interchange in Buffalo, North Buffalo, South Buffalo and East Franklin Townships, Butler County	Exempt	S10
1/112th Infantry Bridge and Graff Ramp Rehabilitation	Armstrong	10	109622	3	Rehabilitation of the existing structure carrying SR 66 over US 422, SR 2025 (Garretts Run Road), and Garretts Run in Manor Township, Armstrong County	Exempt	S19
US 422 & Dutch Ridge Rd Intersection (Carryover)	Armstrong	10	990037	3	Intersection improvements including addition of turning lanes at Dutch Ridge Road & US 422 in Elderton Borough, Armstrong County	Exempt	R1
SR 422 Kittanning Bypass PM	Armstrong	10	112432	3	Preventative maintenance along SR 422 from 1/4 mile west of the SR 66 Interchange, east to the SR 85 intersection in Manor and North Buffalo Townships	Exempt	S10
SR 422 Dunbar Dip	Armstrong	10	98689	3	Resurfacing to include milling of existing bituminous wearing courses, bituminous patching, paving, leveling, binder and wearing courses and minor drainage and guiderail upgrades along US 422 from SR 2012 (Silvis Hollow Road) to T-590 (Simpson Church Road) in Kittanning Township	Exempt	S10
PA 839 over Mahoning Cr.	Armstrong	10	99129	3	Replacement of the existing structure carrying SR 839 over Mahoning Creek in Wayne Township	Exempt	S19
SR 19 Cranberry PM*	Butler	10	112422	3	Preventative maintenance along US 19 from the Allegheny/Butler County line north to Zelienople in Cranberry and Jackson Townships, Butler County	Exempt	S10
SR68 Safety Improvements (Carryover)*	Butler	10	990041	3	Safety improvements along SR 68 in Forward, Connequenessing, and Butler Townships, Butler County	Exempt	S6
SR 422 Butler Bypass PM	Butler	10	112434	3	Preventative maintenance along SR 422 from the SR 356 Interchange East to 0.50 miles west of Bonniebrook Road Intersection in Butler, Summit, Connoquenessing, and Franklin Townships	Exempt	S10
US 22 & SR 217 Interchange improvement (Carryover)	Indiana	10	25543	3	Interchange reconstruction along US 22 and SR 217 in Burrell Township and Blairsville Borough	Exempt	R3
SR 22 thru Blairsville PM	Indiana	10	112423	3	Preventative maintenance along SR 22 from Blairsville/Westmoreland County Line east to Snyder Lane in Burrell Township, Indiana County	Exempt	S10
Armagh Bypass Reconstruct	Indiana	10	97102	3	Highway reconstruction along US 22 from the West Wheatfield Township line east to 0.12 miles east of the US 422/SR 403 Interchange in East Wheatfield Township	Exempt	S10
US 119 Hamill Southbound Bridge	Indiana	10	95728	3	Reconstruction of the existing structure carrying US 119 Southbound over PA 286 in White Township	Exempt	S19
SR 119 South PM	Indiana	10	112421	3	Preventative maintenance along SR 119 from the SR 119/22 interchange north to its intersection with SR 56 in Center and Burrell Townships, Indiana County	Exempt	S10
SR 119 Indiana Bypass Reconstruction	Indiana	10	112431	3	Highway reconstruction along US 119 from 1/2 mile south of the US 119/422 Interchange, north to the SR 110 Interchange in Center, White and Rayne Townships	Exempt	S10
US 119 Hamill Northbound Bridge	Indiana	10	95727	3	Reconstruction of the existing structure carrying US 119 northbound over PA 286 in White Township	Exempt	S19
US 119 Lutz School Rd NB Bridge	Indiana	10	112632	3	Reconstruction of the existing structure carrying US 119 northbound over SR 1003 (Lutz School Road) in White Township, Indiana County	Exempt	S19
US 119 Sullivan NB Bridge	Indiana	10	112537	3	Reconstruction of the existing structure carrying US 119 over SR 954 in White Township, Indiana County	Exempt	S19
US 119 Sullivan SB Bridge	Indiana	10	25616	3	Reconstruction of the existing structure carrying US 119 over SR 954 in White Township, Indiana County	Exempt	S19
US 119 Lutz School Rd SB Bridge	Indiana	10	112661	3	Reconstruction of the existing structure carrying US 119 southbound over SR 1003 (Lutz School Road) in White Township, Indiana County	Exempt	S19
US 119 over SR 8001 bridges	Indiana	10	25621	3	Reconstruction of the existing structures carrying US 119 over SR 8001 in White Township	Exempt	S19
Wake Robin Curve	Indiana	10	69988	3	Highway reconstruction and two-lane relocation/realignment of US Route 119 south of the intersection with SR 4008 (Chambersville Road) in Rayne Township, Indiana County	Exempt	S10
SR 422 Indiana Bypass Reconstruction	Indiana	10	112430	3	Highway reconstruction along SR 422 from the SR 119 Interchange East to 1/2 mile east of SR 553 Interchange in Cherryhill Township	Exempt	S10
US 422 over Two Lick Creek.	Indiana	10	25548	3	Rehabilitation of the existing structure carrying US 422 eastbound over Two Lick Creek in White Township	Exempt	S19

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
SR 422 Cheese Rn Rd to Trim Tree Rd	Indiana	10	100289	3	Highway reconstruction including vertical and horizontal geometry improvements along US 422 between T-408 (Cheese Run Road) and T-433 (Trim Tree Road) in Armstrong Township	Exempt	R4
Bridge NON-NHS Preservation Line Item (state 3)	Districtwide	10		3	Non-NHS Bridge Preservation Reserve	Exempt	S19
Local/Off System Bridges (stage 3)	Districtwide	10		3	Local/Off System Bridge Reconstruction Reserve	Exempt	S19
Bridge NON-NHS Reconstruction Line Item (stage 3)	Districtwide	10		3	Non-NHS Bridge Reconstruction Reserve	Exempt	S19
Roadway NON NHS Reconstruction (stage 3)	Districtwide	10		3	Non-NHS Road Reconstruction Reserve	Exempt	S10
Beaver Ave Conversion	Allegheny	11	102815	3	Possible new roadway alignment on Beaver Avenue in an effort to mitigate traffic around the North Shore, particularly around Heinz Field and Rivers Casino during sporting events in the City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh URA.	Regionally Significant	
ALCO Roads (Bethel Ch, Lebanon Ch, McKees Rks Strochein Rd, Haymaker Rd.)	Allegheny	11		3	Roadway restoration of various roadways (Bethel Ch, Lebanaon Ch, McKees Rks Strochein Rd, Haymaker Rd) in Allegheny County	Exempt	S10
Washington Blvd Reconstruction*	Allegheny	11	20192010	3	Reconstruction of Washington Boulevard to improve flooding conditions in City of Pittsburgh, Allegheny County, Contingent upon study recommendations	Exempt	X1
PA 28:East Ohio Street	Allegheny	11	100773	3	Concrete rehabilitation of SR 28 from General Robinson Street to Heinz Wall in the City of Pittsburgh	Exempt	S10
SR 28: Resurfacing and Bridge Preservation	Allegheny	11	20192011	3	Mill and overlay, bridge preservation on SR 28 from Bailey's Run to Butler County Line in Tarentum Borough, East Deer, Fawn and Harrison Townships	Exempt	S10
Highland Park Bridge/Ramps Reconstruction	Allegheny	11	20192012	3	Bridge and ramp restoration on SR 1005 over the Allegheny River Includes Ramps F and G(SR 8082) in the City of Pittsburgh, O'Hara Township, Sharpsburg Borough, and Indiana Township	Exempt	S19
PA 28: Bull Ck to Butler	Allegheny	11	100778	3	Reconstruction of SR 28 from Bull Creek to the Butler County Line in Harrison, Fawn Townships and Tarentum Borough	Exempt	S10
PA 28: Allegheny Valley	Allegheny	11	100774	3	Reconstruction of SR 28 from Regional Industrial Development Corporation (RIDC) to Yutes Run in Springdale, O'Hara, and Harmar Townships	Exempt	S10
PA 28:Highlnd Pk to RIDC	Allegheny	11	100776	3	Mill and overlay on Highland Park to RIDC Park in O'Hara, Aspinwall and Pittsburgh, Allegheny County	Exempt	S10
PA 28: Millvale-Etna Interchange	Allegheny	11	92271	3	Mill and overlay - Millvale to Etna Interchange in Allegheny County	Exempt	S10
Westinghouse Bridge*	Allegheny	11	111624	3	Bridge preservation on US 30, Westinghouse Bridge over Turtle Creek and railroad tracks, one mile west of SR 148 in East Pittsburgh Borough, Allegheny County	Exempt	S19
SR 65 Eckert Street Bridge (65 ov Eckert St., City of Pittsburgh)	Allegheny	11	115421	3	Bridge deck replacement located on PA 65, Ohio River Boulevard over Eckert Street in the City of Pittsburgh, Allegheny County	Exempt	S19
SR 65 Spruce Run Rd Bridge*	Allegheny	11	56883	3	Bridge rehabilitation on SR 65 (Spruce Run Road) over Spruce Run in Ben Avon Boro, Allegheny County	Exempt	S19
PA 65: Emsworth to I-79*	Allegheny	11	109349	3	Concrete pavement reconstruction on SR 65 (Ohio River Boulevard) from Emsworth to I-79 in Emsworth, Glenfield, Haysville and Glen Osborne, Allegheny County	Exempt	S10
Neville Island Bridge Ramps - Phase 3	Allegheny	11	105457	3	Bridge preservation on SR 79 NB Ramp to SR 65 NB in Glenfield Boro, Allegheny County	Exempt	S19
16th Street Bridge	Allegheny	11		3	Bridge Rehabilitation on 16th Street Bridge in Pittsburgh, Allegheny County	Exempt	S19
Jacks Run Road Bridge No. 1	Allegheny	11		3	put in request to County	Exempt	S19
Mansfield Bridge	Allegheny	11		3	Bridge preservation on Mansfield Bridge in Dravosburg and McKeesport, Allegheny County	Exempt	S19
Blvd of Allies*	Allegheny	11	106930	3	Bridge preservation on Ramp E of Blvd of Allies, in the City of Pittsburgh, Allegheny County	Exempt	S19
Glenwood Bridge	Allegheny	11		3	Bridge Rehabilitation on Glenwood Bridge in Located in Baldwin, Pittsburgh and West Homestead, Allegheny County	Exempt	S19
SR 885 (Bates Street) Reconstruction	Allegheny	11	102617	3	Highway reconstruction on Bates Street from 2nd Avenue to the Boulevard of the Allies in the City of Pittsburgh, Allegheny County	Exempt	S10
I-79 at PA 910 Interchange	Allegheny	11	104328	3	Highway reconstruction, realignment, safety upgrade. Located on I-79, from SR 910 to I-279 split in Marshall Township, Allegheny County	Regionally Significant	
Clairton-Glassport Bridge*	Allegheny	11	20192019	3	Bridge rehabilitation on SR 2038 over Monongahela River in the City of Clairton	Exempt	S19
SR 2040 Road Resurfacing*	Allegheny	11	20192020	3	Patch and overlay on SR 2040, (Lebanon Church Road), in West Mifflin, Pleasant Hills and Baldwin, Allegheny County	Exempt	S10
Birmingham Bridge*	Allegheny	11	20192021	3	Bridge rehabilitation on SR 2085, Birmingham Bridge in the City of Pittsburgh	Exempt	S19
Electric Ave ov Falls Run*	Allegheny	11	78232	3	Bridge restoration/replacement on SR 2112, Electric Avenue over Falls Run in East Pittsburgh and Turtle Creek Boroughs, Allegheny County	Exempt	S19
40th Street Bridge Preservation*	Allegheny	11	69071	3	Located on the 40th St. Br. over the Allegheny River in the City of Pittsburgh, Allegheny County. Preserve 2,364 foot bridge with full paint, repair cracks and section loss	Exempt	S19
Sewickley Bridge Preservation Phase 2*	Allegheny	11	20192022	3	Bridge preservation on SR 4025, Sewickley Bridge, over the Ohio River in Sewickley Boro, Allegheny County	Exempt	S19
10th Street Bridge Preservation*	Allegheny	11	20192027	3	Bridge Preservation work on the structure that carries 10th Street from the intersection of 2nd Avenue and the Armstrong Tunnel to near Muriel Street on the South Side in City of Pittsburgh, Allegheny County; Project sponsor is Allegheny County	Exempt	S19
Homestead Grays Bridge*	Allegheny	11	20192024	3	Bridge rehabilitation of 3,109 foot bridge over Monongahela River connecting Browns Hill Road in the City of Pittsburgh and Eighth Avenue (SR 837) in Homestead; Project sponsor is City of Pittsburgh	Exempt	S19
Forbes Ave Bridge over Fern Hollow*	Allegheny	11	20192023	3	Bridge restoration/replacement on Forbes Avenue Bridge over Fern Hollow in the City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh	Exempt	S19
Rankin Bridge*	Allegheny	11	20192028	3	Bridge rehabilitation of 2,426 foot bridge connecting Braddock Avenue in Rankin over Monongahela River, CSX, Union and N-S Railroads, and SR 0837 in Whitaker; Project sponsor is Allegheny County	Exempt	S19

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
Corliss Tunnel*	Allegheny	11	20192032	3	Tunnel reconstruction and preservation work on the structure that carries Corliss Street from the intersection of West Carson Street westward toward Crafton Heights in the City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh	Exempt	S19
PGH Signal updates phase 5*	Allegheny	11		3	Signal Software and Hardware upgrade/replacement project within the City of Pittsburgh; afftected locations not yet determined; Project sponsor is City of Pittsburgh	Regionally Significant	
Neville Road/Babcock Road Reconstruction*	Allegheny	11	106269	3	Highway restoration on Neville Road from Grand Avenue to the Fleming Park Bridge in Neville Township, Allegheny County; Project sponsor is Allegheny County	Exempt	S10
Smallman Street Reconstruction (Previous Plan Carryover)*	Allegheny	11	20192034	3	Highway reconstruction on Smallman Street from 31st Street to 21st Street in the City of Pittsburgh, Allegheny County; Project sponsor is City of Pittsburgh	Exempt	S10
Beaver Rochester Bridge Preservation	Beaver	11	111604	3	Bridge preservation on SR 51 over Beaver River in Beaver Boro, Beaver County	Exempt	S19
PA 65: Eighth Street to Mercer Rd*	Beaver	11	110356	3	Mill and overlay on SR 65, Ohio River Boulevard, from 8th Street to East Rochester Bridge in Freedom Boro and E. Rochester Township, Beaver County	Exempt	S10
PA 68 -Midland Beaver Road*	Beaver	11	109356	3	Mill and Overlay on SR 68, Midland Beaver Road from segment 10 to segment 210 in Center and Chippewa Townships, Beaver County	Exempt	S10
SR 151 @ Broadhead Road slide/roadway recon*	Beaver	11	105453	3	Highway restoration/reconstruction on PA 3007, Broadhead Road from Frankfort Road to Allegheny County line in City of Aliquippa, Hopewell and Center Townships, Beaver County	Exempt	S10
Ambridge-Alliquippa Bridge	Beaver	11	20192038	3	Bridge rehabilitation on SR 3052 over the Ohio River in Ambridge and Aliquippa Boroughs, Beaver County	Exempt	S19
PA 19: Perry Highway*	Lawrence	11	109389	3	Mill and Overlay on US 19, Perry Highway from segment 90 to segment 200 in Scott Township, Lawrence County	Exempt	S10
SR 422 Bridges (Benjamin Franklin & Taylor Township)	Lawrence	11	20192017	3	Bridge Rehabilitation. located on SR 422 (Benjamin Franklin Township) in Taylor Township Lawrence County	Exempt	S19
Bridge NHS Preservation Line Item	Districtwide	11		3	NHS Bridge Preservation Reserve	Exempt	S19
Bridge NON-NHS Preservation Line Item	Districtwide	11		3	Non-NHS Bridge Preservation Reserve	Exempt	S19
Local/Off System Bridges	Districtwide	11		3	Local/Off System Bridge Reconstruction Reserve	Exempt	S19
Bridge NHS Reconstruction Line Item	Districtwide	11		3	NHS Bridge Reconstruction Reserve	Exempt	S19
Bridge NON-NHS Reconstruction Line Item	Districtwide	11		3	Non-NHS Bridge Reconstruction Reserve	Exempt	S19
Efficiency & Operations NHS Line Item	Districtwide	11		3	NHS Efficiency and Operations Reserve. Projects that improve traffic flow, reduce congestion, and improve the operational characteristics of the existing transportation system. This includes traffic signal systems, Intelligent Transportation Systems (highway & transit), truck climbing lanes, and intersection improvements such as the addition of turning lanes.	Exempt	X1
Roadway NHS Preservation (Stage 3)	Districtwide	11		3	NHS Roadway Preservation Reserve	Exempt	S10
Roadway NON NHS Preservation (Stage 3)	Districtwide	11		3	Non-NHS Roadway Preservation Reserve	Exempt	S10
Roadway NHS Reconstruction (Stage 3)	Districtwide	11		3	NHS Roadway Reconstruction Reserve	Exempt	S10
Safety Line Item	Districtwide	11		3	Safety Reserve	Exempt	S6
Local, County, and State Slide Remediation & Reconstruction	Districtwide	11		3	Funds anticipated for slide remediation and road reconstruction in Allegheny, Beaver, and Lawrence Counties	Exempt	S10
PA 21 Operational & Safety (also see New Cap)*	Fayette	12	20192102	3	The project is for efficiency and operations improvements to the SR 21 (Row E. Furman Highway) corridor in Masontown Borough and German Township, Fayette County	Regionally Significant	
US 119 Operations & Safety*	Fayette	12	20192111	3	This project is for safety and operations improvements to the US 119 (Morgantown Street, Morgantown Road, Main Street, George C. Marshall Parkway, University Drive, Morrell Avenue, Eighth Street, Memorial Boulevard) Corridor from the West Virginia State Line to the Westmoreland County Line in various municipalities in Fayette County	Regionally Significant	
US Route 119 Reconstruction: Uniontown to Penn State	Fayette	12	20192112	3	This project is for the reconstruction of US 119 (George C. Marshall Parkway) from the city of Uniontown to Penn State Fayette Campus in North Union Township, Fayette County	Exempt	S10
US Route 119 Reconstruction: Connellsville to Kingview*	Fayette	12	20192113	3	This project is for the reconstruction of US 119 (Memorial Highway)from the City of Connellsville to Kingview Road in Bullskin and Connellsville Townships, Fayette County	Exempt	S10
Bruceton Mills Road Reconstruction	Fayette	12	96657	3	This project is the reconstruction of 2.1 miles of T-311 (Bruceton Road) located in Henry Clay Township, Fayette County	Exempt	S10
PA 381: SR 40 to Ohiopyle*	Fayette	12	98297	3	This project is the resurfacing of SR 381 (Farmington Ohiopyle Road) from US 40 to Ohiopyle Borough in Wharton and Stewart Townships, and Ohiopyle Borough, Fayette County	Exempt	S10
I-79 Mt. Morris Interchange Area Improvements	Greene	12	990033	3	This project is for safety improvements on the local road system surrounding the Mount Morris Interchange in Mount Morris Township, Greene County	Exempt	S6
SR 21 Operations and Capacity Feasibility Study GRCO	Greene	12		3	This project is to study the operation and capacity needs along SR 21 in Greene County.	Exempt	X1
Point Marion Bridge	Greene	12	112387	3	This project is the rehabilitation/replacement of the structure carrying SR 88 (Dilliner Point Marion Road) over Whiteley Creek in Monongahela Township, Greene County	Exempt	S19
SR 88 Safety improvements at SR 2016 and 2014	Greene	12	990032	3	This project is for safety improvement on SR 88 at two intersections: Maple Town Crossroads (SR 2016) and Fieldson's Crossroads (SR 2014) in Monongahela Township, Greene County	Exempt	R1
SR 18: within Burgettown Boro*	Washington	12	20192100	3	This project is for the reconstruction of SR 18 (Main Street, JL Brunner Memorial Bypass) within the Burgettstown Borough limits in Burgettstown Borough, Washington County	Exempt	S10
US 19/40: I-79 to Chestnut Street*	Washington	12	105493	3	This project is for betterment improvements to US 19/US 40 from the intersection with I-79 to the intersection of Chestnut Street in South Strabane and Amwell Townships, and the City of Washington, Washington County	Exempt	S10
US 19 corridor and intersection imprv (Old Oak - Waterdam)	Washington	12	20192101	3	This project is for efficiency and operations improvements to the US 19 (Washington Road) corridor and intersection at Old Oak and Waterdam Roads in Peters Township, Washington County	Regionally Significant	

2045 Transportation Plan - Highway and Bridge Projects

Project Name	County	PennDOT District	MPMS	LRP Stage	Public Narrative	Air Quality Status	AQ Exempt Code
I-79 Ramp at McClelland Rd	Washington	12	105352	3	This project is for intersection improvements to the I-79 Ramp to SR 1023 (McClelland Road) Intersection in North Strabane Township, Washington County	Exempt	R1
McMurray Rd US 19 to Morganza Rd*	Washington	12	20192124	3	This project is for efficiency and operations improvements to West McMurray Road from US 19 (Washington Road) to SR 1009 (Morganza Road) in Peters and North Strabane Townships, Washington County	Regionally Significant	
SR 1032 Southpoint Blvd from I-79 to Morganza Rd (concept 4)*	Washington	12	20192118	3	This project is for efficiency and operations improvements to State Route 1032 (Southpointe Boulevard) from Interstate 79 to State Route 1009 (Morganza Road) in North Strabane Township, Washington County	Regionally Significant	
Weavertown Rd Corridor from US 19 to Morganza Rd (concept 7)	Washington	12	20192116	3	This project is for efficiency and operations improvements to State Route 1059 (Weavertown Road) from US Route 19 (Washington Road) to State Route 1009 (Morganza Road) in North Strabane Township, Washington County	Regionally Significant	
Donora-Monnessen High Bridge	Washington	12	112389	3	This project is for the replacement/rehabilitation of the Donora Monessen High Level Bridge carrying SR 1077 (Vance Dei Cas Highway) over SR 837, SR 906, railroad and the Monongahela River in Donora Borough, Washington County	Exempt	S19
US 30 & Georges Station Intersection*	Westmoreland	12	114390	3	The project is for efficiency and operations improvements to the US 30 (Lincoln Highway) corridor at the State Route 1053 (Georges Station Road) intersection in Hempfield Township, Westmoreland County	Regionally Significant	
US 30 Walworth Viaduct	Westmoreland	12	20192103	3	This project is for the replacement/rehabilitation of the Walworth Viaduct on US 30 (Lincoln Highway) in Hempfield Township, Westmoreland County	Exempt	S19
Route 30 Interchange with Donohoe Road	Westmoreland	12	20192105	3	This project is for efficiency and operations improvements to the US 30 (Lincoln Highway) corridor at the State Route 1026 (Donohoe Road) intersection in Hempfield Township, Westmoreland County	Regionally Significant	
US Route 30 Reconstruction ALCO line to Irwin*	Westmoreland	12	20192106	3	This project is for the reconstruction of US 30 (Lincoln Highway) from the Allegheny County Line to Irwin Borough in North Huntingdon Township, Westmoreland County	Exempt	S10
US 30 Operations & Safety*	Westmoreland	12	20192108	3	This project is for safety and operations improvements to the US 30 (Lincoln Highway) Corridor from the Allegheny County Line to the Somerset County Line in various municipalities in Westmoreland County	Regionally Significant	
Vandergrift Bridge*	Westmoreland	12	112391	3	This project is for the replacement/rehabilitation of the Vandergrift Bridge carrying SR 56 over SR 2054, railroad, and Kiskiminetas River in East Vandergrift Borough, Westmoreland County	Exempt	S19
SR 66: US 22 to County Line*	Westmoreland	12	20192109	3	This project is for the reconstruction of SR 66 (Freeport Road, SR 0066 SH, Main Street) from the intersection of SR 66 and US 22 (William Penn Highway) to the Armstrong County Line in Salem and Washington Townships; and Delmont and Oklahoma Boroughs, Westmoreland County	Exempt	S10
Avonmore Bridge*	Westmoreland	12	112392	3	This project is for the replacement/rehabilitation of the Avonmore Bridge carrying SR 156 (Sixth Street) over the Kiskiminetas River in Avonmore Borough, Westmoreland County	Exempt	S19
PA 201 Ramp to PA 51 South	Westmoreland	12	105350	3	This project is for intersection safety improvements at the SR 201 & Ramp SR 8011 to SR 51 South intersections in Rostraver Township, Westmoreland County	Exempt	S6
PA 286: Allegheny Co Line to Indiana Co Line	Westmoreland	12	20192114	3	This project is for the reconstruction of SR 286 (Saltsburg Road) from the Allegheny County Line to the Indiana County Line in Murrysville Borough, and Washington, Bell, and Loyalhanna Townships, Westmoreland County	Exempt	S10
Freeport Bridge Rehab*	Westmoreland	12	112393	3	This project is for the replacement/rehabilitation of the Freeport Bridge carrying SR 356 (SR 0356 SH) over railroad and the Allegheny River in Allegheny Township, Westmoreland County	Exempt	S19
PA 366 over PA 400/380	Westmoreland	12	88617	3	Improvements to the structure carrying PA 366 over PA 400 and PA 380 in Murrysville Borough, Westmoreland County.	Exempt	S19
PA 366: Allegheny Co Line to PA 66*	Westmoreland	12	20192115	3	This project is for roadway preservation activities on SR 366 (Tarentum Road, Stevenson Boulevard, Greensburg Road) from the Allegheny County Line to SR 66 in the City of New Kensington, Lowe Burrell Borough, Upper Burrell and Washington Townships, Westmoreland County	Exempt	S10
LVTIP: Pleasant Unity to Airport	Westmoreland	12	108140	3	This project is Phase 3 of the Laurel Valley Transportation Improvement Program, the new alignment of SR 981 from Pleasant Unity to the Kennametal plant in Mount Pleasant and Unity Townships, Westmoreland County	Exempt	R4
Larimer Bridge	Westmoreland	12	112394	3	This project is for the replacement/rehabilitation of the Larimer Bridge carrying PA 993 (Irwin Trafford Road) over Brush Creek in North Huntingdon Township, Westmoreland County	Exempt	S19
W. Leechburg Bridge*	Westmoreland	12	112395	3	This project is for the replacement/rehabilitation of the West Leechburg Bridge carrying State Route 4093 (Leechburg Hill Road) over the railroad and Kiskiminetas River in West Leechburg Borough, Westmoreland County	Exempt	S19
Capital Maint Bridge NHS Preservation Line Item	Districtwide	12		3	NHS Bridge Preservation Reserve	Exempt	S19
Capital Maint Bridge NHS Reconstruction Line Item	Districtwide	12		3	NHS Bridge Reconstruction Reserve	Exempt	S19
Capital Maint Bridge NON-NHS Preservation Line Item	Districtwide	12		3	Non-NHS Bridge Preservation Reserve	Exempt	S19
Capital Maint Bridge NON-NHS Reconstruction Line Item	Districtwide	12		3	Non-NHS Bridge Reconstruction Reserve	Exempt	S19
Local/Off System Bridges	Districtwide	12		3	Local/Off System Bridge Reconstruction Reserve	Exempt	S19
Local, County, and State Slide Remediation & Reconstruction	Districtwide	12		3	This project is the location of a line item for funds anticipated for slide remediation and road reconstruction in Fayette, Greene, Washington and Westmoreland Counties in the third stage of the Long Range Transportation Plan (Years 2031 to 2045)	Exempt	S10
Roadway NHS Preservation Line Item	Districtwide	12		3	Roadway NHS Preservation Reserve	Exempt	S10
Roadway Non NHS Preservation Line Item	Districtwide	12		3	Roadway Non NHS Preservation Reserve	Exempt	S10

NOTE: Highlighted project is being added to the LRP

2045 Transportation Plan - New Capacity Projects and SPC Managed Programs

MPMS/GIS ID	County	Inv Cat	Title	Est Cost	Route	Stage	Narrative	AQ Status	AQ Exempt Code
91845	Allegheny	New Capacity	PA 28/Highland Park Br Interchange	$16,000,000	28	Mid-Term (2025-2032)	Interchange improvement to address the existing bottleneck conditions by re-establishing and accommodating two continuous through lanes through reconstruction and lane restriping within the existing roadway footprint with minor widening on SR 28 (Allegheny Valley Expressway) at the Highland Park Bridge Interchange (SR 8050) between Highland Park Bridge Road (SR 1005) and the Delafield Avenue Interchange (SR 8052), including Ramps in Aspinwall and Sharpsburg Boroughs and O'Hara Township, Allegheny County	Regionally Significant	
80508	Allegheny	New Capacity	286/Sagamore-Sandune PH2*	$30,000,000	286	Mid-Term (2025-2032)	Widening to add turn lanes and through lanes; milling and resurfacing; reconstruction, drainage; curbs, driveway adjustments; signals; structure work.Located on SR 286, from Old Frankstown Road/ Sagamore Road to just north of Presque Isle Drive/Sandune Drive, in Plum, Allegheny County; approximately 2.02 miles	Regionally Significant	
27505	Allegheny	New Capacity	286/Sandune-Logans*	$26,000,000	286	Mid-Term (2025-2032)	Widening with bituminous to add a center turn lane; milling and resurfacing; shoulder work; curbs, drainage, drive adjustments; signal updates, structure work. Located on SR 286, begins at Presque Isle Drive/Sandune Drive and end just north of Logan's Ferry Road, in Plum, Allegheny County and Murrysville, Westmoreland County; approximately 1.49 miles	Regionally Significant	
	Region	PB-MM-CMAQ	SPC Smart Tr. Initiative	$47,000,000	TBD	Mid-Term (2025-2032)	Smart Transportation Reserve	Exempt	X1
	Region	PB-MM-CMAQ	Region TAP Line Item	$16,000,000	TBD	Mid-Term (2025-2032)	TAP Program	Exempt	X12
	Region	PB-MM-CMAQ	Region CMAQ Line Item	$200,000,000	TBD	Mid-Term (2025-2032)	CMAQ Program Reserve	NS	
20192013	Allegheny	New Capacity	PA 28 - Fox Chapel Bottleneck Widening (RIDC to Fox Chapel)	$34,100,000	28	Long Term (2033-2045)	Widen to accommodate 2nd southbound thru lane from RIDC to Fox Chapel on SR 28 in Fox Chapel Boro, Allegheny County	Regionally Significant	
990031	Fayette/Greene	New Capacity	PA 21 Widening	$50,000,000	21	Long Term (2033-2045)	This project is to add new capacity to the SR 21 Corridor from the Masontown Bridge to the Village of Revere in German, Menallen, and South Union Townships, and Masontown Borough, Fayette County. In addition, this project is partially funding the implementation of the future Greene County SR 21 Feasibility and Capacity Study in the area I-79 to the Fayette County line in Franklin, Jefferson, Cumberland and Monongahela townships, Greene County.	Regionally Significant	
92908	Butler	New Capacity	Mars RR Bridge West Expansion	$50,602,000	228	Long Term (2033-2045)	Intersection improvements and widening of SR 228 to 4/5 lanes from SR 3019 (Pittsburgh Street) West to SR 3021 (Franklin Road) in Seven Fields Borough and Adams and Cranberry Townships, Butler County	Regionally Significant	
	Region	PB-MM-CMAQ	SPC Region Smart Tr. Initiative	$135,000,000	TBD	Long Term (2033-2045)	Smart Transportation Program Reserve	Exempt	X1
	Region	PB-MM-CMAQ	SPC Region TA Line Item	$40,000,000	TBD	Long Term (2033-2045)	Transportation Alternatives Set-Aside Program Reserve	Exempt	X12
	Region	PB-MM-CMAQ	SPC Region CMAQ Line Item	$500,000,000	TBD	Long Term (2033-2045)	CMAQ Program Reserve	NS	

2045 Transportation Plan - Pa. Turnpike Projects

Widening & Maintenance Projects - (Mainline) I-76				21-24 TIP	Est. Comp.	Exist.	Improved	Total Cost	Regional Conformity Determination	
County	**MPMS#**	**MilePost#**	**Project Name / Description / Notes**	Phases	Year	#Lanes	#Lanes	Estimate	Status	Exempt Code
LACO BECO		2.3-9.3	Bituminous Overlay MP 2.3-9.3	E C	2019	4	4	$7,600,000	Exempt	S10
BECO		12.5-13.5	Replacement of Beaver River Bridge (Widening from 4 lanes to 6 lanes)	E C	2019 2023	4	6	$150,000,000	Significant	
BECO		9-19	Overlay/Resurfacing Milepost 9 to 19 (New Castle Int. east to MP 19)	E C	2019 2020	4	4	$34,300,000	Exempt	S10
BECO		19-31	Overlay/Resurfacing Milepost 19 to 31 (MP 19 East to Cranberry Int.)	E C	2018 2020	4	4	$16,000,000	Exempt	S10
BECO		B31-B35	I-376 Beaver Valley Expressway Repair/Grinding	E C	2019 2020	4	4	$300,000	Exempt	S10
BUCO		28.01	Overhead Bridge Replacement - Freedom Road (SR 3020) over Turnpike (Widening from 3 lanes to 6 lanes)	E C	2018 2020	3	6	$12,000,000	Significant	
BUCO ALCO		28-31	Total Reconstruction (Cranberry to Pine Twp.)	E C	2018 2023	4	6	$86,000,000	Significant	
ALCO		38-40	Overlay/Resurfacing (Mainline at SR 8 Interchange)	E C	2022 2023	4	4	$13,000,000	Exempt	S10
ALCO		47.73	Bituminous Resurfacing Allegheny Valley Interchange MP 47.73	E C	2019 2021	4	4	$3,000,000	Exempt	S10
ALCO		40-48	Total Reconstruction (MP39.2 to 43.15 Mainline West Reconstruct)	E C	2016 2020	4	6	$100,000,000	Significant	
ALCO		49-53	Total Reconstruction (Allegheny Valley Int. to Pittsburgh Int.)	E C	2026 2027	4	6	$140,000,000	Significant	
ALCO		53 -57	Total Reconstruction (Allegheny Valley Int. to Pittsburgh Int.)	E C	2026 2027	4	6	$140,000,000	Significant	
ALCO		56.56	Pittsburgh Int. Bridge Collision Repair	E C	2020 2021	4	4	$550,000	Exempt	S19
ALCO WECO		57-67	Overlay/Resurfacing (Pittsburgh Int. to Irwin Int.)	E C	2019 2021	4	4	$34,000,000	Exempt	S10
ALCO WECO		57-62	Total Reconstruction (Pittsburgh Int. to Irwin Int.)	E C	2023 2027	4	6	$180,000,000	Significant	

2045 Transportation Plan - Pa. Turnpike Projects

ALCO WECO		62-66	Total Reconstruction (Pittsburgh Int. to Irwin Int.) -NOTE: Split from original MP57-67 Total Reconstruction Project	E C	2029 2034	4	6	$124,000,000	Significant	
WECO		67-75	Bituminous Overlay MP 67-75 SMA & New	E C	2021 2022	4	4	$14,000,000	Exempt	S10
WECO		75.58	Collision Damage Repairs B-483A	E C	2019 2020	4	4	$1,900,000	Exempt	S10
WECO		75-85	Bituminous Overlay MP 75-85	E C	2019 2020	4	4	$14,000,000	Exempt	S10
WECO		85-94	Overlay/Resurfacing (SR 982 to Somerset Co. Line)	E C	2019 2020	4	4	$20,000,000	Exempt	S10
WECO		90.2	Donegal Slope Remediation	E C	2020 2021	4	4	$2,700,000	Exempt	S2
WECO		99-109	Total Reconstruction -NOTE: only 1 mile of this is in SPC area	E C	2018 2022	4	6	$160,000,000	Significant	
FACO		M0-M8.3	Concrete Repairs Mon-Fayette Expressway MP M0.0 - M8.3	E C	2019 2020	4	4	$3,500,000	Exempt	S10
FACO		M13-M30	Diamond Grinding MP M13 - M30	E C	2022	4	4	$300,000	Exempt	S10
WACO		M34-M36	Bituminous Resurfacing Mon-Fayette Expressway MP M34.86-M36.1	E C	2019 2022	4	4	$7,600,000	Exempt	S10
WACO ALCO		M39-M53	Bit. Resurfacing & Concrete Rpr Mon-Fayette Expressway MP M39-M53	E C	2021 2023	4	4	$20,000,000	Exempt	S10

New Projects (new capacity) - PA. Turnpike					21-24 TIP	Est. Comp.	Exist.	Total	Total Cost	Regional Conformity Determination	
County	MPMS#	MilePost#	Project Name / Description / Notes		Phases	Year	#Lanes	Lanes	Estimate	Status	Exempt Code
WACO	96723		Southern Beltway (SR 22 to I-79) (Construct new 4-lane highway)		E C	2018 2022	0	4	$800,000,000	Significant	
WACO	96723			Southern Beltway (SR 22 to I-79) Section 55-A1	E C	2016 2020	0	4	$100,000,000	Significant	
WACO	96723			Southern Beltway (SR 22 to I-79) Section 55-A2	E C	2017 2021	0	4	$95,000,000	Significant	
WACO	96723			Southern Beltway (SR 22 to I-79) Section 55-B	E C	2016 2020	0	4	$100,000,000	Significant	
WACO	96723			Southern Beltway (SR 22 to I-79) Section 55-C1 (C1-1 and C1-2)	E C	2017 2021	0	4	$125,000,000	Significant	

2045 Transportation Plan - Pa. Turnpike Projects

WACO	96723			Southern Beltway (SR 22 to I-79) Section 55-C2 (C2-1 and C2-2)	E C	2018 2022	0	4	$225,000,000	Significant	
ALCO			Mon-Fayette Expressway (SR 51 to I-376) (Construct new 4-lane highway)		E C	2030 2035	0	4	$2,160,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-A	E C	2021 2026	0	4	$235,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-B	E C	2021 2027	0	4	$335,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-C	E C	2029 2032	0	4	$300,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-D	E C	2030 2035	0	4	$230,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-E	E C	2030 2035	0	4	$270,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-F	E C	2030 2035	0	4	$240,000,000	Significant	
ALCO				Mon-Fayette Expressway (SR 51 to I-376) Section 53-G	E C	2030 2035	0	4	$245,000,000	Significant	

Estimated Completion Year

TIP Phases:	2021-24 TIP phases	2045 LRP phases beyond TIP

E = Engineering
R = Right Of Way
C = Construction

NOTES FROM PTC:
This covers projects on the PA Turnpike system from MP 0 to 100
MP 0 is at western Lawrence Co/PA State line
MP 100 is at eastern Westmoreland Co/western Somerset Co line
Also includes Beaver Valley Expressway, Greensburg Bypass, Southern Beltway and Mon/Fayette Expressway

PTC Mainline
MP 0 to MP 8 - Lawrence County
MP 8 to MP 24.45 - Beaver County
MP 24.45 to MP 28.82 - Butler County
MP 28.82 to MP 58.95 - Allegheny County
MP 58.95 to MP 100 - Westmoreland County

2045 Transportation Plan - Public Transportation Projects

Project Sponsor	MPMS#	Project Name / Description	Location	Est. Comp. Year	Nonattainment Status		Regional Conformity Determination	
					Ozone	PM2.5	Status	Exempt Code
Port Authority of Allegheny County	110895	**Bus Rapid Transit Project**	ALCO	2024	Non-Attain	Non-Attain	Significant	
		Improvements associated with Bus Rapid Transit Project from Downtown Pittsburgh to East End destinations, including road reconstruction, Transit Signal Priority, Battery-electric BRT vehicles, charging stations, other improvements and equipment.						
Regional Line item		**Transit Vehicle Replacement**	Regional	Ongoing	Non-Attain	Non-Attain	Exempt	
		Purchase of transit vehicles according to the current Fleet Replacement Schedule. Years 2021-2045.						**M10**
Regional Line item		**Transit Vehicle Preservation & Rehab**	Regional	Ongoing	Non-Attain	Non-Attain	Exempt	
		Preservation and rehabilitation of existing vehicles. Years 2021-2045.						**M3**
Regional Line item		**Transit Capital Maintenance**	Regional	Ongoing	Non-Attain	Non-Attain	Exempt	
		Expenses associated with maintaining and modernizing capital assets such as: Preservation and rehabilitation of fixed facilities; Minor service expansion; Modernization / upgrade of facilities, services. Years 2021-2045.						**M2, M6, M7, M8, M9, X11, X12**
Regional Line item		**Transit Operations**	Regional	Ongoing	Non-Attain	Non-Attain	Exempt	
		Expenses associated with the provision of public transit service including personnel salaries and benefits, fuel, materials & supplies, and routine minor maintenance expenses. Years 2021-2045.						**A1, M1, M4, M5**

APPENDIX C

Sample MOVES 2014a Input Files

1. MOVES County Data Manager Importer File _PM2.5 Annual Run (MOVESIMPORTER.XML)

Sample for 2045 Run for Pittsburgh-Beaver Valley nonattainment area – Allegheny County. Separate XML file for each county in the analysis.

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        <month id="00"/>
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```

2. MOVES Run Specification File – PM2.5 Annual Run (MOVESRUN.MRS)

Sample for 2045 Run for Pittsburgh-Beaver Valley nonattainment area – Allegheny County. Separate MRS file for each county in the analysis.

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<pollutantprocessassociation pollutantkey="119" pollutantname="H2O (aerosol)" processkey="1" processname="Running Exhaust"/>
<pollutantprocessassociation pollutantkey="119" pollutantname="H2O (aerosol)" processkey="2" processname="Start Exhaust"/>

```
<pollutantprocessassociation pollutantkey="119" pollutantname="H2O (aerosol)" processkey="90" processname="Extended Idle Exhaust"/>
<pollutantprocessassociation pollutantkey="119" pollutantname="H2O (aerosol)" processkey="91" processname="Auxiliary Power Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="1" processname="Running Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="2" processname="Start Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="15" processname="Crankcase Running
Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="16" processname="Crankcase Start
Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="17" processname="Crankcase Extended
Idle Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="90" processname="Extended Idle
Exhaust"/>
<pollutantprocessassociation pollutantkey="110" pollutantname="Primary Exhaust PM2.5 - Total" processkey="91" processname="Auxiliary Power
Exhaust"/>
<pollutantprocessassociation pollutantkey="116" pollutantname="Primary PM2.5 - Brakewear Particulate" processkey="9" processname="Brakewear"/>
<pollutantprocessassociation pollutantkey="117" pollutantname="Primary PM2.5 - Tirewear Particulate" processkey="10" processname="Tirewear"/>
<pollutantprocessassociation pollutantkey="115" pollutantname="Sulfate Particulate" processkey="1" processname="Running Exhaust"/>
<pollutantprocessassociation pollutantkey="115" pollutantname="Sulfate Particulate" processkey="2" processname="Start Exhaust"/>
<pollutantprocessassociation pollutantkey="115" pollutantname="Sulfate Particulate" processkey="90" processname="Extended Idle Exhaust"/>
<pollutantprocessassociation pollutantkey="115" pollutantname="Sulfate Particulate" processkey="91" processname="Auxiliary Power Exhaust"/>

   </pollutantprocessassociations>
   <databaseselections>

<databaseselection servername="localhost" databasename="MOVES2014_early_NLEV" description=""/>
<databaseselection servername="localhost" databasename="MOVES2014_calevii08" description=""/>

   </databaseselections>
   <inputdatabase servername="" databasename="" description=""/>
   <uncertaintyparameters uncertaintymodeenabled="false" numberofrunspersimulation="0" numberofsimulations="0"/>
<geographicoutputdetail description="COUNTY"/>
   <outputemissionsbreakdownselection>
<modelyear selected="false"/>
<fueltype selected="false"/>
<fuelsubtype selected="false"/>
<emissionprocess selected="true"/>
      <onroadoffroad selected="true"/>
<roadtype selected="true"/>
<sourceusetype selected="true"/>
      <movesvehicletype selected="false"/>
<onroadscc selected="false"/>
      <offroadscc selected="false"/>
      <estimateuncertainty selected="false" numberOfIterations="2" keepSampledData="false" keepIterations="false"/>
      <sector selected="false"/>
    <engtechid selected="false"/>
      <hpclass selected="false"/>
   </outputemissionsbreakdownselection>
   <outputdatabase servername="localhost" databasename="42003_2045_00_05_AQ_2045_PMAPG_mo" description=""/>>
<outputtimestep value="24-Hour Day"/>
   <outputvmtdata value="true"/>
   <outputsho value="true"/>
   <outputsh value="true"/>
   <outputshp value="true"/>
   <outputshidling value="true"/>
   <outputstarts value="true"/>
   <outputpopulation value="true"/>
   <scaleinputdatabase servername="localhost" databasename="42003_2045_00_05_AQ_2045_PMAPG_mi" description=""/>
   <pmsize value="0"/>
   <outputfactors>
      <timefactors selected="true" units="Hours"/>
      <distancefactors selected="false" units="Miles"/>
      <massfactors selected="false" units="Grams" energyunits="Million BTU"/>
   </outputfactors>
   <savedata>
   </savedata>
   <donotexecute>
```

```
    </donotexecute>
    <generatordatabase shouldsave="false" servername="" databasename="" description=""/>
        <donotperformfinalaggregation selected="false"/>
<lookuptableflags scenarioid="" truncateoutput="false" truncateactivity="false"/>
    <internalcontrolstrategies>
<internalcontrolstrategy
classname="gov.epa.otaq.moves.master.implementation.ghg.internalcontrolstrategies.rateofprogress.RateOfProgressStrategy"><![CDATA[
useParameters           No

]]></internalcontrolstrategy>
    </internalcontrolstrategies>
</runspec>
```

3. MOVES County Data Manager Importer File _Ozone July Weekday Run (MOVESIMPORTER.XML)

Sample for 2045 Run for Pittsburgh-Beaver Valley Ozone nonattainment area – Allegheny County. Separate XML file for each county in the analysis.

```
<moves>
    <importer mode="county" >
        <filters>
    <geographicselections>
        <geographicselection type="COUNTY" key="42003" description="PENNSYLVANIA - Allegheny County"/>
    </geographicselections>
    <timespan>
        <year key="2045"/>
        <month id="07"/>
        <day id="2"/>
        <day id="5"/>
        <beginhour id="1"/>
        <endhour id="24"/>
        <aggregateBy key="Hour"/>
    </timespan>
    <onroadvehicleselections>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="62" sourcetypename="Combination Long-haul Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="61" sourcetypename="Combination Short-haul Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="41" sourcetypename="Intercity Bus"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="32" sourcetypename="Light Commercial Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="54" sourcetypename="Motor Home"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="11" sourcetypename="Motorcycle"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="21" sourcetypename="Passenger Car"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="31" sourcetypename="Passenger Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="51" sourcetypename="Refuse Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="43" sourcetypename="School Bus"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="53" sourcetypename="Single Unit Long-haul Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="52" sourcetypename="Single Unit Short-haul Truck"/>
        <onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="42" sourcetypename="Transit Bus"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="62" sourcetypename="Combination Long-haul Truck"/>
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        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="54" sourcetypename="Motor Home"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="11" sourcetypename="Motorcycle"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="21" sourcetypename="Passenger Car"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="31" sourcetypename="Passenger Truck"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="51" sourcetypename="Refuse Truck"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="43" sourcetypename="School Bus"/>
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        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="52" sourcetypename="Single Unit Short-haul Truck"/>
        <onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="42" sourcetypename="Transit Bus"/>
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Long-haul Truck"/>
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Short-haul Truck"/>
          <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="41" sourcetypename="Intercity Bus"/>
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Truck"/>
          <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="54" sourcetypename="Motor Home"/>
          <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="11" sourcetypename="Motorcycle"/>
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Truck"/>
          <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="51" sourcetypename="Refuse Truck"/>
          <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="43" sourcetypename="School Bus"/>
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haul Truck"/>
```

```
            <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="52" sourcetypename="Single Unit
Short-haul Truck"/>
            <onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="42" sourcetypename="Transit Bus"/>
            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="62" sourcetypename="Combination Long-haul Truck"/>
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            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="41" sourcetypename="Intercity Bus"/>
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            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="54" sourcetypename="Motor Home"/>
            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="11" sourcetypename="Motorcycle"/>
            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="21" sourcetypename="Passenger Car"/>
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            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="51" sourcetypename="Refuse Truck"/>
            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="43" sourcetypename="School Bus"/>
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            <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="52" sourcetypename="Single Unit Short-haul Truck"/>
             <onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="42" sourcetypename="Transit Bus"/>
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    </offroadvehicleselections>
    <offroadvehiclesccs>
    </offroadvehiclesccs>
    <roadtypes>
        <roadtype roadtypeid="1" roadtypename="Off-Network"/>
        <roadtype roadtypeid="2" roadtypename="Rural Restricted Access"/>
        <roadtype roadtypeid="3" roadtypename="Rural Unrestricted Access"/>
        <roadtype roadtypeid="4" roadtypename="Urban Restricted Access"/>
        <roadtype roadtypeid="5" roadtypename="Urban Unrestricted Access"/>
    </roadtypes>
        </filters>
        <databaseselection servername="localhost" databasename="42003_2045_07_05_AQ_2045_OZALL_mi"/>
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            <parts>
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                </sourceTypeAgeDistribution>
            </parts>
        </agedistribution>

        <avgspeeddistribution>
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            <parts>
                <avgSpeedDistribution>
                    <filename>C:\SPC_MOVES\CBAQ\\OZALL\AQ_2045\\42003_2045_07_05_AQ_2045\CDM\avgSpeedDistribution.csv</filename>
                </avgSpeedDistribution>
            </parts>
        </avgspeeddistribution>

        <imcoverage>
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                </imcoverage>
            </parts>
        </imcoverage>

      <fuel>
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            <filename>C:\SPC_MOVES\AQIN\MOVES\Fuel\MOVES2014a\42000_fuelsupply_14a_PGH_RVP10.csv</filename>
          </FuelSupply>
          <FuelFormulation>
            <filename>C:\SPC_MOVES\AQIN\MOVES\Fuel\MOVES2014a\42000_FuelFormulation_14a_PGH_RVP10.csv</filename>
```

```
            </FuelFormulation>
            <FuelUsageFraction>
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            </FuelUsageFraction>
            <AVFT>
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            </AVFT>
         </parts>
      </fuel>

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            <parts>
               <zoneMonthHour>
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               </zoneMonthHour>
            </parts>
         </zonemonthhour>

         <roadtypedistribution>
            <description><![CDATA[]]></description>
            <parts>
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            </parts>
         </roadtypedistribution>

         <sourcetypepopulation>
            <description><![CDATA[]]></description>
            <parts>
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               </sourceTypeYear>
            </parts>
         </sourcetypepopulation>

         <rampfraction>
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            <parts>
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            </parts>
         </rampfraction>

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               <hpmsVTypeYear>
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               </hpmsVTypeYear>
               <monthvmtfraction>
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>
               </monthvmtfraction>
               <dayvmtfraction>
                  <filename>C:\SPC_MOVES\AQIN\MOVES\MonthDayHourFractions\2017_DayFraction\42003_2017_dayvmtfraction.csv</filename>
               </dayvmtfraction>
               <hourvmtfraction>
                  <filename>C:\SPC_MOVES\CBAQ\\OZALL\AQ_2045\\42003_2045_07_05_AQ_2045\CDM\hourvmtfraction.csv</filename>
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            </parts>
         </vehicletypevmt>
      <starts>
         <description><![CDATA[]]></description>
```

```
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               </startsPerDay>
               <startsHourFraction>
<filename></filename>
               </startsHourFraction>
               <startsSourceTypeFraction>
<filename></filename>
               </startsSourceTypeFraction>
               <startsMonthAdjust>
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               </startsMonthAdjust>
               <importStartsOpModeDistribution>
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               </importStartsOpModeDistribution>
               <Starts>
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               </Starts>
            </parts>
         </starts>

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               <hotellingHours>
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            </parts>
         </hotelling>

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            </parts>
         </onroadretrofit>

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            <parts>
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                  <filename>C:\SPC_MOVES\AQIN\MOVES\Fuel\MOVES2014a\MOVESDefaults\42000_RegionCounty_MOVES2014aDefaults.csv</filename>
               </anytable>
            </parts>
         </generic>
                                    </importer>
</moves>
```

4. MOVES Run Specification File – Ozone July Weekday Run (MOVESRUN.MRS)

Sample for 2045 Run for Pittsburgh-Beaver Valley nonattainment area – Allegheny County. Separate MRS file for each county in the analysis.

```
<runspec version="MOVES2014a-20161117">
<description><![CDATA[MOVES2014A RunSpec Created by CENTRAL4 Scenario: ALLE 2045 JULWKD AQ_2045 Emission Inventory with user's
data]]></description>

   <models>
   <model value="ONROAD"/>
   </models>
<modelscale value="INV"/>
   <modeldomain value="SINGLE"/>
   <geographicselections>
      <geographicselection type="COUNTY" key="42003" description="PENNSYLVANIA - Allegheny County"/>
   </geographicselections>
   <timespan>
      <year key="2045"/>
<month id="07"/>
<day id="5"/>
      <beginhour id="1"/>
      <endhour id="24"/>
<aggregateBy key="Hour"/>
   </timespan>
   <onroadvehicleselections>

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<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="21" sourcetypename="Passenger Car"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="31" sourcetypename="Passenger Truck"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="32" sourcetypename="Light Commercial Truck"/>
<onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="11" sourcetypename="Motorcycle"/>
<onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="21" sourcetypename="Passenger Car"/>
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<onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="21" sourcetypename="Passenger Car"/>
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<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="41" sourcetypename="Intercity Bus"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="42" sourcetypename="Transit Bus"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="43" sourcetypename="School Bus"/>
<onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="41" sourcetypename="Intercity Bus"/>
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<onroadvehicleselection fueltypeid="1" fueltypedesc="Gasoline" sourcetypeid="42" sourcetypename="Transit Bus"/>
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<onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="42" sourcetypename="Transit Bus"/>
<onroadvehicleselection fueltypeid="5" fueltypedesc="Ethanol (E-85)" sourcetypeid="43" sourcetypename="School Bus"/>



<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="51" sourcetypename="Refuse Truck"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="52" sourcetypename="Single Unit Short-haul
Truck"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="53" sourcetypename="Single Unit Long-haul
Truck"/>
<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="54" sourcetypename="Motor Home"/>
```

<onroadvehicleselection fueltypeid="3" fueltypedesc="Compressed Natural Gas (CNG)" sourcetypeid="61" sourcetypename="Combination Short-haul Truck"/>
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<onroadvehicleselection fueltypeid="2" fueltypedesc="Diesel Fuel" sourcetypeid="51" sourcetypename="Refuse Truck"/>
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APPENDIX D

County and Facility Type Summaries
VMT, Speed, Emissions

Pittsburgh-Beaver Valley PM2.5 Annual Emission Summary

2021 Existing - Base (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	$PM_{2.5}$
Allegheny (Partial)	Off-Network	N/A	N/A	1,328.63	35.75
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,178,124	43.2	2.47	0.12
	Urban Restricted	2,850,337,600	48.6	1,309.93	69.67
	Urban UnRestricted	5,459,436,370	28.3	2,271.97	139.41
	Subtotal	*8,316,952,095*		*4,912.99*	*244.94*
Armstrong (Partial)	Off-Network	N/A	N/A	5.90	0.14
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	39,871,825	45.9	20.02	0.82
	Subtotal	*39,871,825*		*25.92*	*0.96*
Beaver	Off-Network	N/A	N/A	218.82	5.89
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,336,924	37.8	2.61	0.14
	Urban Restricted	262,164,798	57.0	92.93	4.44
	Urban UnRestricted	949,847,655	34.9	381.07	20.69
	Subtotal	*1,218,349,377*		*695.44*	*31.16*
Butler	Off-Network	N/A	N/A	340.43	7.75
	Rural Restricted	79,898,355	48.8	40.06	2.13
	Rural UnRestricted	191,802,425	33.6	78.30	4.10
	Urban Restricted	425,247,404	56.3	331.60	13.55
	Urban UnRestricted	1,264,262,047	37.5	538.56	25.73
	Subtotal	*1,961,210,232*		*1,328.96*	*53.27*
Washington	Off-Network	N/A	N/A	348.59	8.40
	Rural Restricted	173,260,643	57.3	75.61	3.39
	Rural UnRestricted	75,169,033	34.8	26.96	1.50
	Urban Restricted	950,381,991	55.5	606.70	26.49
	Urban UnRestricted	1,069,010,483	35.5	428.32	22.96
	Subtotal	*2,267,822,151*		*1,486.19*	*62.74*
Westmoreland	Off-Network	N/A	N/A	508.21	13.15
	Rural Restricted	64,908,545	50.8	30.78	1.63
	Rural UnRestricted	133,148,842	30.0	53.12	3.22
	Urban Restricted	1,000,106,575	55.4	828.06	33.98
	Urban UnRestricted	2,084,745,781	35.0	858.11	46.16
	Subtotal	*3,282,909,743*		*2,278.28*	*98.14*
Greene (Partial)	Off-Network	N/A	N/A	2.77	0.06
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	23,615,837	43.9	11.18	0.43
	Subtotal	*23,615,837*		*13.95*	*0.50*
Lawrence (Partial)	Off-Network	N/A	N/A	1.96	0.04
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	255,147	25.0	0.00	0.00
	Urban UnRestricted	14,787,816	41.6	7.81	0.32
	Subtotal	*15,042,963*		*9.77*	*0.36*
Region Subtotal		17,125,774,223		10,751.49	492.06
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**17,125,774,223**		**10,751.49**	**492.06**
			(Kg/Year)	**9,753,594**	**446,390**

SPC June 2021

Pittsburgh-Beaver Valley PM2.5 Annual Emission Summary

2024 TIP Year - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	$PM_{2.5}$
Allegheny (Partial)	Off-Network	N/A	N/A	1,041.73	32.49
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,372,653	43.2	1.68	0.10
	Urban Restricted	2,905,747,982	48.7	917.24	55.83
	Urban UnRestricted	5,526,325,427	28.3	1,533.76	117.28
	Subtotal	*8,439,446,063*		*3,494.41*	*205.71*
Armstrong (Partial)	Off-Network	N/A	N/A	4.40	0.12
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	40,073,370	45.9	13.88	0.65
	Subtotal	*40,073,370*		*18.28*	*0.77*
Beaver	Off-Network	N/A	N/A	160.43	5.01
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,396,073	37.8	1.80	0.11
	Urban Restricted	269,661,111	57.0	64.52	3.68
	Urban UnRestricted	961,024,275	34.9	259.81	17.14
	Subtotal	*1,237,081,459*		*486.56*	*25.93*
Butler	Off-Network	N/A	N/A	265.74	6.74
	Rural Restricted	81,113,793	49.0	28.33	1.69
	Rural UnRestricted	196,018,132	33.5	54.07	3.48
	Urban Restricted	431,170,351	56.2	237.57	10.35
	Urban UnRestricted	1,290,934,245	37.4	373.90	21.49
	Subtotal	*1,999,236,521*		*959.62*	*43.75*
Washington	Off-Network	N/A	N/A	268.88	7.16
	Rural Restricted	165,893,431	57.2	49.74	2.57
	Rural UnRestricted	76,510,957	34.9	18.32	1.27
	Urban Restricted	1,040,122,811	55.5	446.46	21.52
	Urban UnRestricted	1,048,845,380	35.3	282.16	18.47
	Subtotal	*2,331,372,579*		*1,065.56*	*50.99*
Westmoreland	Off-Network	N/A	N/A	381.69	11.21
	Rural Restricted	65,015,669	50.8	21.26	1.28
	Rural UnRestricted	134,780,074	30.0	35.96	2.70
	Urban Restricted	1,010,700,722	55.4	590.45	25.59
	Urban UnRestricted	2,116,637,750	35.0	588.23	38.26
	Subtotal	*3,327,134,215*		*1,617.58*	*79.04*
Greene (Partial)	Off-Network	N/A	N/A	2.04	0.05
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	23,850,621	43.9	7.50	0.35
	Subtotal	*23,850,621*		*9.54*	*0.41*
Lawrence (Partial)	Off-Network	N/A	N/A	1.53	0.04
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	268,381	25.0	0.00	0.00
	Urban UnRestricted	15,085,022	41.7	5.32	0.26
	Subtotal	*15,353,403*		*6.85*	*0.30*
Region Subtotal		17,413,548,232		7,658.40	406.89
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**17,413,548,232**		**7,658.40**	**406.89**
			(Kg/Year)	**6,947,587**	**369,124**

SPC June 2021

Pittsburgh-Beaver Valley PM2.5 Annual Emission Summary

2025 Interim Year #1 - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	$PM_{2.5}$
Allegheny (Partial)	Off-Network	N/A	N/A	951.81	30.85
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,308,004	43.2	1.47	0.09
	Urban Restricted	2,899,286,270	48.7	821.73	52.15
	Urban UnRestricted	5,521,718,169	28.3	1,363.88	111.08
	Subtotal	*8,428,312,442*		*3,138.89*	*194.17*
Armstrong (Partial)	Off-Network	N/A	N/A	3.96	0.11
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	39,791,338	45.9	12.29	0.59
	Subtotal	*39,791,338*		*16.25*	*0.71*
Beaver	Off-Network	N/A	N/A	144.92	4.70
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,409,253	37.8	1.59	0.10
	Urban Restricted	270,022,740	57.0	58.00	3.47
	Urban UnRestricted	963,140,723	35.1	231.98	16.10
	Subtotal	*1,239,572,716*		*436.49*	*24.38*
Butler	Off-Network	N/A	N/A	242.98	6.38
	Rural Restricted	81,105,106	49.0	25.50	1.59
	Rural UnRestricted	195,551,245	33.5	47.78	3.28
	Urban Restricted	429,568,773	56.2	212.82	9.47
	Urban UnRestricted	1,290,324,825	37.4	331.55	20.20
	Subtotal	*1,996,549,949*		*860.64*	*40.92*
Washington	Off-Network	N/A	N/A	248.06	6.74
	Rural Restricted	165,675,321	57.3	44.60	2.39
	Rural UnRestricted	76,248,553	34.9	16.24	1.20
	Urban Restricted	1,036,274,608	55.5	400.02	19.80
	Urban UnRestricted	1,048,123,320	35.3	251.54	17.39
	Subtotal	*2,326,321,802*		*960.46*	*47.51*
Westmoreland	Off-Network	N/A	N/A	347.53	10.54
	Rural Restricted	64,494,264	50.8	18.95	1.19
	Rural UnRestricted	134,286,079	30.0	31.97	2.55
	Urban Restricted	1,007,112,077	55.4	530.51	23.33
	Urban UnRestricted	2,111,382,013	35.0	522.81	35.89
	Subtotal	*3,317,274,433*		*1,451.77*	*73.50*
Greene (Partial)	Off-Network	N/A	N/A	1.82	0.05
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	23,815,371	43.9	6.59	0.33
	Subtotal	*23,815,371*		*8.41*	*0.38*
Lawrence (Partial)	Off-Network	N/A	N/A	1.38	0.04
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	268,110	25.0	0.00	0.00
	Urban UnRestricted	15,067,364	41.7	4.69	0.24
	Subtotal	*15,335,474*		*6.07*	*0.28*
Region Subtotal		17,386,973,524		6,878.97	381.86
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**17,386,973,524**		**6,878.97**	**381.86**
			(Kg/Year)	**6,240,501**	**346,414**

SPC June 2021

Pittsburgh-Beaver Valley PM2.5 Annual Emission Summary

2035 Interim Year #2 - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	$PM_{2.5}$
Allegheny (Partial)	Off-Network	N/A	N/A	535.89	19.30
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,087,490	43.3	0.64	0.06
	Urban Restricted	3,088,438,477	48.3	420.38	31.73
	Urban UnRestricted	5,656,074,998	27.7	623.94	81.35
	Subtotal	*8,751,600,965*		*1,580.85*	*132.45*
Armstrong (Partial)	Off-Network	N/A	N/A	2.31	0.08
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	40,843,162	46.0	5.76	0.36
	Subtotal	*40,843,162*		*8.07*	*0.43*
Beaver	Off-Network	N/A	N/A	87.85	3.17
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,812,266	37.9	0.79	0.07
	Urban Restricted	285,628,110	56.4	28.90	2.14
	Urban UnRestricted	986,915,409	34.8	108.69	11.15
	Subtotal	*1,279,355,785*		*226.23*	*16.53*
Butler	Off-Network	N/A	N/A	138.63	3.84
	Rural Restricted	83,792,907	49.2	12.59	0.91
	Rural UnRestricted	194,722,611	33.2	20.85	2.26
	Urban Restricted	444,419,005	56.2	109.75	5.07
	Urban UnRestricted	1,346,199,434	37.0	154.03	14.07
	Subtotal	*2,069,133,957*		*435.86*	*26.16*
Washington	Off-Network	N/A	N/A	158.53	3.95
	Rural Restricted	194,309,787	57.6	24.86	1.52
	Rural UnRestricted	77,153,194	34.2	7.36	0.85
	Urban Restricted	1,007,315,087	55.0	197.28	10.60
	Urban UnRestricted	1,120,826,322	35.4	123.34	12.39
	Subtotal	*2,399,604,390*		*511.36*	*29.31*
Westmoreland	Off-Network	N/A	N/A	215.61	6.98
	Rural Restricted	63,477,830	50.6	9.13	0.66
	Rural UnRestricted	133,389,332	29.8	14.44	1.78
	Urban Restricted	1,024,686,565	55.4	272.32	12.21
	Urban UnRestricted	2,159,813,421	34.7	246.44	24.79
	Subtotal	*3,381,367,148*		*757.94*	*46.43*
Greene (Partial)	Off-Network	N/A	N/A	0.84	0.03
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	24,354,187	43.8	2.88	0.22
	Subtotal	*24,354,187*		*3.72*	*0.25*
Lawrence (Partial)	Off-Network	N/A	N/A	0.69	0.02
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	366,768	25.0	0.00	0.00
	Urban UnRestricted	15,545,811	41.5	2.13	0.16
	Subtotal	*15,912,579*		*2.82*	*0.18*
Region Subtotal		17,962,172,174		3,526.85	251.74
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**17,962,172,174**		**3,526.85**	**251.74**
			(Kg/Year)	**3,199,505**	**228,373**

SPC June 2021

Pittsburgh-Beaver Valley PM2.5 Annual Emission Summary

2045 LRP Horizon Year - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	$PM_{2.5}$
Allegheny (Partial)	Off-Network	N/A	N/A	482.19	11.55
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,707,167	43.0	0.50	0.05
	Urban Restricted	3,299,420,887	48.4	378.81	28.36
	Urban UnRestricted	5,880,221,707	27.7	546.91	77.99
	Subtotal	*9,186,349,762*		*1,408.42*	*117.94*
Armstrong (Partial)	Off-Network	N/A	N/A	2.03	0.05
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	40,285,272	46.1	4.85	0.31
	Subtotal	*40,285,272*		*6.88*	*0.36*
Beaver	Off-Network	N/A	N/A	78.96	1.89
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,924,884	37.8	0.68	0.07
	Urban Restricted	302,847,445	56.4	24.54	1.83
	Urban UnRestricted	1,017,003,792	34.8	94.99	10.44
	Subtotal	*1,326,776,121*		*199.17*	*14.23*
Butler	Off-Network	N/A	N/A	123.48	2.30
	Rural Restricted	86,873,406	49.1	10.85	0.79
	Rural UnRestricted	199,371,824	33.2	17.59	2.10
	Urban Restricted	459,174,367	56.3	100.27	4.55
	Urban UnRestricted	1,406,093,398	36.9	133.65	13.34
	Subtotal	*2,151,512,995*		*385.83*	*23.08*
Washington	Off-Network	N/A	N/A	145.04	2.35
	Rural Restricted	207,114,666	57.8	22.08	1.32
	Rural UnRestricted	78,667,105	34.3	6.24	0.78
	Urban Restricted	1,019,529,045	55.0	175.65	9.21
	Urban UnRestricted	1,175,562,545	35.3	109.06	11.81
	Subtotal	*2,480,873,361*		*458.08*	*25.47*
Westmoreland	Off-Network	N/A	N/A	195.87	4.25
	Rural Restricted	62,444,602	50.5	7.63	0.55
	Rural UnRestricted	135,684,171	29.8	12.47	1.66
	Urban Restricted	1,036,827,880	55.5	249.55	10.90
	Urban UnRestricted	2,225,589,764	34.7	216.45	23.26
	Subtotal	*3,460,546,416*		*681.99*	*40.63*
Greene (Partial)	Off-Network	N/A	N/A	0.65	0.02
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	0	N/A	0.00	0.00
	Urban UnRestricted	25,245,538	43.8	2.38	0.19
	Subtotal	*25,245,538*		*3.03*	*0.21*
Lawrence (Partial)	Off-Network	N/A	N/A	0.59	0.01
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	370,028	25.0	0.00	0.00
	Urban UnRestricted	15,799,864	41.5	1.77	0.14
	Subtotal	*16,169,893*		*2.35*	*0.15*
Region Subtotal		18,687,759,358		3,145.75	222.07
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**18,687,759,358**		**3,145.75**	**222.07**
			(Kg/Year)	**2,853,774**	**201,459**

SPC June 2021

Allegheny County, PA PM2.5 Annual Emission Summary

2021 Existing / PM2.5 Attainment Year (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Allegheny	Off-Network	N/A	N/A	1,350.16	36.33
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,178,203	43.2	2.47	0.12
	Urban Restricted	2,850,310,109	48.6	1,309.82	69.66
	Urban UnRestricted	5,535,182,761	28.4	2,300.35	141.09
	Subtotal	*8,392,671,073*		*4,962.79*	*247.20*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**8,392,671,073**		**4,962.79**	**247.20**
			(Kg/Year)	**4,502,171**	**224,252**

SPC June 2021

Allegheny County, PA PM2.5 Annual Emission Summary

2024 TIP Year - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Allegheny	Off-Network	N/A	N/A	1,058.59	33.02
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,372,774	43.2	1.68	0.10
	Urban Restricted	2,905,722,781	48.7	917.17	55.83
	Urban UnRestricted	5,603,088,634	28.3	1,552.94	118.70
	Subtotal	*8,516,184,189*		*3,530.38*	*207.65*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**8,516,184,189**		**3,530.38**	**207.65**
			(Kg/Year)	**3,202,707**	**188,376**

SPC June 2021

Allegheny County, PA PM2.5 Annual Emission Summary

2025 Interim Year #1 - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Allegheny	Off-Network	N/A	N/A	967.21	31.36
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,308,395	43.2	1.47	0.09
	Urban Restricted	2,899,262,082	48.7	821.66	52.14
	Urban UnRestricted	5,598,466,604	28.3	1,380.93	112.42
	Subtotal	*8,505,037,081*		*3,171.27*	*196.01*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**8,505,037,081**		**3,171.27**	**196.01**
			(Kg/Year)	**2,876,928**	**177,820**

SPC June 2021

Allegheny County, PA PM2.5 Annual Emission Summary

2035 Interim Year #2 - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Allegheny	Off-Network	N/A	N/A	544.52	19.62
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	7,087,719	43.3	0.64	0.06
	Urban Restricted	3,088,422,849	48.3	420.36	31.73
	Urban UnRestricted	5,728,168,121	27.8	631.04	82.24
	Subtotal	*8,823,678,690*		*1,596.57*	*133.65*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**8,823,678,690**		**1,596.57**	**133.65**
			(Kg/Year)	**1,448,381**	**121,243**

SPC June 2021

Allegheny County, PA PM2.5 Annual Emission Summary

2045 LRP Horizon Year - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Allegheny	Off-Network	N/A	N/A	489.93	11.74
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	6,713,261	43.0	0.50	0.05
	Urban Restricted	3,299,402,438	48.4	378.78	28.36
	Urban UnRestricted	5,951,448,541	27.7	552.80	78.79
	Subtotal	*9,257,564,241*		*1,422.02*	*118.94*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**9,257,564,241**		**1,422.02**	**118.94**
			(Kg/Year)	**1,290,034**	**107,898**

SPC June 2021

Indiana County PM2.5 Annual Emission Summary*

2021 Existing - Base (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Indiana (Partial)	Off-Network	N/A	N/A	20.00	0.45
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	183,815	25.0	0.00	0.00
	Urban UnRestricted	147,603,388	49.1	91.99	3.28
	Subtotal	*147,787,203*		*111.99*	*3.73*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**147,787,203**		**111.99**	**3.73**
			(Kg/Year)	**101,597**	**3,382**

SPC June 2021

** Indiana County Portion of Johnstown, PA PM2.5 Nonattainment Area*

Indiana County PM2.5 Annual Emission Summary*

2024 TIP Year - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Indiana (Partial)	Off-Network	N/A	N/A	14.85	0.38
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	189,321	25.0	0.00	0.00
	Urban UnRestricted	149,207,114	49.1	63.32	2.57
	Subtotal	*149,396,435*		*78.17*	*2.95*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**149,396,435**		**78.17**	**2.95**
			(Kg/Year)	**70,918**	**2,674**

SPC June 2021

** Indiana County Portion of Johnstown, PA PM2.5 Nonattainment Area*

Indiana County PM2.5 Annual Emission Summary*

2025 Interim Year #1 - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Indiana (Partial)	Off-Network	N/A	N/A	13.30	0.36
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	190,878	25.0	0.00	0.00
	Urban UnRestricted	148,704,088	49.2	55.90	2.35
	Subtotal	*148,894,966*		*69.21*	*2.71*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**148,894,966**		**69.21**	**2.71**
			(Kg/Year)	**62,784**	**2,456**

SPC June 2021

** Indiana County Portion of Johnstown, PA PM2.5 Nonattainment Area*

Indiana County PM2.5 Annual Emission Summary*

2035 Interim Year #2 - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Indiana (Partial)	Off-Network	N/A	N/A	6.23	0.21
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	225,043	25.0	0.00	0.00
	Urban UnRestricted	153,038,878	49.4	26.29	1.37
	Subtotal	*153,263,921*		*32.52*	*1.58*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**153,263,921**		**32.52**	**1.58**
			(Kg/Year)	**29,505**	**1,437**

SPC June 2021

** Indiana County Portion of Johnstown, PA PM2.5 Nonattainment Area*

Indiana County PM2.5 Annual Emission Summary*

2045 LRP Horizon Year - June 2021 Modifications (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissoins (Tons/Year)	
				NOx	PM2.5
Indiana (Partial)	Off-Network	N/A	N/A	4.93	0.11
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	0	N/A	0.00	0.00
	Urban Restricted	235,733	25.0	0.00	0.00
	Urban UnRestricted	156,051,362	49.5	22.59	1.20
	Subtotal	*156,287,096*		*27.52*	*1.32*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**156,287,096**		**27.52**	**1.32**
			(Kg/Year)	**24,966**	**1,194**

SPC June 2021

** Indiana County Portion of Johnstown, PA PM2.5 Nonattainment Area*

Pittsburgh-Beaver Valley 8-Hour Ozone Emission Summary

2021 Existing (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissoins (Tons/Day)	
				VOC	NOx
Allegheny	Off-Network	N/A	N/A	7.123	3.360
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	24,861	43.2	0.002	0.008
	Urban Restricted	9,105,879	48.6	0.735	3.769
	Urban UnRestricted	18,415,906	28.4	1.932	6.873
	Subtotal	*27,546,645*		*9.792*	*14.010*
Armstrong	Off-Network	0	N/A	0.640	0.376
	Rural Restricted	227,378	54.6	0.019	0.112
	Rural UnRestricted	178,016	35.1	0.017	0.066
	Urban Restricted	73,140	32.9	0.002	0.000
	Urban UnRestricted	1,311,792	43.4	0.117	0.589
	Subtotal	*1,790,326*		*0.796*	*1.143*
Beaver	Off-Network	0	N/A	1.160	0.544
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	19,790	37.8	0.002	0.007
	Urban Restricted	837,663	57.0	0.059	0.269
	Urban UnRestricted	3,196,366	34.9	0.286	1.158
	Subtotal	*4,053,819*		*1.506*	*1.979*
Butler	Off-Network	0	N/A	1.744	0.871
	Rural Restricted	255,290	48.8	0.024	0.116
	Rural UnRestricted	631,668	33.6	0.063	0.234
	Urban Restricted	1,358,775	56.3	0.125	0.952
	Urban UnRestricted	4,280,061	37.5	0.401	1.642
	Subtotal	*6,525,795*		*2.358*	*3.814*
Washington	Off-Network	0	N/A	1.575	0.893
	Rural Restricted	553,598	N/A	0.040	0.218
	Rural UnRestricted	249,938	N/A	0.022	0.081
	Urban Restricted	3,036,617	N/A	0.244	1.744
	Urban UnRestricted	3,641,025	N/A	0.322	1.322
	Subtotal	*7,481,178*		*2.204*	*4.259*
Westmoreland	Off-Network	0	N/A	2.558	1.282
	Rural Restricted	207,392	N/A	0.017	0.089
	Rural UnRestricted	451,860	N/A	0.045	0.163
	Urban Restricted	3,195,630	N/A	0.273	2.373
	Urban UnRestricted	6,987,048	N/A	0.625	2.591
	Subtotal	*10,841,930*		*3.518*	*6.497*
Fayette	Off-Network	0	N/A	1.210	0.551
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	2,354	44.7	0.000	0.001
	Urban Restricted	544,839	46.3	0.047	0.219
	Urban UnRestricted	2,849,317	40.5	0.259	1.208
	Subtotal	*3,396,510*		*1.517*	*1.979*
Region Subtotal		61,636,204		21.690	33.681
Off-Model Project Emission Benefits				0.000	0.000
Region Total		**61,636,204**		**21.690**	**33.681**
			(Kg/Day)	**19,677**	**30,555**

SPC June 2021

Pittsburgh-Beaver Valley 8-Hour Ozone Emission Summary

2024 TIP Year - June 2021 Modifications (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissoins (Tons/Day)	
				VOC	NOx
Allegheny	Off-Network	N/A	N/A	5.587	2.526
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	25,399	43.2	0.001	0.005
	Urban Restricted	9,234,029	48.7	0.530	2.626
	Urban UnRestricted	18,546,389	28.3	1.353	4.615
	Subtotal	*27,805,817*		*7.471*	*9.772*
Armstrong	Off-Network	0	N/A	0.485	0.293
	Rural Restricted	227,682	54.6	0.014	0.078
	Rural UnRestricted	178,822	35.1	0.012	0.045
	Urban Restricted	73,325	32.9	0.002	0.000
	Urban UnRestricted	1,317,823	43.4	0.084	0.408
	Subtotal	*1,797,651*		*0.598*	*0.824*
Beaver	Off-Network	0	N/A	0.850	0.383
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	19,869	37.8	0.001	0.005
	Urban Restricted	857,084	57.0	0.043	0.186
	Urban UnRestricted	3,216,840	34.9	0.200	0.785
	Subtotal	*4,093,793*		*1.095*	*1.359*
Butler	Off-Network	0	N/A	1.349	0.661
	Rural Restricted	257,816	49.0	0.018	0.081
	Rural UnRestricted	642,682	33.5	0.046	0.161
	Urban Restricted	1,370,492	56.2	0.092	0.679
	Urban UnRestricted	4,345,669	37.4	0.290	1.133
	Subtotal	*6,616,659*		*1.795*	*2.715*
Washington	Off-Network	0	N/A	1.173	0.669
	Rural Restricted	527,304	N/A	0.027	0.143
	Rural UnRestricted	253,108	N/A	0.016	0.055
	Urban Restricted	3,306,133	N/A	0.188	1.278
	Urban UnRestricted	3,550,732	N/A	0.220	0.866
	Subtotal	*7,637,277*		*1.624*	*3.010*
Westmoreland	Off-Network	0	N/A	1.890	0.930
	Rural Restricted	206,646	N/A	0.012	0.061
	Rural UnRestricted	454,978	N/A	0.031	0.110
	Urban Restricted	3,212,563	N/A	0.194	1.683
	Urban UnRestricted	7,057,164	N/A	0.440	1.766
	Subtotal	*10,931,351*		*2.568*	*4.549*
Fayette	Off-Network	0	N/A	0.910	0.395
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	2,372	44.7	0.000	0.001
	Urban Restricted	547,558	46.3	0.034	0.151
	Urban UnRestricted	2,853,057	40.6	0.185	0.829
	Subtotal	*3,402,988*		*1.129*	*1.376*
Region Subtotal		62,285,536		16.278	23.607
Off-Model Project Emission Benefits				0.000	0.000
Region Total		**62,285,536**		**16.278**	**23.607**
			(Kg/Day)	**14,767**	**21,416**

SPC June 2021

Pittsburgh-Beaver Valley 8-Hour Ozone Emission Summary

2025 Interim Year #1 - June 2021 Modifications (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissoins (Tons/Day)	
				VOC	NOx
Allegheny	Off-Network	N/A	N/A	5.197	2.282
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	25,310	43.2	0.001	0.005
	Urban Restricted	9,262,435	48.7	0.490	2.367
	Urban UnRestricted	18,630,423	28.3	1.257	4.127
	Subtotal	*27,918,168*		*6.944*	*8.780*
Armstrong	Off-Network	0	N/A	0.445	0.269
	Rural Restricted	227,499	54.6	0.012	0.069
	Rural UnRestricted	178,725	35.1	0.011	0.040
	Urban Restricted	73,540	32.9	0.002	0.000
	Urban UnRestricted	1,318,937	43.4	0.076	0.364
	Subtotal	*1,798,701*		*0.547*	*0.743*
Beaver	Off-Network	0	N/A	0.782	0.342
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	20,016	37.8	0.001	0.004
	Urban Restricted	862,771	57.0	0.040	0.168
	Urban UnRestricted	3,240,554	35.1	0.186	0.705
	Subtotal	*4,123,341*		*1.008*	*1.219*
Butler	Off-Network	0	N/A	1.246	0.601
	Rural Restricted	259,137	49.0	0.016	0.074
	Rural UnRestricted	644,567	33.5	0.042	0.143
	Urban Restricted	1,372,568	56.2	0.083	0.611
	Urban UnRestricted	4,366,305	37.4	0.266	1.010
	Subtotal	*6,642,576*		*1.653*	*2.439*
Washington	Off-Network	0	N/A	1.084	0.614
	Rural Restricted	529,362	N/A	0.025	0.129
	Rural UnRestricted	253,534	N/A	0.014	0.049
	Urban Restricted	3,311,067	N/A	0.172	1.151
	Urban UnRestricted	3,566,947	N/A	0.204	0.776
	Subtotal	*7,660,910*		*1.499*	*2.720*
Westmoreland	Off-Network	0	N/A	1.741	0.840
	Rural Restricted	206,068	N/A	0.011	0.055
	Rural UnRestricted	455,674	N/A	0.029	0.098
	Urban Restricted	3,217,971	N/A	0.177	1.520
	Urban UnRestricted	7,076,947	N/A	0.407	1.578
	Subtotal	*10,956,661*		*2.365*	*4.091*
Fayette	Off-Network	0	N/A	0.900	0.380
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	2,396	44.7	0.000	0.001
	Urban Restricted	547,473	46.3	0.031	0.134
	Urban UnRestricted	2,855,102	40.6	0.168	0.739
	Subtotal	*3,404,971*		*1.100*	*1.253*
Region Subtotal		62,505,329		15.116	21.246
Off-Model Project Emission Benefits				0.000	0.000
Region Total		**62,505,329**		**15.116**	**21.246**
			(Kg/Day)	**13,713**	**19,274**

SPC June 2021

Pittsburgh-Beaver Valley 8-Hour Ozone Emission Summary

2035 Interim Year #2 - June 2021 Modifications (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissoins (Tons/Day)	
				VOC	NOx
Allegheny	Off-Network	N/A	N/A	3.227	1.058
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	24,545	43.3	0.001	0.002
	Urban Restricted	9,866,821	48.3	0.316	1.209
	Urban UnRestricted	19,078,349	27.8	0.820	1.879
	Subtotal	*28,969,716*		*4.363*	*4.149*
Armstrong	Off-Network	0	N/A	0.307	0.167
	Rural Restricted	217,956	54.5	0.007	0.032
	Rural UnRestricted	180,741	34.6	0.007	0.017
	Urban Restricted	89,036	31.3	0.006	0.021
	Urban UnRestricted	1,352,088	43.6	0.046	0.170
	Subtotal	*1,839,822*		*0.373*	*0.407*
Beaver	Off-Network	0	N/A	0.524	0.170
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	21,274	37.9	0.001	0.002
	Urban Restricted	912,631	56.4	0.026	0.084
	Urban UnRestricted	3,321,454	34.8	0.119	0.329
	Subtotal	*4,255,359*		*0.670*	*0.585*
Butler	Off-Network	0	N/A	0.766	0.304
	Rural Restricted	267,731	49.2	0.010	0.036
	Rural UnRestricted	641,507	33.2	0.026	0.062
	Urban Restricted	1,420,011	56.2	0.048	0.315
	Urban UnRestricted	4,563,815	37.0	0.173	0.468
	Subtotal	*6,893,064*		*1.024*	*1.185*
Washington	Off-Network	0	N/A	0.630	0.362
	Rural Restricted	620,853	N/A	0.017	0.072
	Rural UnRestricted	256,535	N/A	0.009	0.022
	Urban Restricted	3,218,529	N/A	0.098	0.567
	Urban UnRestricted	3,807,153	N/A	0.135	0.378
	Subtotal	*7,903,070*		*0.890*	*1.401*
Westmoreland	Off-Network	0	N/A	1.145	0.446
	Rural Restricted	202,819	N/A	0.006	0.026
	Rural UnRestricted	451,659	N/A	0.018	0.044
	Urban Restricted	3,274,145	N/A	0.100	0.780
	Urban UnRestricted	7,240,534	N/A	0.261	0.741
	Subtotal	*11,169,157*		*1.531*	*2.036*
Fayette	Off-Network	0	N/A	0.576	0.172
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	2,590	44.7	0.000	0.000
	Urban Restricted	554,134	45.6	0.019	0.063
	Urban UnRestricted	2,851,475	40.3	0.103	0.337
	Subtotal	*3,408,199*		*0.698*	*0.573*
Region Subtotal		64,438,386		9.550	10.336
Off-Model Project Emission Benefits				0.000	0.000
Region Total		**64,438,386**		**9.550**	**10.336**
			(Kg/Day)	**8,663**	**9,376**

SPC June 2021

Pittsburgh-Beaver Valley 8-Hour Ozone Emission Summary

2045 LRP Horizon Year - June 2021 Modifications (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissoins (Tons/Day)	
				VOC	NOx
Allegheny	Off-Network	N/A	N/A	2.618	0.857
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	23,254	43.0	0.001	0.002
	Urban Restricted	10,540,965	48.4	0.277	1.087
	Urban UnRestricted	19,833,366	27.7	0.736	1.640
	Subtotal	*30,397,585*		*3.632*	*3.586*
Armstrong	Off-Network	0	N/A	0.260	0.149
	Rural Restricted	218,924	54.5	0.006	0.027
	Rural UnRestricted	183,781	34.6	0.006	0.015
	Urban Restricted	89,769	31.3	0.005	0.018
	Urban UnRestricted	1,370,103	43.6	0.040	0.146
	Subtotal	*1,862,577*		*0.317*	*0.354*
Beaver	Off-Network	0	N/A	0.425	0.138
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	21,626	37.8	0.001	0.002
	Urban Restricted	967,651	56.4	0.022	0.071
	Urban UnRestricted	3,423,428	34.8	0.105	0.286
	Subtotal	*4,412,705*		*0.554*	*0.497*
Butler	Off-Network	0	N/A	0.628	0.255
	Rural Restricted	277,575	49.1	0.008	0.031
	Rural UnRestricted	656,867	33.2	0.023	0.052
	Urban Restricted	1,467,191	56.3	0.041	0.287
	Urban UnRestricted	4,768,843	36.9	0.155	0.404
	Subtotal	*7,170,476*		*0.856*	*1.030*
Washington	Off-Network	0	N/A	0.483	0.323
	Rural Restricted	661,766	N/A	0.015	0.064
	Rural UnRestricted	261,594	N/A	0.008	0.019
	Urban Restricted	3,257,546	N/A	0.082	0.504
	Urban UnRestricted	3,993,350	N/A	0.122	0.333
	Subtotal	*8,174,256*		*0.710*	*1.242*
Westmoreland	Off-Network	0	N/A	0.932	0.374
	Rural Restricted	199,519	N/A	0.005	0.022
	Rural UnRestricted	459,316	N/A	0.016	0.038
	Urban Restricted	3,312,957	N/A	0.086	0.713
	Urban UnRestricted	7,461,699	N/A	0.231	0.648
	Subtotal	*11,433,491*		*1.271*	*1.795*
Fayette	Off-Network	0	N/A	0.484	0.137
	Rural Restricted	0	N/A	0.000	0.000
	Rural UnRestricted	2,723	44.7	0.000	0.000
	Urban Restricted	563,275	45.6	0.016	0.053
	Urban UnRestricted	2,871,854	40.4	0.088	0.286
	Subtotal	*3,437,852*		*0.588*	*0.476*
Region Subtotal		66,888,942		7.927	8.980
Off-Model Project Emission Benefits				0.000	0.000
Region Total		**66,888,942**		**7.927**	**8.980**
			(Kg/Day)	**7,191**	**8,146**

SPC June 2021

APPENDIX E

Common Acronyms

COMMON ACRONYMS

AADT	Annual Average Daily Traffic
ADA	Americans with Disabilities Act of 1990 (federal)
ADT	Average Daily Traffic
BPR	PennDOT Bureau of Planning and Research
BRT	Bus Rapid Transit
CAAA 90	Federal Clean Air Act Amendments of 1990
CBD	Central Business District
CENTRAL	Menu-driven software platform that executes PPSUITE and MOVES in batch mode
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality
CO	Carbon Monoxide
CO_2	Carbon Dioxide
DEP	Pennsylvania Department of Environmental Protection (also PaDEP)
DOT	Department of Transportation
DVMT	Daily Vehicle Miles of Travel
EPA	Environmental Protection Agency (United States)
EPACT	Energy Policy Act of 1992 (federal)
FAST-Act	Fixing America's Surface Transportation Act (federal transportation law – enacted 2015)
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GIS	Geographic Information System
HBW	Home-Based Work trips
HBO	Home-Based Other trips
HC	Hydrocarbons
HDDV	Heavy Duty Diesel Vehicle
HDGV	Heavy Duty Gasoline Vehicle
HDV	Heavy Duty Vehicle
HOV	High Occupancy Vehicle
HPMS	Highway Performance Monitoring System
I/M	Vehicle Emissions Inspection and Maintenance Program
ISTEA	Intermodal Surface Transportation Efficiency Act (federal transportation law – enacted 1991)
IVHS	Intelligent Vehicle Highway Systems
ITS	Intelligent Transportation Systems
IVT	In-Vehicle Travel Time
LDDT	Light Duty Diesel Truck
LDDV	Light Duty Diesel Vehicle
LDGT	Light Duty Gasoline Truck
LDGV	Light Duty Gasoline Vehicle
LDT	Light Duty Truck
LDV	Light Duty Vehicle
LEV	Low Emission Vehicle
LRP	Long-Range Transportation Plan
LOS	Level of Service
MAP-21	Moving Ahead for Progress in the 21st Century (federal transportation law – enacted 2012)
MOVES	Motor Vehicle Emissions Simulator – EPA on-road emissions model (replaced MOBILE model)
MPO	Metropolitan Planning Organization
MPH	Miles per Hour
MPMS	Multi-Modal Project Management System (Pennsylvania)

COMMON ACRONYMS

NAAQS	National Ambient Air Quality Standards (federal)
NEPA	National Environmental Policy Act of 1969, as amended (federal)
NHB	Non Home-Based trips
NHS	National Highway System
NH_3	Ammonia
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
O_3	Ozone
OVT	Out of Vehicle Travel Time
PaDEP	Pennsylvania Department of Environmental Protection (also DEP)
PennDOT	Pennsylvania Department of Transportation
PM_{10}	Coarse Particulate Matter - particles with diameter less than 10 micrometers
$PM_{2.5}$	Fine Particulate Matter - particles with diameter less than 2.5 micrometers
PPB	Parts Per Billion
PPM	Parts Per Million
PPSUITE	Software tool to estimate DVMT, average speeds, and vehicle type mix for input to MOVES
RFG	Reformulated Gasoline
RFP	Reasonable Further Progress
RMS	PennDOT's Roadway Management System
ROW	Right of Way
RVP	Reid Vapor Pressure
SAFETEA-LU	Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (federal – 2005)
SIP	State Implementation Plan
SOV	Single Occupancy Vehicle
SO_2	Sulfur Dioxide
SO_X	Sulfur Oxides
SPC	Southwestern Pennsylvania Commission
SR	State Route number
STC	State Transportation Commission
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TAZ	Traffic Analysis Zone
TCM	Transportation Control Measure
TDM	Travel Demand Management
TEA-21	Transportation Equity Act for the 21st Century (federal transportation law – enacted 1998)
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TPD	Tons per Day
TPY	Tons per Year
TR	Traffic Route number
TSM	Transportation System Management
USC	United States Code
$\mu G/M^3$	Micrograms per Cubic Meter
USDOT	United States Department of Transportation
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
VOYAGER	Suite of computer programs used to model travel demand

The Southwestern Pennsylvania Commission (SPC) hereby gives public notice that it is the policy of the Commission to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related statutes and regulations in all programs and activities. Title VI and other related statutes require that no person in the United States of America shall, on the grounds of race, color, sex, national origin, age, or disability, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which SPC receives federal financial assistance. Any person who believes they have been aggrieved by an unlawful discriminatory practice by SPC under Title VI has a right to file a formal complaint with the Commission. Any such complaint must be in writing and filed with SPC's Title VI Coordinator within one hundred eighty (180) days following the date of the alleged discriminatory occurrence. For more information, or to obtain a Title VI Discrimination Complaint Form, please see our website at: www.spcregion.org or call 412-391-5590.