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, January 15, 2025, at 9:00 am
Virtual Meeting Agenda

Roll Call

Courtesy of the Floor

1. Staff Introduction: Subham Kharel, PhD, Senior Data and Analytics Planner

Minutes

1. *ACTION ITEM:* Technical Committee approval of the Joint Technical and Coordinating Committee Meeting Minutes of December 18, 2024
2. *ACTION ITEM:* Coordinating Committee approval of the Joint Technical and Coordinating Committee Meeting Minutes of December 18, 2024

Old Business

1. *ACTION ITEM:* 2025 Performance Measures – 1 Safety Target Setting (BH)
2. *INFORMATION ITEM:* Lehigh Valley Walk Audit (EG)

New Business

1. *INFORMATION/ACTION ITEMS:* 2025-2028 Transportation Improvement Program (TIP)
    a. *INFORMATION ITEM:* Administrative Modifications & Amendments (JR)
    b. *ACTION ITEM:* TIP Amendment: RAISE Grant-Funded Riverside Drive Complete Street/Trail Project (BB)
2. *INFORMATION ITEM:* Route 309 Center Valley Parkway Project Update (M. Fallon, PE)
3. *INFORMATION ITEM:* Regional Climate Action Plan
    a. WorkshopLV: Environment, January 22, 2025 at 8:30 AM
    LVPC Conference Center, 615 Waterfront Drive, Suite 201, Allentown, PA 18102

Status Reports

1. PennDOT District 5-0 Multimodal Transportation Fund (MTF) and Transportation Alternative Set Aside (TASA) Project Status Report
2. 4th Quarter of 2024 Traffic Report

Public Engagement, Education and Grants

1. *INFORMATION ITEM*: Public Engagement
    ➢ WDIY, 88.1 FM, National Public Radio – Plan Lehigh Valley Radio Show
    a. Aired January 6: “Being Grateful for the Past and the Future with Scott Greenly”
    b. February 3: Next show airs 6:30 PM
        • https://www.wdiy.org/show/plan-lehigh-valley
2. *INFORMATION ITEM:* Lehigh Valley Government Academy (LVGA)
    ➢ Local Technical Assistance Program (LTAP) (BH)
    a. February 6: Streamlined Approach to Stormwater Management, 11 am to Noon
        • Registration at https://gis.penndot.gov/LTAP/default.aspx
3. *INFORMATION ITEM*: Grants (BD)

- Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program
    - https://www.fhwa.dot.gov/environment/protect/discretionary/

Adjournment

Next LVTS Meetings

LVTS Joint Technical and Coordinating Committee Meeting
February 19, 2025, at 9:00 am

LVTS Technical Committee Meeting
March 19, 2025, at 9:00 am

Meetings will be held virtually.
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.

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Lehigh Valley Transportation Study
Minutes from the Wednesday, December 18, 2024
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 10, 2024.

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
Jennifer Ruth	PennDOT District 5

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
Chris Kufro	PennDOT District 5-0
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
Salvatore Panto	City of Easton
Darlene Heller (Alt)	City of Bethlehem

LVTS Coordinating Committee

Matthew Tuerk	City of Allentown
J. William Reynolds	City of Bethlehem

Salvatore Panto	City of Easton
Lamont McClure	Northampton County

Staff Present: Becky Bradley, Evan Gardi, Humaira Nabeela, Brian Hite, Ben Dinkel, Hannah Milagio

Public Present: Amy Unger, Jeff Rai, Mick Dee, Scott Vottero, Stephen Turocsy, Monique Saunders, Michael Emili, Mike Rebert, Scott Harney, Steve Chiaramonte, Bill Laird, Larry Peterson, Craig Beavers, Gene Porochniak, Jay McGee, Brett Webber, Sarah DeGrendel, Michael McGuire, Ralph Eberhardt, Sherri Penchishen, Brian Hare, Nyomi Nonnemaker, Evan Jones, Kerri Cutright, Sarah, Brian Miller, Nick Miller

Courtesy of the Floor
Mr. Molchany asked if there were any comments or questions from the public about items not on the agenda. Ms. Bradley congratulated Mr. Hite on obtaining his American Institute of Certified Planners certification. Mr. Molchany, Mr. Porochniak, Mr. Mosca, Mr. Stoudt, Mr. Eberhardt, Mr. Beavers, Mr. Hare, Mr. McGee, Mr. Harney and Mr. Dee also expressed their congratulations. Mr. Hite thanked everyone for their kind words, and he expressed gratitude for the LVPC and the LVTS for supporting his career and this achievement.

Minutes
Mr. Cotter stated that the last Technical Committee was held on November 20, 2024. Ms. Milagio noted the actions voted on:

- Minutes from the October 16, 2024 meeting
- Adjournment

Mr. Cotter asked for a motion to approve the minutes. Mr. Meyer 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 October 16, 2024. Ms. Milagio noted the actions voted on.

- Minutes from the August 21, 2024, meeting
- 2025-2028 Transportation Improvement Program Amendment: 309 Center Valley – Right of Way Phase
- Adjournment

Mr. Molchany asked for a motion to approve the minutes. Mr. Mosca made the motion, seconded by Mr. Kufro. 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/ACTION ITEM: **2024-2025 Unified Planning Work Program (UPWP) Amendments**
Ms. Bradley reviewed two amendments to the current 2024-2025 UPWP. The first amendment is to add the work to support the Route 22 Study, per funding secured by Senator Nick Miller and PennDOT Secretary Mike Carroll. The second amendment is to allocate planning funds to hire a consultant that would assist in the refining and formalization of the project selection process. Mr. Molchany asked if there were any questions from the committee and the public, and there were none.

Mr. Cotter asked for a motion to recommend the 2024-2025 UPWP Amendment to the Coordinating Committee. Mr. Raio made a motion to recommend the 2024-2025 UPWP Amendment to the Coordinating Committee, and the motion was seconded by Mr. Meyer. Mr. Cotter asked if there were any

questions or comments from the committee or the public, and there were none. Ms. Bradley called for the vote, and the motion was carried.

Mr. Molchany asked for a motion to approve the 2024-2025 UPWP Amendment, as forwarded by the Technical Committee. Mr. Kufro made the motion to approve the 2024-2025 UPWP Amendment, and the motion was seconded by Mr. Stoudt. Mr. Molchany asked if there were any questions or comments from the committee or the public, and there were none. Ms. Bradley called for the vote, and the motion was carried.

INFORMATION/ACTION ITEM: **2025-2027 Unified Planning Work Program (UPWP) Revisions and Adoption**

Ms. Bradley noted that the new UPWP would take effect July 1, 2025 and end on June 30, 2027. This UPWP is formatted differently than previous years', per feedback received during the Federal Certification Review, and includes more detail on the work of the LVTS. This UPWP was sent to the Federal Highway Administration (FHWA), Federal Transit Administration (FTA) and PennDOT for a 30-day comment period, and feedback from that comment period was incorporated into the document.

Ms. Bradley highlighted page 11 in the document, which outlines major planning deliverables that are federally required. She also reviewed additional information that was included in the document as a result of the Federal Certification Review, including the structure and meeting dates of LVTS, key partnerships, and the tasks associated with all of the work activities.

Mr. Molchany stated that the adoption of the UPWP is a requirement of FHWA, FTA and PennDOT, and that the LVPC would also be voting on the UPWP. Ms. Bradley confirmed that the LVPC Executive Committee, which has contracting authority, adopted the UPWP on December 12, pending adoption by the LVTS.

Mr. Cotter asked for a motion to recommend adoption of the 2025-2027 UPWP to the Coordinating Committee. Mr. Petrik made a motion to recommend adopting the 2025-2027 UPWP to the Coordinating Committee, and the motion was seconded by Mr. Raio. Mr. Cotter asked if there were any questions or comments from the committee or the public, and there were none. Ms. Bradley called for the vote, and the motion was carried.

Mr. Molchany asked for a motion to approve the 2024-2025 UPWP Amendment, as forwarded by the Technical Committee. Mr. O'Neil made the motion to approve the 2024-2025 UPWP Amendment, and the motion was seconded by Mr. Stoudt. Mr. Molchany asked if there were any questions or comments from the committee. Mr. Mosca thanked Ms. Bradley and the staff for incorporating guidance from PennDOT, FHWA and FTA into the UPWP. Mr. Molchany asked if there were any additional questions from LVTS or the public, and there were none. Ms. Bradley called for the vote, and the motion was carried.

ACTION ITEM: **Eastern PA Freight Alliance, Freight Infrastructure Plan Adoption**

Mr. Gardi noted that the Eastern PA Freight Alliance (EPFA) Freight Infrastructure Plan, and the accompanying Freight Profile and Appendices, were included in the meeting packet. He thanked the members who participated in the October 9th meeting and who provided comments on the plan. He also noted that the next step after adoption of the plan will be to establish a Memorandum of Understanding for the EPFA, and that this would be presented to the LVTS at a future meeting.

Mr. Cotter asked if there were any questions or comments on the EPFA Freight Infrastructure Plan from members or the public, and there were none. He asked for a motion to recommend adoption of the EPFA Freight Infrastructure Plan to the Coordinating Committee. Mr. Petrik made a motion to recommend adoption of the EPFA Freight Infrastructure Plan to the Coordinating Committee, and the motion was seconded by Ms. Bradley. Ms. Bradley called for the vote and the motion carried.

Mr. Molchany asked for a motion to adopt the EPFA Freight Infrastructure Plan, as forwarded by the Technical Committee. Mr. Kufro made a motion to adopt the EPFA Freight Infrastructure Plan, and Mr. Mosca seconded the motion. Mr. Molchany asked if there were any questions or comments from members or the public, and there were none. Ms. Bradley called for the vote and the motion carried.

ACTION ITEM: **Coordinated Public Transit - Human Services Transportation (HST) Plan Adoption**
Mr. Dinkel noted that the HST seeks to identify all human-service transportation providers within the region and identify if any duplicate or missing service exists. The plan also seeks to address the transportation needs for seniors and people with disabilities by prioritizing projects that address their needs. The LVPC held two public workshops this fall, which were attended by over 27 individuals who represented LANTA, LVPC, and ten other local human service organizations. Through these workshops, the LVPC staff shared updated maps and data relevant to the plan, and facilitated discussions with attendees on data and policies that shaped the update to the HST plan. Mr. Dinkel reviewed the four policy categories: Capital, Operations, Accessibility and Education.

Mr. Molchany thanked Mr. O'Neil and LANTA for their work. He noted that the Human Services departments of Lehigh and Northampton Counties rely on LANTA to provide essential transportation services to older residents, and this was especially true during the COVID-19 pandemic.

Mr. Cotter expressed gratitude and excitement for the Workshop series, and for the partnership between the LVPC and LANTA to produce the plan. He asked for a motion from the Technical Committee to recommend adoption of the Coordinated Public Transit - Human Services Transportation Plan to the Coordinating Committee. Mr. Petrik recommended adoption of the Coordinated Public Transit - Human Services Transportation Plan to the Coordinating Committee, and the motion was seconded by Ms. Bradley.

Mr. Cotter asked if there were any comments or questions from members. Ms. Bradley thanked the partners who supported and are included in the HST plan: ShareCare Faith in Action, Senior Life, Cetronia Ambulance, ARC, Via, Northampton County Developmental Programs, Lehigh Valley Active Life, United Way of the Greater Lehigh Valley, ITN, Heartline Transport, PennDOT District 5 and LANTA. She highlighted that, while LANTA is a significant provider of paratransit services for seniors and people with disabilities, there are other nonprofit organizations in the region that provide this service, as well. Mr. O'Neil thanked the LVPC staff for their work on the plan, and he noted that the title of the plan is direct from the US Department of Transportation. He stated Pennsylvania has a robust menu of services for seniors and people with disabilities for paratransit, and that the HST plan helps to direct 5310 funds to address gaps in services in the region. He also thanked the partners involved in the plan's development.

Mr. Cotter asked if there were any additional questions from members or the public, and there were none. Ms. Bradley called for the vote and the motion carried.

Mr. Molchany asked for a motion from the Coordinating Committee to adopt the Coordinated Public Transit – Human Services Transportation Plan, as forwarded by the Technical Committee. Mr. O'Neil made the motion to adopt the Coordinated Public Transit – Human Services Transportation Plan, and Mr. Mosca seconded the motion. Mr. Molchany asked if there were any questions or comments from the members or the public, and there were none. Ms. Bradley called for the vote and the motion carried.

New Business

ACTION ITEM: **2025 LVTS Meeting Dates**
Mr. Cotter noted that the LVTS meeting dates listed for 2025 include Technical Committee meetings held jointly with the Coordinating Committee in January, February, April, June, August, September, October

and December, as well as the Technical Committee meetings in March, May, July, and November. Mr. Cotter asked for a motion to recommend approval of the 2025 LVTS Meeting dates to the Coordinating Committee. Mr. Meyer made a motion to recommend approval of the 2025 LVTS Meeting dates to the Coordinating Committee, and the motion was seconded by Mr. Raio. Mr. Cotter asked if there were any questions or comments from members or the public, and there were none. Ms. Bradley called for the vote and the motion carried.

Mr. Molchany asked for a motion to approve the 2025 LVTS Meeting dates, as forwarded by the Technical Committee. Mr. Stoudt made a motion to approve the 2025 LVTS Meeting dates, and the motion was seconded by Mr. Mosca. Mr. Molchany asked if there were any questions from members or the public, and there were none. Ms. Bradley called for the vote and the motion carried.

***INFORMATION ITEM*: Annual Listing of Obligated Projects + Accomplishments**

Mr. Hite noted that the Annual Listing of Obligated Projects is a federal requirement to make a publicly available list of all federal transportation funded projects for the previous federal fiscal year (FFY), between October 1, 2023 and September 30, 2024. The LVTS is expanding this listing of obligated projects to include projects that have been completed, or "accomplished", during that timeframe. Mr. Hite explained that an obligation is the federal government's legal commitment to pay the federal share of a project's cost, usually by phase of the project, and an obligated project is one that has been authorized by a federal agency. Projects for which funds have been obligated are not necessarily initiated or completed in the program year, and the amount of the obligation will not necessarily equal the total cost of the project. Mr. Hite stated that obligations related to the Federal Transit Administration occur when the FTA grant is awarded and executed by the grantee, while highway, bridge and enhancement grant projects obligation occurs when a project agreement is executed and the state or grantee requests that the funds be obligated.

Mr. Hite stated that, in FFY 2024, there were $106,678,869 in Obligated Highway, Bridge and Enhancement Grant projects. There was also $3,346,426 in deobligations or monies saved from previously obligated projects. LANTA received $14,580,720 in transit funding obligations, and the Interstate System obligations received by PennDOT Central office for the Interstate System in the Lehigh Valley was $57,776,275.

Mr. Hite noted that, in FFY 2024, the Lehigh Valley saw $97,331,257 in completed transportation projects and $128,602,793 in estimated under construction projects. He reviewed the website, www.lvpc.org/2024-obligated-projects, which included the full document for the Annual Listing of Obligated Projects + Accomplishments. Mr. Molchany stated that this document is important to maintain transparency on how money is being spent on transportation infrastructure projects in the region, and he encouraged meeting participants to review the document and website for more information. He asked if there were any questions from the committees or the public, and there were none.

***INFORMATION ITEM:* 2025 LVPC Work Plan and Budget - Transportation**

Ms. Bradley noted that, with the adoption of the UPWP, it would be an appropriate time to provide an in-depth review of the 2025 LVPC Work Plan and Budget as it relates to the work of the LVTS. She reminded meeting participants that the LVPC serves as the bi-county planning agency for Lehigh and Northampton Counties, which operates under a series of state and federal laws, as well as the LVTS Metropolitan Planning Organization (MPO). The tasks and funding within the first half of the recently adopted UPWP are incorporated into the 2025 LVPC Work Plan + Budget, which the LVPC Executive Committee adopted on December 11, 2024.

Ms. Bradley stated that the LVPC receives funding from a variety of entities. Lehigh and Northampton Counties provide the required match for the MPO, with most of that funding coming from the Commonwealth of Pennsylvania and the US Department of Transportation. Both counties also contribute

to the bi-county planning commission work. Additional funding comes from various project contracts and LVPC-generated revenue, including subdivision and land development review fees and publication sales. She also noted that more than 33% of the LVPC's budget is supported by the USDOT and PennDOT for the UPWP. In total, the LVPC forecasts $6,577,690 in income for 2025.

Ms. Bradley noted that the LVPC is short-staffed, according to an analysis done comparing the size of the LVPC staff with those of other counties in the state and comparing that with population of the MPO areas. She stated that the LVPC has been slowly expanding the staff as funding allows, from 13 people a decade ago to 23 people currently, and that the LVPC intends to grow the staff to 28 people in 2025.

Ms. Bradley stated that the Comprehensive Planning section includes subdivision and land development reviews, municipal ordinance reviews, and municipal planning support and training, and accounts for $150,202 of the organizational budget. The Environmental Planning section includes stormwater reviews, wastewater system reviews, the Act 167 Global Stormwater Management Plan, and Carbon Pollution Reduction work, and accounts for $1,523,515 of the organizational budget.

Ms. Bradley reviewed each line item for the Transportation Planning section of the LVPC budget. These included: the Eastern PA Freight Alliance; the PennDOT Base Contracts for 2024-2025 and 2025-2027, and the county matches; the Local Technical Assistance Program (LTAP); and the supplemental funding for the Route 22 study. Ms. Bradley thanked Lehigh County for committing $10,732 to the LVTS for implementation of freight infrastructure improvements in the county. Northampton County did not allocate funds for freight infrastructure improvements, so the LVTS will need to be mindful of efforts related to freight infrastructure implementation that is not covered under the UPWP.

Ms. Bradley noted that, through various discussions since the release of the Lehigh Valley Passenger Rail Phase 1 Study, the LVTS had decided that a Phase 2 Study would be necessary to work towards entering the Federal Railroad Association's (FRA) Corridor ID Program. The Phase 2 Study is required to enter the Corridor ID Program, and the LVTS is the legal entity that would need to advance the passenger rail system in the region. It was agreed that the LVTS would try to raise $500,000 to complete the Phase 2 Study: $450,000 for the consultant, and $25,000 each for LANTA and the LVPC to do planning and consultant management for the project. Ms. Bradley stated that Lehigh County would be willing to fund half of the $500,000 needed if Northampton County would fund the other half of the project. Northampton County Council declined to allocate the funds needed for the Lehigh Valley Passenger Rail Phase 2 Study, and Executive McClure discouraged County Council from making that amendment to the budget. Ms. Bradley stated that there are no funds currently allocated for the Lehigh Valley Passenger rail Phase 2 Study, and that, in 2025, the LVTS will hold a forum with the FRA to have further discussions on the next steps in the process and discuss potential fundraising opportunities for the study. Ms. Bradley reiterated that the requirements for passenger rail are laid out concretely by the Federal government. The Phase 2 study would include: the identification of a project sponsor and operator; the determination of a market pair (New Jersey/New York, Philadelphia, or Reading); the travel demand analysis; the determination of the technical and financial feasibility of the market pair; the alternatives analysis, which would establish goals and objectives, develop evaluation criteria, and conduct a comparative assessment of candidate approaches to achieve the project goals and impact analysis.

Ms. Bradley noted that there are additional miscellaneous sources of income, which bring the total income to $6,577,690.

Ms. Bradley stated that personnel expenses are the largest expense, as the LVPC provides planning services. Other expense categories include Consultants and Supplies, General Office, Equipment Maintenance, and Supplies and Expenses. The expenses match the revenues at $6,577,690 for a balanced budget.

Ms. Bradley highlighted a few items on the 2025 Work Plan Major Projects and Initiatives Summary chart. The Organizational Strategic Plan Development will begin in January 2025, and was an item discussed in the June 2024 Federal Certification Review. The rebuild of the organizational website is currently underway and will be completed in 2025, along with an electronic plan submission system that will also serve as a portal for grant review letter requests. Community Planning Partnerships are ongoing, including several municipalities who are working on active transportation plans and projects. Municipal Street Vacation Petition Reviews are conducted when a property owner asks a municipality to vacate a roadway that exists in the public right-of-way on an official map or road plan, but it is not used or has not been maintained as such. These reviews are conducted as part of the county planning process. The Transportation Team at the LVPC reviews every Traffic Impact Study for a land development, as well. The LVPC has a Memorandum of Understanding with LANTA that all development proposals for Land Uses of Regional Significance are forwarded to LANTA for their comments on transit, which are then incorporated into the review letters.

Ms. Bradley continued to highlight items from the 2025 Work Plan Major Projects and Initiatives Summary Chart. She noted that the Lehigh County Freight Land Use Guidance and the LVTS Project Selection Criteria Refinement Process will be completed in 2025. The Route 22 Improvements Plan will begin in 2025. Coordination with the City of Allentown, Whitehall Township, PennDOT and other partners on the Riverside Drive project will continue through 2025, with the anticipated completion of the project in 2029. The regional Transportation Safety Plan will be completed in 2025. The National Electric Vehicle Infrastructure (NEVI) Phase 1 Project, which includes location selections for electric vehicle infrastructure in the region, will occur during the first half of 2025. The Annual Highway Performance Monitoring will occur during the summer and fall months of 2025. The Roadway Functional Classification System Update is currently underway and will be completed in the first half of 2025, in conjunction with the conclusion of the Freight Infrastructure Plan.

Ms. Bradley stated that, through a Lehigh Valley Greenways Mini Grant, the LVPC was awarded funding to conduct a regional trail gap analysis. This mini grant required matches from both counties; Lehigh County funded the match for the grant, but Northampton County did not. During the December 12, 2024 LVPC Executive Committee meeting, Executive McClure made clear that he believes the Northampton County Parks and Recreation staff could do that work. The status of that project is currently unclear due to the lack of match funds. This project is critical to safe transportation mobility, as identified in *Walk/RollLV: The Active Transportation Plan* and *FutureLV: The Regional Plan*.

Ms. Bradley noted that the safe and accessible Communities Program will include implementation of the Walk Audit results and continued partnership with AARP PA and the United Way of the Greater Lehigh Valley in 2025. The population and employment projection updates that will be included in the update to the Long-Range Transportation Plan, as well as creating the schedule for that update, will begin in the second half of 2025. Land Use Data Layer Updates will be included in this work to get ready for the update, as well. Implementation of the Enhanced Bus/Bus Rapid Transit Plan is underway in partnership with LANTA and PennDOT, and that will continue through 2025. Per the Federal Certification Review, the LVPC, LANTA and PennDOT need to sign a Memorandum of Understanding for Transit Planning Coordination by April 2025, and work on this has already begun. Performance Measures on safety, regional asset management, transit performance, and congestion mitigation air quality and freight will be reviewed and revised throughout 2025. The Annual List of Obligated Projects will be issued in the later months of 2025. The Lehigh Valley Passenger Rail Phase 2 Study work is to be determined.

Mr. Molchany noted that there is no shortage of work that the LVPC undertakes to support both the bi-county planning commission and the MPO. He expressed appreciation for the work of the LVPC conducts to support the LVTS. Mr. Molchany asked if any members or the public had questions on the 2025 Work Plan and Budget. Mr. Webber thanked Ms. Bradley for clarification on the process and financial support for the Lehigh Valley Passenger Rail Phase 2 Study. He shared that All Aboard Lehigh Valley is hosting a

rail summit in March to help facilitate public dialogue around passenger rail in the Lehigh Valley. More information will be available soon.

Ms. Milagio read a statement from Mr. Beavers, which was sent in the meeting chat: Good morning all, Craig Beavers, Palmer Township. I was disheartened to hear that Lehigh and Northampton County were unable to agree to a joint contribution for the Phase II of the Passenger Rail Analysis. As a planner in a municipality where a proposed route would travel through, the information from this study would have been vital to determining future land use and transportation improvements in our community. If there are any public fundraising efforts, I would be happy to provide a personal contribution for this study; I believe it is too important for our region to not move forward with further exploration. Mr. Molchany responded that he does not believe the agreement cannot be achieved, it is simply delayed. The FRA discussion will occur in early 2025 and hopefully the information from that discussion will provide an avenue to seek the required funding to move ahead.

***INFORMATION ITEM:* 2025 Performance Measures – 1 Safety Target Setting**

Ms. Nabeela noted that PennDOT provided the existing baseline data and regional targets for Performance Measure 1 – Safety. The targets, which were included in the packet, are based on a 2% reduction from the baseline numbers, which was derived from the Strategic Highway Safety Plan (SHSP) crash data analysis and the national initiative Toward Zero Deaths. She noted that the proposed targets will be considered for adoption at the January 15, 2025 LVTS Joint Technical and Coordinating Committee meeting. Mr. Molchany reminded LVTS members that they are charged to extensively review the information on the performance measure that is included in the packet to vote on at a future meeting. Mr. Molchany asked if there were any questions from members or the public, and there were none.

***INFORMATION ITEM:* 2025-2028 Transportation Improvement Program (TIP) Administrative Modifications**

Ms. Ruth reviewed the administrative actions of the 2025-2028 TIP that occurred from October 5 to December 6, 2024. There were 4 administrative actions, one interstate administrative action, and three statewide administrative action. Those actions were:

- Administrative Action #1: South Walnut Street Bridge
- Administrative Action #2: State Route 512 over Brush Meadow Creek
- Administrative Action #3: LVTS Bridge Preserve + Repair Bundle #6
- Statewide Administrative Action #1: City of Allentown – School Zone Traffic Safety Upgrade + Borough of Coopersburg Streetscape – Phase 9
- Statewide Administrative Action #2: Lehigh Canal Abbott Street Bridge
- Interstate Administrative Action #1: I-78 33 Interchange to Morgan Hill + I-78 LVTS Bridges
- Statewide Administrative Action #3: King's Route 309 Business Park Roundabout
- Administrative Action #4: Raubsville Road over Frey's Run

Mr. Molchany asked if there were any questions from LVTS or the public, and there were none.

Status Reports

Mr. Molchany said the status reports on PennDOT District 5 Highway Projects, the quarterly Traffic Report, and the Communications and Education memo, were included in the meeting packet. There were no questions or comments from the committees or public.

Public Engagement, Education + Grants

Mr. Hite reviewed information for the upcoming Traffic Calming course from PennDOT's Local Technical Assistance Program (LTAP). The class will be held in-person at the LVPC's office at 615 Waterfront Drive, Suite 201 Allentown, PA 18102. The Traffic Calming course provides information that can help municipalities establish a rational traffic calming program for their roadways. This class is currently full,

but interested parties should reach out to Mr. Hite or Ms. Milagio to be added to the waiting list. Mr. Molchany noted how important LTAP is for our local communities, and that Lehigh Valley LTAP classes have among the highest attendance. He asked if there were any questions from the LVTS or the public, and there were none.

Mr. Dinkel presented on the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Discretionary Grant Program is a competitive grant program to plan for and strengthen surface transportation to be more resilient to natural hazards, including climate change, sea level rise, flooding, extreme weather events, and other natural disasters through support of planning activities, resilience improvements, community resilience, evacuation routes, and at-risk costal infrastructure. Mr. Molchany noted that the information on grants is essential for the region to bring in additional funding to support the regional transportation grid. He asked if there were any questions from the LVTS or the public, and there were none.

Adjournment

Mr. Molchany stated that the next LVTS Joint Technical and Coordinating Committee meeting is on January 15, 2025, at 9 AM. Mr. O'Neil made a motion to adjourn, and the meeting was adjourned.

November 8, 2023

Dear Planning Partners:

Pursuant to the Code of Federal Regulations (23 CFR § 490) regarding National Performance Management Measures for the Highway Safety Improvement Program (HSIP), Pennsylvania has established the 2024 targets for the following Safety Performance Measures:

1) Number of fatalities
2) Rate of fatalities per 100 million Vehicle Miles Travelled (VMT)
3) Number of serious injuries
4) Rate of serious injuries per 100 million VMT
5) Number of non-motorized fatalities and serious injuries.

The Pennsylvania Department of Transportation (PennDOT) is required to establish these targets by August 31st each year. The 2024 targets found in Table 1 of the enclosure are based on a data driven trend analysis of the statewide fatality and suspected serious injury numbers (2% annual fatality reduction and maintaining level suspected serious injuries).

Metropolitan Planning Organization (MPOs) are required to establish targets within 180 days of PennDOT establishing its targets (by February 27, 2024) either by agreeing to plan and program projects in support of the PennDOT targets, or by establishing their own quantifiable targets. For consistency, PennDOT is requesting Rural Planning Organizations (RPOs) follow the same procedure. Table 2 of the enclosure reflects values for your MPO/RPO based on the same methodology that was used at the state level.

The MPOs that establish quantifiable fatality rate or serious injury rate targets shall report the VMT estimate used for such targets and the methodology used to develop the estimate. The methodology should be consistent with other Federal reporting requirements, if applicable. MPOs/RPOs wishing to establish their own quantifiable targets are requested to coordinate with PennDOT as early as possible, but no later than December 31, 2023.

A state is determined to have met or made significant progress toward meeting established targets if the outcome in 4 of 5 performance measures is better than the baseline number. For Pennsylvania's 2022 targets, the Federal Highway Administration (FHWA) will report this determination by March 31, 2024.

Preliminary data indicate Pennsylvania did not meet our 2022 targets and will be subject to the provisions of 23 United States Code § 148 (i). This will require the Department to submit an implementation plan that identifies gaps, develops strategies, action steps and best practices, and includes a financial and performance review of all HSIP funded projects. This plan will be due June 30, 2024. In addition, we will be required to obligate in Federal Fiscal

Year (FFY) 2025 an amount equal to the FFY 2021 HSIP apportionment.

For more information, please visit the FHWA Safety Performance Management website at https://safety.fhwa.dot.gov/hsip/spm/.

Your response is requested before February 27, 2024.

Please complete the following:

_____
Planning Organization Name

Select one of the following options for establishing Safety Performance Measures:

☐ The MPO/RPO agrees to plan and program projects so that they contribute toward the accomplishment of the established PennDOT targets. The MPO/RPO will have the option to establish quantifiable targets of their own each year when new PennDOT targets are established. Table 2 of the enclosure reflects corresponding MPO/RPO values.

☐ The MPO/RPO has established quantifiable targets for each performance measure for our planning area. The targets and methodology used to develop them are enclosed with this letter. This option will require PennDOT coordination with the Federal Highway Administration to ensure that the targets established are not just aspirational but achievable based on the projects that are programmed on the MPO/RPO's Transportation Improvement Program. If choosing this option please notify the Center for Program Development and Management (CPDM) by December 31, 2023.

Concurrence: _____ _____
Authorized MPO/RPO Representative Date

SUBMIT

Should you have any questions, please contact Casey Markey, Transportation Planning Manager, Center for Program Development and Management, at 717.787.1251 or cmarkey@pa.gov.

Sincerely,

Larry S. Shifflet

Larry S. Shifflet
Deputy Secretary for Planning

Sincerely,

Michael W. Rebert

Michael W. Rebert, P.E.
Deputy Secretary for Highway Administration

Enclosure

Table 1: Statewide Targets:

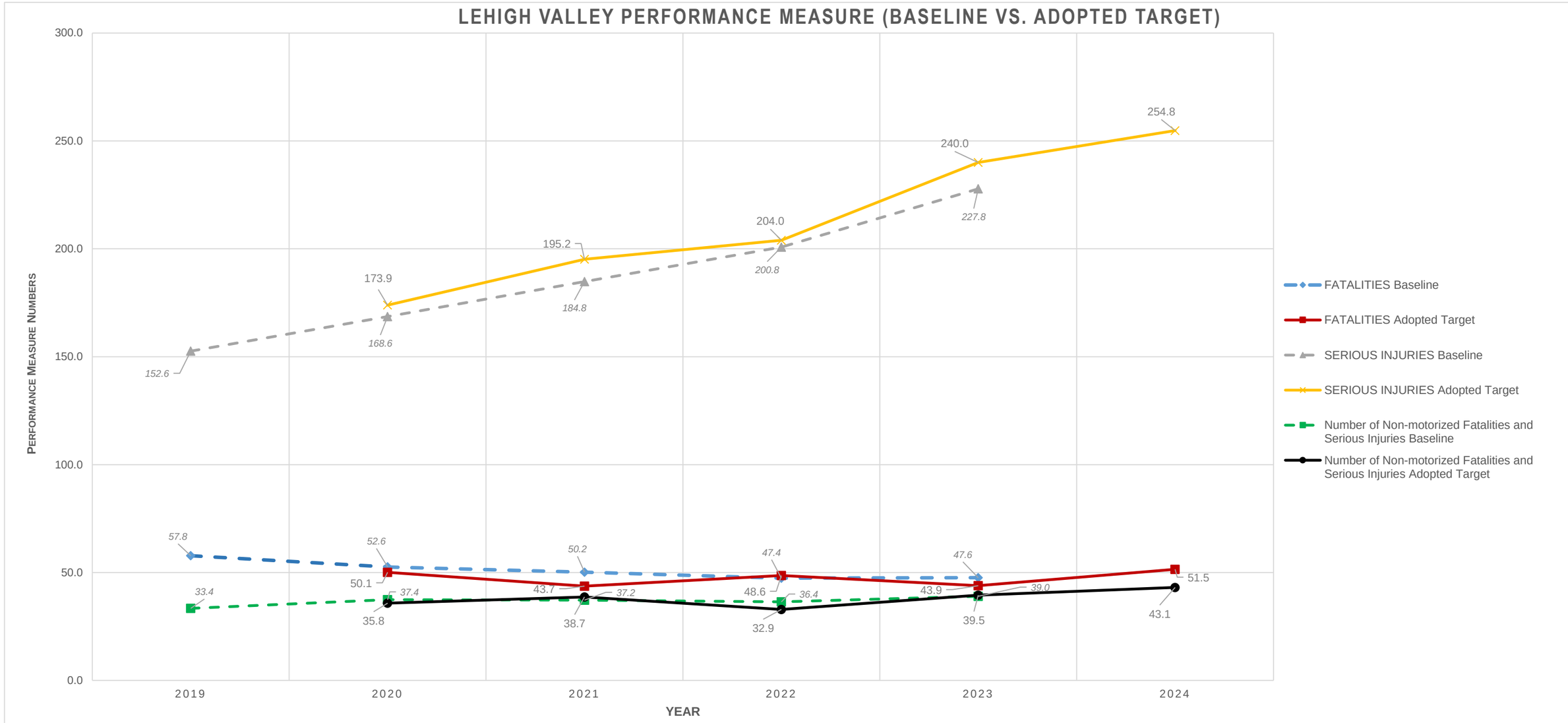
Performance Measure	5-year Rolling Averages		
	TARGET 2021-2025	ACTUAL 2021-2025	BASELINE 2019-2023
Number of Fatalities	1,192.8		1161.2
Fatality Rate	1.186		1.183
Number of Serious Injuries	4,832.6		4738.6
Serious Injury Rate	4.806		4.828
Number of Non-motorized Fatalities and Serious Injuries	916.8		833.4

* Future VMT estimated to hold level over next few years

Table 2: Lehigh Valley MPO Supporting Values:

Performance Measure	5-year Rolling Averages		
	TARGET 2021-2025	ACTUAL 2021-2025	BASELINE 2019-2023
Number of Fatalities	47.8		47.8
Fatality Rate	0.891		0.924
Number of Serious Injuries	244.4		236.6
Serious Injury Rate	4.556		4.572
Number of Non-motorized Fatalities and Serious Injuries	46.7		42.0

* Future VMT estimated to hold level over next few years



** 2024 Baseline numbers and Proposed Target numbers are not added*

LVTS Metropolitan Planning Organization

FISCAL CONSTRAINT TABLE

FFY 2025-2028 TIP Highway and Bridge Element

Technical and Coordinating Committees

TIP Modifications from December 7, 2024 through January 3, 2025

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

Statewide 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 ($)**		
Bogert's Bridge Rehabilitation			Before	TAP		0			0												0.00	Increase for updated cost estimate.
- BBR	118404	CON	Adjust	TAP		139,620			60,380												200,000.00	
Lehigh			After	TAP		139,620			60,380												200,000.00	
TAP Reserve			Before	TAP		139,620			250,466			7,858,330			30,604,000						38,852,416.00	Source.
	60560	CON	Adjust	TAP		(139,620)			(60,380)												(200,000.00)	
Central Office			After	TAP		0			190,086			7,858,330			30,604,000						38,652,416.00	
Administrative Action #1				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
SR 248/Airport Road Intersection Improvements			Before	CAQ	Toll	618,000															618,000.00	Increase to cover negotiated agreement plus internal costs.
			Before	NHPP	Toll	0															0.00	
248 - 07S	120952	PE	Adjust	NHPP	Toll	27,611															27,611.00	
			After	CAQ	Toll	618,000															618,000.00	
Northampton County			After	NHPP	Toll	27,611															27,611.00	
222 & Shantz & 863 Improv			Before																		0.00	Deobligation returned to region for reassignment.
222 - 01S	79554	FD	Adjust	NHPP		(27,611)															(27,611.00)	
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 ($)**		
LVTS Bridge Preservation #7			Before		185		2,500,000			2,650,000											5,150,000.00	Increase to meet low bid.
2012 - BRM	112231	CON	Adjust		185		145,878														145,878.00	
Northampton County			After		185		2,645,878			2,650,000											5,295,878.00	
			Before	BOF	185	26,992	315,966		6,146	105,369		93,640	136,392		755,016	1,537,254		27,377,555	39,699,010		70,053,340.00	Source.
			Before	BRIP		192,960			106,800			75,460			84,960			57,985,100			58,445,280.00	
LVTS Highway & Bridge LI			Before	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			Before	STP	581	294,200	288,820		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,988,605.00	
	102201	CON	Adjust	BOF	185		(145,878)														(145,878.00)	
			After	BOF	185	26,992	170,088		6,146	105,369		93,640	136,392		755,016	1,537,254		27,377,555	39,699,010		69,907,462.00	
			After	BRIP		192,960			106,800			75,460			84,960			57,985,100			58,445,280.00	
Lehigh County			After	NHPP		172,750			327,432			690,460			319,000			69,872,480			71,382,122.00	
			After	STP	581	294,200	288,820		24,980	294,489		410,100	240,931		633,536	420,059		31,204,252	90,177,238		123,988,605.00	
Amendment #1				**Fund Type**		**FFY 2025**			**FFY 2026**			**FFY 2027**			**FFY 2028**			**FFYs 2029-2032 and Beyond**			**Total**	**Remarks**
Project Title	**MPMS**	**Phase**	**Amts**	**Fed.**	**Sta.**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**	**Fed. ($)**	**State ($)**	**Loc/Oth ($)**		
Riverside Drive RAISE Grant			Before	RAISE		0															0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD	118070	FD	Adjust	RAISE		650,000															650,000.00	
Lehigh County			After	RAISE		650,000															650,000.00	
Riverside Drive RAISE Grant			Before	RAISE					0												0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD	118070	UTL	Adjust	RAISE					500,000												500,000.00	
Lehigh County			After	RAISE					500,000												500,000.00	
Riverside Drive RAISE Grant			Before	RAISE		0															0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD	118070	ROW	Adjust	RAISE		1,000,000															1,000,000.00	
Lehigh County			After	RAISE		1,000,000															1,000,000.00	
Riverside Drive RAISE Grant			Before	RAISE					0												0.00	Add RAISE grant funded project to TIP. Match is ROW contribution.
/ RSD	118070	CON	Adjust	RAISE					17,208,854												17,208,854.00	
Lehigh County			After	RAISE					17,208,854												17,208,854.00	
Before FFY Totals						1,444,522	3,104,786	0	715,824	3,049,858	0	9,127,990	377,323	0	32,396,512	1,957,313	0	186,439,387	129,876,248		368,489,763	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	
After FFY Totals						3,122,133	3,104,786	0	18,424,678	3,049,858	0	9,127,990	377,323	0	32,396,512	1,957,313	0	186,439,387	129,876,248		387,876,228	

NOTES: Non zero Adjustment due to RAISE Grant Funds.

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

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.

This project was available for public comment from April 19, 2023, to May 19, 2023, before it was added to the 2023-2026 TIP, and it is included in the current Metropolitan Transportation Plan (MTP). According to the LVTS Public Participation Plan, the addition of a project to the TIP that was included in the MTP does not require an additional public comment period. 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

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.

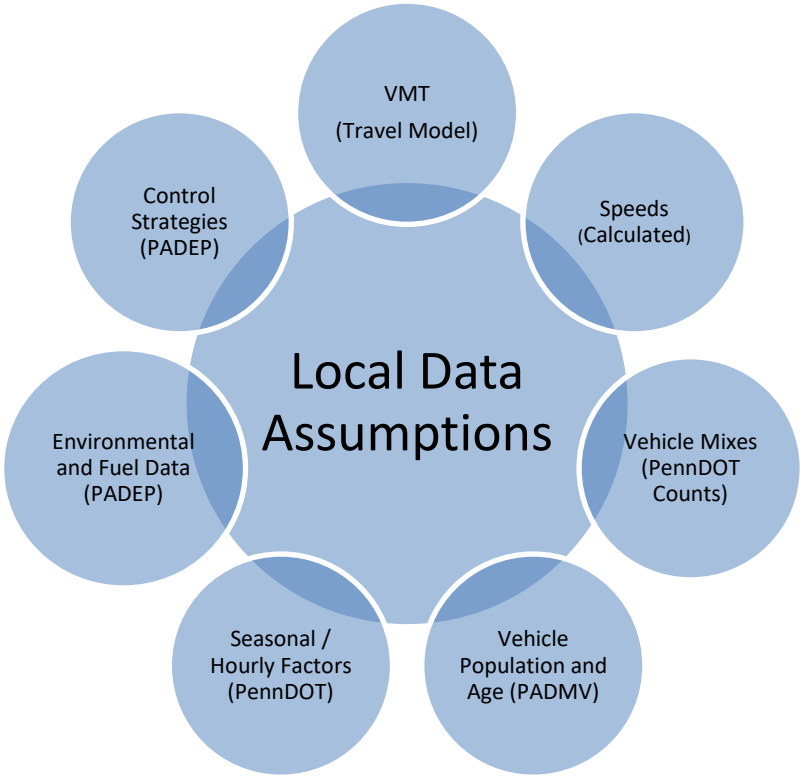
A mix of local and national default (internal to MOVES) data are used in the analysis. As illustrated in **Exhibit 2**, local data has been used for data items that have a significant impact on emissions, including: vehicle miles of travel (VMT), vehicle population, congested speeds, and vehicle type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

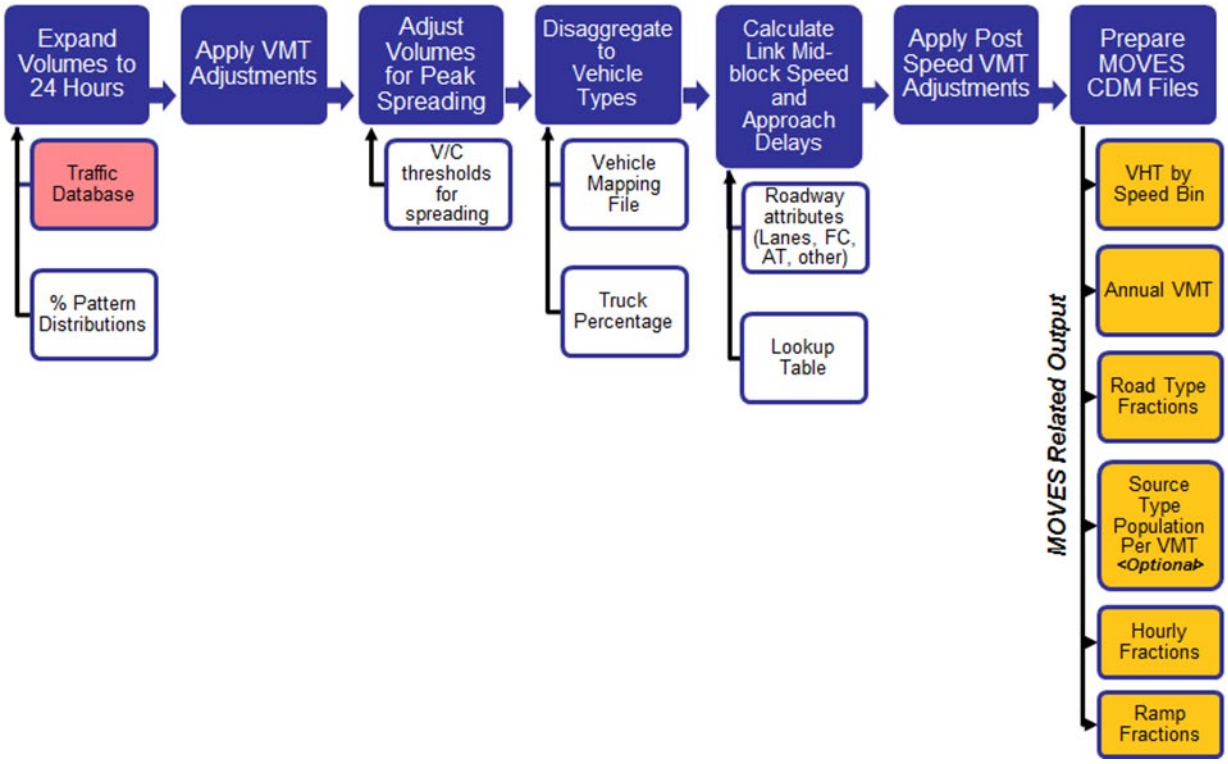
EXHIBIT 2: LOCAL DATA INPUTS USED FOR CONFORMITY RUNS



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

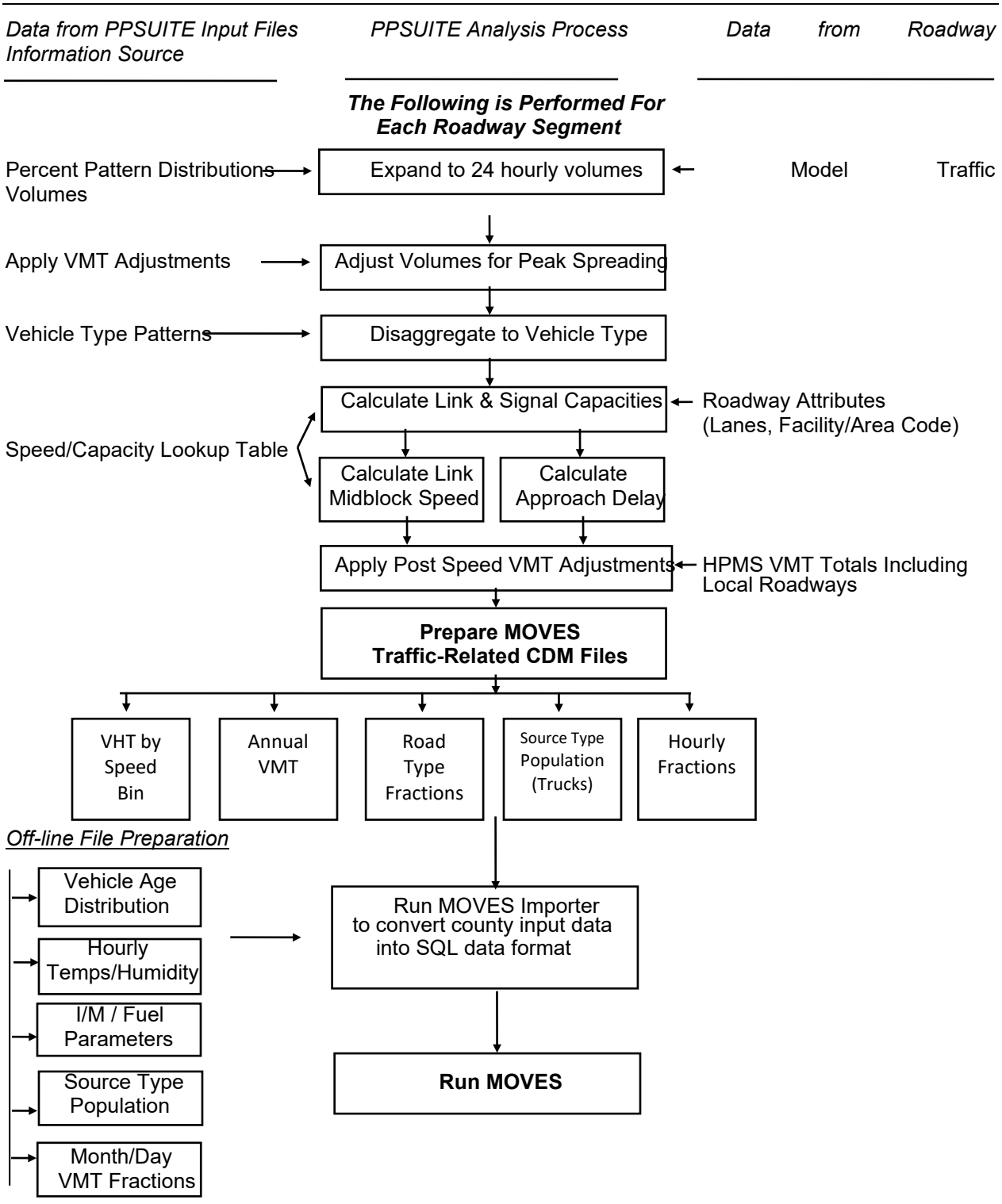
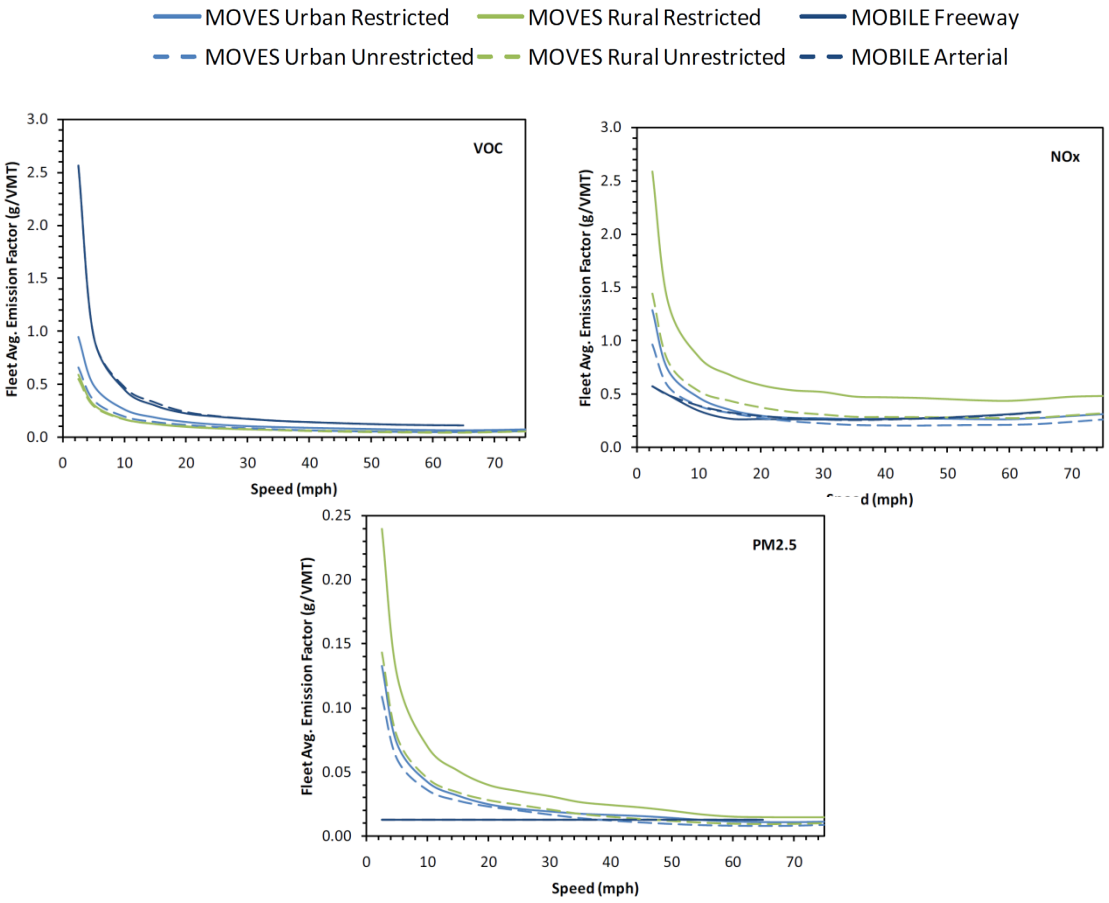


EXHIBIT 7: EMISSION FACTOR VS. SPEED VARIANCES (VOC, NO_X, AND $PM_{2.5}$)



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 (Kg/Day)**	**3.56 3,230**	**6.44 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	**(Kg/Day)**	**3.56 3,230**	**6.44 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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Scenario: OZO Lehigh 2025  Jul WkDay

2025 Build, Inv, Ozone

Emission Inventory with Local data]]></description>
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Home"/>
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Buses"/>
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<fuelsubtype selected="false"/>
<emissionprocess selected="true"/>
<onroadoffroad selected="true"/>
<roadtype selected="true"/>
<sourceusetype selected="true"/>
<movesvehicletype selected="false"/>
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<outputsho value="true"/>

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	<outputshp value="true"/>
	<outputshidling value="true"/>
	<outputstarts value="true"/>
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	<savedata>

	</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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sourcetypename="Combination Short-haul Truck"/>
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Truck"/>
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Truck"/>
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Truck"/>
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Buses"/>
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Truck"/>
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Unit Short-haul Truck"/>
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Bus"/>
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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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Transportation Alternatives Set-Aside Projects

Two Rivers Trail Gap 9A South Section, Northampton County (C-C. Barry)
MPMS 119824 – est. let February 12, 2026

- Project scope extension was approved to include south section
- Designer working on plan development and activities to obtain required clearances

Bogert's Bridge Rehabilitation, City of Allentown (C-C. Barry)
MPMS 118404 – est. let May 8, 2025

- PS&E preparation in progress
- Environmental clearance received August 14, 2024
- ROW clearance received August 15, 2024
- Sponsor received additional $200,000 in TASA funds
- Letter of Amendment to add additional funds being drafted

100 Steps Restoration Project, Borough of Slatington (C-C. Barry)
MPMS 118439 – est. let July 10, 2025

- PS&E preparation in progress
- Designer addressing comments from constructability review

Ironton Rail Trail Trailhead Improvement Project, Whitehall Township (C-C. Barry)
MPMS 118436 –let November 7, 2024

- Low bidder Pioneer Construction Company at $342,638.02

Easton Pedestrian Safety Project Phase 3, City of Easton (C-C. Barry)
MPMS 118435 – est. let May 8, 2025

- MPT approved on October 16, 2024
- Lighting plans and proprietary item request in Lighting Unit review.
- Designer working on addressing comments from constructability review

Community Bike Works, Community Bike Works (C-A. Wolfe)
MPMS 121551 –let August 1, 2024 (bike education project, no physical construction)

- Coordinating with OCC for required custom reimbursement agreement draft

Coopersburg Streetscape Phase 9, Borough of Coopersburg (C-C. Barry)
MPMS 121552 – est. let TBD

- Plan development underway along with activities to obtain required clearances

Allentown School Zone Traffic Safety Upgrades, City of Allentown (C-A. Wolfe)
MPMS 121550 – est. let TBD

- Sponsor working on obtaining designer

Lehigh Canal Abbott Street Bridge, City of Easton (C-A. Wolfe)
MPMS 121553 – est. let TBD

- Sponsor working on obtaining designer

Multimodal Transportation Fund Projects

Main Street/SR 873 & Walnut Street Improvements, Slatington Borough (C-L. Montgomery)
MPMS 113099 – est. let April 10, 2025

- Project combined with the District's Walnut Street Bridge project (MPMS 94680)
- Utility clearance received September 19, 2024
- ROW acquisition complete, awaiting declaration of taking hearing in Lehigh County
- TCP and temporary signal plans reviewed, and comments provided, awaiting resubmission
- JPA permit approved December 10, 2024
- Final structure plans under review

Iron Works Catasauqua Streetscape, Catasauqua Borough (C-C. Barry)
MPMS 115798 – est. let TBD (paper let)

- Sponsor has found development partner and hopes to begin advancing design efforts soon

Wilson Borough Improvements, Wilson Borough (C-C. Barry)
MPMS 115769 – est. let March 27, 2025 (paper let)

- Sponsor had determined project will be bid as Design/Build
- Sponsor continues working on ROW acquisition, condemnation will be needed

Allentown 15th Street Traffic Signal Improvements, City of Allentown (C-C. Barry)
MPMS 116846 – est. let TBD (paper let)

- Plan development ongoing along with activities to obtain required ROW clearance

S. Church and Hickory Street Connections, Borough of Macungie (C-C. Barry)
MPMS 119779 – est. let TBD (paper let)

- Plan development ongoing along with activities to obtain required clearances

Bethlehem Township Emergency Traffic Signal (C-C. Barry)
MPMS TBD – est. let April 1, 2027 (paper let)

- Reimbursement agreement signed by sponsor and in PennDOT Legal review
- Plan development ongoing along with activities to obtain required clearances

Coplay Multimodal Street Improvements (C-C. Barry)
MPMS TBD – est. let TBD (paper let)

- Kick off meeting held December 6, 2024

Pearl Street Safety Improvements (C-C. Barry)
MPMS TBD – est. let TBD (paper let)

- Kick off meeting held December 6, 2024

King's Route 309 Business Park Roundabout (C-C. Barry)
MPMS TBD – est. let TBD (paper let)

- Kick off meeting held October 25, 2024
- Plan development underway along with activities to obtain required clearances
- Reimbursement agreement being drafted, awaiting evergreen note from sponsor

ACRONYM REFERENCE	
ADA	AMERICAN WITH DISABILITIES ACT
CE	CATEGORICAL EXCLUSION
CEE	CATEGORICAL EXCLUSION EVALUATION
CO	CENTRAL OFFICE
CRP	CULTURAL RESOUCES PROFESSIONAL
DCNR	DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DEP	DEPARTMENT OF ENVIRONMENTAL PROTECTION
DO	DISTRICT OFFICE
E&S	EROSION AND SEDIMENTATION
FD	FINAL DESIGN
FHWA	FEDERAL HIGHWAY ADMINISTRATION
GP	GENERAL PERMIT
H&H	HYDROLOGIC AND HYDRAULIC
HOP	HIGHWAY OCCUPANCY PERMIT
HRSF	HISTORIC RESOURCE SURVEY FORM
MPMS	MULTIMODAL PROJECT MANAGEMENT SYSTEM
MPT	MAINTENANCE AND PROTECTION OF TRAFFIC
NOITE	NOTICE OF INTENT TO ENTER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NTP	NOTICE TO PROCEED
PHMC	PA HISTORICAL AND MUSEUM COMMISSION
POA	POINT OF ACCESS
PS&E	PLANS, SPECIFICATIONS AND ESTIMATE
ROW	RIGHT OF WAY
RRFB	RECTANGULAR RAPID FLASHING BEACON
SHPO	STATE HISTORIC PRESERVATION OFFICE
SOI	STATEMENT OF INTEREST
SPMP	SIGNING AND PAVEMENT MARKING PLAN
SUE	SUBSURFACE UTILITY ENGINEERING
T&E	THREATENED AND ENDANGERED SPECIES COORDINATION
TBD	TO BE DETERMINED
TCP	TRAFFIC CONTROL PLAN
TIF	TECHNICALLY INFEASIBILITY FORM
TS&L	TYPE, SIZE AND LOCATION
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE

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

MEMORANDUM

DATE: January 7, 2025
TO: Lehigh Valley Transportation Study
FROM: Brian Hite, AICP, Transportation Planner

REGARDING: **4th Quarter of 2024 Traffic Monitoring Report**

This memo highlights some aspects of the attached Monthly Traffic Monitoring Report data charts. This report covers traffic volumes and types of commercial trucks on roadways with active continuous traffic counters in operation in the Lehigh Valley during the 4th quarter of 2024 which comprises the months of October, November and December.

This data is a critical component of the Federal Highway Administration (FHWA) Highway Performance Monitoring System (HPMS) activities conducted by the Lehigh Valley Transportation Study (LVTS) and the Lehigh Valley Planning Commission (LVPC). Traffic data provides the basis for many transportation planning and programming purposes.

These are the continuous counters in operation and the associated data collected during the 4th quarter of 2024 with associated last Tuesday of the month data and any unusual variances provided.

- **Route 22 in Hanover Township** between Airport Road and Fullerton Avenue Exits:
  - October 106,787 vehicles including 10,351 commercial trucks
  - November 115,050 vehicles including 10,556 commercial trucks
  - December 92,926 vehicles including 7,121 commercial trucks

- **Route 33 in Lower Nazareth Township** between Newburg Road and Route 248 Exits:
  - October 86,824 vehicles including 10,611 commercial trucks
  - November 91,250 vehicles including 10,943 commercial trucks
  - December 69,934 vehicles including 6,083 commercial trucks

- **Route 22 in Palmer Township** between Route 33 and the 25th Street Exits.
  - October 47,893 vehicles including 2,627commercial trucks
  - November 56,071 vehicles including 2,711 commercial trucks
  - December 45,303 vehicles including 1,721 commercial trucks

- **Route 309 in Upper Saucon Township** between Fairmount Street and Passer Road
  - October 41,379 vehicles
  - November 42,207 vehicles
  - December 32,214 vehicles
    - *Note: the 309-traffic counter is unable to determine types of vehicles such as commercial trucks*

November 2024 had significant increase in vehicle volumes due primarily to travelling associated with the Thanksgiving Holiday as well as retail and e-commerce making significant parcel deliveries and freight movements to handle the demand. This is a normal trend we notice on a yearly basis. Subsequently, the end of December is a typical end of year drop in travel between the spiritual holiday time frames and New Years Day as many people take holiday time off and some businesses slow production or operations during those end of year weeks.

Comparison of the 4th Quarter of 2023 to 2024 Traffic Volumes

During the end of 2023 the Lehigh Valley had 2 active continuous traffic counters in operation; Route 309 in Upper Saucon Township and Route 22 in Hanover Township. The year 2024 saw a significant increase in travel during the Thanksgiving Holiday time frame as compared to 2023. Of note

Historically the months of November and December have variables affecting traffic volumes including Holiday travel, weather events and in 2024 political campaign visits to the Lehigh Valley

Comparing the year 2023 and 2024 November traffic volumes:

- **Route 22 in Hanover Township** saw an increase in 2024 from 108,951 vehicles to 115,050 vehicles recorded. Commercial trucks were at 14,026 in 2023 as compared to 10,556 trucks in 2024.

- **Route 309 in Upper Saucon Township** reported an increase from 2023 of 39,003 vehicles to 42,207 in 2024.

One factor that may have led to an increase is that the Thanksgiving holiday on the 4th Thursday of November was the latest day in the month on the 28th. This late holiday occurrence may have influenced more people to take additional time off and to travel more than in previous years and also affected commercial truck movements and deliveries.

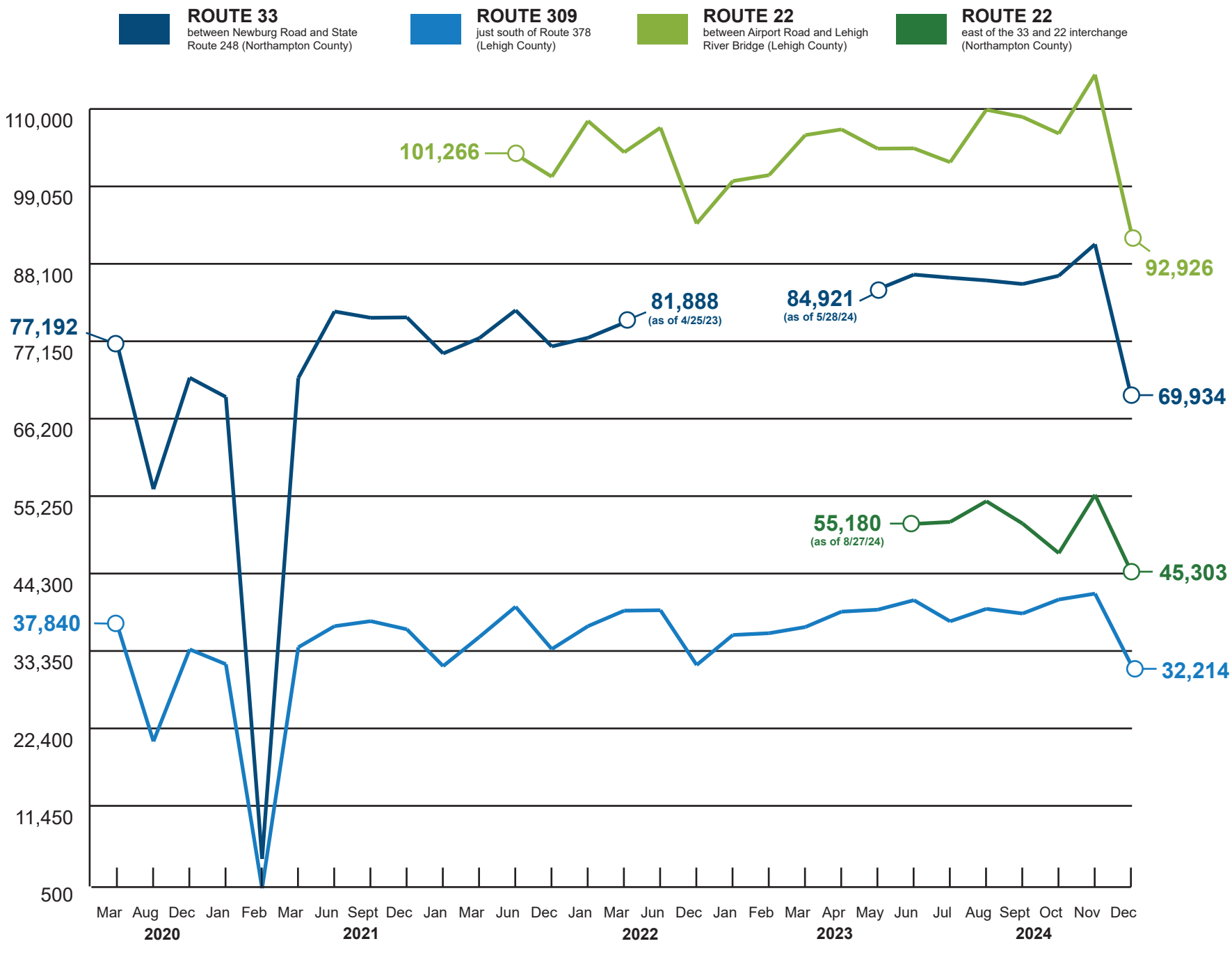
From December 2023 to 2024 traffic volumes saw slight variations across both counters.

- **Route 22 in Hanover Township** reported 94,154 vehicles, including 10,933 trucks in 2023, a slight decrease as compared to the 92,926 vehicles. Of interest is the significant drop in commercial truck traffic from 10,933 trucks in 2023 to 7,121 in 2024. This may have been heavily impacted by Christmas Eve on that Tuesday

- **Route 309 in Upper Saucon Township** saw flat traffic volumes from 32,191 in 2023 to 32,214 in 2024, a change of 23 more vehicles.

The Route 309 traffic counter has been consistent year in and year out as far as traffic volumes and seasonal variations. The main north south corridor in southern Lehigh County is heavily influenced by consistent commuter travel that is generally only affected by traffic disruptions on Interstate 476, the Pennsylvania Turnpike. Whereas the traffic volumes on Route 22 may be affected greater by holiday fluctuations and the impacts of disruptions on Route 22 itself or other east-west corridors such as Interstate 78.

TOTAL VEHICLE TRAFFIC



TOTAL TRUCK TRAFFIC