Lehigh Valley Transportation Study

RICHARD MOLCHANY
Chair, Coordinating Committee

BRENDAN COTTER
Chair, Technical Committee

BECKY A. BRADLEY, AICP
Secretary,
Coordinating Committee +
Technical Committee

Planning for the Future of Lehigh and Northampton Counties at 615 Waterfront Drive, Suite 201, Allentown, PA 18102 ■ (610) 264-4544 ■ lvpc@lvpc.org ■ www.lvpc.org

LVTS JOINT TECHNICAL & COORDINATING COMMITTEE MEETING
Wednesday, March 19, 2025, at 9:00 am
Virtual Meeting Agenda

Roll Call

Courtesy of the Floor

1. Coalition for Appropriate Transportation (CAT) "Considering Pedestrians" award for LVTS Bridge and Highway Projects

Minutes

1. *ACTION ITEM:* Technical Committee approval of the Joint Technical and Coordinating Committee Meeting Minutes of February 19, 2025
2. *ACTION ITEM:* Coordinating Committee approval of the Joint Technical and Coordinating Committee Meeting Minutes of February 19, 2025

Old Business

1. *ACTION ITEM:* Transportation Planning Agreement between LVPC, PennDOT, and LANTA
2. *ACTION/INFORMATION ITEM:* 2025-2028 Transportation Improvement Program (TIP)
    a. *ACTION ITEM:* TIP Amendment: RAISE Grant-Funded Riverside Drive Complete Street/Trail Project (HM)
    b. *INFORMATION ITEM:* Administrative Modifications (JR)
3. *INFORMATION ITEM:* 2025 Work Program Updates
    a. Project Selection – Part I
        i. Transportation Alternatives Set Aside (HM)
        ii. Carbon Reduction
    b. Enhanced Bus, Bus Rapid Transit Partnership Project
4. *INFORMATION ITEM:* Lehigh Valley Passenger Rail Update (BB, RM)

New Business

1. *INFORMATION ITEM*: State Transportation Commission (STC) and PennDOT 2025 12-Year Program (TYP) Update, Public Comment Period + Survey
    a. https://talkpatransportation.com/
2. *INFORMATION ITEM:* LTAP Tech Assist & Training 5-year Report

Status Reports

1. Monthly Traffic Count Report
2. PennDOT District 5-0 Highway Project Status Report
3. PennDOT District 5-0 Public Meetings
    a. Breinigsville Road over Breinig Run Bridge Replacement in Upper Macungie Township, Lehigh County. Virtual plans available online through March 24, 2025.

Public Engagement, Education and Grants

1. *INFORMATION ITEM*: Public Engagement
    - WDIY, 88.1 FM, National Public Radio – Plan Lehigh Valley Radio Show
        a. Aired March 3: "The 2024 Development Year with Joey Dotta"

b. April 7: Next show airs 6:30 PM
   - https://www.wdiy.org/show/plan-lehigh-valley

➢ Morning Call Business Cycle Column
a. March 2: “Healthcare picking up where Bethlehem Steel once shined”
b. April 13: Next column publishes
   - mcall.com, lvpc.org/newslv

2. *INFORMATION ITEM:* Lehigh Valley Government Academy (LVGA)
   ➢ Local Technical Assistance Program (LTAP)
      - April 2: Temporary Traffic Control Work Zones 8 am to 3 pm
         - In person at LVPC Conference Center, 615 Waterfront Drive, Suite 201, Allentown PA 18102 Registration at https://gis.penndot.gov/LTAP/default.aspx or contact Hannah Milagio at hmilagio@lvpc.org or 610-264-4544
3. *INFORMATION ITEM*: Grants (BD)
   ➢ Pennsylvania Department of Community and Economic Development (DCED) Multimodal Transportation Fund (MTF)
      - https://dced.pa.gov/programs/multimodal-transportation-fund/
   ➢ Pennsylvania Department of Community and Economic Development (DCED) Greenways, Trails, and Recreation Program (GTRP)
      - https://dced.pa.gov/programs/greenways-trails-and-recreation-program-gtrp/
   ➢ 2025-2026 Pennsylvania WalkWorks Active Transportation Planning Program Grant
      - https://www.pa.gov/agencies/health/programs/healthy-living/walkworks/grant-opportunities.html

Adjournment

Next LVTS Meetings

Special LVTS Technical Committee Meeting
March 24, 2025, at 9:00 am
In-Person

LVTS Joint Technical and Coordinating Committee Meeting
April 15, 2025, at 9:00 am
Virtual

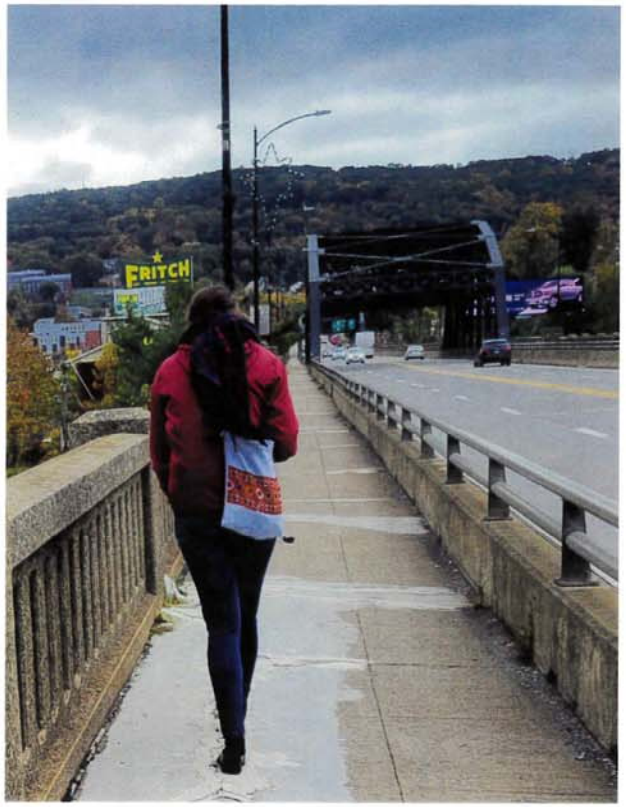
LVTS Technical Committee Meeting
May 21, 2025, at 9:00 am
Virtual

Meeting participation information can be found here:
https://www.lvpc.org/transportation-committees.html

The LVPC/LVTS website, www.lvpc.org, may be translated into multiple languages. Publications and other public documents can be made available in non-English languages and alternative formats, if requested.

2025 CAT Award Winner

Coalition for Appropriate Transportation



Considering Pedestrians Award

Lehigh Valley Transportation Study

The LVTS oversees funding for our regional bridge & road network projects (the TIP), totalling over $111M /year.

CAT recognizes the influence these projects have on pedestrian connectivity, safety, and quality of life.

Presented at the CAT Annual Meeting, March 5, 2025

Lehigh Valley Transportation Study
Minutes from Wednesday, February 19, 2025
Joint Technical and Coordinating Committee Meeting

Prior to the call to order, Ms. Milagio stated the agenda and materials for the meeting were posted on the LVPC website. She provided directions on how to participate in the virtual meeting and protocol for the meeting to flow smoothly. The meeting was advertised in the Lehigh Valley Press on January 8, 2025. Mr. Rick Molchany chaired the Coordinating Committee portion of the meeting, and Mr. Brendan Cotter chaired the Technical Committee portion of the agenda.

Mr. Molchany welcomed the members and the public participants and called the meeting to order.

Roll Call
Ms. Milagio took Roll Call.

Attendees:

Technical Committee

Brendan Cotter	LANTA
Ryan Meyer	LNAA
Becky Bradley, AICP	LVPC
David Petrik (Alt)	City of Allentown
David Hopkins (Alt)	City of Easton
Nick Raio	PennDOT Central Office

LVTS Coordinating Committee

Rick Molchany (Alt)	Lehigh County
David Hopkins (Alt)	City of Easton
Becky Bradley, AICP	LVPC
David Petrik (Alt)	City of Allentown
Michael Alkhal (Alt.)	City of Bethlehem
Lamont McClure	Northampton County
Jim Mosca	PennDOT Central Office
Owen O'Neill	LANTA
Thomas Stoudt	LNAA

Members Absent:

Technical Committee

Matthew Tuerk	City of Allentown
J. William Reynolds	City of Bethlehem
Darlene Heller (Alt)	City of Bethlehem
Salvatore Panto	City of Easton
Jennifer Ruth	PennDOT District 5

LVTS Coordinating Committee

Matthew Tuerk	City of Allentown
J. William Reynolds	City of Bethlehem
Chris Kufro	PennDOT District 5-0
Michael Emili (Alt)	Northampton County

Staff Present: Becky Bradley, Evan Gardi, Brian Hite, Ben Dinkel, Hannah Milagio, Faria Urmy, Subham Kharel, Minsoo Park

Public Present: Scott Slingerland, Larry Peterson, Amy Unger, Toni Mitman, Brian Hare, Scott Harney, Lee Rackus, Ralph Eberhardt, Christopher Morgan, Evan Jones, Craig Beavers, Brett Webber, Kim Schaffer, Gene Porochniak, Liz Rosencrans, Andrew Krahulik-Knapp, Sherri Penchishen, Lee Rackus

Courtesy of the Floor
Mr. Molchany asked if there were any comments or questions from the public about items not on the agenda, and there were none.

Mr. Molchany recognized Ms. Darlene Heller for more than 22 years of service to the region through the LVTS, and he congratulated Ms. Heller on her well-deserved retirement. He noted that he has worked with Ms. Heller for the past 11 years, and she is a very professional and knowledgeable planner who will be dearly missed by the City of Bethlehem. Ms. Bradley noted that the LVTS will present her with a certificate, and the staff are working with the City to identify her replacement as the alternate for the City of Bethlehem on the LVTS.

Mr. Molchany introduced Mr. Park, who recently joined the LVPC staff. Mr. Park introduced himself and gave brief descriptions of their backgrounds and qualifications. Mr. Molchany welcomed them to the Lehigh Valley and the LVTS.

Minutes
Mr. Cotter stated that the last Technical Committee was held on January 15, 2025. Ms. Milagio noted the actions voted on:

- Minutes from the December 18th, 2024 Joint Technical + Coordinating Committee Meeting
- 2025 Performance Measure 1 – Safety Target Setting
- Adjournment

Mr. Cotter asked for a motion to approve the minutes. Mr. Hopkins made the motion, and the motion was seconded by Mr. Petrik. There were no questions or comments from members or the public. Mr. Cotter asked Ms. Bradley to call for a vote and the motion was approved.

Mr. Molchany stated the Coordinating Committee meeting was held on January 15, 2025. Ms. Milagio noted the actions voted on:

- Minutes from the December 18th, 2024 Joint Technical + Coordinating Committee Meeting
- 2025 Performance Measure 1 – Safety Target Setting
- Adjournment

Mr. Molchany asked for a motion to approve the minutes. Mr. Mosca made the motion, seconded by Mr. O'Neil. Mr. Molchany asked for any questions or comments from the members and the public. Hearing none, Mr. Molchany asked Ms. Bradley to call for a vote and the motion was approved.

Old Business

***INFORMATION ITEM:* 2022-2025 Transportation Performance Management, PM-2 and PM-3 Mid Performance Period Update**
Mr. Hite stated that, in February 2023, PennDOT established 2-year and 4-year targets for the PM-2 and PM-3 measures for the 2022-2025 performance period. The targets were developed in coordination with Pennsylvania's Metropolitan and Rural Planning Organizations (MPO/RPO). Each MPO/RPO agreed to support the PennDOT statewide and regional PM-2 and PM-3 targets established at that time. The LVTS adopted these targets as part of that continuing, comprehensive, and cooperative planning process. The Mid Performance Period Progress Report offers an to review and adjust the 4-year targets for each of the PM-2 and PM-3 performance measures.

Mr. Hite reviewed PM-2 Asset Management, which aims to improve the condition of pavements and bridges on the National Highway System (NHS) and Interstate System. PM-2 calculates the percentage of pavements across these systems in good and poor conditions, and it generates an analysis of the percentage of National Highway System bridge deck areas classified in good and poor conditions. The Lehigh Valley is meeting or exceeding adopted targets, which shows that the LVTS' strategic project selection process and investment decisions are supporting the NHS, a critical component to the quality of life in the region and the Commonwealth.

Mr. Hite noted that PM-3 Reliability works to improve the mobility and operation of freight movement on the NHS and Interstate System. It also seeks to improve air quality and congestion through the Congestion Management and Air Quality (CMAQ) funding. PM-3 measures the percentage of person-miles traveled on the NHS and Interstate System, truck travel time on the Interstate System, annual hours of peak hour excessive delay (PHED) per capita, percentage of non-single occupant vehicle travel and on-road mobile source emissions reductions for projects that receive CMAQ funding. The Lehigh Valley is meeting or exceeding adopted targets for PM-3.

Mr. Hite stated that all bridge, pavement, reliability, freight and CMAQ emission targets were assessed in coordination between PennDOT and MPO/RPOs, and no changes for the LVTS at this mid-point.

Mr. Molchany asked if there were any questions on the PM-2 and PM-3 Mid-Period Update from LVTS members or the public, and there were none.

New Business

***INFORMATION ITEM:* Statement of Financial Interests Form**
Ms. Bradley reminded LVTS members that, as members of a Pennsylvania public entity, they are required to submit a Statement of Financial Interests. Members will likely need to submit a Statement of Financial Interest to other entities and boards on which they serve, and a copy of this form should be submitted to Ms. Milagio, either electronically or by mail. Mr. Molchany asked if there were any questions on the Statements of Financial Interests.

***INFORMATION ITEM:* 2025-2028 Transportation Improvement Program (TIP) Administrative Modifications**
Mr. Peterson reviewed the administrative actions of the 2025-2028 TIP that occurred from January 4th, 2025 through February 7, 2025. There were seven administrative actions and one statewide administrative action. Those actions were:

- Statewide Administrative Action #1: Main Street (State Route 873) + Walnut Street Intersection Improvements
- Administrative Action #1: PA 309 Resurface
- Administrative Action #2: Indian Creek Road over Leibert Creek
- Administrative Action #3: Donats Peak Road Bridge over Kistler Creek
- Administrative Action #4: St. John Street Improvements
- Administrative Action #5: Jordan Creek Bridge Replacement
- Administrative Action #6: State Route 143 over Tributary to Ontelaunee Creek
- Administrative Action #7: Transportation Alternative Project Management

Mr. Molchany asked if there were any questions from LVTS or the public. Mr. Harney asked Mr. Peterson to explain briefly what a 971 Claim Damage Estimate is. Mr. Peterson noted that the 971 Claim Damage Estimate is a right-of-way form used when there is an estimate for a financial obligation. Mr. Molchany asked if there were any additional questions, and there were none.

***INFORMATION ITEM:* Public Meeting: Riverside Drive RAISE Grant TIP Amendment**
Ms. Bradley reminded meeting participants that, in January, the LVTS Joint Technical and Coordinating Committee voted to add the Riverside Drive RAISE Grant to the 2025-2028 Transportation Improvement Program (TIP). During that meeting, there was a discussion that included Mr. Porochniak from the

Federal Highway Administration (FHWA) about the public comment requirements for the amendment. The LVTS Public Participation Plan requirements were met, but the Air Quality Conformity Determination Analysis for the amendment was completed and changes the report for the 2025-2028 TIP, so the amendment needs to be out for an additional 30-day public comment period.

Ms. Bradley reminded meeting participants that the Riverside Drive project is bringing additional funding to the region from the US Department of Transportation RAISE Grant Program, and it is in a Justice40 Community. The project is extending Riverside Drive, a complete street, southward from Hamilton Street to Union Street in the City of Allentown, and northward from Furnace Street to East Wood Street in the City of Allentown and Township of Whitehall. A gravel multi-use trail will continue from East Wood Street to Lehigh Avenue in the Township of Whitehall. The full documentation for this TIP amendment can be found at www.lvpc.org/lvts-committee-meetings.

Ms. Milagio stated that this public meeting was one of two offered as part of the public comment period, which opened on January 29 and will close February 28. The second would take place during the Lehigh Valley Planning Commission's Transportation Committee meeting on February 27 at 5:30. Comments on the project can be made at the meetings, by email to planning@lvpc.org, or at www.lvpc.org/lvts-committee-meetings.

Mr. Molchany asked if there were any questions or comments from members or the public on the Riverside Drive project. Ms. Rosencrans expressed concern that the design presented in the amendment shows a trail width of 10 feet. The Delaware and Lehigh National Heritage Corridor would like to advocate for a 12-foot width for the trail section, as previously discussed at public meetings. Ms. Bradley stated that the design of the project is still in the planning stage. The LVTS acknowledges this concern and will plan for future design coordination with the Delaware and Lehigh National Heritage Corridor. Mr. Slingerland asked for clarification on the time and location of the second meeting. Ms. Milagio shared that the second public meeting would be February 27 at 5:30, and the meeting would be virtual.

Mr. Molchany asked Ms. Bradley to confirm that the Riverside Drive project was funded by a competitive federal grant program that would add to the regional transportation grid, and it would not impact the allocation of regional transportation funding. Ms. Bradley confirmed this was correct. Mr. Molchany asked if there were any additional questions or comments, and there were none.

***INFORMATION ITEM:* 2025 Work Program Updates**

Ms. Bradley stated that each year the LVPC adopts an annual work program and budget. This includes items in that are represented in various contracts and resolutions, including the Unified Planning Work Programs. Regular transportation planning program updates will be added to the LVTS Joint Technical and Coordinating Committees agendas to report on progress of various obligations and to allow time to connect the various activities to the overall planning, management and investment activities that the Committee work supports.

Mr. Gardi noted that the Eastern Pennsylvania Freight Alliance (EPFA) Freight Infrastructure Plan has been adopted by four out of the five member organizations and the fifth and final adoption of the plan is estimated to be completed this spring. While awaiting the final adoption, the EPFA has been working on a website for the alliance to display the Freight Infrastructure Plan and provide valuable freight information to the public. It will also feature a fully interactive map that the members are currently reviewing internally with their GIS professionals. After the website rollout and final adoption, the next step is to draft the EPFA Memorandum of Understanding to formalize the alliance.

Ms. Bradley noted that part of the Federal Certification Review that occurred last year required that LVPC, as the contracting authority for the LVTS, LANTA and PENNDOT develop a 'Roles and Responsibilities MOU' to meet the requirements of 23 CFR 450.314. LVPC, LANTA and PENNDOT met a couple of weeks ago to work on a draft document. Currently, each entity is revising the draft and will be bringing it to the LVTS next month for review and discussion. It is anticipated that the MOU will be finalized by the April deadline noted in the Federal Certification Review.

Ms. Bradley stated that, in response to the growth in the region which has resulted in increased community needs and significant resources constraints, the LVPC is working on a new strategic plan. Next week interviews with LVTS members of the Technical and Coordinating Committees will happen on February 27th. Other government partners and LVPC members will also have interview times this month. Community partners, outside agencies and non-profits will be scheduled for April. And by early summer, the LVPC's consultants, EverStrive Solutions will prepare a draft Strategic Plan and the LVTS and LVPC will be reconveined to discuss details before the plan is finalized later in the summer. This plan is critical to understanding the work program and resources needed to support our region.

Ms. Milagio shared that the LVPC's website is currently in the process of being completely rebuilt. For the LVTS, this will mean a new, streamlined resource for everyone. From general guides on the LVTS and its programs and plans, to specific documentation available for public comment, the new transportation section of the website will be more accessible for all.

Ms. Bradley reviewed the E-Plan System project currently underway at the LVPC. The project will create a streamlined system through which community partners can submit documents to the LVPC, including subdivision and land development reviews, street vacation petitions and requests for letters of support for grant applications. The system will also include a portal for project submission for the next Metropolitan Transportation Plan (MTP), the new name for the Long-Range Transportation Plan (LRTP), update.

Ms. Bradley stated that Lehigh Valley Housing Supply and Attainability Strategy will provide achievable ways of increasing housing at appropriate income levels and in locations that support the needs of everyone. Nearly a decade of suppressed housing construction, combined with a consistently growing population, has resulted in a 9,000-unit regionwide housing shortage that makes it difficult for families to afford homes in the Lehigh Valley. This shortage also impacts commuting patterns in the region, as more people living in Carbon, Schuylkill and Monroe counties come into the region for work. A partnership of the LVPC, Lehigh County and the Urban Land Institute, the Housing Strategy will be a result of collaborating with all housing sector stakeholders, including buyers, financiers, builders, designers, planners, educators and government leaders.

Ms. Bradley stated that there are three events associated with this project: a cross-sector forum that was held in early February, a subject matter expert forum scheduled for late March, and a housing business plan scheduled for release in June. She reviewed the interactive housing website and data dashboard, available at www.lvpc.org/housing.

Ms. Bradley noted that there are two components of the 2025 Project Selection Process: the Federal Fiscal Year (FFY) 2025 obligations, and the gear-up for the *FutureLV: The Regional Plan* update in 2026. The FFY2025 obligations will be discussed at a workshop meeting of the Technical Committee, which will be scheduled shortly. These obligations will rely on the projects listed in the LRTP. Ms. Bradley noted that LVTS has not received official notice that Carbon Reduction funds have been eliminated from the TIP, but it is possible that it could occur and it is essential to allocate those funds quickly so they are not deobligated. The gear-up for the *FutureLV: The Regional Plan* update will tie in with the E-Plan System, which will serve as a portal for project submissions. The LVPC also intends to submit an RFP for consulting services for the process itself in the near future.

Mr. Dinkel noted that Functional Classification is the classification of roadways based on how they operate. Roads that serve more through-traffic are considered arterials, and roads that primarily serve local uses are considered locals. Collector roads fall in the middle and connect local roads with arterial roads. LVPC planners have been compiling data related to population, employment, urbanized areas, current Annual Average Daily Traffic, FutureLV layers such as land use, parks, centers, corridors. Staff will present findings at a spring LVTS meeting.

Mr. Hite stated that efforts are ongoing for the Transportation Safety Plan Update. This is a data driven process and staff are working on analysis of data collected from various sources. Staff also compiled data from the various adopted plans and projects, including *FutureLV: The Regional Plan*, the Lehigh Valley Walk Audit, Local Safety Plans from our municipalities, Local Technical Assistance Program Technical

Assistance conducted at areas of safety concern. The Safety Plan will also bring together the new US 22 Safety Corridor Designation for enhanced enforcement and safety awareness.

Mr. Kharel noted that, using crash data from PennDOT, the data team is conducting a rigorous analysis to identify potential High Injury Crash Corridors and Intersections for LVTS review and consideration. Along with mapping crash locations based on key factors like the built environment and driver behavior, the data team is developing a predictive model to help better understand how these factors interact to contribute to crashes. Unlike previous models, this effort leverages machine learning to capture complex relationships and account for uncertainty in crash prediction. This allows for a more nuanced and probabilistic understanding of risk, ensuring that insights remain data-driven while recognizing the inherent variability in crash patterns. This analysis will provide critical insights to support informed decision-making and assist LVTS in guiding safety efforts. Additionally, it will tie into key LVTS projects such as the Enhanced Bus/Bus Rapid Transit and the Transportation Safety Plan update.

Mr. Gardi shared that the staff have been working closely with PennDOT District 5 and LANTA to work on moving the Enhanced Bus/Bus Rapid Transit System forward. Through our work on various plans such as *FutureLV: The Regional Plan*, *Walk/Roll LV: Active Transportation Plan*, and the current update of our Transportation Safety plan, staff have gathered valuable data from across the Lehigh Valley. This serves as the backbone of the individual system component and location selection.

Ms. Bradley provided an update for the Riverside Drive RAISE Grant project. The project design team, which includes PennDOT, Lehigh County, the City of Allentown, Whitehall Township and the LVPC, has been meeting to go through the land development process. Design components and discussions among the partners is underway now. Ms. Bradley contextualized the project by noting that, when the grant was awarded in 2021, FHWA was unclear on the contracting process for various reasons, including valuation of the land that was provided as a match. With the Unleashing American Energy executive order on January 20, the potential impacts of that executive order on the Riverside Drive project are currently. Ms. Bradley is meeting with federal and state representatives to discuss the importance of this project and transportation funding to the region. She will provide updates on federal impacts on transportation funding to the LVTS as that information becomes available.

Ms. Bradley reminded participants that, in partnership with Secretary Carroll of PennDOT and Senator Miller, funding has been secured to create a US Route 22 Improvements Plan. This project was included in the Unified Planning Work Program (UPWP), and the LVPC is awaiting finalization of the UPWP to be able to move forward with that Request for Proposals.

Ms. Bradley stated that, under the Unleashing American Energy executive order on January 20, the National Electric Vehicle Infrastructure (NEVI) Program has ended. There are various states bringing lawsuits against this and other executive orders to various district courts, and the NEVI program has been a part of those lawsuits. The NEVI program was included in the UPWP, specifically the Phase One of the project which includes the project prioritization process for electric vehicle infrastructure, and it was anticipated that work to be completed by June. This work has been paused, and work on the Safety Plan has been advanced. The LVTS maintains its commitment to electric vehicle infrastructure and the importance of a mixed-energy portfolio in the region.

Mr. Molchany thanked Ms. Bradley and the staff for the detailed update on the 2025 work plan. He noted that there is a lot of work being done that will support the update to *FutureLV: The Regional Plan.* He asked if there were any questions from LVTS members.

Mr. Molchany asked if there were any questions from the public. Ms. Milagio noted that several questions were asked in the meeting chat and subsequently answered by Ms. Bradley. Ms. Milagio summarized the questions and answers in the meeting:

- Ms. Rackus asked if there was a surplus of senior housing identified in the region. Ms. Bradley asked for clarification on what Ms. Rackus' definition of senior housing was. Ms. Rackus responded that she was referring to age restricted 55+ communities, and Ms. Bradley noted that she would ask the housing project team. Ms. Rackus thanked Ms. Bradley, and she shared that

developers use this classification of housing to justify higher densities in Whitehall Township's single-family areas, but the township has a need for non-age restricted family homes, as well.

- Mr. Neitz asked if there would be opportunities to discuss with housing developers the considerations of trail connectivity and walkability when considering housing developments. Ms. Bradley responded that this is a top priority for the LVPC, and these elements are already incorporated into land development reviews. This will continue through the housing project, and she would keep Mr. Neitz in the loop on that work.
- Ms. Schaffer asked about the timeline for open applications for TASA and climate reduction funding. Ms. Bradley responded that the open call was made during the update to the Long-Range Transportation Plan. Community Bike Works is already included in the plan, so the organization will be considered.
- Mr. Harney asked if the transportation safety analysis is based on a custom evaluation of data or something like the Highway Safety Manual regional screening. Ms. Bradley responded that it is based on dozens of data sets and custom analytics developed by the LVPC.

Mr. Molchany asked if there were any additional questions, and there were none.

Status Reports
Mr. Molchany said the status reports on PennDOT District 5 Bridge Projects, the monthly Traffic Report and Public Engagement, Grants and Education were included in the meeting packet. There were no questions or comments from the committees or public.

Adjournment
Mr. Molchany stated that the next LVTS Joint Technical and Coordinating Committee meeting is on February 19, 2025, at 9 AM. Mr. Stoudt made a motion to adjourn, and the meeting was adjourned.

Transportation Planning Agreement
by and between the
Lehigh Valley Planning Commission,
Pennsylvania Department of Transportation, and
the Lehigh and Northampton Transportation Authority

Part A. Purpose of Agreement

The Lehigh Valley Planning Commission (LVPC), the Metropolitan Planning Organization (MPO), in cooperation with the Pennsylvania Department of Transportation (PennDOT), the State, and the Lehigh and Northampton Transportation Authority (LANTA), the Public Transit Agency, shall undertake a continuing, cooperative, and comprehensive performance-based multimodal transportation planning and programming process for the metropolitan planning area (MPA) in accordance with state and regional goals for metropolitan planning, the provisions of 23 USC 134, 49 USC 5303, and 23 CFR 450, and in accordance with the provisions of this Agreement.

Part B. Responsibilities of Parties

1. The LVPC shall be the leading agency in carrying out the regional transportation planning and programming process and shall be responsible for:
    a. Convening a forum for cooperative transportation planning and decision-making, through the Lehigh Valley Transportation Study (LVTS) committees and workshops that is informed through a public participation process that ensures reasonable opportunities for early and continuing involvement of individuals, affected public agencies, representatives of public transportation, airport officials, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as carpool and vanpool programs, shuttles, or telework programs), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of persons with disabilities, and other interested parties in the review and evaluation of all transportation plans and programs, to include special outreach efforts to those traditionally underserved by transportation systems.
    b. Ensuring the total voting membership of the LVTS consists of:
        i. Local elected city officials or their designated representatives; and
        ii. Officials of the Lehigh and Northampton Transportation Authority; and
        iii. Secretary of the Pennsylvania Department of Transportation or their designated representatives; and
        iv. Officials of the Lehigh Valley Planning Commission; and
        v. Officials of the Lehigh and Northampton Airport Authority; and
        vi. Elected County Executives of Lehigh County and Northampton County or their designated representatives.
    c. Assembling membership and conducting meetings of a Technical Committee comprised of representatives from Allentown City, Bethlehem City and Easton City governments, the Pennsylvania Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh Valley Planning Commission, and Lehigh and Northampton Airport Authority to collaborate on the development of

planning policy, measures and recommendations for the Coordinating Committee.

d. Assembling membership and conducting meetings of a Coordinating Committee comprised of representatives from Allentown City, Bethlehem City and Easton City governments, the Pennsylvania Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh Valley Planning Commission, and Lehighand Northampton Airport Authority, Lehigh County and Northampton County to collaborate and support implementation of metropolitan planning requirements. Assemble and maintain an adequate, competent staff with the knowledge and experience necessary to perform MPO activities as required by law.
e. Formulating, adopting and periodically reviewing, updating and amending a metropolitan transportation plan (MTP) for the metropolitan planning area (MPA), which shall conform to all applicable federal requirements.
f. Formulating and approving a short-range Transportation Improvement Program (TIP) for the MPA, which shall cover a period of not less than 4 years and must have 4 years of projects and may include projects outside the planning area for information only.
g. Develop, review and maintain a public participation process. This includes coordination of public participation requirements for the program of projects prepared by public transit agencies under 49 U.S.C. 5307.Formulating and approving the Unified Planning Work Program (UPWP), which shall identify all transportation-related planning activities to be funded with federal financial aids and technical assistance.
h. Incorporating and utilizing a Congestion Management Process (CMP) in the preparation of transportation plans and programs to ensure adequate consideration of alternative strategies to roadway construction and widening.
i. Working cooperatively with PennDOT and LANTA in the preparation of an annual listing of obligated transportation projects funded under 23 U.S.C. or 49 U.S.C. Chapter 53.
j. Coordinating with PennDOT and LANTA in the preparation and maintenance of a Coordinated Public Transit – Human Services Transportation Plan including, but not be limited to, an assessment of available services and transportation needs, identification of strategies, actions, and projects to address gaps between services and needs and improve service efficiencies, and identification of priorities for implementation.
k. Considering and implementing PennDOT guidance on transportation plans and programs, and the transportation planning process in general, consistent with regional and local goals.
l. Making data, assumptions, criteria, methodology, and analyses available to PennDOT, LANTA, local governments, and others.
m. Working with PennDOT and LANTA in the preparation of a financial plan for the MTP and TIP, including the cooperative development of estimates of transportation system costs and funding revenues to support implementation of the plan and program.

n. Developing and maintaining a regional travel demand modeling program in accordance with performance specifications developed by PennDOT in cooperation with MPOs.
o. Cooperatively establishing all federally required MPO performance targets, sharing performance data, preparing system performance reports in coordination with PennDOT and LANTA (based on FHWA and FTA performance measure final rules publications), and in Accordance with the performance-based planning MOU executed May 8, 2019, and its successors.
p. Cooperating with PennDOT in the development of the statewide long-range transportation plan pursuant to the provisions of 23 U.S.C. 135.
q. Providing PennDOT and LANTA with copies of all MPO transportation plans and programs and associated documentation of their adoption, endorsement, or amendment.
r. Providing PennDOT with a periodic self-certification that the MPO's transportation planning process conforms to all applicable federal requirements pursuant to 23 CFR 450.
s. Complying with American Disabilities Act of 1990 plan certification procedures as required in 49 CFR 37. 139.
t. Complying with Title VI of the Civil Rights Act and maintaining a current Title VI Program as required by the U.S. Department of Transportation.

2. PennDOT shall be responsible for the following transportation planning and programming activities:
    a. Actively participating in MPO planning and programming activities to represent the state's interests and ensure awareness and consideration of state transportation plans, programs, projects and policies in MPO decision-making.
    b. Cooperating in the development and maintenance of the MTP and TIP as a participating jurisdiction, providing information requested by the LVPC in a timely manner relative to state-funded or state-managed transportation projects and services to be deployed within the MPA to ensure consideration for inclusion in the MTP and TIP. This includes information relative to the availability, or anticipated availability, of federal and state financial aids for metropolitan transportation improvements and services that fall under MPO or local programming jurisdiction.
    c. Developing the statewide long-range transportation plan and the State Transportation Improvement Program (STIP) in cooperation with LVPC, pursuant to the provisions of 23 U.S.C. 135.
    d. Incorporating the approved TIP without modification into the STIP, directly or by reference.
    e. Cooperating in the development and maintenance of the UPWP as a participating jurisdiction, providing information requested by the LVPC in a timely manner related to state-funded or state-managed planning activities or technical assistance being deployed within the MPA for inclusion in the UPWP. This includes informing the LVPC to the availability, or anticipated availability, of federal and state financial aids and technical assistance for metropolitan transportation planning activities; making all metropolitan planning funds authorized by 23 U.S.C. 104(f) and 49 U.S.C. 5305(d) available to the MPOs in accordance with a formula developed by PennDOT, in consultation with the LVPC, and approved by USDOT.

f. Working cooperatively with the LVPC and LANTA in the preparation of an annual listing of obligated transportation projects funded under 23 U.S.C. or 49 U.S.C. Chapter 53 to include supplying information about federal obligations of grant funds administrated through the Federal Highway Administration in a reasonable time following the end of the federal fiscal year.
g. Coordinating with LVPC and LANTA in the preparation and maintenance of a Coordinated Public Transit – Human Services Transportation Plan.
h. Working with the LVPC and LANTA in the preparation of a financial plan for the MTP and TIP, consistent with 23 CFR 450.324(f), including the cooperative development of estimates of transportation system costs, inflation rates, and funding revenues to support implementation of the plan and program.
i. Providing technical support and data and information collected or maintained by PennDOT that is pertinent to the transportation planning work to be performed by the LVPC under this Agreement.
j. Establishing performance standards for regional travel demand modeling in coordination with MPOs across the state. The model shall be developed and reviewed in a manner consistent with the guidance outlined in Minimum Travel Demand Model Calibration and Validation Guidelines for the State of Pennsylvania.
k. Coordinating the development of recommendations to reconcile regional transportation plans and programs with statewide plans and programs as necessary to ensure connectivity within transportation systems.
l. Upon request and as needed, presenting to the LVTS an update on statewide transportation initiatives and priorities that either affect regional transportation plans and programs or should be considered in their development.
m. Cooperatively selecting and establishing performance targets, sharing performance data and analysis, supporting monitoring and reporting of system performance in coordination with the LVPC and LANTA (based on FHWA and FTA performance measure final rules). and in Accordance with the performance-based planning MOU executed May 8, 2019, and its successors.
n. Coordinating the development of the schedule and procedures for submittal and interagency review (including but not limited to FHWA and FTA) and approval of the MTP, TIP, and UPWP.
o. Ensure MPO compliance with federal or state statutes, policies, regulations and guidelines, which bear upon metropolitan transportation planning and programming activities and contractual arrangements.
p. Monitoring the MPO's transportation planning process, when such monitoring is required by federal law or regulation, to ensure compatibility with State and USDOT programs and objectives and compliance with applicable Federal requirements.

3. LANTA shall be responsible for the following transportation planning and programming activities:
    a. Actively participating in MPO activities to represent public transit interests and ensure awareness and consideration of public transit plans, programs, projects, and policies in MPO decision-making.
    b. Cooperating in the development and maintenance of the MTP and TIP as a participating jurisdiction, providing information requested by the LVPC in a timely manner relative to public transit projects and services to be deployed within the MPA to ensure consideration for inclusion in the MTP and TIP. This includes

information relative to the availability, or anticipated availability, of federal and local financial aids for public transit improvements and services within the MPA.

c. Cooperating in the development and maintenance of the UPWP as a participating jurisdiction, providing information requested by the LVPC a timely manner related to transit planning activities or technical assistance being deployed within the MPA for inclusion in the UPWP. This includes informing the LVPC about the availability, or anticipated availability, of federal and state financial aids and technical assistance for public transit planning activities.
d. Working cooperatively with the LVPC and PennDOT in the preparation of an annual listing of obligated transportation projects funded under 23 U.S.C. or 49 U.S.C. Chapter 53 to include supplying information about federal obligations of grant funds administrated through the Federal Transit Administration in a reasonable amount of time.
e. Cooperating with PennDOT in the development of the statewide long-range transportation plan pursuant to the provisions of 23 U.S.C. 135.
f. Coordinating with LVPC and PennDOT in the preparation and maintenance of a Coordinated Public Transit – Human Services Transportation Plan.
g. Coordinating with PennDOT and LVPC on the conduct of short-range transit plans or operational analyses that affect or inform regional and statewide transportation plans and programs.
h. Working with the LVPC and PennDOT in the preparation of a financial plan for the MTP and TIP, particularly related to the cooperative development of estimates of transit system costs, inflation rates, and funding revenues to support implementation of the plan and program.
i. Providing data and information collected or maintained related to public transit that is pertinent to the transportation planning work to be performed by the LVPC under this Agreement.
j. Cooperatively selecting and establishing performance targets, informing of performance targets that are established by or determined through prescribed processes set by outside regulatory agencies, sharing performance data and analysis, supporting monitoring and reporting of system performance in coordination with PennDOT and LVPC (based on FHWA and FTA performance measure final rules), and in Accordance with the performance-based planning MOU executed May 8, 2019 and its successors.
k. Preparing and submitting applications for federal public transportation capital assistance grants and state operating assistance grants and administering approved grants.
l. Conducting preliminary engineering and final design studies relating to public transportation capital facilities, including, but not limited to, transit stations, shelters, bus stop signs, garages, maintenance buildings, operator buildings, and rolling stock.
m. Conducting detailed operational planning necessary to establish or modify transit routes, schedules, fares, stop locations, transfer points, vehicle assignments, and other operating procedures.
n. Conducting transit marketing activities, including, but not limited to, the conduct of market surveys, design of user information materials, and the development of transit promotion programs.

o. Conducting transit management activities, including but not limited to, activities related to personnel procedures and training programs, maintenance policies, fare collection and handling procedures, and accounting practices.
p. Collecting data to meet the requirements of 49 U.S.C. 5335 regarding the National Transit Database.
q. Upon request and as needed, presenting to the LVTS an update on local public transit initiatives and priorities that either affect regional transportation plans and programs or should be considered in their development.
r. Preparing and updating paratransit service plans in conformance with the Americans with Disabilities Act of 1990, FTA Circular 4710.1.

Part C. Scope of Work

1. The cooperative metropolitan transportation planning process shall be carried out in accordance with a UPWP approved by the LVPC, PennDOT and USDOT, in consultation with LANTA, including budget and cost allocation. The UPWP will be reviewed and approved at least every two years. The original and all approved subsequent UPWPs during the terms of this agreement shall be made part of this agreement, which shall constitute the scope of work to be performed under this Agreement.
2. The Planning Work Program shall set forth a description of the specific metropolitan transportation planning activities and products to be completed each calendar year, the corresponding staffing and budgetary requirements, and the allocation of the total costs between the participating agencies.
3. The cooperative metropolitan transportation planning process to be conducted under this agreement and governed by the provisions of 23 CFR 450 shall encompass the metropolitan planning area (MPA), as determined by agreement between the Commonwealth and LVPC.

Part D. Organization and Administration

1. The LVTS shall appoint and maintain such advisory committees as deemed appropriate to effectively carry out the comprehensive transportation planning process under this Agreement. PennDOT and LANTA shall be represented on such advisory committees.
2. LVPC may enter into such institutional arrangements, service contracts or agency agreements as it deems necessary to carry out the scope of work under this Agreement with the understanding that the LVPC shall remain accountable for completion of planning products in accordance with the UPWP.

When consultants are to be employed in accomplishing work under this Agreement, parties providing funding or technical support for such work shall have the right to review and advise on basic study methods and procedures and to review.

Part E. Work Products

1. PennDOT, the LVPC and LANTA shall give each other and applicable USDOT agencies reasonable opportunity to review and comment on their respective reports produced under this Agreement prior to publication of the final report.
2. All reports and documents published by all parties under this Agreement shall give credit to all other parties and to participating USDOT agencies and include appropriate disclaimer statements regarding representation of USDOT views or policies.
3. All parties and the USDOT shall each have the royalty-free nonexclusive and irrevocable right to reproduce, publish, distribute, or otherwise use, and to authorize others to use, the work produced under this Agreement for government purposes.

Part F. Effective Period

1. The Agreement shall be reviewed as needed, such as when a new transportation funding bill is passed by the United States Congress, and/or when new federal regulations are published by FHWA/FTA but shall remain in effect until any party notifies the others in writing that the Agreement is no longer suitable. If or when this occurs, the parties agree to meet as soon as practicable to discuss possible modifications to the Agreement.
2. This Agreement shall become effective upon the signatures of each party.

Part G. Signatures

Lehigh Valley Planning Commission

_____ _____

Becky A. Bradley, AICP — Date

Executive Director

Pennsylvania Department of Transportation

_____ _____

Kristin Mulkerin, — Date

Deputy Secretary of Planning

Lehigh and Northampton Transportation Authority

_____ _____

Owen O'Neil — Date

Executive Director

RESOLUTION 3-19-25A

OF THE JOINT TECHNICAL AND COORDINATING COMMITTEES OF LEHIGH VALLEY TRANSPORTATION STUDY

Recommending a Transportation Planning Agreement Between the Lehigh Valley Planning Commission, the Metropolitan Planning Organization, Pennsylvania Department of Transportation, the State and, the Lehigh and Northampton Transportation Authority, the Public Transit Agency

WHEREAS, the Lehigh Valley Planning Commission (LVPC) is the Metropolitan Planning Organization (MPO) for Lehigh Valley, encompassing the Metropolitan Planning Area (MPA), defined as Lehigh County and Northampton County, Pennsylvania; and

WHEREAS, the Lehigh Valley Planning Commission (LVPC) supports the Lehigh Valley Transportation Study (LVTS), as the MPO policy board created and is designated to carry out the metropolitan transportation planning process in accordance with federal statute; and

WHEREAS, the LVPC cooperates with the Pennsylvania Department of Transportation (PennDOT), the State, and Lehigh and Northampton Transportation Authority (LANTA), the Public Transit Agency, to carry out the metropolitan planning process; and

WHEREAS, Federal statute, specifically, 23 CFR § 450.314, requires the MPO, PennDOT, and LANTA within the MPA to enter into a written agreement to clearly identify the responsibilities of the parties in carrying out the metropolitan planning process; and

WHEREAS, LVTS is the transportation policy-making body of the MPO and serves as a central forum for cooperative transportation decision-making in accordance with the provisions of Title 23, Part 450 of the Code of Federal Regulations (CFR); and

WHEREAS, The LVTS includes voting representation from the LVPC, PennDOT, LANTA and others, supporting a history, present and future oriented towards collaboration and cooperation; and

WHEREAS, The LVPC, PennDOT, and LANTA have drafted and agreed to the language in the attached Transportation Planning Agreement to satisfy federal requirements and to support the cooperative planning process; and

WHEREAS, The LVTS has reviewed the Transportation Planning Agreement and attests that the document accurately outlines the roles and responsibilities of the MPO as required by federal statute noted herein.

NOW, THEREFORE, BE IT RESOLVED that the LVTS Technical Committee and Coordinating Committee requests the LVPC Executive Committee's approval of the Transportation Planning Agreement between the LVPC, PennDOT, and LANTA.

Adopted by the Lehigh Valley Transportation Study Technical and Coordinating Committees on this nineteenth day of March 2025.

SIGNATURE PAGE

Lehigh Valley Transportation Study Technical Committee:

_____

Brendan Cotter, Chair

_____

Ryan Meyer, Vice Chair

ATTEST: _____

Becky A. Bradley
LVPC Executive Director and LVTS Secretary

Lehigh Valley Transportation Study Coordinating Committee:

_____

Richard Molchany, Chair

_____

David Hopkins, Vice Chair

ATTEST: _____

Becky A. Bradley
LVPC Executive Director and LVTS Secretary

A request to amend the 2025-2028 Transportation Improvement Program (TIP) has been forwarded for the consideration of the Lehigh Valley Transportation Study (LVTS) by the Pennsylvania Department of Transportation (PennDOT) in partnership with the Lehigh Valley Planning Commission (LVPC). This project is bringing additional funding to the region from the US Department of Transportation RAISE Grant Program, and it is located in a Justice40 Community. The project is extending Riverside Drive, a complete street, southward from Hamilton Street to Union Street in the City of Allentown, and northward from Furnace Street to East Wood Street in the City of Allentown and Township of Whitehall. A gravel multi-use trail will continue from East Wood Street to Lehigh Avenue in the Township of Whitehall.

The amendment was available for public comment from January 29 to February 28, 2025. The request is summarized below, and details can be found in the corresponding financial chart.

Amendment #1

Riverside Drive RAISE Grant – Increase of $19,358,854.

Project Sponsors: Pennsylvania Department of Transportation (PennDOT) in partnership with the Lehigh Valley Planning Commission

Adding the RAISE Grant funded project to the Transportation Improvement Program. The funding match is a land contribution to the public right of way.

Funding Sources:

- $650,000 RAISE Grant is being added to the Final Design Phase in Federal Fiscal Year 2025
- $500,000 RAISE Grant is being added to the Utility Relocation Phase in Federal Fiscal Year 2026
- $1,000,000 RAISE Grant is being added to the Right of Way Phase in Federal Fiscal Year 2025
- $17,208,854 RAISE Grant is being added to the Construction Phase in Federal Fiscal Year 2026

Questions should be directed to the requestors:

PennDOT: Jen Ruth, jeruth@pa.gov
LVPC: Becky Bradley bbradley@lvpc.org

LVTS Metropolitan Planning Organization

FISCAL CONSTRAINT TABLE

FFY 2025-2028 TIP Highway Element

PMC Request/Administrative Action Request

MPO Tech Meeting: January 15, 2025 | **MPO Coord Meeting: January 15, 2025**

Amendment				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
Riverside Drive RAISE Grant	118070	FD	Before	RAISE		0															0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD			Adjust	RAISE		650,000															650,000.00	
Lehigh County			After	RAISE		650,000															650,000.00	
Riverside Drive RAISE Grant	118070	UTL	Before	RAISE					0												0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD			Adjust	RAISE					500,000												500,000.00	
Lehigh County			After	RAISE					500,000												500,000.00	
Riverside Drive RAISE Grant	118070	ROW	Before	RAISE		0															0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD			Adjust	RAISE		1,000,000															1,000,000.00	
Lehigh County			After	RAISE		1,000,000															1,000,000.00	
Riverside Drive RAISE Grant	118070	CON	Before	RAISE					0												0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD			Adjust	RAISE					17,208,854												17,208,854.00	
Lehigh County			After	RAISE					17,208,854												17,208,854.00	
Before FFY Totals						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	Actions do not affect the project delivery schedules or air quality conformity.
FFY Adjustment Totals						1,650,000	0	0	17,708,854	0	0	0	0	0	0	0	0	0	0	0	19,358,854.00	
After FFY Totals						1,650,000	0	0	17,708,854	0	0	0	0	0	0	0	0	0	0	0	19,358,854.00	

NOTES:

Air Quality Conformity Analysis Report

Lehigh Valley MPO 2025-2028 Transportation Improvement Program (TIP) Amendment and 2050 Long Range Transportation Plan (LRTP)

National Ambient Air Quality Standards (NAAQS) Addressed:

- 2008 8-Hour Ozone (Nonattainment)
- 2006 24-Hour $PM_{2.5}$ (Maintenance)

Prepared by:

The Lehigh Valley Planning Commission and
Pennsylvania Department of Transportation
for the
Lehigh Valley Transportation Study

Report Date: November 2024

Table of Contents

Table of Exhibits

Summary of Attachments

Attachment A: Project List
Attachment B: Detailed Emission Results
Attachment C: Sample MOVES Input Files

Overview

This report provides an analysis of the air quality implications of the Lehigh Valley Transportation Study (LVTS) MPO 2025-2028 Transportation Improvement Program (TIP) and 2050 Long Range Transportation Plan (LRTP). The analysis demonstrates transportation conformity under the 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) and the 2006 24-hour $PM_{2.5}$ NAAQS. The air quality conformity analysis reflects an assessment of the regionally significant, non-exempt transportation projects included in both the TIP and LRTP. The 2025 TIP has been amended to include the Riverside Drive Raise Grant project. Note that conformity for the LRTP is being reaffirmed as there are no changes to the LRTP from the previous conformity determination.

This document replaces the previously approved conformity demonstration of the TIP and LRTP and ensures that the findings meet all current criteria established by the U.S. Environmental Protection Agency (EPA) for the applicable NAAQS. A new conformity determination has been completed to provide a regional forecast of emissions based on planned air quality significant projects in the updated TIP and the latest available planning assumptions. All air quality significant projects for the LRTP remain the same as previous conformity determinations. The TIP and LRTP projects are listed in **Attachment A**.

Background on Transportation Conformity

Transportation conformity is a way to ensure that federal funding and approval are awarded to transportation activities that are consistent with air quality goals. Under the Clean Air Act (CAA), transportation and air quality modeling procedures must be coordinated to ensure that the TIP and the LRTP are consistent with the area's applicable State Implementation Plan (SIP). The SIP is a federally approved and enforceable plan by which each area identifies how it will attain and/or maintain the health-related primary and welfare-related secondary NAAQS.

In order to receive transportation funding and approvals from the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA), state and local transportation agencies must demonstrate that the plans, programs, or projects meet the transportation conformity requirements of the CAA as set forth in the transportation conformity rule. Under the transportation conformity rule, transportation plans are expected to conform to the applicable SIP in nonattainment or maintenance areas. The integration of transportation and air quality planning is intended to ensure that transportation plans, programs, and projects will not:

- Cause or contribute to any new violation of any applicable NAAQS.
- Increase the frequency or severity of any existing violation of any applicable NAAQS.
- Delay timely attainment of any applicable NAAQS, any required interim emissions reductions, or other NAAQS milestones.

The transportation conformity determination includes an assessment of future highway emissions for defined analysis years, including the end year of the LRTP. Emissions are estimated using the latest available planning assumptions and available analytical tools, including EPA's latest approved on-highway mobile sources emissions model, the Motor Vehicle Emission Simulator

(MOVES). The conformity determination provides a tabulation of the analysis results for applicable precursor pollutants, showing that the required conformity test was met for each analysis year.

Report Contents

This document includes a summary of the methodology and data assumptions used for the conformity analysis. As shown in **Exhibit 1**, attachments containing additional detail have been provided with the document. In addition, modeling input and output files have been reviewed by the Environmental Protection Agency (EPA) Region III and the Pennsylvania Department of Environmental Protection (DEP).

EXHIBIT 1: SUMMARY OF ATTACHMENTS

Attachment	Title	Description
A	Project List	Provides a list of regionally significant highway projects for the TIP and LRTP.
B	Detailed Emission Results	Provides a detailed summary of emissions by roadway type.
C	MOVES Sample Run Specification	Provides example MOVES data importer (XML) and run specification (MRS) files.

National Ambient Air Quality Standard Designations

The CAA requires the EPA to set NAAQS for pollutants considered harmful to public health and the environment. A nonattainment area is any area that does not meet the primary or secondary NAAQS. Once a nonattainment area meets the standards and additional redesignation requirements in the CAA [Section 107(d)(3)(E)], EPA will designate the area as a maintenance area.

The Lehigh Valley MPO area (includes Lehigh and Northampton counties) is currently designated as a marginal nonattainment area under the 2008 8-hour ozone NAAQS and a maintenance area under the 2006 24-hour $PM_{2.5}$ NAAQS. The region is attaining the current 2012 annual $PM_{2.5}$ NAAQS. Transportation conformity requires nonattainment and maintenance areas to demonstrate that all future transportation projects will not prevent an area from reaching its air quality attainment goals.

Fine Particulate Matter

Fine particulate matter (PM2.5) can be emitted directly into the atmosphere (sources include exhaust and dust from brake and tire wear) or formed in the atmosphere by combinations of precursor pollutants (secondary formation). Sulfates and nitrates are two types of pollutants that contribute to secondary formation. Sulfate emissions are a result of power plant and industry emissions, while nitrate emissions result from automobiles, power plants, and other combustion sources. Scientific studies have shown a significant correlation between exposure to fine particulates and severe health issues such as heart disease, lung disease, and premature death.

The pollutants that could be analyzed in the conformity analysis are: [1] direct PM2.5 emissions (tail pipe emissions, brake and tire wear), [2] re-entrained road dust, and [3] precursors nitrogen oxides (NOX), volatile organic compounds (VOC), sulfur oxides (SOX) and ammonia (NH3). The EPA has ruled that until the EPA or DEP find that other precursor pollutants are significant contributors, and a SIP revision is approved stating such findings, direct PM2.5 emissions and NOX are the only pollutants that must be analyzed for transportation conformity (40 CFR 93.119(f)(8)–(10)).

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

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

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

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

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

2012 Annual PM2.5 Standard

The EPA published the 2012 annual PM2.5 NAAQS on January 15, 2013, (78 FR 3086), with an effective date of March 18, 2013. The EPA revised the annual PM2.5 NAAQS by strengthening the standard from 15 µg/m3 to 12 µg/m3. An area is in nonattainment of this standard if the 3-year average of the annual mean PM2.5 concentrations for designated monitoring sites in an area is greater than 12.0 µg/m3. On December 18, 2014, EPA issued final designations for the standard that were revised on April 7, 2015 (80 FR 18535). Berks County is designated in attainment of the standard.

2024 Annual PM2.5 Standard

On February 7, 2024, EPA strengthened the annual PM2.5 standard at 9.0 µg/m3 to provide increased public health protection, consistent with the available health science. The nonattainment areas have not been designated yet for this new standard.

Ozone

Ozone is formed by chemical reactions occurring under specific atmospheric conditions. Precursor pollutants that contribute to the formation of ozone include VOC and NO_X, both of which are components of vehicle exhaust. VOCs may also be produced through the evaporation of vehicle fuel, as well as by displacement of vapors in the gas tank during refueling. By controlling VOC and NO_X emissions, ozone formation can be mitigated.

2008 8-hour Ozone NAAQS

The EPA published the 2008 8-hour ozone NAAQS on March 27, 2008, (73 FR 16436), with an effective date of May 27, 2008. EPA revised the ozone NAAQS by strengthening the standard to 0.075 ppm. Thus, an area is in nonattainment of the 2008 8-hour ozone NAAQS if the 3-year average of the individual fourth highest air quality monitor readings, averaged over 8 hours throughout the day, exceeds the NAAQS of 0.075 ppm. The Lehigh Valley MPO area was designated as a nonattainment area under the 2008 8-hour ozone NAAQS, effective July 20, 2012 (77 FR 30088). The nonattainment area also includes Carbon County, which demonstrates conformity separately. Effective June 3, 2016, EPA determined that the Lehigh Valley MPO area has attained the 2008 ozone NAAQS by the applicable attainment date. This determination of attainment does not constitute a redesignation to attainment. Redesignations require states to meet a number of additional statutory criteria, including the EPA approval of a state plan demonstrating maintenance of the air quality standard for 10 years after redesignation.

2015 8-hour Ozone NAAQS

In 2015, based on its review of the air quality criteria for ozone and related photochemical oxidants, the EPA revised the primary and secondary NAAQS for ozone to provide requisite protection of public health and welfare, respectively (80 FR 65292). The EPA revised the levels of both standards to 0.070 ppm, and retained their indicators, forms (fourth-highest daily maximum, averaged across three consecutive years) and averaging times (eight hours). On October 16, 2018 (83 FR 52163), EPA established designations to include Lehigh and Northampton Counties as attainment for the 2015 8-hour ozone NAAQS. However, a conformity determination is required as long as 2008 8-hour ozone standard is not revoked by EPA.

Interagency Consultation

As required by the federal transportation conformity rule, the conformity process includes a significant level of cooperative interaction among federal, state, and local agencies. For this air quality conformity analysis, interagency consultation was conducted as required by the Pennsylvania Conformity SIP. This included conference call(s) or meeting(s) of the Pennsylvania Transportation-Air Quality Work Group (including the Pennsylvania Department of Transportation (PennDOT), DEP, EPA, FHWA, FTA and representatives from larger MPOs within the state). A meeting was conducted on February 7, 2024 to review all planning assumptions and to discuss the template and content for transportation conformity analyses.

Analysis Methodology and Data

This transportation conformity analysis was conducted using EPA's MOVES model, which is the official model for estimating emissions from highway vehicles for SIP emission inventories and transportation conformity (75 FR 9411. MOVES3 has been used for this conformity determination and is (in addition to MOVES4) currently considered one of the latest approved model versions for SIP and transportation conformity purposes (88 FR 32167). After September 12, 2025, MOVES4 must be used for conformity determinations.

Planning assumptions are updated following EPA and FHWA joint guidance (EPA420-B-08-901) that clarifies the implementation of the latest planning assumption requirements in 40 CFR 93.110. This analysis utilizes the best available latest traffic, vehicle fleet and environmental data to estimate regional highway emissions.

PennDOT updates many of the key planning assumptions on a triennial basis to support EPA's National Emissions Inventory (NEI) and FHWA's latest planning assumption requirements for transportation conformity. The PennDOT triennial data update is typically used to inform the planning assumptions for the future analysis years used for transportation conformity.

Due to the impacts that COVID has had on the vehicle fleet turnover, PennDOT, in coordination with the Pennsylvania Air Quality Workgroup, has determined that the estimates of the vehicle fleet age for the most recent available data (2020-2022) may not be reflective of future conditions

or longer term trends. Thus, the vehicle age assumption relied on previous planning assumptions used for past conformity analyses.

All other data assumptions for the conformity analysis relied on the latest available planning assumptions or national/local defaults consistent with methods used for past conformity analyses and EPA's technical guidance. This includes information and characteristics related to fuels, inspection maintenance (I/M) program parameters, heavy-truck long duration idling, and environmental data (e.g. temperatures and humidity).

The analysis methodology and data inputs for this analysis were developed through interagency consultation and used available EPA guidance documents that included:

- Policy Guidance on the Use of MOVES3 for State Implementation Plan Development, Transportation Conformity, and Other Purposes, US EPA Office of Transportation and Air Quality, EPA-420-B-20-044, November 2020.

- MOVES3 Technical Guidance: Using MOVES to Prepare Emission Inventories in State Implementation Plans and Transportation Conformity. US EPA Office of Transportation and Air Quality, EPA-420-B-20-052, November 2020.

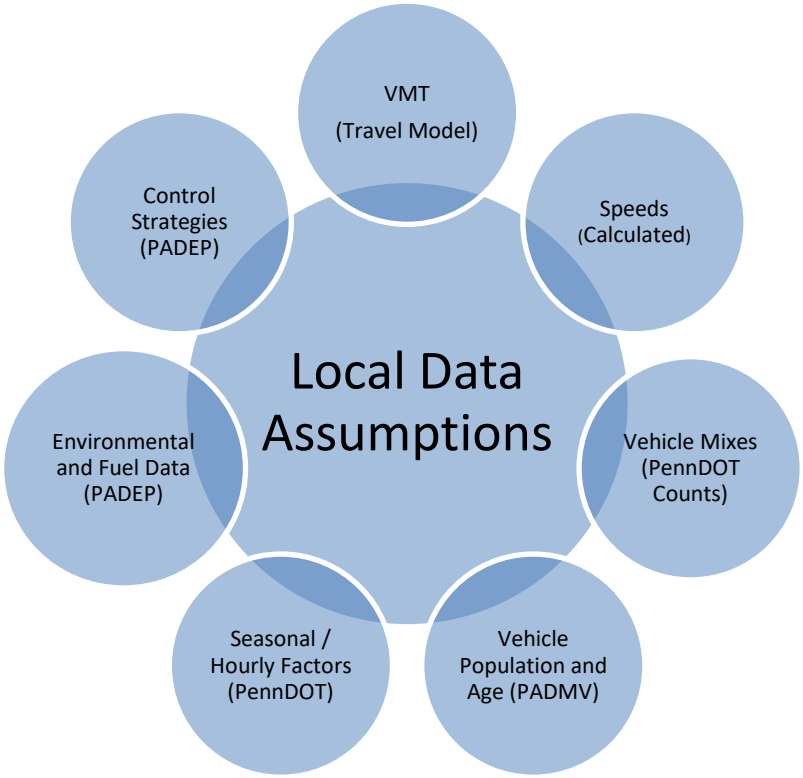
A mix of local and national default (internal to MOVES) data are used in the analysis. As illustrated in **Exhibit 2**, local data has been used for data items that have a significant impact on emissions, including: vehicle miles of travel (VMT), vehicle population, congested speeds, and vehicle type 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/national sources.

The methodology used for this analysis is consistent with the methodology used to develop SIP inventories. This includes the use of custom post-processing software (PPSUITE) to calculate hourly speeds and prepare key traffic input files to the MOVES emission model.

PPSUITE consists of a set of programs that perform the following functions:

- Analyzes highway operating conditions.
- Calculates highway speeds.
- Compiles VMT and vehicle type mix data.
- Prepares MOVES runs and processes MOVES outputs.

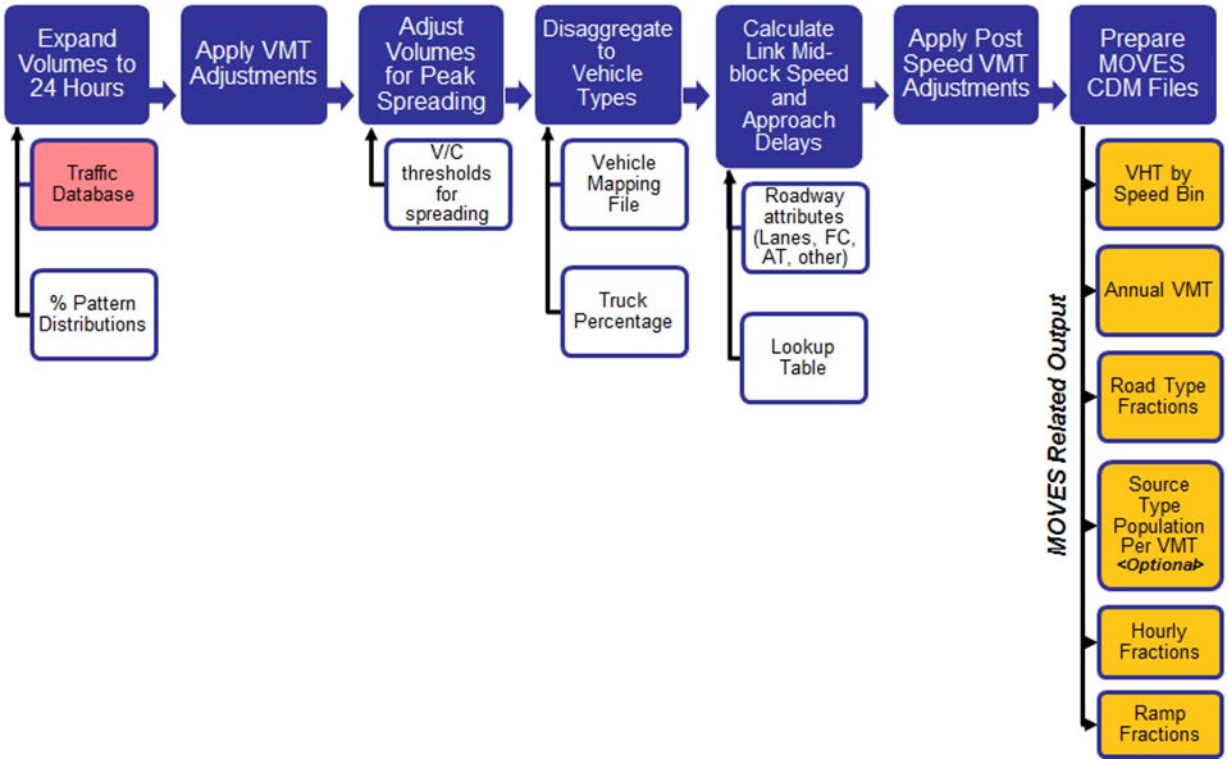
EXHIBIT 2: LOCAL DATA INPUTS USED FOR CONFORMITY RUNS



PPSUITE is a widely used and accepted tool for estimating speeds and processing emissions rates. The PPSUITE tool has been used for developing on-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 producing traffic-related input files to the MOVES emission model. **Exhibit 3** summarizes the key functions of PPSUITE within the emission calculation process. 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 SQL steps into the process. CENTRAL provides important quality control and assurance steps, including file naming and storage automation.

EXHIBIT 3: EMISSION CALCULATION PROCESS



Key MOVES Input Data

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; 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. These data items are discussed in the following sections.

Travel Demand Model

The roadway data input to emissions calculations for this conformity analysis is based on information from the region's travel demand forecasting model. The travel demand model estimates roadway volumes based on input demographic forecasts and expected changes to the transportation roadway network.

The regional travel demand model follows the basic "four-step" travel demand forecasting process and utilizes the Cube Voyager (TP+) software platform. The model consists of 510 Traffic

Analysis Zones (TAZ's), approximately 9,000 links, and approximately 5,200 nodes. The network contains attributes such as distance, number of lanes, area type, facility type, free flow speed, capacity of the lane, and location of traffic signals.

The model was updated in December of 2023. This update includes preparation of a new socio-economic dataset developed using the Census 2020 data, updates to the external share model and through trip table, updates to trip generation rates, and revisions to model parameters and coefficients to reflect 2022 traffic patterns and conditions. The project team decided to utilize year 2022 traffic conditions due to the significant impact of COVID19 on 2020 traffic patterns. Using the projected traffic volume data from the model, conditions were evaluated for all applicable future analysis years. All significant air quality projects from the TIP and LRTP were coded into the travel demand model. Transit data was also generated as part of the travel demand model. Existing fixed transit routes and their associated attributes (i.e., stops, headways, fares, speeds) are included within a transit subroutine. Ridership estimates generated by this subroutine are fed back into the model stream as part of the overall network processing.

Traffic forecasts were projected based on the socioeconomic and land use data projections developed and adopted by the Lehigh Valley Planning Commission. This data includes total population, households, and employment. **Exhibit 4** summarizes the socioeconomic data for the base year and horizon years of the LRTP. Socioeconomic data for other analysis years were forecasted using interpolation.

EXHIBIT 4: SOCIOECONOMIC GROWTH ASSUMPTIONS TO THE TRAVEL MODEL

County	Year	Population	Household	Total Employment
Lehigh Valley	2025	702,202	277,082	402,086
	2030	719,113	283,771	413,159
	2035	736,023	290,460	424,233
	2045	769,844	303,838	446,380
	2050	786,755	310,527	457,453

The travel model network and assigned traffic volumes are processed by PPSUITE to prepare the traffic inputs needed to run the MOVES emission model. The following information is extracted from the model for emission calculations:

- Lanes
- Roadway capacity
- Distance
- Daily traffic volume
- Type of area abutting the roadway (e.g., urban, suburban, rural, etc.)
- Type of roadway facility (e.g., interstate, arterial, collector, local, etc.)

Other Supporting Traffic Data

Other traffic data is used to adjust and disaggregate traffic volumes. Key sources used in these processes include the following:

- *Highway Performance Monitoring System (HPMS VMT)*: According to EPA guidance, baseline inventory VMT computed from the regional travel model must be adjusted to be consistent with HPMS VMT totals. The VMT contained in the HPMS reports are considered to represent average annual daily traffic (AADT), an average of all days in the year, including weekends and holidays. Adjustment factors are calculated and used to adjust locally modeled roadway data VMT to be consistent with the reported HPMS totals and are applied to all county and facility group combinations within the region. These adjustments are important to account for local roadway VMT not represented within the regional travel demand model.

- *Seasonal Factors*: The traffic volumes estimated from the regional travel demand model are adjusted to summer or average monthly conditions (as needed for annual processing), using seasonal adjustment factors prepared by PennDOT's BPR in their annual traffic data report published on the BPR website (https://www.penndot.pa.gov/ProjectAndPrograms/Planning/TrafficInformation/Pages/default.aspx). The seasonal factors are also used to develop MOVES daily and monthly VMT fraction files, allowing MOVES to determine the portion of annual VMT that occurs in each month of the year.

- *Hourly Patterns*: Speeds and emissions vary considerably depending on the time of day. In order to produce accurate emission estimates, it is important to estimate the pattern by which roadway volume varies by breaking the data down into hourly increments. Pattern data is in the form of a percentage of the daily volumes for each hour. Distributions are provided for all the counties within the region and by each facility type grouping. The hourly pattern data has been developed from 24-hour vehicle count data compiled by PennDOT's BPR, using the process identified in PennDOT's annual traffic data report. The same factors are also used to develop the MOVES hourly fraction file.

Vehicle Class

MOVES produces emission rates for thirteen MOVES vehicle source input types. VMT, however, is input to MOVES by six HPMS vehicle groups (note that passenger cars and light trucks are grouped for input to MOVES3.1). **Exhibit 5** summarizes the distinction between each classification scheme.

EXHIBIT 5: MOVES SOURCE TYPES AND HPMS VEHICLE GROUPS

SOURCE TYPES		HPMS Class Groups	
11	Motorcycle	10	Motorcycle
21	Passenger Car	25	Passenger Car
31	Passenger Truck	25	Passenger/Light Truck
32	Light Commercial Truck	40	Buses
41	Other Buses	50	Single Unit Trucks
42	Transit Bus	60	Combination Trucks
43	School bus		
51	Refuse Truck		
52	Single Unit Short-haul Truck		
53	Single Unit Long-haul Truck		
54	Motor Home		
61	Combination Short-haul Truck		
62	Combination Long-haul Truck		

The emissions estimation process includes a method to disaggregate the traffic volumes to the thirteen source types and then to recombine the estimates to the five HPMS vehicle classes. Vehicle type pattern data is used by PPSUITE to distribute the hourly roadway segment volumes among the thirteen MOVES 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 of information:

- PennDOT truck percentages from the RMS database.
- Hourly distributions for trucks and total traffic compiled by PennDOT's BPR.
- 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* (http://hcm.trb.org/).

Vehicle Ages

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 were prepared from the most recently available registration download from PennDOT's Bureau of Motor Vehicles Registration Database. Due to data limitations, information for light duty vehicles, other buses and motor home (including source types 11, 21, 31, 32, 41 and 54) was used as local data for MOVES inputs, while heavy-duty vehicles (including source types 42, 43, 51, 52, 53, 61, and 62) used the internal MOVES national default age distribution data. The registration data download is based on MOBILE6.2 vehicle categories. The data was converted to source types using the EPA convertor spreadsheets provided with the MOVES emission model.

Vehicle Population

The vehicle population information, including the number and age of vehicles, impacts forecasted 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.

For the preparation of source type population for other required conformity analysis years, base values were adjusted using forecast population and household data for the area. Growth rates were limited so as to not exceed the Lehigh Valley VMT growth assumptions.

Meteorology Data

Average monthly minimum temperatures, maximum temperatures, and humidity values are consistent with the regional State Implementation Plan (SIP) modeling conducted by DEP. The data was obtained from AccuWeather, Inc. (www.accuweather.com). The 10-year (2010-2020) average minimum and maximum monthly temperature and relative humidity values were obtained for each of the 10 airport locations in Pennsylvania.

Fuel Parameters

The MOVES3 default data assumptions have been reviewed and determined adequate to be used as inputs to the MOVES emissions modeling. Key assumptions include:

- 10.0 RVP used for summer months.
- 100% market share of 10% ethanol throughout the year for analysis years 2025, 2035 and 2045 (based on MOVES3 defaults).

I/M Program Parameters

The inspection maintenance (I/M) program inputs to the MOVES model are based on current programs within each county (all PA I/M programs are based on county boundaries). All analysis years include Pennsylvania's statewide I/M program. The default I/M program parameters included in MOVES were examined for each county and necessary changes were made to the default parameters to match the 2021 I/M program performance.

In order to assure that emission controls are working properly, vehicle inspection and maintenance (I/M) programs have been adopted in some nonattainment areas. These programs have the added benefit of improving the fuel efficiency of vehicles. The Pennsylvania inspection and maintenance (I/M) program was upgraded and expanded throughout the state with a phase-in period starting in September 2003 and fully implemented by June 2004.

The I/M program requirements vary by region (five regions) and include on-board diagnostics (OBD) technology that uses the vehicle's computer for model years 1996 and newer to identify potential engine and exhaust system problems that could affect emissions. The program, named PAOBDII, is implemented by region as follows:

- Philadelphia Region - Bucks, Chester, Delaware, Montgomery and Philadelphia Counties
- [Includes tailpipe exhaust testing using ASM2015 or equipment for pre-1996 vehicles up to 25 years old]
- Pittsburgh Region - Allegheny, Beaver, Washington and Westmoreland Counties.
- [Includes tailpipe exhaust testing using PA 97 equipment for pre-1996 vehicles up to 25 years old]
- South Central and Lehigh Valley Region - Berks, Cumberland, Dauphin, Lancaster, Lebanon, Lehigh, Northampton and York Counties.
- [Includes gas cap and visual inspection only for 1975 through 1995 model years]
- North Region - Blair, Cambria, Centre, Erie, Lackawanna, Luzerne, Lycoming, and Mercer Counties.
- [Gas cap and visual inspection only – No OBD]
- Other 42 Counties – Includes the remaining 42 counties not included above.
- [Visual inspection only – No OBD]

Other Vehicle Technology and Control Strategy Data

Federal Programs

Current federal vehicle emissions control and fuel programs are incorporated into the MOVES3 software. The MOVES3 model includes the National Program standards covering light duty vehicles through model year 2026, heavy duty greenhouse gas standards for model year 2014-2018 vehicles, and the Tier 3 vehicle standards. Modifications of default emission rates are required to reflect the early implementation of the National Low Emission Vehicle (NLEV) program in Pennsylvania. To reflect these impacts, EPA has released instructions and input files that can

be used to model these impacts. The NLEV input database was created for Pennsylvania per EPA's instructions and was used for this inventory.

MOVES3 also incorporates the following new federal emission standard rules:

- Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2 (HD GHG2) Rule: MOVES3 accounts for the HD GHG2 rule published in 2016. The rule set stricter fuel economy standards for HD vehicles which reduce CO2 emissions, but also impact other pollutants through changes in glider sales, hoteling activity, vehicle mass and road load coefficients.
- Safe Affordable Fuel Efficient (SAFE) Vehicles Rule: MOVES3 also accounts for the March 2020 SAFE standards for light-duty vehicles. These standards were less stringent than the preceding fuel economy standards, and thus increased fuel consumption and CO2 emissions.

State Programs

The Pennsylvania Clean Vehicles (PCV) Program, adopted in 1998, incorporated the California Low Emission Vehicle Regulations (CA LEV) by reference. The PCV Program allowed automakers to comply with the NLEV program as an alternative to this Pennsylvania program until MY2006. Beginning with MY2008, all "new" passenger cars and light-duty trucks with a gross vehicle weight rating (GVWR) of 8,500 pounds or less sold/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 both work with the public, including manufacturers, vehicle dealers and consumers, to ensure that vehicles sold and purchased in Pennsylvania or vehicles purchased from other states by Pennsylvania residents comply with the requirements of the PCV Program, in order to be titled in Pennsylvania. Additionally, PennDOT ensures that paperwork for title and registration includes proof of CARB- or 50-state emission certification or that the vehicle owner qualifies for an exemption to the requirements, as listed on PennDOT's MV-9 form and in the PCV Program regulation. When necessary, information from PennDOT's title and registration process may be used to audit vehicle title transactions to determine program compliance.

The impacts of this program are modeled for all analysis years beyond 2008 using the same instructions and tools downloaded for the early NLEV analysis. EPA provided input files to reflect state programs similar to the CAL LEV program. Modifications to those files were made to reflect a 2008 program start date for Pennsylvania.

Analysis Process Details

The previous sections have summarized the input data used for computing speeds and emission rates for this conformity analysis. This section explains how PPSUITE and MOVES use that input data to produce emission estimates. **Exhibit 6** provides a more detailed overview of the PPSUITE analysis procedure using the available traffic data information described in the previous sections.

VMT Preparation

Producing an emissions inventory with PPSUITE requires a process of disaggregation and aggregation. Data is available and used on a very detailed scale – individual roadway segments for each of the 24 hours of the day. This data needs to be processed individually to determine the distribution of vehicle hours of travel (VHT) by speed and then aggregated by vehicle class to determine the input VMT to the MOVES emission model. Key steps in the preparation of VMT include:

- *Assemble VMT* - The regional travel demand model contains the roadway segments, distances and travel volumes needed to estimate VMT. PPSUITE processes each segment by simply multiplying the assigned travel volume by the distance to obtain VMT.
- *Apply Seasonal Adjustments* – PPSUITE adjusts the traffic volumes to the appropriate analysis season. These traffic volumes are assembled by PPSUITE and extrapolated over the course of a year to produce the annual VMT file input to MOVES.
- *Disaggregate to Hours* - After seasonal adjustments are applied, the traffic volumes are distributed to each hour of the day. This allows for more accurate speed calculations (effects of congested hours) and allows PPSUITE to prepare the hourly VMT and speeds for input to MOVES.
- *Peak Spreading* - After distributing the daily volumes to each hour of the day, PPSUITE identifies hours that are unreasonably congested. For those hours, PPSUITE then spreads a portion of the volume to other hours within the same peak period, thereby approximating the "peak spreading" that normally occurs in such over-capacity conditions. This process also helps prevent hours with unreasonably congested speeds from disproportionately impacting emission calculations.
- *Disaggregation to Vehicle Types* - EPA requires VMT estimates to be prepared by the six HPMS vehicle groups, reflecting specific local characteristics. As described in the previous section, the hourly volumes are disaggregated into thirteen MOVES source types based on data from PennDOT, in combination with MOVES defaults. The thirteen MOVES source types are then recombined into five HPMS vehicle classes.
- *Apply HPMS VMT Adjustments* - Volumes must also be adjusted to account for differences with the HPMS VMT totals, as described in previous sections. VMT adjustment factors are provided as inputs to PPSUITE and are applied to each of the roadway segment volumes. VMT adjustment factors are also applied to runs for future years.

Speed Estimation

Emissions for many pollutants (including VOC and NO_X) vary significantly with travel speed. VOC emissions generally decrease as speed increases, while NO_X emissions decrease at low speeds and increases at higher speeds, as illustrated in **Exhibit 7**. Because emissions are so sensitive to speed changes, EPA recommends special attention be given to developing reasonable and consistent speed estimates. EPA also recommends that VMT be disaggregated into subsets that have roughly equal speeds, with separate emission factors for each subset. At a minimum, speeds should be estimated separately by road type.

The computational framework used for this analysis meets and exceeds the recommendation above relating to speed estimates. Speeds are individually calculated for each roadway segment and hour. Rather than accumulating the roadway segments into a particular road type and calculating an average speed, each individual link hourly speed is represented in the MOVES vehicle hours of travel (VHT) by a speed bin file. This MOVES input file allows the specification of a distribution of hourly speeds. For example, if 5% of a county's arterial VHT operates at 5 mph during the AM peak hour and the remaining 95% operates at 65 mph, this can be represented in the MOVES speed input file. For the roadway vehicle emissions calculations, speed distributions are input to MOVES by road type and source type for each hour of the day.

To calculate speeds, PPSUITE first obtains initial capacities (i.e., how much volume the roadway can serve before heavy congestion) and free-flow speeds (speeds assuming no congestion) from a speed/capacity lookup table. As described previously, this data contains default roadway information indexed by the area and facility type codes. For areas with known characteristics, values can be directly coded to the database and the speed/capacity default values can be overridden. For most areas where known information is unavailable, the speed/capacity lookup tables provide valuable default information regarding speeds, capacities, signal characteristics, and other capacity adjustment information used for calculating congested delays and speeds. The result of this process is an estimated average travel time for each hour of the day for each highway segment. The average travel time multiplied by traffic volume produces vehicle hours of travel (VHT).

EXHIBIT 6: PPSUITE SPEED/EMISSION ESTIMATION PROCEDURE

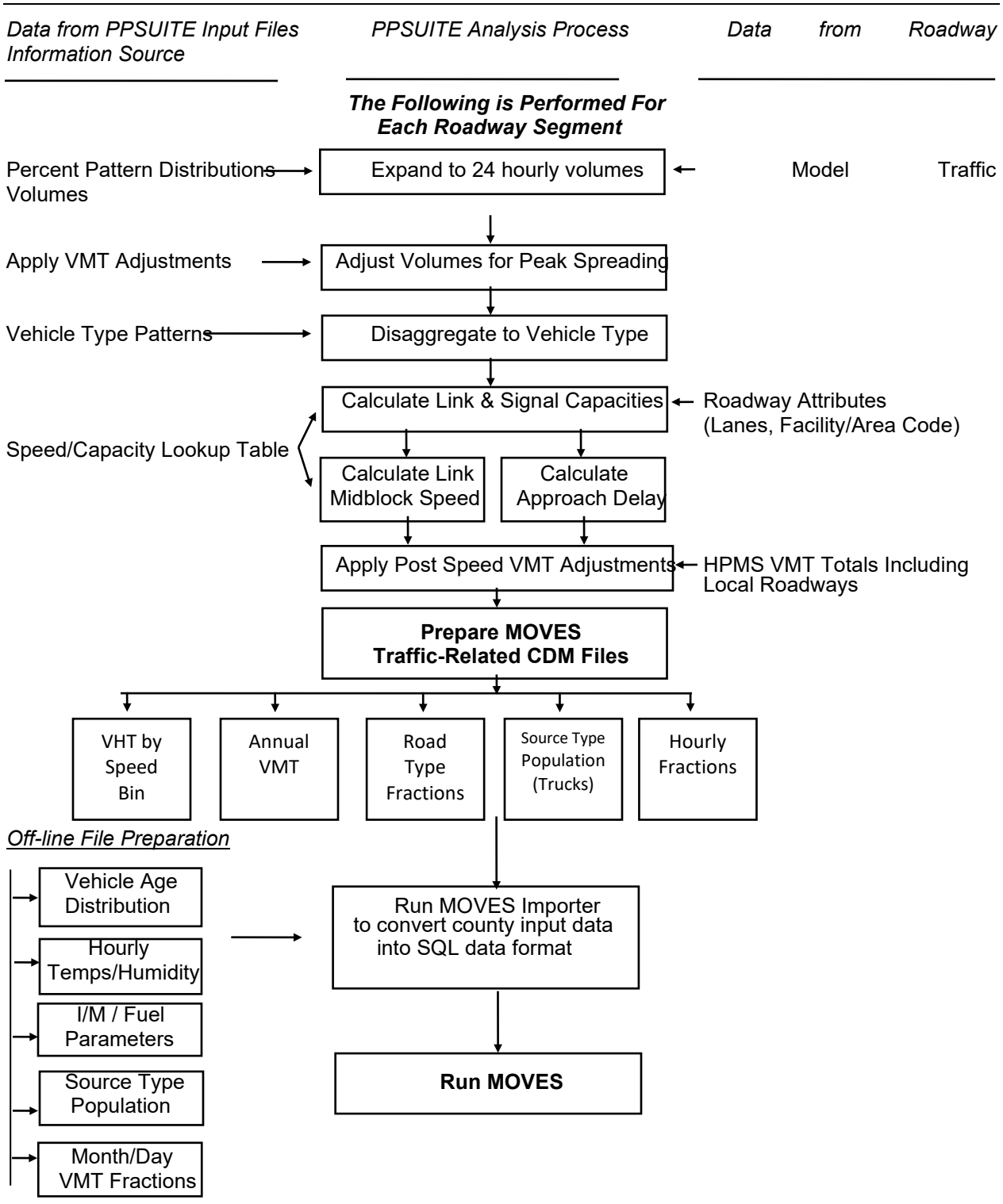
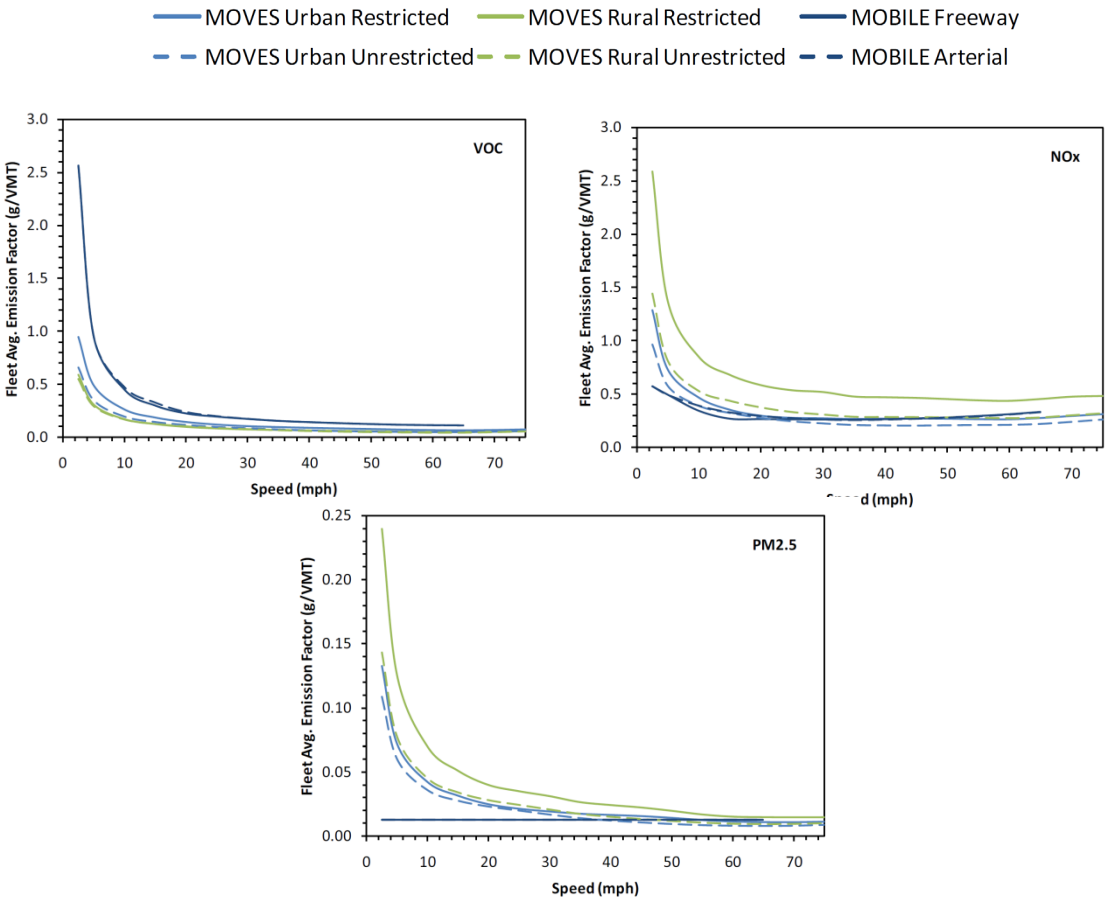


EXHIBIT 7: EMISSION FACTOR VS. SPEED VARIANCES (VOC, NO_X, AND $PM_{2.5}$)



Source: Figure 3 from Implications of the MOVES2010 Model on Mobile Source Emission Estimates, Air & Waste Management Association, July 2010.

Developing the MOVES Traffic Input Files

The PPSUITE software is responsible for producing the following MOVES input files during any analysis run:

- VMT by HPMS vehicle class.
- VHT by speed bin.
- Road type distributions.
- Hourly VMT fractions.

These files are text formatted files with a *.csv extension. The files are provided as inputs within the MOVES County Data Manager (CDM) and are described below:

- *VMT Input File*: VMT is the primary traffic input affecting emission results. The roadway segment distances, and traffic volumes are used to prepare estimates of VMT. PPSUITE performs these calculations and outputs the MOVES annual VMT input file to the County Data Manager (CDM). The annual VMT is computed by multiplying travel model roadway adjusted VMT by 365 days (366 days in a leap year).
- *VHT by Speed Bin File*: As described in the previous section, the PPSUITE software prepares the MOVES VHT by speed bin file, which summarizes the distribution of speeds across all links into each of the 16 MOVES speed bins for each hour of the day by road type. This robust process is consistent with the methods and recommendations provided in EPA's technical guidance and ensures that MOVES emission rates are used to the fullest extent.
- *Road Type Distributions*: Within MOVES, typical drive cycles and associated operating conditions vary by roadway type. MOVES defines five different roadway types as follows:

  1 Off-Network.
  2 Rural Restricted Access.
  3 Rural Unrestricted Access.
  4 Urban Restricted Access.
  5 Urban Unrestricted Access.

  For this analysis, the MOVES road type distribution file is automatically generated by PPSUITE using defined equivalencies. The off-network road type includes emissions from vehicle starts, extended idling, and evaporative emissions. Off-network activity in MOVES is primarily determined by the Source Type Population input.

MOVES Runs

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 data importer is 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 in batch mode. A summary of key MOVES run specification settings is shown in **Exhibit 8**. 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 population are provided as inputs to the model; MOVES is responsible for producing the total emissions for the region.

EXHIBIT 8: MOVES RUN SPECIFICATION FILE PARAMETER SETTINGS

Parameter	Setting
MOVES Version	MOVES3.1
MOVES Default Database Version	movesdb20221007
Scale	COUNTY
Analysis Mode	Inventory
Time Span	**Annual Runs:** Single MOVES run with 12-month inputs including all days and hours **July Weekday Runs:** July month, Weekday, 24 hours
Time Aggregation	Hour
Geographic Selection	County [FIPS]
Vehicle Selection	All source types Gasoline, Diesel, CNG, E85
Road Type	All road types including off-network
Pollutants and Processes	All $PM_{2.5}$ categories, NO_X, VOC
Database selection	Early NLEV database PA-Specific CAL LEV program database
General Output	Units: Emission = grams; Distance = miles; Time = hours; Energy = Million BTU
Output Emissions	Time = Hour or Month, Emissions by Process ID, Source Type and Road Type

Conformity Analysis Results

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

Emission Tests

There are currently no approved SIP MVEBs for the Lehigh Valley MPO area under 2008 8-hour ozone NAAQS. However, the Lehigh Valley MPO area has MVEBs approved by EPA under the 1997 8-hour ozone NAAQS using MOVES (79 FR 28435). The approved MVEBs are used in this analysis for the ozone conformity test. The ozone conformity analysis has been conducted to evaluate emissions in comparison to the applicable ozone MVEBs summarized in **Exhibit 9**.

EXHIBIT 9: 8-HOUR OZONE MOTOR VEHICLE EMISSION BUDGETS

County / Pollutant	2009 Budget (tons/day)	2018 Budget (tons/day)
VOC	20.65	12.43
NO_X	39.18	20.41

On April 13, 2015, EPA approved the Commonwealth of Pennsylvania's request to redesignate the Lehigh Valley MPO area to attainment for the 2006 24-hour $PM_{2.5}$ NAAQS. The MVEBs provided in the maintenance plans for the county are summarized in **Exhibit 10**. The MVEBs are specified as annual values in tons/year; and as a result, the conformity analyses are conducted for annual conditions.

EXHIBIT 10: ANNUAL $PM_{2.5}$ MOTOR VEHICLE EMISSION BUDGETS

.

County / Pollutant	2017 Budget (tons/year)	2025 Budget (tons/year)
$PM_{2.5}$	297	234
NO_X	8,081	5,303

Analysis Years

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

- A near-term year, one to five years in the future.
- The last year of the LRTP's forecast period, horizon year 2050.
- All established MVEB years.
- Attainment year of the standard if within timeframe of TIP and LRTP.
- An intermediate year or years such that if there are two years in which analysis is performed, the two analysis years are no more than ten years apart.

All analysis years were determined through the interagency consultation process. **Exhibit 11** provides the analysis years used for this conformity analysis.

EXHIBIT 11: TRANSPORTATION CONFORMITY ANALYSIS YEARS

Analysis Year	Description
2025	Budget Year
2030	Interim Year
2035	Interim Year
2045	Interim Year
2050	Horizon Year of LRTP

Components of the $PM_{2.5}$ Regional Emissions Analysis

$PM_{2.5}$ can be the result of either direct or indirect emissions. Direct transportation emissions can be the result of brake or tire-wear, particulates in exhaust emissions, or dust raised by on-road vehicles or construction equipment. Possible indirect transportation related emissions of $PM_{2.5}$ include: NH_3, NO_X, SO_X, and VOC. The EPA has ruled that regional analysis of direct $PM_{2.5}$ emissions must include both exhaust and brake/tire-wear emissions. EPA's current regulations specify that road dust should be included in the regional analysis of direct $PM_{2.5}$ emissions only if the EPA or the state air agency have found it to be a significant contributor to the region's nonattainment. Neither the EPA nor the state air agency has determined road dust to be a significant contributor in the nonattainment area for this conformity determination.

Until a SIP revision is approved proving that NO_X is insignificant, EPA's current regulations state that indirect $PM_{2.5}$ emissions must be analyzed for NO_X. Conversely, VOC, SO_X and NH_3 must be analyzed only if the state(s) or the EPA determines one or more of these pollutants significant. Therefore, NO_X is the only indirect $PM_{2.5}$ component analyzed for the nonattainment area in this conformity determination.

Regionally Significant Highway Projects

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

Analysis Results

An emissions analysis has been completed for 2008 8-hour ozone and 2006 24-hour $PM_{2.5}$ NAAQS. The results of the analysis are summarized in the tables below. Forecast years have been estimated using the procedures and assumptions provide in this conformity report. A detailed emission summary is also provided in **Attachment B**. Example MOVES importer (XML) and run specification (MRS) files are provided in **Attachment C**.

2008 Ozone NAAQS

Exhibit 12 summarizes the Lehigh Valley MPO area ozone emission results for a summer weekday in each analysis year. The analysis year emission results are compared to the emission budgets in **Exhibit 9**. All years are lower than the applicable conformity budgets established in the regional maintenance plan for the 1997 ozone NAAQS.

EXHIBIT 12: OZONE EMISSION ANALYSIS RESULTS AND CONFORMITY TEST
(Summer Weekday)

Pollutant	*2018 BUDGET (tons/day)*	*2025 (tons/day)*	*2030 (tons/day)*	*2035 (tons/day)*	*2045 (tons/day)*	*2050 (tons/day)*
VOC	***12.43***	*4.43*	*3.56*	*3.15*	*2.68*	*2.48*
NO_X	***20.41***	*8.90*	*6.44*	*5.68*	*5.84*	*6.16*
Conformity Result		**Pass**	**Pass**	**Pass**	**Pass**	**Pass**

2006 24-hour NAAQS

Exhibit 13 summarizes the 24-hour $PM_{2.5}$ and NO_X emissions for annual conditions. The emissions are compared against the available 2017 and 2025 SIP MVEBs listed in **Exhibit 10**. The results illustrate that projected emissions are below the applicable MVEBs.

Exhibit 13: $PM_{2.5}$ Emission Analysis Results and Conformity Test
(Annual Analysis Runs)

Pollutant	*2025 (tons/year)*	*2030 (tons/year)*	*2035 (tons/year)*	*2045 (tons/year)*	*2050 (tons/year)*
$PM_{2.5}$	109	88	79	75	75
NO_X	2,721	1,952	1,713	1,737	1,822
MVEB - $PM_{2.5}$	***234***	***234***	***234***	***234***	***234***
MVEB - NO_X	***5,303***	***5,303***	***5,303***	***5,303***	***5,303***
Conformity Result	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**

Conformity Determination

Financial Constraint

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

Public Participation

The TIP and LRTP have undergone the public participation requirements as well as the comment and response requirements according to the procedures established in compliance with 23 CFR part 450, LVTS Public Participation Plan and Pennsylvania's Conformity SIP. The draft document was made available for a 30-day public review and comment period starting May 1st and included a public meeting.

Public Participation

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

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

Resources

MOVES Model

Modeling Page within EPA's Office of Mobile Sources Website contains a downloadable model, MOVES users guide and other information. See (https://www.epa.gov/moves)

Policy Guidance on the Use of MOVES3 for State Implementation Plan Development, Transportation Conformity, and Other Purposes, US EPA Office of Transportation and Air Quality, EPA-420-B-20-044, November 2020.

MOVES3 Technical Guidance: Using MOVES to Prepare Emission Inventories in State Implementation Plans and Transportation Conformity. US EPA Office of Transportation and Air Quality, EPA-420-B-20-052, November 2020.

Traffic Engineering

Highway Capacity Manual, sixth edition (HCM2016), Transportation Research Board, presents current knowledge and techniques for analyzing the transportation system.

Traffic Data Collection and Factor Development Report, 2022 Data, Pennsylvania Department of Transportation, Bureau of Planning and Research.

Highway Vehicle Emissions Analysis Glossary

AADT: Average Annual Daily Traffic, average of ALL days.

CAA: Clean Air Act as amended.

CARB: California Air Resources Board.

CFR: Code of Federal Regulations.

County Data Manager (CDM): User interface developed to simplify importing specific local data for a single county or a user-defined custom domain without requiring direct interaction with the underlying MySQL/MariaDB database in the MOVES emission model.

DEP: Pennsylvania Department of Environmental Protection

Emission rate or factor: Expresses the amount of pollution emitted per unit of activity. For highway vehicles, this is usually expressed in grams of pollutant emitted per mile driven.

EPA: Environmental Protection Agency

FC: Functional code. Applied to road segments to identify their type (freeway, local, etc.).

FHWA: Federal Highway Administration.

FR: Federal Register.

FTA: Federal Transit Administration.

Growth factor: Factor used to convert volumes to future years.

HPMS: Highway Performance Monitoring System.

I/M: Vehicle emissions inspection/maintenance programs are required in certain areas of the country. The programs ensure that vehicle emission controls are in good working order throughout the life of the vehicle. The programs require vehicles to be tested for emissions. Most vehicles that do not pass must be repaired.

LRTP: Long Range Transportation Plan

MOVES: Motor Vehicle Emission Simulator. The latest model EPA has developed to estimate emissions from highway vehicles.

MVEB: motor vehicle emissions budget.

NAAQS: National Ambient Air Quality Standard

NTD: National Transit Database

Pattern data: Extrapolations of traffic patterns (such as how traffic volume on road segment types varies by time of day, or what kinds of vehicles tend to use a road segment type) from segments with observed data to similar segments.

PPSUITE: Post-Processor for Air Quality. A set of programs that estimate speeds and prepares MOVES inputs and processes MOVES outputs.

Road Type: Functional code, applied in data management to road segments to identify their type (rural/urban highways, rural/urban arterials, etc.).

RMS: Roadway Management System.

Source Type: One of thirteen vehicle types used in MOVES modeling.

SIP: State Implementation Plan

TAZ: Traffic Analysis Zone System

TIP: Transportation Improvement Program

VHT: Vehicle hours traveled.

VMT: Vehicle miles traveled. In modeling terms, it is the simulated traffic volumes multiplied by link length.

ATTACHMENT A

Project List

The following FFY2025–2028 Transportation Improvement Program (TIP) and 2050 Long Range Transportation Plan (LRTP) air quality significant highway projects are included in this analysis. Project descriptions have been included with the associated TIP and LRTP documentation.

AIR QUALITY SIGNIFICANT PROJECTS BY ANALYSIS YEAR

MPMS #	AQ Significant Project Name
2025-2028 Highway-Bridge TIP Projects	
92780 (Interstate)	I-78 Reconstruction – Berks County Line to SR 100
109318 (Interstate)	I-78 WB - Easton Rd to SR 33 Truck Climbing Lane
57433	Lehigh & Race Street Intersection
11981	Linden Street
96432	SR 309 & Tilghman Interchange Reconfiguration
99697	7th Street Multimodal Corridor
120952	SR 248/Airport Road Intersection Improvements
110169	State Route 29 / Cedar Crest Boulevard Signal Upgrades
110170	MacArthur Road Signal Upgrade
110174	Mauch Chunk Road Signal Upgrade
109971	Route 145 Safety Improvements
102160	State Route 309/Center Valley Parkway Interchange
110076	Jordan Creek Bridge Replacement
110183	SR 29 Shimersville Hill Safety Improvements
117606	SR 22/ SR 191 Interchange Improvements
117509	Freemansburg Ave (SR 2018) Safety Improvements
116936	SR 191 Lower Nazareth Intersection Improvements
120976	Linden Steet Two-Way Conversion
118070	Riverside Drive Raise Grant
2025-2028 Transit TIP Projects	
106530	LANTA Enhanced Bus / BRT

2050 LRTP Projects (Incorporates PennDOT 12-Year Program) No Changes from Past Conformity Determination
AQ Significant Project Name
Emmaus Avenue Adaptive Signal Upgrades
Hanover Avenue Adaptive Signal Upgrades at 7 Intersections - North Albert to North Wahneta Streets
State Route 512/Mill Street Intersection Improvements
Union Boulevard/Tilghman Street Adaptive Signal Upgrades at 27 Intersections
American Parkway intersections improvement at Hamilton, Linden & Gordon Streets
State Route 145/South Pike Avenue Betterment Project
Fullerton Avenue (State Route 1015) Betterment Project
State Route 145/7th Street Betterment Project
State Route 33 Betterment Project
State Route 378 Betterment Project
State Route 378 Betterment Project
State Route 248 Betterment Project
State Route 145 (MacArthur Road) Betterment Project, from Newburg Road to 7th Street
State Route 145 (MacArthur Road) Betterment Project, from Center Street to Clearview Road
US Route 22 Betterment Project
State Route 33 North/South Betterment Project
State Route 611 Betterment Project
State Route 248 Betterment Project
State Route 100 Betterment Project
State Route 412 Hellertown Corridor Improvements
State Route 145 (South 4th Street/Pike Avenue) Corridor Improvements
Adaptive Signal Updates
State Route 2002 (Emmaus Avenue) Signal Improvements
State Route 1009 (Schoenersville Road) Corridor Improvements
Lehigh Street and Union Street Intersection and Corridor Improvements
Hamilton Street/Hanover Avenue Corridor Study and Construction
State Route 512 Adaptive Signal Upgrade
State Route 222 (Jaindl Highway) at Krocks Road Intersection Improvements
State Route 29 (Cedar Crest Boulevard) Intersection Improvements.
Weaversville Road Curve Improvements
State Route 1002 (Tilghman Street) Improvements
Nestle Way/Grim Road Corridor and State Route 3012 (Schantz Road) Intersection Improvements
Old Route 22 & State Route 863 Intersection Widening
State Route 222 (Jaindl Highway/Hamilton Boulevard/Hamilton Street) Signal Improvements

State Route 222 (Jaindl Highway), Grim Road and Cetronia Road Intersection Improvements
State Route 100 and Industrial Boulevard Intersection Improvements
Bath Adaptive Traffic Signals
Advanced Signal Coordination System along State Route 512
Road Auxiliary Turn Lanes at Intersection of Vera Cruz Road and Pike Avenue
Downtown Easton Signal Improvements
State Route 1002 (Tilghman Street) Signal Improvements
Uhler Road/Sullivan Trail Intersection Improvement
Center Street One Way to Two Way Conversion
State Route 2020 (William Penn Highway) and State Route 33 Interchange
US Route 22 Widening from Mauch Chunk Road & Route 145
Jefferson Street Road Diet/Roundabout
State Route 309 Northbound Realignment
State Route 222 (Hamilton Boulevard) Breinigsville Road/Newtown Road Roundabout
State Route 2004 (Susquehanna Street/Seidersville Road), State Route 2002 (Emmaus Avenue/Broadway) Roundabout
Mauch Chunk Road/Elizabeth Avenue Roundabout
College Heights Boulevard Traffic Calming and Roundabout
State Route 248 (Lehigh Drive) and State Route 946 (Mountain View Drive) Intersection
State Routes 946 and 248 Intersection Improvements
State Route 512 (Market Street) Improvements, Bangor Borough
Male Road Bridge
Coffeetown Road Bridge Replacement
Water Street Culvert
Canal Park Bridge
Airport Road Corridor Phase 1 Infrastructure Implementation Line Item
Broad Street Traffic Signal Upgrades
State Route 378 (Wyandotte Street) Corridor Improvements
State Route 512 Slate Belt Corridor Improvements Study and Improvements
State Route 33 and Interstate 78 Interchange Reconstruction
State Route 1006 (Walbert Avenue) Betterment Project
17th Street Corridor Traffic Signal Modernization
Americans with Disabilities Act Traffic Signalization in Bath Borough

ATTACHMENT B

Detailed Emission Results

Ozone Analysis

Lehigh Valley Ozone Daily Emission Summary

2025 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissions (Tons/Day)	
				VOC	NOx
Lehigh	Off-Network	N/A	N/A	1.5	0.81
	Rural Restricted	1,026,027	48.4	0.1	0.41
	Rural UnRestricted	1,778,058	31.5	0.1	0.64
	Urban Restricted	3,924,560	33.6	0.3	1.64
	Urban UnRestricted	5,041,565	23.8	0.5	1.89
	Subtotal	*11,770,209*		*2.46*	*5.38*
Northampton	Off-Network	N/A	N/A	1.4	0.67
	Rural Restricted	0	N/A	0.0	0.00
	Rural UnRestricted	1,626,513	39.5	0.1	0.51
	Urban Restricted	3,488,236	45.2	0.2	1.21
	Urban UnRestricted	3,228,113	25.9	0.3	1.13
	Subtotal	*8,342,862*		*1.98*	*3.52*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**20,113,071**		**4.43**	**8.90**
			(Kg/Day)	**4,023**	**8,077**

Lehigh Valley Ozone Daily Emission Summary

2025 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Summer Daily VMT	Emissions (Tons/Day)	
			VOC	NOx
Lehigh	Motorcycle	69,862	0.2	0.05
	Passenger Car	5,951,958	0.8	0.32
	Passenger Truck	3,808,592	1.0	0.99
	Light Commercial Truck	967,855	0.3	0.44
	Intercity Bus	1,690	0.0	0.01
	Transit Bus	19,554	0.0	0.09
	School Bus	8,774	0.0	0.03
	Refuse Truck	5,611	0.0	0.02
	Single Unit Short-haul Truck	267,808	0.1	0.41
	Single Unit Long-haul Truck	37,964	0.0	0.05
	Motor Home	39,081	0.0	0.10
	Combination Short-haul Truck	251,968	0.0	1.09
	Combination Long-haul Truck	339,492	0.1	1.78
	Subtotal	*11,770,209*	*2.46*	*5.38*
Northampton	Motorcycle	49,689	0.1	0.03
	Passenger Car	4,236,769	0.7	0.25
	Passenger Truck	2,711,071	0.8	0.73
	Light Commercial Truck	688,948	0.2	0.32
	Intercity Bus	737	0.0	0.00
	Transit Bus	8,170	0.0	0.04
	School Bus	5,617	0.0	0.02
	Refuse Truck	3,795	0.0	0.01
	Single Unit Short-haul Truck	182,503	0.0	0.25
	Single Unit Long-haul Truck	25,887	0.0	0.03
	Motor Home	26,634	0.0	0.07
	Combination Short-haul Truck	171,771	0.0	0.67
	Combination Long-haul Truck	231,270	0.0	1.10
	Subtotal	*8,342,862*	*1.98*	*3.52*
Off-Model Project Emission Benefits			0.00	0.00
Region Total		**20,113,071**	**4.43**	**8.90**
		(Kg/Day)	**4,023**	**8,077**

Lehigh Valley Ozone Daily Emission Summary

2025 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Day)	
		VOC	NOx
Lehigh	Running Exhaust	0.50	4.81
	Start Exhaust	0.35	0.48
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.21	0.00
	Evap Fuel Vapor Venting	0.53	0.00
	Evap Fuel Leaks	0.83	0.00
	Crankcase Running Exhaust	0.03	0.04
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.01	0.06
	Auxiliary Power Exhaust	0.00	0.00
	Subtotal	*2.46*	*5.38*
Northampton	Running Exhaust	0.32	3.04
	Start Exhaust	0.32	0.42
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.19	0.00
	Evap Fuel Vapor Venting	0.46	0.00
	Evap Fuel Leaks	0.67	0.00
	Crankcase Running Exhaust	0.02	0.02
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.04
	Auxiliary Power Exhaust	0.00	0.00
	Subtotal	*1.98*	*3.52*
Off-Model Project Emission Benefits		0.00	0.00
Region Total		**4.43**	**8.90**
	(Kg/Day)	**4,023**	**8,077**

Lehigh Valley Ozone Daily Emission Summary

2030 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissions (Tons/Day)	
				VOC	NOx
Lehigh	Off-Network	N/A	N/A	1.2	0.64
	Rural Restricted	1,080,308	46.3	0.0	0.29
	Rural UnRestricted	1,821,028	30.5	0.1	0.45
	Urban Restricted	4,073,828	33.1	0.2	1.16
	Urban UnRestricted	5,243,579	23.4	0.4	1.40
	Subtotal	*12,218,743*		*1.97*	*3.94*
Northampton	Off-Network	N/A	N/A	1.1	0.52
	Rural Restricted	0	N/A	0.0	0.00
	Rural UnRestricted	1,669,571	39.3	0.1	0.35
	Urban Restricted	3,608,654	44.1	0.2	0.82
	Urban UnRestricted	3,303,870	25.2	0.2	0.81
	Subtotal	*8,582,095*		*1.59*	*2.50*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**20,800,839**		**3.56**	**6.44**
			(Kg/Day)	**3,230**	**5,839**

Lehigh Valley Ozone Daily Emission Summary

2030 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Summer Daily VMT	Emissions (Tons/Day)	
			VOC	NOx
Lehigh	Motorcycle	72,490	0.2	0.05
	Passenger Car	6,176,074	0.6	0.18
	Passenger Truck	3,952,005	0.8	0.43
	Light Commercial Truck	1,004,279	0.2	0.20
	Intercity Bus	1,747	0.0	0.01
	Transit Bus	20,401	0.0	0.07
	School Bus	9,155	0.0	0.02
	Refuse Truck	5,824	0.0	0.02
	Single Unit Short-haul Truck	279,522	0.0	0.36
	Single Unit Long-haul Truck	39,519	0.0	0.04
	Motor Home	40,730	0.0	0.08
	Combination Short-haul Truck	261,304	0.0	0.99
	Combination Long-haul Truck	355,693	0.0	1.50
	Subtotal	*12,218,743*	*1.97*	*3.94*
Northampton	Motorcycle	51,098	0.1	0.03
	Passenger Car	4,356,978	0.5	0.14
	Passenger Truck	2,787,987	0.7	0.33
	Light Commercial Truck	708,522	0.2	0.15
	Intercity Bus	742	0.0	0.00
	Transit Bus	8,445	0.0	0.03
	School Bus	5,800	0.0	0.01
	Refuse Truck	3,939	0.0	0.01
	Single Unit Short-haul Truck	188,482	0.0	0.22
	Single Unit Long-haul Truck	26,620	0.0	0.03
	Motor Home	27,466	0.0	0.05
	Combination Short-haul Truck	176,273	0.0	0.60
	Combination Long-haul Truck	239,743	0.0	0.90
	Subtotal	*8,582,095*	*1.59*	*2.50*
Off-Model Project Emission Benefits			0.00	0.00
Region Total		**20,800,839**	**3.56**	**6.44**
		(Kg/Day)	**3,230**	**5,839**

Lehigh Valley Ozone Daily Emission Summary

2030 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Day)	
		VOC	NOx
Lehigh	Running Exhaust	0.31	3.50
	Start Exhaust	0.25	0.35
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.13	0.00
	Evap Fuel Vapor Venting	0.40	0.00
	Evap Fuel Leaks	0.84	0.00
	Crankcase Running Exhaust	0.02	0.04
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.04
	Auxiliary Power Exhaust	0.00	0.01
	Subtotal	*1.97*	*3.94*
Northampton	Running Exhaust	0.20	2.13
	Start Exhaust	0.23	0.31
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.12	0.00
	Evap Fuel Vapor Venting	0.35	0.00
	Evap Fuel Leaks	0.68	0.00
	Crankcase Running Exhaust	0.01	0.02
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.03
	Auxiliary Power Exhaust	0.00	0.00
	Subtotal	*1.59*	*2.50*
Off-Model Project Emission Benefits		0.00	0.00
Region Total		**3.56**	**6.44**
	(Kg/Day)	**3,230**	**5,839**

Lehigh Valley Ozone Daily Emission Summary

2035 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissions (Tons/Day)	
				VOC	NOx
Lehigh	Off-Network	N/A	N/A	1.1	0.57
	Rural Restricted	1,129,613	45.4	0.0	0.25
	Rural UnRestricted	1,914,513	29.8	0.1	0.41
	Urban Restricted	4,212,387	32.4	0.2	1.02
	Urban UnRestricted	5,446,844	22.9	0.3	1.27
	Subtotal	*12,703,357*		*1.74*	*3.52*
Northampton	Off-Network	N/A	N/A	1.0	0.46
	Rural Restricted	0	N/A	0.0	0.00
	Rural UnRestricted	1,740,908	38.8	0.1	0.30
	Urban Restricted	3,714,405	43.4	0.1	0.69
	Urban UnRestricted	3,428,266	25.3	0.2	0.72
	Subtotal	*8,883,578*		*1.41*	*2.17*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**21,586,935**		**3.15**	**5.68**
			(Kg/Day)	**2,856**	**5,154**

Lehigh Valley Ozone Daily Emission Summary

2035 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Summer Daily VMT	Emissions (Tons/Day)	
			VOC	NOx
Lehigh	Motorcycle	75,315	0.2	0.05
	Passenger Car	6,417,338	0.5	0.12
	Passenger Truck	4,106,386	0.7	0.25
	Light Commercial Truck	1,043,509	0.2	0.09
	Intercity Bus	1,854	0.0	0.01
	Transit Bus	21,320	0.0	0.06
	School Bus	9,580	0.0	0.02
	Refuse Truck	6,111	0.0	0.02
	Single Unit Short-haul Truck	292,566	0.0	0.36
	Single Unit Long-haul Truck	41,218	0.0	0.04
	Motor Home	42,616	0.0	0.07
	Combination Short-haul Truck	272,717	0.0	1.00
	Combination Long-haul Truck	372,828	0.0	1.42
	Subtotal	*12,703,357*	*1.74*	*3.52*
Northampton	Motorcycle	52,860	0.1	0.03
	Passenger Car	4,507,632	0.5	0.10
	Passenger Truck	2,884,419	0.6	0.20
	Light Commercial Truck	733,007	0.2	0.07
	Intercity Bus	782	0.0	0.00
	Transit Bus	8,784	0.0	0.02
	School Bus	6,050	0.0	0.01
	Refuse Truck	4,077	0.0	0.01
	Single Unit Short-haul Truck	196,399	0.0	0.22
	Single Unit Long-haul Truck	27,666	0.0	0.02
	Motor Home	28,606	0.0	0.04
	Combination Short-haul Truck	183,030	0.0	0.59
	Combination Long-haul Truck	250,268	0.0	0.84
	Subtotal	*8,883,578*	*1.41*	*2.17*
Off-Model Project Emission Benefits			0.00	0.00
Region Total		**21,586,935**	**3.15**	**5.68**
		(Kg/Day)	**2,856**	**5,154**

Lehigh Valley Ozone Daily Emission Summary

2035 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Day)	
		VOC	NOx
Lehigh	Running Exhaust	0.25	3.13
	Start Exhaust	0.20	0.30
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.10	0.00
	Evap Fuel Vapor Venting	0.33	0.00
	Evap Fuel Leaks	0.84	0.00
	Crankcase Running Exhaust	0.02	0.04
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.03
	Auxiliary Power Exhaust	0.00	0.01
	Subtotal	*1.74*	*3.52*
Northampton	Running Exhaust	0.16	1.86
	Start Exhaust	0.18	0.26
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.09	0.00
	Evap Fuel Vapor Venting	0.29	0.00
	Evap Fuel Leaks	0.67	0.00
	Crankcase Running Exhaust	0.01	0.02
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.02
	Auxiliary Power Exhaust	0.00	0.00
	Subtotal	*1.41*	*2.17*
Off-Model Project Emission Benefits		0.00	0.00
Region Total		**3.15**	**5.68**
	(Kg/Day)	**2,856**	**5,154**

Lehigh Valley Ozone Daily Emission Summary

2045 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissions (Tons/Day)	
				VOC	NOx
Lehigh	Off-Network	N/A	N/A	0.8	0.57
	Rural Restricted	1,232,645	42.6	0.0	0.25
	Rural UnRestricted	2,039,248	28.2	0.1	0.43
	Urban Restricted	4,508,123	32.2	0.2	1.00
	Urban UnRestricted	5,917,987	21.3	0.3	1.38
	Subtotal	*13,698,003*		*1.49*	*3.63*
Northampton	Off-Network	N/A	N/A	0.8	0.45
	Rural Restricted	0	N/A	0.0	0.00
	Rural UnRestricted	1,816,957	38.3	0.1	0.30
	Urban Restricted	3,951,012	40.2	0.1	0.70
	Urban UnRestricted	3,768,053	24.2	0.2	0.76
	Subtotal	*9,536,022*		*1.19*	*2.21*
Off-Model Project Emission Benefits				0.00	-0.01
Region Total		**23,234,025**		**2.68**	**5.84**
			(Kg/Day)	**2,429**	**5,294**

Lehigh Valley Ozone Daily Emission Summary

2045 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Summer Daily VMT	Emissions (Tons/Day)	
			VOC	NOx
Lehigh	Motorcycle	81,112	0.2	0.05
	Passenger Car	6,912,384	0.5	0.09
	Passenger Truck	4,423,156	0.5	0.18
	Light Commercial Truck	1,124,021	0.1	0.06
	Intercity Bus	2,092	0.0	0.01
	Transit Bus	23,204	0.0	0.07
	School Bus	10,434	0.0	0.02
	Refuse Truck	6,618	0.0	0.02
	Single Unit Short-haul Truck	319,165	0.0	0.40
	Single Unit Long-haul Truck	45,069	0.0	0.05
	Motor Home	46,465	0.0	0.06
	Combination Short-haul Truck	298,090	0.0	1.10
	Combination Long-haul Truck	406,193	0.0	1.53
	Subtotal	*13,698,003*	*1.49*	*3.63*
Northampton	Motorcycle	56,676	0.1	0.04
	Passenger Car	4,834,096	0.4	0.08
	Passenger Truck	3,093,302	0.4	0.14
	Light Commercial Truck	786,093	0.1	0.05
	Intercity Bus	863	0.0	0.00
	Transit Bus	9,541	0.0	0.03
	School Bus	6,553	0.0	0.01
	Refuse Truck	4,436	0.0	0.01
	Single Unit Short-haul Truck	213,100	0.0	0.24
	Single Unit Long-haul Truck	30,086	0.0	0.03
	Motor Home	31,022	0.0	0.03
	Combination Short-haul Truck	199,064	0.0	0.65
	Combination Long-haul Truck	271,188	0.0	0.90
	Subtotal	*9,536,022*	*1.19*	*2.21*
Off-Model Project Emission Benefits			0.00	-0.01
Region Total		**23,234,025**	**2.68**	**5.84**
		(Kg/Day)	**2,429**	**5,294**

Lehigh Valley Ozone Daily Emission Summary

2045 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Day)	
		VOC	NOx
Lehigh	Running Exhaust	0.23	3.26
	Start Exhaust	0.16	0.28
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.07	0.00
	Evap Fuel Vapor Venting	0.24	0.00
	Evap Fuel Leaks	0.76	0.00
	Crankcase Running Exhaust	0.02	0.05
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.03
	Auxiliary Power Exhaust	0.00	0.01
	Subtotal	*1.49*	*3.63*
Northampton	Running Exhaust	0.15	1.92
	Start Exhaust	0.14	0.24
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.06	0.00
	Evap Fuel Vapor Venting	0.21	0.00
	Evap Fuel Leaks	0.61	0.00
	Crankcase Running Exhaust	0.01	0.03
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.02
	Auxiliary Power Exhaust	0.00	0.01
	Subtotal	*1.19*	*2.21*
Off-Model Project Emission Benefits		0.00	-0.01
Region Total		**2.68**	**5.84**
	(Kg/Day)	**2,429**	**5,294**

Lehigh Valley Ozone Daily Emission Summary

2050 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Summer Daily VMT	Speed (mph)	Emissions (Tons/Day)	
				VOC	NOx
Lehigh	Off-Network	N/A	N/A	0.8	0.58
	Rural Restricted	1,290,922	41.1	0.0	0.27
	Rural UnRestricted	1,952,031	27.1	0.1	0.43
	Urban Restricted	4,639,542	31.7	0.2	1.06
	Urban UnRestricted	6,270,001	21.2	0.3	1.49
	Subtotal	*14,152,496*		*1.38*	*3.83*
Northampton	Off-Network	N/A	N/A	0.7	0.46
	Rural Restricted	0	N/A	0.0	0.00
	Rural UnRestricted	1,888,105	38.0	0.1	0.32
	Urban Restricted	4,064,357	39.9	0.1	0.74
	Urban UnRestricted	3,904,275	23.5	0.2	0.82
	Subtotal	*9,856,737*		*1.10*	*2.33*
Off-Model Project Emission Benefits				0.00	0.00
Region Total		**24,009,233**		**2.48**	**6.16**
			(Kg/Day)	**2,252**	**5,593**

Lehigh Valley Ozone Daily Emission Summary

2050 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Day)	
		VOC	NOx
Lehigh	Running Exhaust	0.24	3.45
	Start Exhaust	0.16	0.29
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.07	0.00
	Evap Fuel Vapor Venting	0.24	0.00
	Evap Fuel Leaks	0.65	0.00
	Crankcase Running Exhaust	0.02	0.05
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.03
	Auxiliary Power Exhaust	0.00	0.01
	Subtotal	*1.38*	*3.83*
Northampton	Running Exhaust	0.15	2.03
	Start Exhaust	0.14	0.25
	Brakewear	0.00	0.00
	Tirewear	0.00	0.00
	Evap Permeation	0.06	0.00
	Evap Fuel Vapor Venting	0.20	0.00
	Evap Fuel Leaks	0.53	0.00
	Crankcase Running Exhaust	0.01	0.03
	Crankcase Start Exhaust	0.00	0.00
	Crankcase Extended Idle Exhaust	0.00	0.00
	Extended Idle Exhaust	0.00	0.02
	Auxiliary Power Exhaust	0.00	0.01
	Subtotal	*1.10*	*2.33*
Off-Model Project Emission Benefits		0.00	0.00
Region Total		**2.48**	**6.16**
	(Kg/Day)	**2,252**	**5,593**

Lehigh Valley Ozone Daily Emission Summary

2050 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Summer Daily VMT	Emissions (Tons/Day)	
			VOC	NOx
Lehigh	Motorcycle	83,744	0.2	0.05
	Passenger Car	6,746,160	0.5	0.09
	Passenger Truck	4,896,560	0.4	0.17
	Light Commercial Truck	1,222,351	0.1	0.06
	Intercity Bus	2,210	0.0	0.01
	Transit Bus	24,072	0.0	0.08
	School Bus	10,832	0.0	0.02
	Refuse Truck	7,022	0.0	0.02
	Single Unit Short-haul Truck	322,262	0.0	0.42
	Single Unit Long-haul Truck	45,164	0.0	0.05
	Motor Home	59,599	0.0	0.07
	Combination Short-haul Truck	299,042	0.0	1.13
	Combination Long-haul Truck	433,477	0.0	1.67
	Subtotal	*14,152,496*	*1.38*	*3.83*
Northampton	Motorcycle	58,545	0.2	0.04
	Passenger Car	4,719,981	0.4	0.08
	Passenger Truck	3,425,906	0.3	0.14
	Light Commercial Truck	855,248	0.1	0.04
	Intercity Bus	923	0.0	0.00
	Transit Bus	9,903	0.0	0.03
	School Bus	6,816	0.0	0.01
	Refuse Truck	4,653	0.0	0.01
	Single Unit Short-haul Truck	215,361	0.0	0.25
	Single Unit Long-haul Truck	30,165	0.0	0.03
	Motor Home	39,821	0.0	0.04
	Combination Short-haul Truck	199,849	0.0	0.67
	Combination Long-haul Truck	289,567	0.0	0.99
	Subtotal	*9,856,737*	*1.10*	*2.33*
Off-Model Project Emission Benefits			0.00	0.00
Region Total		**24,009,233 (Kg/Day)**	**2.48 2,252**	**6.16 5,593**

Annual $PM_{2.5}$ Analysis

Lehigh Valley PM2.5 Annual Emission Summary

2025 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissions (Tons/Year)	
				NOx	$PM_{2.5}$
Lehigh	Off-Network	N/A	N/A	276.98	10.77
	Rural Restricted	274,239,980	54.5	115.96	3.21
	Rural UnRestricted	538,089,238	35.2	197.66	8.36
	Urban Restricted	1,048,951,044	46.9	407.32	12.66
	Urban UnRestricted	1,512,066,003	27.5	567.93	27.37
	Subtotal	*3,373,346,266*		*1,565.85*	*62.37*
Northampton	Off-Network	N/A	N/A	234.52	9.55
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	502,786,968	40.3	169.67	7.08
	Urban Restricted	1,064,539,409	51.1	383.29	11.91
	Urban UnRestricted	997,698,452	27.3	367.92	17.82
	Subtotal	*2,565,024,829*		*1,155.40*	*46.36*
Off-Model Project Emission Benefits				-0.21	-0.01
Region Total		**5,938,371,095**	**(Kg/Year)**	**2,721.04** **2,468,488**	**108.72** **98,630**

Lehigh Valley PM2.5 Annual Emission Summary

2025 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Annual VMT	Emissions (Tons/Year)	
			NOx	$PM_{2.5}$
Lehigh	Motorcycle	20,050,841	15.41	0.49
	Passenger Car	1,708,371,020	114.04	14.67
	Passenger Truck	1,093,167,410	295.38	16.41
	Light Commercial Truck	277,800,380	126.63	5.80
	Intercity Bus	376,490	1.85	0.05
	Transit Bus	5,473,996	25.81	0.48
	School Bus	2,456,340	8.05	0.30
	Refuse Truck	1,579,683	6.04	0.12
	Single Unit Short-haul Truck	75,534,536	111.66	2.84
	Single Unit Long-haul Truck	10,705,580	13.81	0.36
	Motor Home	11,021,136	30.52	1.13
	Combination Short-haul Truck	71,050,922	308.42	6.51
	Combination Long-haul Truck	95,757,933	508.22	13.22
	Subtotal	*3,373,346,266*	*1,565.85*	*62.37*
Northampton	Motorcycle	15,279,459	11.92	0.37
	Passenger Car	1,302,735,500	94.05	11.23
	Passenger Truck	833,608,900	234.93	12.64
	Light Commercial Truck	211,840,210	99.80	4.43
	Intercity Bus	198,882	0.96	0.02
	Transit Bus	2,507,331	11.50	0.21
	School Bus	1,723,670	5.59	0.20
	Refuse Truck	1,169,642	4.27	0.08
	Single Unit Short-haul Truck	56,053,587	79.63	2.02
	Single Unit Long-haul Truck	7,942,197	9.80	0.26
	Motor Home	8,181,699	21.97	0.81
	Combination Short-haul Truck	52,713,729	218.72	4.63
	Combination Long-haul Truck	71,070,024	362.27	9.46
	Subtotal	*2,565,024,829*	*1,155.40*	*46.36*
Off-Model Project Emission Benefits			-0.21	-0.01
Region Total		**5,938,371,095 (Kg/Year)**	**2,721.04** **2,468,488**	**108.72** **98,630**

Lehigh Valley PM2.5 Annual Emission Summary

2025 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Year)	
		NOx	$PM_{2.5}$
Lehigh	Running Exhaust	1,364.96	28.84
	Start Exhaust	172.50	8.49
	Brakewear	0.00	15.19
	Tirewear	0.00	5.86
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	10.62	3.60
	Crankcase Start Exhaust	0.01	0.07
	Crankcase Extended Idle Exhaust	0.13	0.10
	Extended Idle Exhaust	16.52	0.20
	Auxiliary Power Exhaust	1.11	0.02
	Subtotal	*1,565.85*	*62.37*
Northampton	Running Exhaust	978.60	20.97
	Start Exhaust	156.04	7.79
	Brakewear	0.00	10.34
	Tirewear	0.00	4.37
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	7.43	2.58
	Crankcase Start Exhaust	0.01	0.07
	Crankcase Extended Idle Exhaust	0.10	0.07
	Extended Idle Exhaust	12.38	0.15
	Auxiliary Power Exhaust	0.83	0.01
	Subtotal	*1,155.40*	*46.36*
Off-Model Project Emission Benefits		-0.21	-0.01
Region Total		**2,721.04**	**108.72**
	(Kg/Year)	**2,468,488**	**98,630**

Lehigh Valley PM2.5 Annual Emission Summary

2030 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissions (Tons/Year)	
				NOx	$PM_{2.5}$
Lehigh	Off-Network	N/A	N/A	226.08	10.31
	Rural Restricted	288,770,294	54.4	77.01	2.20
	Rural UnRestricted	551,099,676	34.5	139.10	6.46
	Urban Restricted	1,088,797,798	46.0	273.43	9.09
	Urban UnRestricted	1,573,056,355	27.3	415.96	22.18
	Subtotal	*3,501,724,123*		*1,131.57*	*50.24*
Northampton	Off-Network	N/A	N/A	189.86	9.34
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	516,117,854	40.1	116.02	5.37
	Urban Restricted	1,101,277,318	50.7	249.75	8.46
	Urban UnRestricted	1,021,091,248	26.8	264.90	14.33
	Subtotal	*2,638,486,419*		*820.53*	*37.50*
Off-Model Project Emission Benefits				-0.57	-0.02
Region Total		**6,140,210,543**		**1,951.53**	**87.71**
			(Kg/Year)	**1,770,399**	**79,570**

Lehigh Valley PM2.5 Annual Emission Summary

2030 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Annual VMT	Emissions (Tons/Year)	
			NOx	$PM_{2.5}$
Lehigh	Motorcycle	20,804,126	15.84	0.51
	Passenger Car	1,772,668,280	71.22	15.09
	Passenger Truck	1,134,311,760	135.03	14.04
	Light Commercial Truck	288,250,020	58.79	4.32
	Intercity Bus	383,755	1.43	0.03
	Transit Bus	5,712,353	18.17	0.26
	School Bus	2,563,457	5.79	0.15
	Refuse Truck	1,632,694	5.15	0.06
	Single Unit Short-haul Truck	78,815,111	95.33	1.89
	Single Unit Long-haul Truck	11,140,310	11.82	0.25
	Motor Home	11,487,202	22.34	0.77
	Combination Short-haul Truck	73,695,346	274.25	4.72
	Combination Long-haul Truck	100,259,709	416.41	8.15
	Subtotal	*3,501,724,123*	*1,131.57*	*50.24*
Northampton	Motorcycle	15,712,077	12.13	0.38
	Passenger Car	1,339,643,200	60.93	11.56
	Passenger Truck	857,223,800	110.39	10.91
	Light Commercial Truck	217,849,700	47.13	3.33
	Intercity Bus	200,856	0.73	0.01
	Transit Bus	2,591,177	8.04	0.11
	School Bus	1,779,496	4.06	0.10
	Refuse Truck	1,199,159	3.59	0.04
	Single Unit Short-haul Truck	57,887,342	66.94	1.31
	Single Unit Long-haul Truck	8,189,172	8.26	0.18
	Motor Home	8,436,049	15.77	0.54
	Combination Short-haul Truck	54,114,975	191.33	3.30
	Combination Long-haul Truck	73,659,418	291.23	5.73
	Subtotal	*2,638,486,419*	*820.53*	*37.50*
Off-Model Project Emission Benefits			-0.57	-0.02
Region Total		**6,140,210,543 (Kg/Year)**	**1,951.53 1,770,399**	**87.71 79,570**

Lehigh Valley PM2.5 Annual Emission Summary

2030 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Year)	
		NOx	$PM_{2.5}$
Lehigh	Running Exhaust	971.75	16.89
	Start Exhaust	134.95	9.11
	Brakewear	0.00	16.10
	Tirewear	0.00	6.09
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	11.06	1.81
	Crankcase Start Exhaust	0.00	0.07
	Crankcase Extended Idle Exhaust	0.11	0.06
	Extended Idle Exhaust	11.90	0.09
	Auxiliary Power Exhaust	1.79	0.01
	Subtotal	*1,131.57*	*50.24*
Northampton	Running Exhaust	680.67	12.21
	Start Exhaust	121.93	8.42
	Brakewear	0.00	10.89
	Tirewear	0.00	4.51
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	7.63	1.28
	Crankcase Start Exhaust	0.00	0.07
	Crankcase Extended Idle Exhaust	0.08	0.05
	Extended Idle Exhaust	8.87	0.07
	Auxiliary Power Exhaust	1.34	0.01
	Subtotal	*820.53*	*37.50*
Off-Model Project Emission Benefits		-0.57	-0.02
Region Total	**(Kg/Year)**	**1,951.53 1,770,399**	**87.71 79,570**

Lehigh Valley PM2.5 Annual Emission Summary

2035 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissions (Tons/Year)	
				NOx	$PM_{2.5}$
Lehigh	Off-Network	N/A	N/A	207.10	9.74
	Rural Restricted	301,941,302	54.3	63.59	1.76
	Rural UnRestricted	579,553,827	33.6	125.85	5.87
	Urban Restricted	1,125,875,488	44.9	230.55	7.64
	Urban UnRestricted	1,633,990,336	27.0	373.86	20.26
	Subtotal	*3,641,360,953*		*1,000.96*	*45.27*
Northampton	Off-Network	N/A	N/A	173.42	8.93
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	538,166,239	39.7	101.44	4.76
	Urban Restricted	1,133,535,643	50.5	203.50	6.94
	Urban UnRestricted	1,059,536,726	26.8	234.70	12.98
	Subtotal	*2,731,238,609*		*713.06*	*33.62*
Off-Model Project Emission Benefits				-1.03	-0.03
Region Total		**6,372,599,563**	**(Kg/Year)**	**1,712.99** **1,553,999**	**78.85** **71,536**

Lehigh Valley PM2.5 Annual Emission Summary

2035 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Annual VMT	Emissions (Tons/Year)	
			NOx	$PM_{2.5}$
Lehigh	Motorcycle	21,619,351	16.29	0.53
	Passenger Car	1,842,276,692	54.99	14.82
	Passenger Truck	1,178,853,590	84.18	13.01
	Light Commercial Truck	299,568,410	28.66	3.54
	Intercity Bus	404,263	1.29	0.02
	Transit Bus	5,976,466	16.24	0.17
	School Bus	2,685,455	5.08	0.09
	Refuse Truck	1,718,545	5.19	0.05
	Single Unit Short-haul Truck	82,520,165	95.42	1.75
	Single Unit Long-haul Truck	11,633,486	11.72	0.23
	Motor Home	12,020,111	18.74	0.69
	Combination Short-haul Truck	76,948,147	273.78	4.26
	Combination Long-haul Truck	105,136,273	389.38	6.11
	Subtotal	*3,641,360,953*	*1,000.96*	*45.27*
Northampton	Motorcycle	16,253,889	12.41	0.39
	Passenger Car	1,385,990,700	48.33	11.21
	Passenger Truck	886,891,000	70.85	10.13
	Light Commercial Truck	225,382,350	23.82	2.75
	Intercity Bus	206,746	0.64	0.01
	Transit Bus	2,698,236	7.11	0.07
	School Bus	1,858,323	3.58	0.06
	Refuse Truck	1,249,548	3.55	0.03
	Single Unit Short-haul Truck	60,315,682	66.07	1.20
	Single Unit Long-haul Truck	8,512,742	8.06	0.15
	Motor Home	8,785,676	12.96	0.48
	Combination Short-haul Truck	56,241,633	188.19	2.93
	Combination Long-haul Truck	76,852,085	267.49	4.21
	Subtotal	*2,731,238,609*	*713.06*	*33.62*
Off-Model Project Emission Benefits			-1.03	-0.03
Region Total		**6,372,599,563 (Kg/Year)**	**1,712.99** **1,553,999**	**78.85** **71,536**

Lehigh Valley PM2.5 Annual Emission Summary

2035 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Year)	
		NOx	$PM_{2.5}$
Lehigh	Running Exhaust	858.73	11.30
	Start Exhaust	118.87	9.05
	Brakewear	0.00	17.18
	Tirewear	0.00	6.36
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	11.65	1.22
	Crankcase Start Exhaust	0.00	0.07
	Crankcase Extended Idle Exhaust	0.10	0.04
	Extended Idle Exhaust	9.38	0.04
	Auxiliary Power Exhaust	2.22	0.01
	Subtotal	*1,000.96*	*45.27*
Northampton	Running Exhaust	589.30	8.12
	Start Exhaust	107.17	8.39
	Brakewear	0.00	11.44
	Tirewear	0.00	4.68
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	7.92	0.86
	Crankcase Start Exhaust	0.00	0.07
	Crankcase Extended Idle Exhaust	0.07	0.03
	Extended Idle Exhaust	6.96	0.03
	Auxiliary Power Exhaust	1.64	0.01
	Subtotal	*713.06*	*33.62*
Off-Model Project Emission Benefits		-1.03	-0.03
Region Total		**1,712.99**	**78.85**
	(Kg/Year)	**1,553,999**	**71,536**

Lehigh Valley PM2.5 Annual Emission Summary

2045 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissions (Tons/Year)	
				NOx	$PM_{2.5}$
Lehigh	Off-Network	N/A	N/A	206.19	7.26
	Rural Restricted	329,454,362	53.3	61.67	1.64
	Rural UnRestricted	617,722,478	31.9	130.33	5.90
	Urban Restricted	1,204,909,342	43.8	222.87	7.23
	Urban UnRestricted	1,775,396,224	25.7	398.17	21.13
	Subtotal	*3,927,482,406*		*1,019.23*	*43.17*
Northampton	Off-Network	N/A	N/A	172.94	6.69
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	561,648,270	39.1	100.26	4.57
	Urban Restricted	1,205,743,606	49.0	196.84	6.61
	Urban UnRestricted	1,164,729,865	25.8	248.75	13.60
	Subtotal	*2,932,121,741*		*718.79*	*31.48*
Off-Model Project Emission Benefits				-1.28	-0.04
Region Total		**6,859,604,147**		**1,736.74**	**74.60**
			(Kg/Year)	**1,575,545**	**67,678**

Lehigh Valley PM2.5 Annual Emission Summary

2045 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Annual VMT	Emissions (Tons/Year)	
			NOx	$PM_{2.5}$
Lehigh	Motorcycle	23,288,525	17.47	0.58
	Passenger Car	1,984,823,596	45.13	14.35
	Passenger Truck	1,270,065,630	62.17	11.68
	Light Commercial Truck	322,751,770	19.35	3.18
	Intercity Bus	458,131	1.38	0.02
	Transit Bus	6,518,399	17.41	0.16
	School Bus	2,930,932	5.30	0.08
	Refuse Truck	1,883,456	5.75	0.05
	Single Unit Short-haul Truck	90,090,545	105.92	1.95
	Single Unit Long-haul Truck	12,725,702	13.05	0.25
	Motor Home	13,115,304	14.80	0.42
	Combination Short-haul Truck	84,159,316	298.19	4.40
	Combination Long-haul Truck	114,671,100	413.30	6.05
	Subtotal	*3,927,482,406*	*1,019.23*	*43.17*
Northampton	Motorcycle	17,429,382	13.18	0.42
	Passenger Car	1,486,506,900	41.14	10.62
	Passenger Truck	951,204,400	54.05	8.91
	Light Commercial Truck	241,727,220	16.74	2.42
	Intercity Bus	231,144	0.68	0.01
	Transit Bus	2,930,684	7.62	0.07
	School Bus	2,012,935	3.74	0.05
	Refuse Truck	1,359,046	3.92	0.04
	Single Unit Short-haul Truck	65,476,446	72.96	1.33
	Single Unit Long-haul Truck	9,237,360	8.92	0.17
	Motor Home	9,533,426	10.04	0.28
	Combination Short-haul Truck	61,135,819	203.68	3.01
	Combination Long-haul Truck	83,336,980	282.12	4.14
	Subtotal	*2,932,121,741*	*718.79*	*31.48*
Off-Model Project Emission Benefits			-1.28	-0.04
Region Total		**6,859,604,147 (Kg/Year)**	**1,736.74 1,575,545**	**74.60 67,678**

Lehigh Valley PM2.5 Annual Emission Summary

2045 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Year)	
		NOx	$PM_{2.5}$
Lehigh	Running Exhaust	880.66	8.66
	Start Exhaust	114.45	6.76
	Brakewear	0.00	19.65
	Tirewear	0.00	6.92
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	12.83	1.05
	Crankcase Start Exhaust	0.00	0.05
	Crankcase Extended Idle Exhaust	0.10	0.04
	Extended Idle Exhaust	8.59	0.03
	Auxiliary Power Exhaust	2.59	0.00
	Subtotal	*1,019.23*	*43.17*
Northampton	Running Exhaust	598.47	6.18
	Start Exhaust	103.35	6.29
	Brakewear	0.00	13.08
	Tirewear	0.00	5.09
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	8.68	0.74
	Crankcase Start Exhaust	0.00	0.05
	Crankcase Extended Idle Exhaust	0.07	0.03
	Extended Idle Exhaust	6.32	0.02
	Auxiliary Power Exhaust	1.91	0.00
	Subtotal	*718.79*	*31.48*
Off-Model Project Emission Benefits		-1.28	-0.04
Region Total	**(Kg/Year)**	**1,736.74 1,575,545**	**74.60 67,678**

Lehigh Valley PM2.5 Annual Emission Summary

2050 FFY25 TIP and 2050 LRTP Conformity (By Road Type)

County	Road Type	Annual VMT	Speed (mph)	Emissions (Tons/Year)	
				NOx	$PM_{2.5}$
Lehigh	Off-Network	N/A	N/A	213.30	6.31
	Rural Restricted	344,977,872	53.3	64.37	1.68
	Rural UnRestricted	590,949,193	31.2	128.95	5.67
	Urban Restricted	1,240,011,172	43.5	233.11	7.38
	Urban UnRestricted	1,882,295,218	25.8	427.87	22.26
	Subtotal	*4,058,233,454*		*1,067.59*	*43.29*
Northampton	Off-Network	N/A	N/A	179.10	5.83
	Rural Restricted	0	N/A	0.00	0.00
	Rural UnRestricted	583,707,582	38.7	106.32	4.74
	Urban Restricted	1,240,313,135	49.1	204.30	6.70
	Urban UnRestricted	1,206,854,578	25.2	265.16	14.21
	Subtotal	*3,030,875,295*		*754.88*	*31.49*
Off-Model Project Emission Benefits				-0.35	-0.01
Region Total		**7,089,108,749**	**(Kg/Year)**	**1,822.12** **1,653,004**	**74.77** **67,828**

Lehigh Valley PM2.5 Annual Emission Summary

2050 FFY25 TIP and 2050 LRTP Conformity (By Source Type)

County	Source Type	Annual VMT	Emissions (Tons/Year)	
			NOx	$PM_{2.5}$
Lehigh	Motorcycle	24,046,909	17.99	0.60
	Passenger Car	1,937,272,688	46.55	14.10
	Passenger Truck	1,406,127,720	59.59	11.48
	Light Commercial Truck	351,018,460	18.85	3.13
	Intercity Bus	488,843	1.49	0.02
	Transit Bus	6,766,111	18.84	0.18
	School Bus	3,044,673	5.66	0.08
	Refuse Truck	1,983,479	6.22	0.06
	Single Unit Short-haul Truck	91,015,113	109.95	2.03
	Single Unit Long-haul Truck	12,753,730	13.41	0.26
	Motor Home	16,833,617	18.57	0.52
	Combination Short-haul Truck	84,479,102	303.19	4.40
	Combination Long-haul Truck	122,403,010	447.29	6.44
	Subtotal	*4,058,233,454*	*1,067.59*	*43.29*
Northampton	Motorcycle	18,004,506	13.58	0.44
	Passenger Car	1,451,474,800	42.87	10.53
	Passenger Truck	1,053,524,500	52.51	8.62
	Light Commercial Truck	263,003,320	16.49	2.36
	Intercity Bus	242,334	0.72	0.01
	Transit Bus	3,045,750	8.29	0.08
	School Bus	2,096,327	4.02	0.05
	Refuse Truck	1,433,040	4.25	0.04
	Single Unit Short-haul Truck	66,158,479	76.02	1.39
	Single Unit Long-haul Truck	9,277,143	9.22	0.17
	Motor Home	12,236,848	12.63	0.35
	Combination Short-haul Truck	61,390,018	207.87	3.02
	Combination Long-haul Truck	88,988,230	306.42	4.42
	Subtotal	*3,030,875,295*	*754.88*	*31.49*
Off-Model Project Emission Benefits			-0.35	-0.01
Region Total		**7,089,108,749** **(Kg/Year)**	**1,822.12** **1,653,004**	**74.77** **67,828**

Lehigh Valley PM2.5 Annual Emission Summary

2050 FFY25 TIP and 2050 LRTP Conformity (By Emission Process)

County	Emission Process	Emissions (Tons/Year)	
		NOx	$PM_{2.5}$
Lehigh	Running Exhaust	924.24	8.42
	Start Exhaust	117.82	5.83
	Brakewear	0.00	20.67
	Tirewear	0.00	7.19
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	13.57	1.07
	Crankcase Start Exhaust	0.00	0.05
	Crankcase Extended Idle Exhaust	0.10	0.04
	Extended Idle Exhaust	9.06	0.03
	Auxiliary Power Exhaust	2.79	0.00
	Subtotal	*1,067.59*	*43.29*
Northampton	Running Exhaust	629.93	6.00
	Start Exhaust	106.97	5.45
	Brakewear	0.00	13.89
	Tirewear	0.00	5.29
	Evap Permeation	0.00	0.00
	Evap Fuel Vapor Venting	0.00	0.00
	Evap Fuel Leaks	0.00	0.00
	Crankcase Running Exhaust	9.21	0.76
	Crankcase Start Exhaust	0.00	0.04
	Crankcase Extended Idle Exhaust	0.07	0.03
	Extended Idle Exhaust	6.65	0.02
	Auxiliary Power Exhaust	2.05	0.00
	Subtotal	*754.88*	*31.49*
Off-Model Project Emission Benefits		-0.35	-0.01
Region Total		**1,822.12**	**74.77**
	(Kg/Year)	**1,653,004**	**67,828**

ATTACHMENT C

Sample MOVES Data Importer (XML) Input Files and Run Specification (MRS) Input Files

(Sample for 2025 July Weekday and Annual Runs)

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

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

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2025 Build, Inv, Ozone

Emission Inventory with Local data]]></description>
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<pollutantprocessassociation pollutantkey="87" pollutantname="Volatile Organic Compounds" processkey="17" processname="Crankcase Extended Idle Exhaust"/>
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<fuelsubtype selected="false"/>
<emissionprocess selected="true"/>
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<sourceusetype selected="true"/>
<movesvehicletype selected="false"/>
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	<outputshp value="true"/>
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	<outputstarts value="true"/>
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	</savedata>

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	</donotexecute>

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MOVES County Data Manager Importer File – Annual Run (MOVESIMPORTER.XML)

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Truck"/>
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MOVES Run Specification File – Annual Run (MOVESRUN.MRS)

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Scenario: P25 Lehigh 2025  Year WkEnd_WkDay

2025 Build Inv PM 2.5 NOx and VOC

Emission Inventory with Local data]]></description>
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Riverside Drive Public Comments - January 29, 2025 to February 28, 2025					
#	Date	Name	Muni/Org	Comment	Response
1	29-Jan	Craig Beavers	Palmer Township	I am in full support of the proposed Transportation Improvement Program Amendment for the Riverside Drive Multimodal Revitalization Corridor. This project will positively impact the residents of the City of Allentown, Whitehall Township, and thousands within the Lehigh Valley who travel through this area. Not only will this provide positive vehicular circulation improvements, but it also provides critical connections to our commuter trail network for pedestrians and bicyclists. The project benefits disadvantaged communities and helps promote equitable access to important destinations for employment, education, retail, and recreation. This will implement many key goals and policies of FutureLV: The Regional Plan, Allentown Vision 2030, the 2005 Whitehall Township Comprehensive Plan, and several other critical planning documents.	Thank you for your comment and support of this important regional project.
2	19-Feb	Liz Rosencrans	Delaware and Lehigh National Heritage Corridor	I would like to express concern that the design presented in the amendment shows a trail width of 10 feet. The Delaware and Lehigh National Heritage Corridor would like to advocate for a 12-foot width for the trail section, as previously discussed at public meetings.	The design of the project is still in the planning stage. The Lehigh Valley Transportation Study acknowledges this concern and will plan for futher design coordination with the Delaware and Lehigh National Heritage Corridor.
3	19-Feb	Scott Slingerland	Coalition for Appropriate Transportation	Could you clarify when the second public meeting will be held?	The second public meeting for the Riverside Drive RAISE Grant Amendment will be held during the Lehigh Valley Planning Ccommission's Transportation Committee meeting on Feburary 26 at 5:30 pm.
4	19-Feb	Rick Molchany	Lehigh County	To clarify, the funding for this project is an addition to the regional transportation allocation, and not a reallocation of regional funds, is that correct?	That is correct. This project is new funding that was not available to the region outside of a nationally competitive grant programs.

LVTS Metropolitan Planning Organization

FISCAL CONSTRAINT TABLE

FFY 2025-2028 TIP Highway and Bridge Element

Technical and Coordinating Committees

TIP Modifications from February 8, 2025 through March 7, 2025

MPO Tech Meeting: March 19, 2025 | **MPO Coord Meeting: March 19, 2025**

Administrative Action #1				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
Freemansburg Ave Safety Improvements			Before	HSIP	Toll	772,500															772,500.00	Increase to cover negotiated agreement plus internal costs.
2018 - 02S	117509	FD	Adjust	HSIP	Toll	66,945															66,945.00	
Northampton County			After	HSIP	Toll	839,445															839,445.00	
222 & Shantz & 863 Improv			Before																		0.00	Deobligation returned to region for reassignment.
222 - 01S	79554	ROW	Adjust	HSIP		(66,945)															(66,945.00)	
Lehigh County			After																		0.00	

Administrative Action #2				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
Hugh Moore Park Bridge Painting and Repairs			Before	BOF		1,100,000		650,000	1,296,710												3,046,710.00	Release BOF and add earmark funds received via Consolidated Appropriations Act 2024, PA 776.
			Before	SXF					0												0.00	
7302 - HSB	118069	CON	Adjust	BOF		(319,569)			(1,296,710)												(1,616,279.00)	
			Adjust	SXF					1,616,279												1,616,279.00	
Northampton County			After	BOF		780,431		650,000	0												1,430,431.00	
			After	SXF					1,616,279												1,616,279.00	
LVTS Highway & Bridge LI			Before	BOF	185	26,992	377,188		6,146	371,574		93,640	136,392		755,016	1,537,254		27,377,555	39,348,913		70,030,670.00	Balancing source to maintain fiscal constraint.
			Before	BRIP		492,960			424,800			75,460			84,960			56,584,712			57,662,892.00	
			Before	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			Before	STP	581	294,200	238,081		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,937,866.00	
	102201	CON	Adjust	BOF	185	319,569			1,296,710												1,616,279.00	
			After	BOF	185	346,561	377,188		1,302,856	371,574		93,640	136,392		755,016	1,537,254		27,377,555	39,348,913		71,646,949.00	
Lehigh County			After	BRIP		492,960			424,800			75,460			84,960			56,584,712			57,662,892.00	
			After	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			After	STP	581	294,200	238,081		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,937,866.00	

Administrative Action #3				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
Walnut Street Bridge			Before	BOF	183	1,450,000	271,875	90,625	2,000,000	506,250	168,750	1,206,000	226,125	75,375							5,995,000.00	Increase to cover PS&E estimate.
			Before	STU					700,000												700,000.00	
7408 - WSB	94680	CON	Adjust	BOF	183	913,472	171,276	57,092	282,288	52,929	17,643										1,494,700.00	
Lehigh County			After	BOF	183	2,363,472	443,151	147,717	2,282,288	559,179	186,393	1,206,000	226,125	75,375							7,489,700.00	
			After	STU					700,000												700,000.00	
Meadows Road Bridge			Before	BOF		554,204		138,551													692,755.00	Release due to receiving regular authority off 2023 TIP.
7210 - MRB	12286	CON	Adjust	BOF		(528,313)		(132,078)													(660,391.00)	
Northampton County			After	BOF		25,891		6,473													32,364.00	
Old Carriage Road Bridge Replacement			Before																		0.00	Deobligation returned to region for reassignment.
3018 - 01B	110058	ROW	Adjust	BOF		(38,610)															(38,610.00)	
Northampton County			After																		0.00	
LVTS Highway & Bridge LI			Before	BOF	185	346,561	377,188		1,302,856	371,574		93,640	136,392		755,016	1,537,254		27,377,555	39,348,913		71,646,949.00	185 source.
			Before	BRIP		492,960			424,800			75,460			84,960			56,584,712			57,662,892.00	
			Before	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			Before	STP	581	294,200	238,081		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,937,866.00	
	102201	CON	Adjust	BOF	185	(346,549)	(171,276)		(282,288)	(52,929)											(853,042.00)	
			After	BOF	185	12	205,912		1,020,568	318,645		93,640	136,392		755,016	1,537,254		27,377,555	39,348,913		70,793,907.00	
Lehigh County			After	BRIP		492,960			424,800			75,460			84,960			56,584,712			57,662,892.00	
			After	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			After	STP	581	294,200	238,081		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,937,866.00	

Administrative Action #4				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
Powder Valley Rd over Indian Creek			Before		185		0														0.00	Increase to cover supplement for borings.
2025 - 01B	109237	PE	Adjust		185		74,137														74,137.00	
Lehigh County			After		185		74,137														74,137.00	
LVTS Highway & Bridge LI			Before	BOF	185	12	205,912		1,020,568	318,645		93,640	136,392		755,016	1,537,254		27,377,555	39,348,913		70,793,907.00	Source.
			Before	BRIP		492,960			424,800			75,460			84,960			56,584,712			57,662,892.00	
			Before	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			Before	STP	581	294,200	238,081		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,937,866.00	
	102201	CON	Adjust	BOF	185		(74,137)														(74,137.00)	
			After	BOF	185	12	131,775		1,020,568	318,645		93,640	136,392		755,016	1,537,254		27,377,555	39,348,913		70,719,770.00	
Lehigh County			After	BRIP		492,960			424,800			75,460			84,960			56,584,712			57,662,892.00	
			After	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			After	STP	581	294,200	238,081		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,937,866.00	

Before FFY Totals						7,129,999	1,946,406	879,176	8,657,916	2,451,510	168,750	5,014,980	1,358,094	75,375	5,377,536	5,871,939	0	555,116,997	388,578,453		982,627,131	Actions do not affect the project delivery schedules or air quality conformity.
FFY Adjustment Totals						0	0	(74,986)	1,616,279	0	17,643	0	0	0	0	0	0	0	0	0	1,558,936	
After FFY Totals						7,235,554	1,946,406	804,190	10,274,195	2,451,510	186,393	5,014,980	1,358,094	75,375	5,377,536	5,871,939	0	555,116,997	388,578,453		984,291,622	

NOTES: Non zero Adjustment due to Local Funds and the addition of SXF (earmark) funds.

MEMORANDUM

DATE: March 12, 2025
TO: Lehigh Valley Transportation Study
FROM: Lehigh Valley Planning Commission

REGARDING: Lehigh Valley Government Academy (LVGA
Local Technical Assistance Program (LTAP) Update

The Local Technical Assistance Program (LTAP) for the Lehigh Valley is a collaborative partnership between the Pennsylvania Department of Transportation (PennDOT) and the Lehigh Valley Planning Commission (LVPC) staff supporting the Lehigh Valley Transportation Study (LVTS).

LTAP is dedicated to transferring transportation technology through training, technical assistance, and other customer services to municipal elected officials and their staff. The LTAP program is designed to help Pennsylvania's municipalities make the best use of their roadway maintenance dollars. LTAP provides technical information and proven technologies dealing with roadway maintenance and safety methods to meet the growing demands of municipal governments. It is important to emphasize that all LTAP services are free to municipalities for the benefit of the entire transportation network, regardless of mode and for all those involved with its maintenance and operations. The services and assistance provided can be invaluable to all our communities who may require a level of assistance to solve a problem the correct way the first way for an efficient process following PennDOT guidelines and best practices from across Pennsylvania and the United States.

Lehigh Valley LTAP Classroom Education

50 of 62 Lehigh Valley Municipalities have participated in LTAP training from January 2020 to March 2025. While participation is largely municipal, engineers, planners and other professionals from associated or allied industries attend as well. All in all, 1,525 people have trained in "classroom" over the last five years. The education provided and the students attending various courses show the awareness of the value of LTAP.

In the five-year period of this report the LTAP program offered a variety of options for education in total there were 44 in-person classes held at the LVPC or at a municipality hosting a class. Additionally, virtual classes were extremely popular during the pandemic and even now. The LVPC in collaboration with PennDOT provided 136 virtual classes.
Through the LVPC's coordination and collaboration with PennDOT and Lehigh Valley communities, new classes were developed. These, while initiated locally, are now

statewide and include “School Transportation Management”, “Trucks on Local Roads” and “Introduction to Traffic Studies”.

Lehigh Valley LTAP Tech Assist Program

LTAP also provides specialized one-on-one training through on-site “Tech Assists”. LTAP’s technical assistance provides customized guidance to municipalities on a host of transportation-related issues. Tech Assists provide recommendations or answer a question about the local transportation system. PennDOT’s technical experts and LVPC staff help troubleshoot almost any local transportation maintenance or safety concern. Currently, this program is supported by the US Department of Transportation, PennDOT and LVPC, and is free of charge.

Between January 2020 and March 2025, the Lehigh Valley LTAP Tech Assist program responded to 221 requests for assistance which trained or provided guidance to 43 municipalities. This is an annual average of 44 onsite technical assistance visits per year, the highest of any region in the Commonwealth.

Lehigh Valley LTAP Now and Next

The future of the Lehigh Valley LTAP program is limitless in its potential as we build upon the success of the program over the past several years.

With the excellent participation and level of on-site technical assistance required by and expected by the LVPC and our communities we are working with our LTAP Partner, PennDOT, to achieve a more strategic and targeted approach.

This next level of technical assistance is currently, envisioned to coordinate local, regional and state transportation infrastructure needs. This comprehensive, collaborative approach to Tech Assists is intended to advance projects identified in the *FutureLV: The Region Plan* (Metropolitan Transportation Plan, *WalkRollLV: Active Transportation Plan, Transportation Safety Plan, Congestion Management Process.* A more targeted approach is also intended to support municipal and county governments with grant applications for state and federal funding outside for the regional Metropolitan Planning allocations and with local capital planning. As a growing region, transportation needs and improvements can be a challenge but collectively and collaboratively we can achieve more improvements, faster as a goal.

Building upon the past success is essential, we will be providing information of where the LTAP program is and where we plan to evolve. Regular updates on virtual and in-person classes and Tech Assists are expected to be shared. Additionally, the Annual LTAP report will also be shared in the fourth quarter of 2025.

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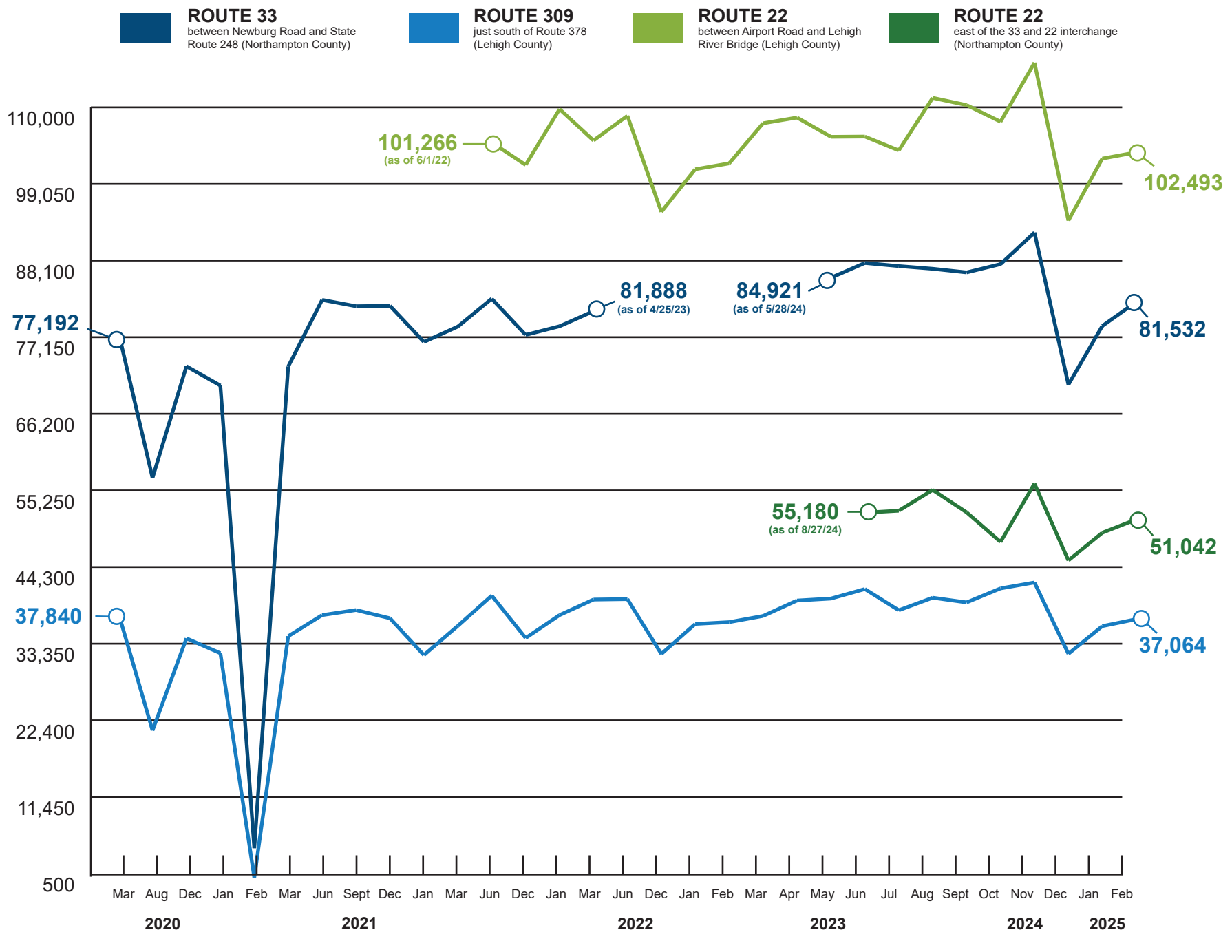
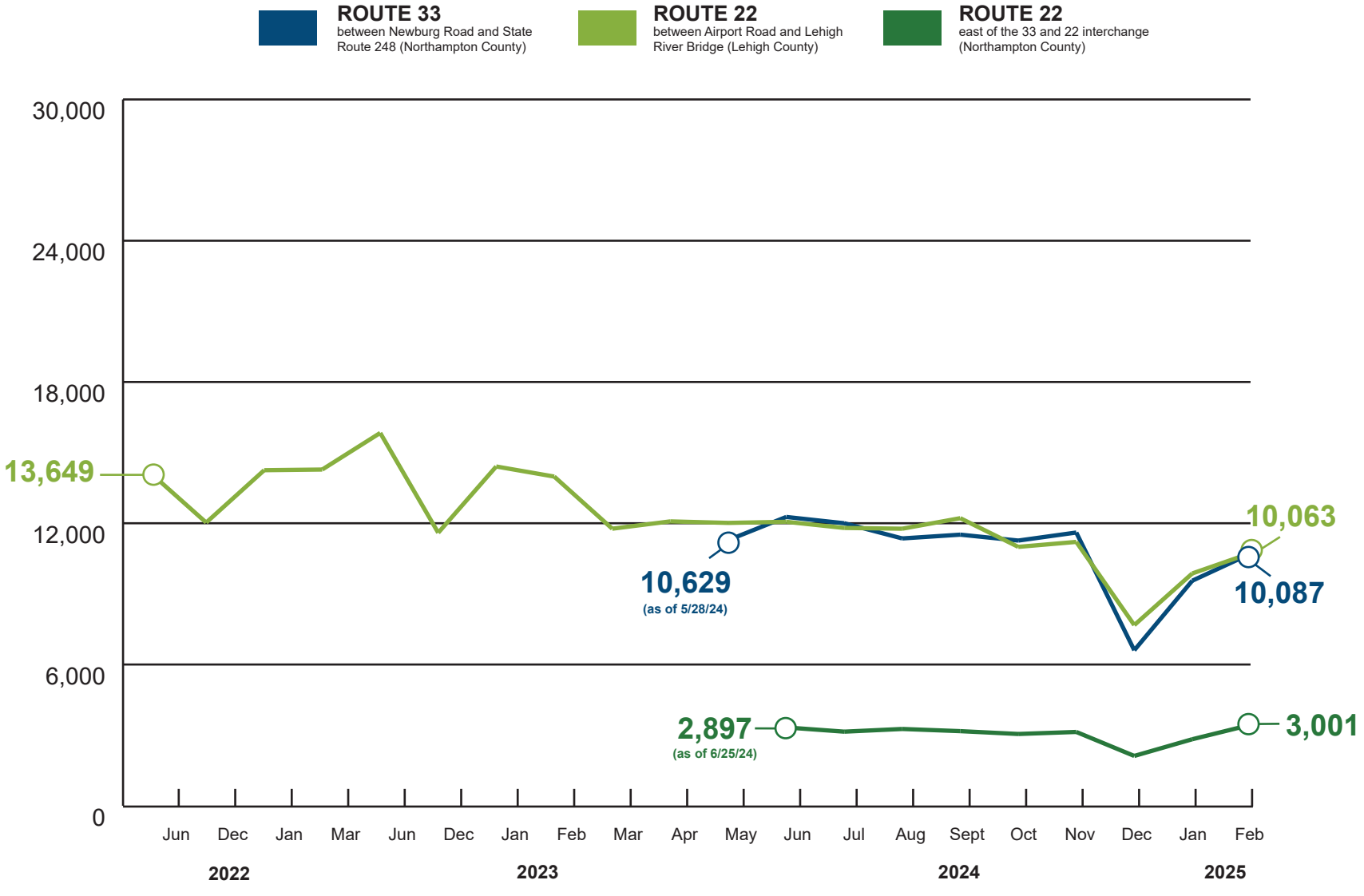
TOTAL VEHICLE TRAFFIC



TOTAL TRUCK TRAFFIC



US 22, Section WDN Widening (C-C. Frey)
Whitehall, South Whitehall, and Hanover Townships, and City of Bethlehem Lehigh County; Hanover Township, Northampton County
MPMS 96384 – est. let N/A

- Revised Preliminary POA study submitted in late January. Minor comments on narrative issued on February 21, 2024. However, the design year assumed in the POA is 2050. With the now-proposed breakout project delivery approach due to funding limitations, the design year is now projected to be 2058. Since Final POA will be developed for each breakout project and a very conservative traffic growth rate was assumed on SR 22, CO and FHWA have agreed that the traffic projections in the Preliminary POA do not need to be revisited. Preliminary POA resubmission anticipated in April 2025
- Preliminary Noise Analysis is being revised to current project limit just west of Airport Road and break-out project strategies discussed with CO and FHWA as well as the 2058 design year noted above, supplement in process for design year change
- Due to anticipated ROW displacements in EJ area, a streamlined Environmental Assessment (EA) will be required for NEPA clearance; due to time restrictions of EA, the EA will be initiated once the Preliminary POA and Preliminary Noise Analysis are closer to approval
- Design team continuing work to identify EJ community leaders (Hispanic, Syrian, and Asian populations) in preparation of public involvement process
- Upon environmental clearance, US 22 Widening will be advanced via a series of breakout projects. First breakout project will be SR 22/Fullerton Interchange (MPMS 117610) anticipated to be let in 2029

SR 145, Section MLT 7th Street Multimodal Corridor (C-R. Prophet)
City of Allentown and Whitehall Township, Lehigh County
MPMS 99697 – est. let April 1, 2027

- Final Design is being delayed aligning with funding, currently programmed in FFY 2026

SR 309, Section 14M Betterment (C-M. Fallon)
North and South Whitehall Townships, Lehigh County
MPMS 102312 – est. let August 21, 2025

- NPDES permit submitted to LCCD December 5, 2024, comments received February 7, 2025
- JPA permit submitted to DEP October 3, 2024, and received administrative complete approval November 20, 2024, comments received February 12, 2025
- Coordination with Traffic Unit is ongoing
- Railroad coordination ongoing
- Traffic signal plan resubmission on November 20, 2024, comments received December 5, 2024
- Signing Plans and Pavement Marking Plan resubmission on November 20, 2024, comments received December 18, 2024

SR 378, Section 04M SR 378 Lighting (M. Patel)
City of Bethlehem, Lehigh County
MPMS 110398 – est. let April 1, 2027

- Lighting Plans are in the District and will be submitted to central office review
- Utility/URMS coordination is ongoing

SR 1017, Section 02S Mauch Chunk Signal Improvements (C-M. McGuire)
South Whitehall Township, Lehigh County
MPMS 110174 – est. let August 21, 2025

- Right of way plans have been approved, acquisition is underway
- Utility coordination in progress
- Final design submissions are all in progress

SR 22, Section 15M SR 22/SR 191 Interchange Improvements (C-M. McGuire)
Bethlehem Township, Northampton County
MPMS 117606 – est. let April 1, 2030

- Met with Bethlehem Township officials on January 22, 2025, to discuss alternatives and get their feedback
- Continuing to refine draft alternatives
- Purpose and Need under review by FHWA

SR 191, Section 04S SR 191 Lower Nazareth Intersection Improvements (C-R. Himmelwright)
Lower Nazareth Township, Northampton County
MPMS 116936 – est. let March 12, 2026

- Utility Coordination Ongoing
- Working towards CE Clearance and DFV Approval
- Performing archaeology during preliminary design at potential stormwater basin site

SR 248, Section 07S SR 248/Airport Road Intersection Improvements (C-M. McGuire)
East Allen Township, Northampton County
MPMS 120952 – est. let April 1, 2029

- NOITE Letters submitted for signature on February 26, 2025
- Traffic counts, survey, and environmental studies to get underway in March 2025

SR 2018, Section 02S Freemansburg Ave (SR 2018) Safety Improvements (C-J. Besz)
Bethlehem Township, Northampton County
MPMS 117509 – est. let March 12, 2026

- Utility coordination continues
- Development of Final ROW Plans is ongoing
- Execution of agreement for Final Design, is ongoing

ACRONYM REFERENCE	
ACM/LBP	ASBESTOS CONTAINING MATERIAL / LEAD BASED PAINT
ADA	AMERICAN WITH DISABILITIES ACT
BRPA	BRIDGE AND ROADWAY PROGRAMMATIC AGREEMENT
CE	CATEGORICAL EXCLUSION
CEE	CATEGORICAL EXCLUSION EVALUATION
CO	CENTRAL OFFICE
CRP	CULTURAL RESOURCES PROFESSIONAL
DCNR	DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DEP	DEPARTMENT OF ENVIRONMENTAL PROTECTION
DFV	DESIGN FIELD VIEW
DO	DISTRICT OFFICE
E&S	EROSION AND SEDIMENTATION
EJ	ENVIRONMENTAL JUSTICE
ESA	ENVIRONMENTAL SITE ASSESSMENT
FD	FINAL DESIGN
FHWA	FEDERAL HIGHWAY ADMINISTRATION
H&H	HYDROLOGIC AND HYDRAULIC
HOP	HIGHWAY OCCUPANCY PERMIT
HRSF	HISTORIC RESOURCE SURVEY FORM
JD	JURISDICTIONAL DETERMINATION
JPA	JOINT PERMIT AGREEMENT
L&G	LINE AND GRADE
LCCD	LEHIGH COUNTY CONSERVATION DISTRICT
LGTS	LINE, GRADE AND TYPICAL SECTION
LOMR	LETTER OF MAP REVISION
MPT	MAINTENANCE AND PROTECTION OF TRAFFIC
NCCD	NORTHAMPTON COUNT CONSERVATION DISTRICT
NOITE	NOTICE OF INTENT TO ENTER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NTP	NOTICE TO PROCEED
PE	PRELIMINARY ENGINEERING
PHMC	PA HISTORICAL AND MUSEUM COMMISSION
PNDI	PENNSYLVANIA NATURAL DIVERSITY INVENTORY
POA	POINT OF ACCESS
PS&E	PLANS, SPECIFICATIONS AND ESTIMATE
ROW	RIGHT OF WAY
RSGER	RECONNAISSANCE SOILS AND GEOLOGICAL ENGINEERING REPORT
SEPS	SUBSURFACE EXPLORATION PLANNING SUBMISSION
SFV	SCOPE AND FIELD VIEW
SHPO	STATE HISTORIC PRESERVATION OFFICE
SPMP	SIGNING AND PAVEMENT MARKING PLAN
SUE	SUBSURFACE UTILITY ENGINEERING
T&E	THREATENED AND ENDANGERED SPECIES COORDINATION
TCP	TRAFFIC CONTROL PLAN
TIF	TECHNICALLY INFEASIBILITY FORM
TIP	TRANSPORTATION IMPROVEMENT PROGRAM
TS&L	TYPE, SIZE AND LOCATION
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

SR 3007 (BREINIGSVILLE ROAD) OVER BREINIG RUN BRIDGE PROJECT
Upper Macungie Township, Lehigh County

BRIDGE FEATURES:

- BUILT IN 1921
  (REINFORCED CONCRETE SLAB WITH CONCRETE ENCASED STEEL BEAMS)

- BRIDGE IS IN POOR CONDITION

PURPOSE:

- REPLACE THE EXISTING STRUCTURE IN A WAY THAT PROVIDES A SAFE CROSSING FOR THE TRAVELING PUBLIC WHILE MEETING CURRENT DESIGN STANDARDS.

ANTICIPATED PROJECT SCHEDULE:

(SUBJECT TO CHANGE)

- PRELIMINARY AND FINAL ENGINEERING
  (PRESENT TO FALL 2026)

- AWARD CONTRACT
  (FALL/WINTER 2026)

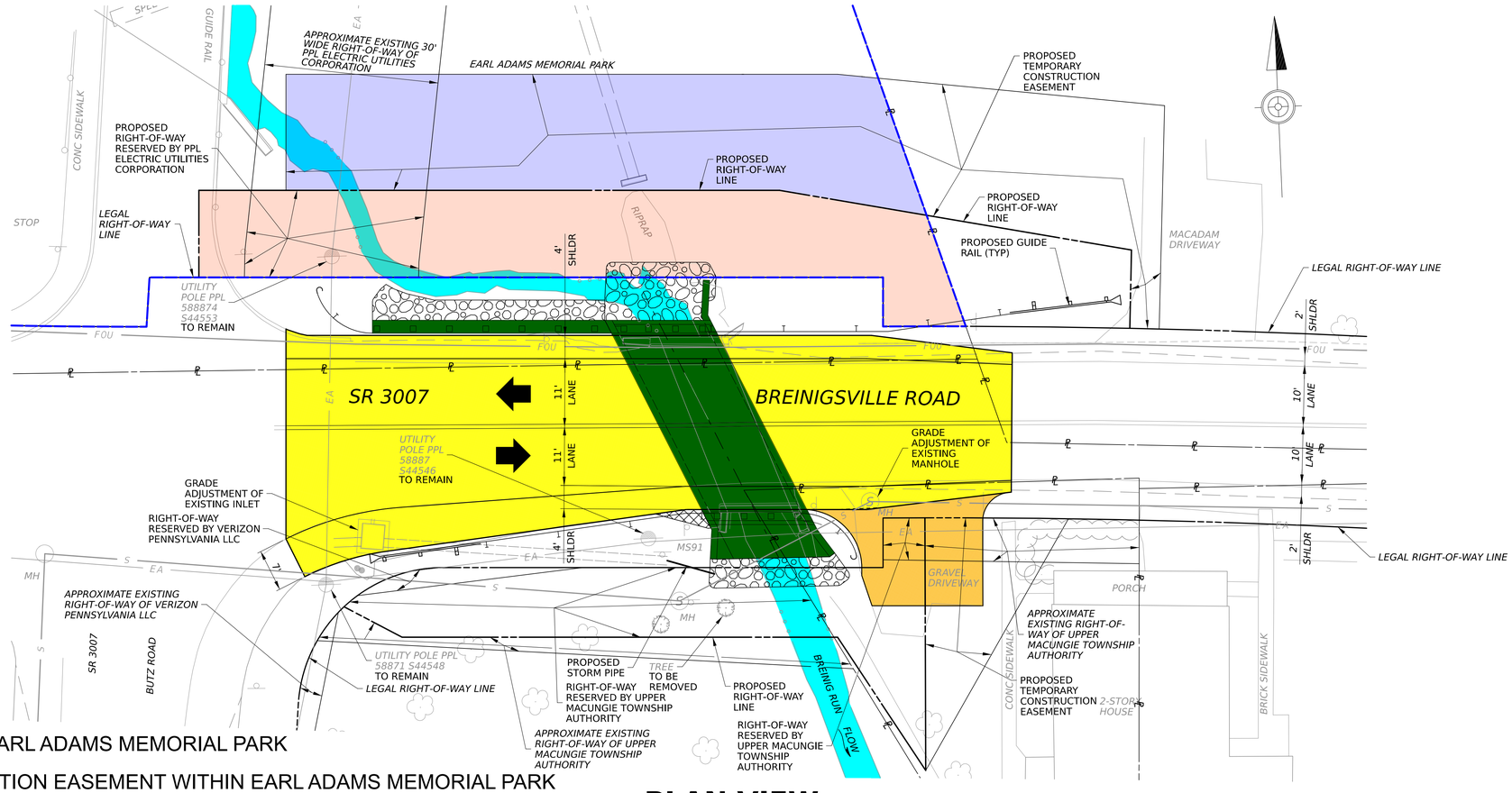
- CONSTRUCTION
  (SPRING 2027 TO WINTER 2028)

- ANTICIPATED CONSTRUCTION DURATION - 3 MONTHS

SR 3007 (BREINIGSVILLE ROAD) LOOKING EAST

SR 3007 (BREINIGSVILLE ROAD) LOOKING WEST

SOUTHEAST QUADRANT DRIVEWAY



PLAN VIEW

LEGEND:

- PROPOSED FULL-DEPTH ROADWAY RECONSTRUCTION
- PROPOSED STRUCTURE
- BREINIG RUN
- PROPOSED DRIVEWAY ADJUSTMENT
- PROPOSED RIGHT-OF-WAY WITHIN EARL ADAMS MEMORIAL PARK
- PROPOSED TEMPORARY CONSTRUCTION EASEMENT WITHIN EARL ADAMS MEMORIAL PARK
- BOUNDARY OF SECTION 4(f)/SECTION 2002 PROTECTED PROPERTY EARL ADAMS MEMORIAL PARK

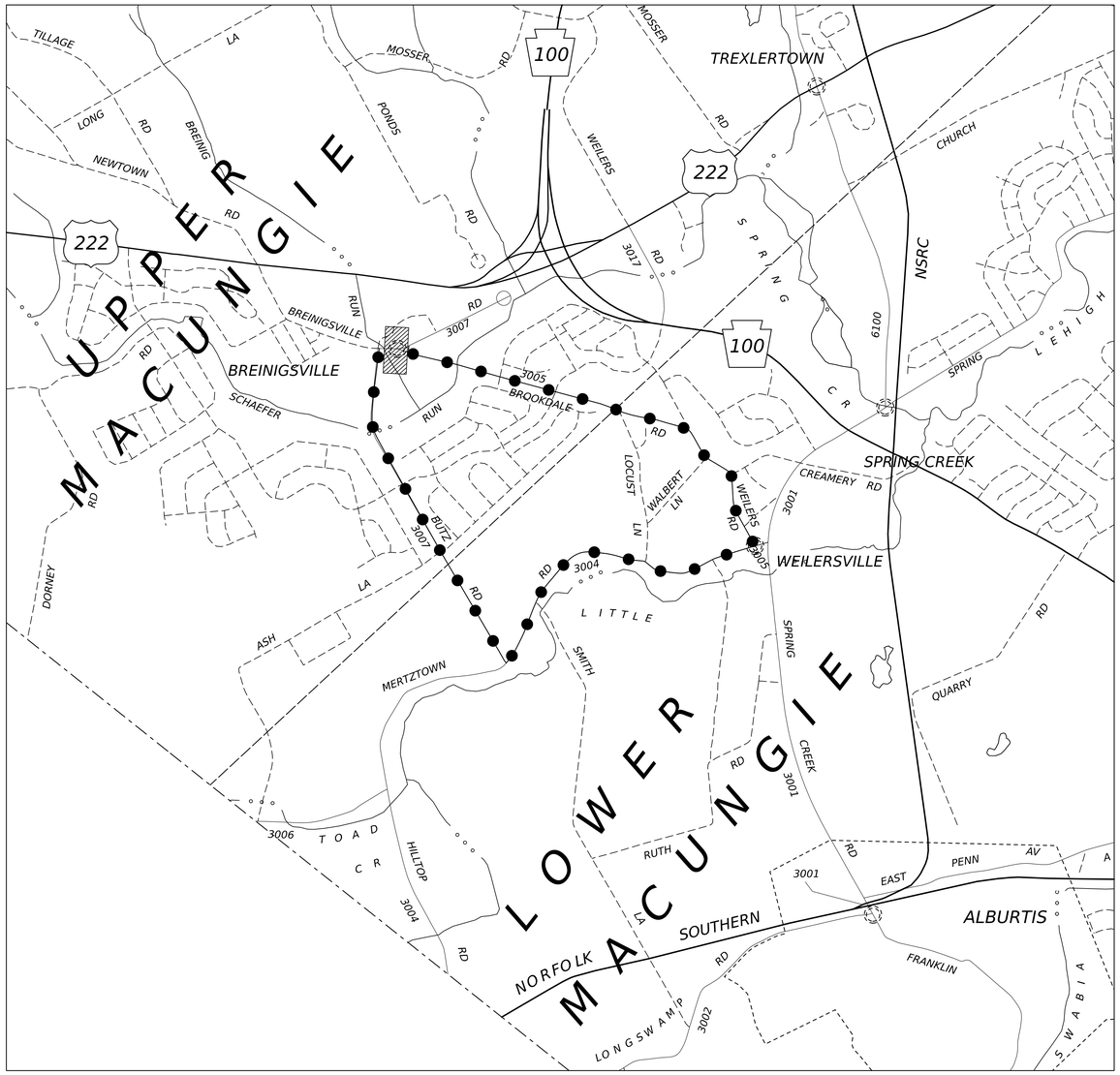
PRELIMINARY

pennsylvania
DEPARTMENT OF TRANSPORTATION

PROJECT OVERVIEW
Winter 2025

PREPARED BY:
benesch
250 Cetronia Road, Suite 150
Allentown, PA 18104
610-439-7066

SR 3007 (BREINIGSVILLE ROAD) OVER BREINIG RUN BRIDGE PROJECT
Upper Macungie Township, Lehigh County



LEGEND
- PROJECT LOCATION
- DETOUR (6.84 MILES)
- STATE HIGHWAY
- TOWNSHIP ROAD
- MUNICIPAL BOUNDARY
- STREAM

DETOUR MAP

SCALE

0 1000 2000 3000 FEET

NORTH STRUCTURE ELEVATION

SOUTH STRUCTURE ELEVATION

PRELIMINARY

pennsylvania
DEPARTMENT OF TRANSPORTATION

PROJECT OVERVIEW
Winter 2025

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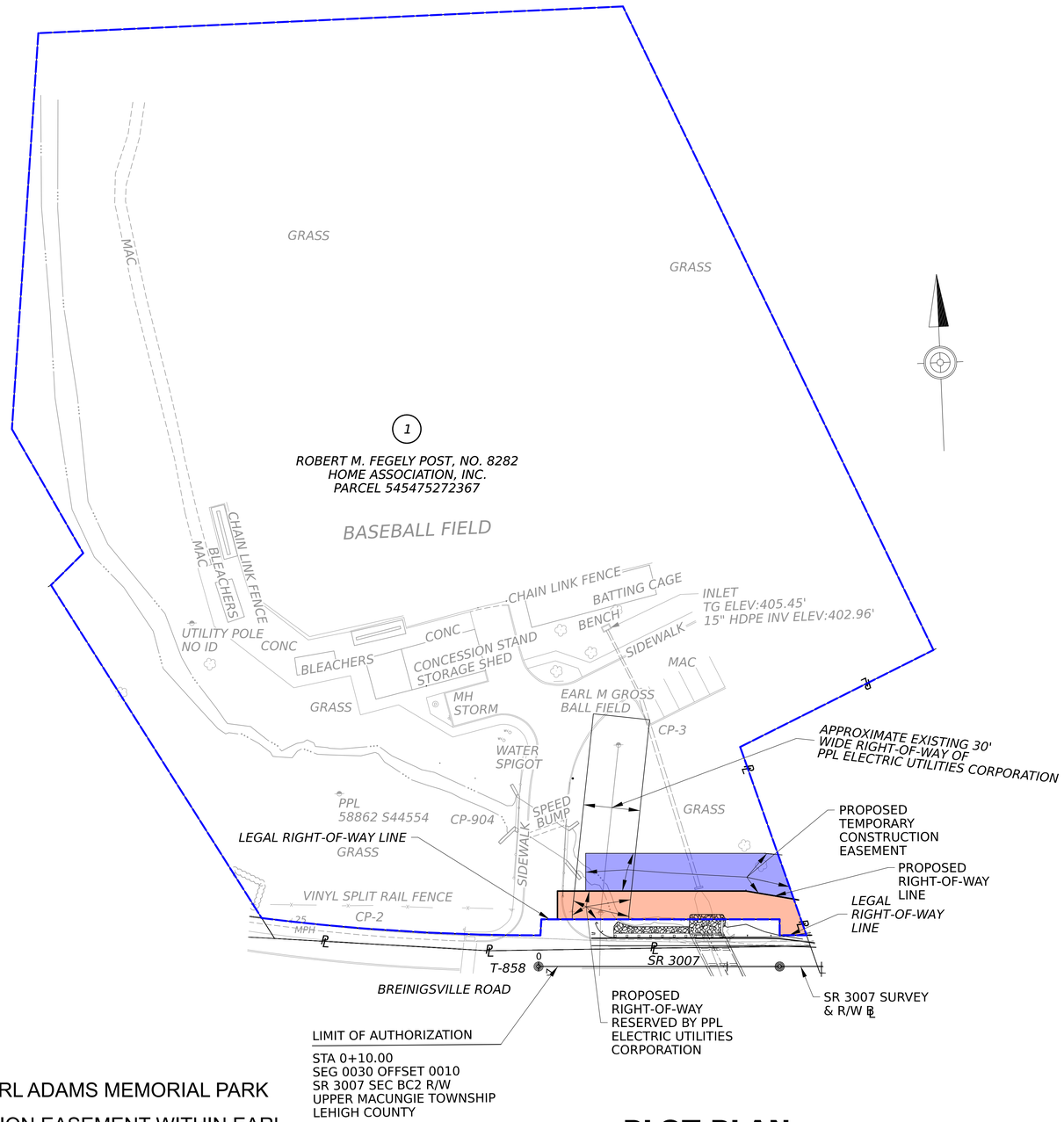
610-439-7066

SR 3007 (BREINIGSVILLE ROAD) OVER BREINIG RUN BRIDGE PROJECT
Upper Macungie Township, Lehigh County



LEGEND:

- PROPOSED RIGHT-OF-WAY WITHIN EARL ADAMS MEMORIAL PARK
- PROPOSED TEMPORARY CONSTRUCTION EASEMENT WITHIN EARL ADAMS MEMORIAL PARK
- BOUNDARY OF SECTION 4(f)/SECTION 2002 PROTECTED PROPERTY EARL ADAMS MEMORIAL PARK

PLOT PLAN
SECTION 4(f)/SECTION 2002 PROTECTED PROPERTY

PRELIMINARY

pennsylvania
DEPARTMENT OF TRANSPORTATION

PROJECT OVERVIEW
Winter 2025

PREPARED BY:
benesch
250 Cetronia Road, Suite 150
Allentown, PA 18104
610-439-7066

THE MORNING CALL

Talking Business with Becky Bradley: Health care picks up where Bethlehem Steel once shined

By Becky Bradley
For The Morning Call
March 3, 2025 at 5:57 AM

If you follow the development headlines, you're likely to see that as the Federal Reserve Bank continued its mission of taming inflation in 2024, development took a step back in residential, industrial and commercial building.

But after a quarter-century in the planning business, I've learned that those national trends don't always apply to an attractive region that's been adding roughly 4,000 people a year for seven decades. As we pore over 2024 development data at the Lehigh Valley Planning Commission, some interesting trends are revealed. In short, housing proposals are up, investors are turning towards infill development to maximize space and capitalize on every development opportunity, and medical-related development is surging.

On that latter note, let me lay down some data that I find fascinating. At the height of its power, Bethlehem Steel employed 31,000 people at its flagship Bethlehem plant. Right now, 64,000 people are employed in the health care field across the Lehigh Valley. I'm not suggesting that any company will ever dominate our regional economy the way Bethlehem Steel once did, but those numbers show just how important health care is to this region, how our region has grown, and based on our BuildLV Development data from last year, its economic footprint will continue to grow. We saw the most office proposals, at 412,000 square feet, since before the pandemic and it was based almost entirely on new medical office space, which accounted for more than three-quarters of all of office plans reviewed.

Medical also helped the public/quasi-public development category continue its run of million-plus square foot years with nearly 1.3 million reviewed, largely on the basis of new neighborhood medical complexes and major expansions. One of the largest projects of the year was the 340,000 square-foot expansion at St. Luke's University Health Network's Bethlehem Township campus, but there were many others including Lehigh Valley Hospital Network's proposed Emergency Department expansion at its Muhlenberg Campus in Bethlehem.

While the medical-related development numbers sort of jumped off the spreadsheet, they certainly weren't the only ones that defied national trends. We reviewed nearly 6,400 housing units for the year and municipalities approved 2,755 for construction – the most since 2007. It's clear that developers and communities are working to help lessen the Lehigh Valley's monumental housing shortage, and that momentum will continue as the LVPC, Urban Land Institute and Lehigh County partner to create a Lehigh Valley Housing Supply and Attainability Strategy. You're going to hear a lot more about that effort in the coming weeks.

The types of new homes we reviewed continue to be more diverse than in previous housing booms in the 1980s and 2000s. It's not surprising that more than half of them – 3,601 – are for apartments, as investors work to fill a rental demand, in part, from people who have yet to find housing that's right for them to purchase in this undersupplied market. But we're also seeing a resurgence of single-family detached homes. The 646 approved last year were the most since 2007, while 315 townhomes and 126 twins were also approved. We actually review more than double the units that are approved annually in each category, but it can take some projects years before they are approved, and even longer before shovels hit the dirt, showing why the Lehigh Valley's current 9,000-unit housing shortage will take years to erase.

The more than 12.7 million feet of nonresidential development reviewed was carried by 9.3 million square feet of industrial space, and 860,000 feet of commercial space that came mainly with a mix of restaurants, entertainment venues and four hotels that help solidify the region's growing role as a tourist destination.

Maybe the most inspiring number is one that's been consistently high in recent years: 55 changes to municipal ordinances, map and plans. These are almost always complex, painstaking adjustments that take months to change the municipal documents that guide how and where development happens, and many of them last year were full-blown zoning code rewrites. That shows our municipal leaders are both proactive and willing to put in the work in to manage the development pressure many of them are feeling.

Why? It goes back to where we started. We're not like other regions and we can't always be explained by national trends. We are a uniquely attractive region whose government and community leaders are determined to keep us that way.

Becky Bradley is executive director of the Lehigh Valley Planning Commission. She can be reached at planning@lvpc.org.

Originally Published: March 2, 2025 at 8:30 AM EST

MEMORANDUM

DATE: March 19, 2025
TO: Lehigh Valley Planning Commission
FROM: Matt Assad, Managing Editor
Brian Hite, AICP, Transportation Planner
Ben Dinkel, Transportation Planner

REGARDING: Public Engagement, Education and Grants

Public Engagement

The most recent **Plan Lehigh Valley National Public Radio** show, which aired at 6:30 pm, March 3 on WDIY radio 88.1 FM, detailed the trends that emerged during the 2024 development year, with guest LVPC Regional Planner Joey Dotta. Trends include surging housing proposals, continued focus on apartments, more in-fill industrial projects and an office category dominated by new medical office projects. The show is available at www.wdiy.org/show/plan-lehigh-valley and www.lvpc.org/newslv. The next Plan Lehigh Valley Radio Show will air April 7, at 6:30 pm.

The latest **Business Cycle Column** ran Sunday, March 2, and it also took a very similar look the busy development year that was 2024. It detailed the second-most housing unit proposals (6,386) since 2007, and how the medical field now employs more than twice as many Lehigh Valley than Bethlehem Steel did at its highest point. That column can be found in your packet, and online at lvpc.org and mcall.com. The next column in the Morning Call will be published April 13.

Educational Opportunities

The following LTAP Class will be held in person at the LVPC Conference Center, 615 Waterfront Drive, Suite 201, Allentown PA 18102

Wednesday April 2
Temporary Traffic Control (Work Zones) – 8 am to 3 pm
This course will enhance your awareness of the importance of safety for all workers and road users in work zones. It covers basic work zone principles and reviews the different control devices applied in work zones. The course also emphasizes worker safety, including appropriate safety apparel, safe work zone practices, and appropriate work zone set-ups. The participants will be able to: • Recognize the importance of temporary traffic control for the safety of the work crew and of the traveling public. • Develop a working knowledge of State and Federal temporary traffic control laws, regulations, and guidelines. • Demonstrate the ability to develop temporary traffic control plan/set-ups in accordance with PennDOT Publication 213 for various local road situations. Intended Audience: Individuals who are performing maintenance, construction, or traffic control on municipal roadways including: public works employees, road crews, roadmasters and street superintendents. Others who would benefit from this course include law enforcement personnel (for enforcement purposes), municipal managers and elected officials (to understand the importance and for budgeting purposes). Engineers are welcome to attend, but the focus is on the non-engineer. Note: This is not a flagger certification workshop.

All LVGA LTAP classes are free and are intended for municipalities, transportation non-profits and organizations with a transportation purpose. LTAP Enables many practitioners who need courses with professional development hours (PDHs) to earn credits for maintaining their licenses and certificates.

Anyone can register at www.gis.penndot.gov/LTAP or by contacting Hannah Milagio at hmilagio@lvpc.org or 610-264-4544

The following Pennsylvania Municipal Planning Education Institute (PMPEI) class will be held in person at the LVPC Conference Center, 615 Waterfront Drive, Suite 201, Allentown, PA 18102

Mondays in May (May 5, May 12, May 19)
Subdivision and Land Development – 5:30 – 9 pm
Everything you need to know as a Zoning Officer! This class is a great start for new Zoning Officers and staff, and an excellent refresher for seasoned Zoning Officers. We will explain the duties of a Zoning Officer, statutory authority, Municipalities Planning Code requirements, as well as a review of the specific job functions of a Zoning Officer, including permits, inspections, Zoning Hearing Board administration, enforcement, building codes, records retention, and Right-to-Know. We will also discuss various lessons learned during COVID, such as electronic submissions and working remotely.

Registration and more information is available at www.lvpc.org/lvga.

PennDOT Connects Municipal Outreach Hybrid Meeting
March 27, 2025 from 1:00 pm to 3:00 pm
PennDOT District 5 Office
1002 Hamilton Street, Allentown PA 18101
https://register.gotowebinar.com/register/9087370590033476183

Grant Opportunities

2025-2026 Pennsylvania WalkWorks Active Transportation Planning Program Grant

Grants and technical assistance will be offered to a limited number of municipalities and planning organizations to assist with the development of Active Transportation Plans during the period of July 2025 through June 2026. These plans are essential to efforts to establish activity-friendly routes that connect people to everyday destinations, thereby expanding opportunities for physical activity and improving public health. The grant closes on March 21st.

https://www.pa.gov/agencies/health/programs/healthy-living/walkworks/grant-opportunities.html

Pennsylvania Department of Community and Economic Development (DCED) Multimodal Transportation Fund (MTF)

The Multimodal Transportation Fund provides grants to encourage economic development and ensure that a safe and reliable system of transportation is available to the residents of the commonwealth. Funds may be used for the development, rehabilitation and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development. Eligible entities include: Municipalities, Councils of Governments, Businesses, Economic Development Organizations, Public Transportation Agencies, and Ports-Rail/Freight. Grants are available for projects with a total cost of $100,000 or more. Grants shall not exceed $3,000,000 for any project. Applications will be accepted until May 31st.

https://dced.pa.gov/programs/multimodal-transportation-fund/

Pennsylvania Department of Community and Economic Development (DCED)
Greenways, Trails, and Recreation Program (GTRP)

The Marcellus Shale Legacy Fund allocates funds to the Commonwealth Financing Authority for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks and beautification projects using the Greenways, Trails, and Recreation Program (GTRP). The funding is available for projects that involve development, rehabilitation and improvements to public parks, recreation areas, greenways, trails, and river conservation. Eligible entities are: Municipalities, Councils of Governments, Watershed Organization, For-Profit Businesses, Authorized Organization, and Institutions of Higher Education. Grants shall not exceed $250,000 for any project. A 15% match of the total project cost is required. Applications will be accepted until May 31st.

https://dced.pa.gov/programs/greenways-trails-and-recreation-program-gtrp/