Lehigh Valley Planning Commission

DR. CHRISTOPHER R. AMATO
Chair

CHRISTINA V. MORGAN
Vice Chair

ARMANDO MORITZ-CHAPELLIQUEN
Treasurer

BECKY A. BRADLEY, AICP
Executive Director

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

TRANSPORTATION PLANNING COMMITTEE MEETING
Thursday, December 18, 2025, at 9:30am
AGENDA

Roll Call

Courtesy of the Floor

1. New Staff Introductions
    a. Jacob Weinberg, Community and Regional Planner
    b. Peter Lantz, Environmental Engineer
    c. Mary Grace Collins, Community and Regional Planner
    d. Giovanna Rizkallah, AI Engineer + Innovation Planner

Old Business

1. *PRESENTATION & DISCUSSION ITEM:* Lehigh County Industrial Land Use Guide (EG)
2. *INFORMATION ITEM:* Trail Connection Strategy (EG)

New Business

1. *ACTION ITEM*: Chair and Vice Chair Elections
2. *ACTION ITEM*: Salisbury Township Street Vacation Petition (EG)
3. *INFORMATION ITEM:* Annual List of Obligated Projects (EG)
4. *INFORMATION ITEM:* 2027-2030 Transportation Improvement Program Update (EG, SK)

Status Reports

1. *INFORMATION ITEM:* Highway Performance Monitoring System: Monthly Traffic Report (CK)

Adjournment

Next Transportation Committee Meeting:

Virtual
Thursday, January 22, 2025, at 5:30 pm

THE MEETING CAN BE ACCESSED AT http://www.tinyurl.com/LVPC2025 OR VIA PHONE 610-477-5793 Conf ID: 651 626 091#.

Lehigh County Industrial Land Use Guide

Comment Draft
December 15, 2025
Prepared by the Lehigh Valley Planning Commission

Table of Contents

Introduction

Industrial development and rapid technology advancements are shaping Lehigh County's land use needs, forcing communities to evolve quickly to handle the emerging uses arriving at their doorstep. However, this region has a history of adapting because industrial development has been a defining influence on Lehigh County's economy and landscape since the 1700s, when the earliest European settlers established water-powered mills for grain processing, lumber production and iron works along creeks such as the Little Lehigh, Jordan, Coplay and Saucon. The opening of the Lehigh Canal in 1829 revolutionized the local economy by allowing goods to easily move between Lehigh County and nearby regions, and local towns like Allentown grew into industrial centers.

By the late 1800s, Lehigh County and the broader Lehigh Valley had become home to a wide array of prominent industries. Iron production expanded with the advent of anthracite-fired iron furnaces, including the Allentown Iron Works on the Little Lehigh Creek, the Thomas Iron Works in what is now Hokendauqua, and the Coplay Furnace complex, several of which still stand today as historic sites. These operations helped make the region a national center for early iron manufacturing before Bethlehem Steel's rise.

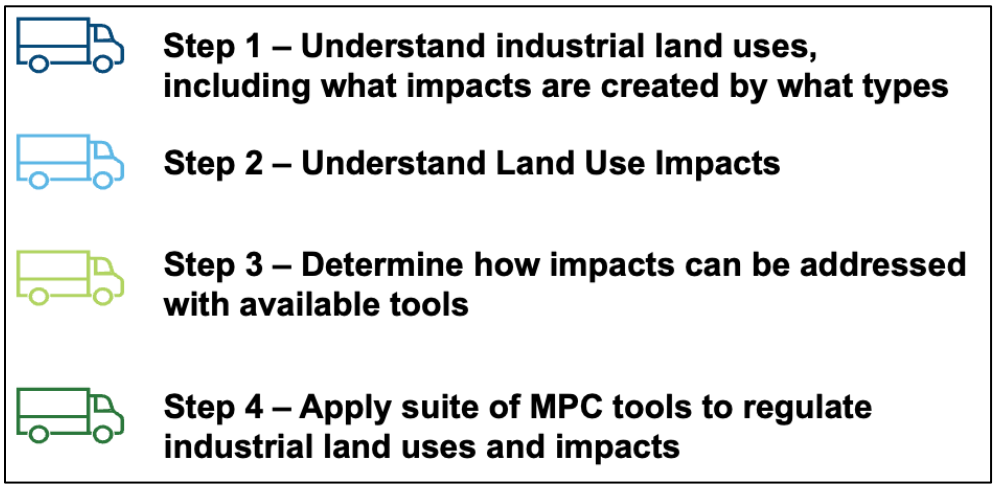
The Valley also became one of the nation's premier silk manufacturing hubs in the late 1800s, driven by mills such as the Adelaide Silk Mill in Allentown, the Hemphill and Sayre silk operations in Catasauqua, and numerous smaller mills in Emmaus, Slatington, and Alburtis. At the same time, the region's cement industry began to take shape through plants near Coplay and Egypt, laying the groundwork for the Lehigh Valley's emergence as the "Cement Belt of the United States." By the late 1800s and early 1900s, Bethlehem Steel anchored a regional economy built on heavy industry, headquartered just across the county line in Bethlehem.

Industry shifted after World War II as American steel and traditional manufacturing declined, but due to the key positioning of Lehigh County relative to adjacent regions, the County emerged as a hub for logistics uses supporting the rise of global supply chains and e-commerce. This rapid shift and expansion of large-scale warehouse development created economic opportunity but also caused traffic, environmental and quality-of-life challenges for municipalities.

Today, industry continues to rapidly evolve, as technology-based industrial uses, advanced manufacturing, and alternative energy are expanding into the region, bringing new demands for land, transportation and utility infrastructure. Communities must prepare for a changing industrial landscape to balance community, economic and environmental priorities. The Lehigh County Industrial Land Use Guide provides the resource tools, data and best practices local governments need to manage current impacts and proactively plan.

How to Use This Guide

The Lehigh County Industrial Land Use Guide is a practical reference for planners, municipal officials and other community stakeholders to better manage industrial growth and its impacts. It serves as a policy alignment and decision-support tool that helps municipalities connect data, best practices and regulatory tools to make informed, balanced decisions about existing and emerging industrial land uses.



Municipalities can use this guide to:

- **Support Comprehensive Planning**: Align local policies and future land use maps with evolving land use trends, identify suitable areas for industrial activity, and integrate industrial corridors into long-range economic and transportation strategies.
- **Inform Zoning and Land Development Regulations**: Translate best practices into zoning districts, use standards, and subdivision and land development ordinance (SALDO) criteria that balance industrial needs with community character and environmental protection.
- **Strengthen Development Review**: Reference the guide when evaluating industrial proposals for consistency with comprehensive plans, transportation access and infrastructure capacity. The guide's recommendations can also serve as technical justification in decision-making.
- **Plan Infrastructure and Transportation Improvements**: Coordinate industrial land use planning with roadway, freight, rail and utility networks; prioritize capital projects that make appropriate sites development-ready.
- **Promote Regional Coordination**: Use the guide to collaborate with neighboring municipalities on shared issues like truck routing, stormwater or infrastructure extensions that cross boundaries.
- **Engage the Public**: Reference the guide to communicate how industrial uses are evaluated, what impacts are being mitigated, and how local and regional plans align.

Industrial development continues to fuel Lehigh County's economic and population growth. By using this guide, communities can manage that growth thoughtfully while supporting jobs and tax revenue, maintaining infrastructure efficiency, protecting environmental and community assets, and positioning themselves for future funding and investment opportunities.

Municipal Engagement

On October 15 from 5:30-7 pm, representatives of Lehigh County communities gathered at the LVPC Conference Center to workshop the Lehigh County Industrial Land Use Guide and discuss common challenges and opportunities. The workshop included a presentation by LVPC on project scope and initial data findings, a facilitated discussion on local industrial land use and freight concerns, priorities for planning for industrial growth, areas of traffic impacts and tools that municipalities have available to address impacts.

The outcome of this engagement directly informed the development of the Guide. Key takeaways from participants included:

1. Managing Traffic and Transportation Impacts Is a Universal Priority
Communities cited freight traffic, congestion, truck routing and access management as their top concerns, and emphasized that freight traffic often spills onto local roads when major corridors like Route 22 or I interstate 78 (I-78) back up, creating safety and quality-of-life challenges in boroughs and townships where roads were not designed for heavy truck volumes.

Participants expressed interest in stronger coordination on Highway Occupancy Permits (HOPs), improved truck management tools, and better access to AADT data, turning volumes and freight routing patterns to make informed decisions.

2. Infrastructure Capacity, Especially Energy, is Emerging as a Critical Limiting Factor
Participants commented on the growing need for electric capacity to support data centers, cold storage and advanced manufacturing. Several communities questioned whether local grids have the infrastructure to handle large-scale users without compromising service to existing residents and businesses.

3. Communities Need Guidance on Emerging Industrial Uses
Municipalities reported a high level of uncertainty about the unique impacts of data centers and other new industrial uses. Key themes included:

- Understanding noise, cooling systems, backup power generation and utility intensity.
- Clarifying decommissioning expectations and life-cycle impacts.
- Ensuring local zoning standards are consistent with state legislation.

Several communities are researching emerging uses or revising ordinances, but they also expressed the need for consistent regional data and best practices to support their efforts.

4. Brownfield Reuse and “Best Use of Existing Space” Remain Strong Values
Many municipalities voiced a desire to direct industrial growth to brownfields, existing industrial districts and redevelopment areas rather than greenfields.

Townships and boroughs emphasized:

- Leverage existing regional assets such as the Lehigh Valley International Airport and FedEx Ground logistics hub.
- Aligning industrial development with long-term community visions, including housing and commercial growth priorities.

5. Land Use Conflicts Are Becoming More Nuanced

Local leaders expressed concern that new industrial users -- especially large energy-intensive ones -- could crowd out desired residential or commercial development by consuming disproportionate shares of available infrastructure capacity or land supply.

Municipalities are navigating how to balance:

- The need for economic growth
- Maintaining community character
- And avoiding over-concentration of industrial uses in certain areas

6. Communities Need Practical Tools, Examples and Clear Data

Across municipalities the most requested supports from LVPC included:

- Case studies that illustrate impacts, such as utility consumption, traffic generation and project timelines
- Regional studies, guidance documents and examples from peer communities
- Support in developing or updating comprehensive plans, zoning, and Subdivision and Land Development Ordinances (SALDOs)
- Technical assistance in capital improvement planning
- Assistance in funding frequent ordinance updates, and planning and code modernization

7. Urban Communities Have Distinct Concerns

City of Allentown representatives highlighted challenges around adapting pre-war industrial buildings for modern manufacturing and freight demands. Questions included how to incorporate modern loading, circulation and safety requirements into dense, historic settings.

The workshop made clear that industrial land use in Lehigh County is evolving rapidly, and municipalities are eager for coordinated regional guidance. Participants are facing a mix of long-standing issues -- like freight traffic and redevelopment -- as well as new, complex challenges around utility capacity, digital infrastructure and emerging industrial uses.

The feedback from this engagement directly shaped the structure of the Guide, ensuring it addresses the real-world issues communities are facing and provides the tools, insights, and resources needed to support informed, proactive planning for Lehigh County's industrial future.

Industrial Market Evolution and Development Trends

Once known for its steel manufacturing and heavy industries like slate and cement, the Lehigh Valley has evolved into an e-commerce and logistics hub for the Northeastern United States. Situated along the I-78 and Interstate 80 (I-80) corridors, the Valley is within a day's drive of roughly one-third of the nation's population. This geographic advantage has made Lehigh County a competitive location for distribution and warehousing, supporting sustained growth in the industrial real estate market.

Warehousing and Logistics
The surge in online shopping during and after the COVID-19 Pandemic accelerated demand for large distribution facilities across the Lehigh Valley. Nearly every available building was quickly leased, and vacancy rates fell to around 3% in 2022 -- an extremely low level for the market. With space scarce, rental prices more than doubled in just a few years, climbing from about $5 per square foot in 2021 to over $11 per square foot by the end of 2024.

As of mid-2025, the market has begun to stabilize. Vacancy rates have risen to about 7%, and lease rates have leveled off, signaling a transition from rapid expansion to a more sustainable balance of supply and demand. This shift reflects a healthy market adjustment rather than a broader decline.

The logistics sector is also diversifying. Subleasing activity has increased as companies reassess space commitments made during the pandemic, creating new opportunities for smaller businesses. Flex space, which can accommodate light manufacturing, assembly, storage, and administrative functions, is becoming more common.

Manufacturing
Manufacturing in Lehigh County is becoming increasingly high-tech, driven by automation, robotics and digital systems that reduce labor needs but heighten demands for skilled technicians, reliable power and broadband. These technological advancements require less space to operate, leading to a shift toward smaller facilities, typically between 20,000 and 50,000 square feet. Emerging manufacturers are producing electronics and medical devices, while reshoring trends are returning production of semiconductors, pharmaceuticals and other goods to the United States to shorten supply chains.

Together, warehousing and manufacturing trends illustrate a regional industrial market that remains active but is beginning to stabilize after a period of rapid growth.

Industrial Market Conditions
Following years of record expansion, the Lehigh Valley's industrial market is entering a period of stabilization as demand begins to balance with available supply. Net

absorption -- the difference between space leased and vacated -- has slowed, while new construction has declined to its lowest level since 2013, with just 743,000 square feet breaking ground along the Interstate 78/ Interstate 80 corridor in early 2025, according to international real estate firm CBRE.

Both declining absorption and reduced construction reflect a market realignment after the pandemic-era surge in warehouse development. As fewer large-scale projects are proposed, the total industrial square footage added to the market each year has moderated.

Lease rates, which more than doubled between 2021 and 2023, have since stabilized around $11.50, remaining among the highest along the corridor. Nationally, 2024 marked the 15th consecutive year of industrial expansion across the United States, though at its slowest pace since 2010. Within this context, the Lehigh Valley has demonstrated steady performance and resilience, maintaining near-zero changes in inventory, absorption and rent growth, even as larger metros experienced sharper swings.

Recent trade policies and executive actions have introduced some uncertainty, prompting many companies to delay expansion decisions until costs and supply chain implications become clearer. This cautious, strategic approach is visible nationwide, including in the Lehigh Valley, where developers are taking a longer-term view of new industrial investment.

Regional Development Patterns

Development patterns across the Lehigh Valley over the past decade reflect a region in transition -- shifting from rapid industrial expansion toward more balanced, mixed-use growth. Between 2015 and 2022, multi-family housing approvals rose steadily, reflecting increased demand for higher-density living near employment and service centers. Public and quasi-public uses such as healthcare facilities also expanded, signaling broader investment in community infrastructure.

During the pandemic, municipalities such as Bethlehem, and the townships of Lower Macungie, South Whitehall and Whitehall experienced a temporary spike in non-residential square footage as businesses sought space outside dense urban areas. That surge has since receded, while steady growth continues in Upper Macungie Township, Allentown and Bethlehem, where strong transportation access, workforce proximity and established infrastructure continue to attract investment.

Meanwhile, warehouse and industrial development peaked during the pandemic and has since returned to pre-pandemic levels. Office and retail construction have declined since 2018, influenced by remote work, e-commerce, and automation. These changes highlight an evolving regional identity -- one that increasingly emphasizes livability, resilience and sustainable economic diversity.

Importantly, the industrial surge was accompanied by parallel residential

growth. Municipalities including Allentown, Bethlehem, Emmaus Borough and South Whitehall Township experienced simultaneous increases in both housing and non-residential development, underscoring the close link between industrial expansion and housing demand. As both sectors stabilize, the Lehigh Valley appears to be entering a post-boom phase defined by moderate, sustainable growth that supports long-term economic strength and regional balance.

Evolving Industrial Needs

Looking ahead, Lehigh County's industrial landscape will continue evolving as new technologies, energy systems, and logistics models reshape how and where industries operate. Traditional warehousing and manufacturing will increasingly intersect with technology-driven production -- such as biofabrication, microchip manufacturing and large-scale 3D printing -- that demand smaller, more specialized facilities supported by high-capacity utilities and broadband. Digital and automated industrial operations, including data centers, cryptocurrency mining, and autonomous vehicle hubs, will expand the region's role in the national digital economy but will also heighten energy and infrastructure demands. Simultaneously, energy generation and storage facilities from solar and battery installations to advanced grid management systems will become more common as Pennsylvania's energy market modernizes and industries seek sustainable, resilient power sources. The freight and logistics sector is also expected to transform with the adoption of electric and autonomous trucks, increased intermodal connectivity, and the redevelopment of aging warehouse stock for more efficient operations.

Together, these shifts point toward an industrial future defined by smaller footprints, higher energy intensity, greater digital integration, and closer ties between industrial land use, infrastructure and community planning. For municipalities, this means planning proactively, by updating zoning, infrastructure, and comprehensive plans to ensure that future industrial growth remains compatible with community character, resource capacity and long-term regional goals.

Tools for Local Governments

The foundation for how Pennsylvania municipalities guide growth and development is established by the Pennsylvania Municipalities Planning Code (MPC). The MPC grants local governments the authority to adopt comprehensive plans, zoning ordinances, and subdivision and land development ordinances, which together form the framework for managing land use and development.

Many municipalities in Lehigh County have adopted these planning and regulatory tools provided under the MPC, but too often these tools are developed and maintained in silos. A municipality may prepare a comprehensive plan, write a zoning ordinance, and adopt a subdivision and land development ordinance (SALDO), yet over time the connection between the three becomes blurred. Outdated zoning may not reflect the vision set forth in the comprehensive plan, and SALDO provisions may drift away from the standards needed to support zoning districts. When this happens, municipalities are left reacting to development proposals instead of proactively guiding them, particularly as new or unfamiliar industrial uses emerge.

The comprehensive plan, zoning, and subdivision and land development ordinances are tools most effective when used together, with each reinforcing the others:

Comprehensive Plan: Provides the long-term vision and identifies areas best suited for different types of industrial uses.

Zoning: Translates the Comprehensive Plan vision into mapped districts and regulatory standards that shape where industrial uses are permitted and how they function.

Subdivision and Land Development Ordinance: Ensures that the details of site design are consistent with both the zoning framework and the broader goals of the comprehensive plan.

For industrial land uses in particular, integration is critical. Industrial facilities often come with large site footprints, significant infrastructure demands, and potential community impacts on traffic, environment, and quality of life. If zoning regulations are not aligned with SALDO standards, municipalities may miss opportunities to manage truck circulation, buffer adjacent neighborhoods, or ensure adequate utility capacity. Likewise, if zoning diverges from the comprehensive plan, municipalities may find themselves facing development in areas that conflict with community goals.

When used together intentionally, these tools allow municipalities to stay ahead of market trends, set clear expectations for developers, minimize conflicts between industrial development and surrounding land uses, ensure that industrial growth aligns with local priorities, and protect quality of life while supporting economic opportunity. The sections that follow provide guidance on how each tool can be applied to help communities make informed, forward-looking decisions about industrial land use.

Comprehensive Plans

A comprehensive plan is the highest-level policy document a municipality has under the MPC. While not regulatory on its own, it establishes the vision, goals, and framework that zoning ordinances and subdivision and land development ordinances (SALDOs) should implement.

How Comprehensive Plans Can Address Industrial Land Uses:

Identify Suitable Locations – Analyze transportation networks, utility capacity, environmental features and land availability to guide where industrial development is most appropriate. Set policies that clearly determine the outcomes of development, avoiding conflicts with residential areas, schools or sensitive natural resources. Designate industrial growth areas, and highlight opportunities for reuse or redevelopment.

Balance Land Use Priorities – Consider housing, agriculture, open space and economic development together to ensure that industrial growth is accommodated without displacing other community priorities.

Anticipate Emerging Trends – Include policies for new or evolving uses to proactively set expectations before proposals arrive.

Set Transportation and Infrastructure Policies – Identify where infrastructure upgrades may be needed; outline strategies for coordinating with utility providers and transportation agencies; include policies to elevate the quality of developments and minimize impacts (truck driver necessities, parking, etc.); reference other municipal planning documents such as Official Sewage Facilities Plans and Capital Improvements Plans.

Promote Design and Mitigation Standards – While zoning and SALDO carry the enforceable requirements, the comprehensive plan can establish policies for enhanced built environments through buffering, landscaping, sustainable building practices, renewable energy, architectural treatments and building aesthetics.

Support Regional Coordination – Align local goals with *FutureLV: The Regional Plan* to support regional coordination, as industrial markets and freight traffic cross municipal boundaries.

Zoning

Zoning is the most direct regulatory tool municipalities must manage industrial land uses. As authorized by the MPC, zoning ordinances establish where industrial uses are permitted, the standards they must meet, and how they relate to surrounding land uses. Zoning regulations are created to implement the visions of comprehensive plans and are legally enforceable.

How Zoning Ordinances and Maps Can Address Industrial Land Uses:

Differentiate Between Types of Industry – Ordinances should include clear definitions that establish separate uses based on their types and resulting impacts, including manufacturing, technology industry, warehousing and logistics.

Designate Appropriate Districts – Zoning maps identify where industrial uses can go, typically near highways, rail corridors, or other infrastructure, and away from residential neighborhoods and sensitive environmental areas.

Set Dimensional and Site Standards – Requirements for setbacks, buffering and building height reduce conflicts with adjacent uses, especially when near residential or mixed-use areas.

Require Screening and Design Features – Landscaping, berms, façade requirements and green building practices can help reduce the visual and environmental footprint of large industrial buildings.

Mitigate Operational Impacts – Performance standards address noise, lighting, emissions, truck circulation, hours of operation and other potential impacts, ensuring industrial activity does not create nuisances for neighbors.

Address Transportation and Parking – Truck routes, loading areas and parking requirements can be tailored to industrial uses, keeping heavy vehicle traffic off local streets and ensuring adequate but not excessive parking.

Encourage Redevelopment and Reuse – Flexible zoning provisions can make it easier to reuse or redevelop obsolete industrial sites and reinvest in brownfield sites to support community revitalization.

Protect Natural Resources – Overlay districts, environmental performance standards, and conservation design techniques can ensure that industrial development avoids or mitigates impacts on critical habitats, farmland or water resources.

Subdivision and Land Development

While zoning determines *where* industrial uses may be located, Subdivision and Land Development Ordinances (SALDOs) establish detailed requirements for *how* land is divided and developed. These ordinances as authorized by the MPC allow municipalities to ensure that new industrial sites are designed safely, efficiently and in ways that minimize impacts on surrounding communities, working in tandem with zoning and comprehensive plans to create a predictable, consistent framework of plan submission and review for both municipalities and developers.

How SALDOs Can Address Industrial Land Uses:

Transportation and Access Management – Require traffic impact studies to assess infrastructure needs and ensure safe and efficient truck circulation, including designated entrances, on-site truck parking and turning radius requirements.

Infrastructure and Utilities – Require adequate sewer, water, stormwater, and broadband capacity before approval of plans. Incorporate modern infrastructure needs, such as electric vehicle charging or redundant power for high-tech uses.

Stormwater and Environmental Management – Encourage green infrastructure approaches such as rain gardens. Protect floodplains, wetlands and steep slopes through development standards that minimize site disturbance. Require landscaping and tree plantings in parking areas and throughout sites to improve air quality and mitigate heat island effects.

Site Layout and Design Standards – Establish minimum requirements for parking, loading areas and internal circulation that reflect industrial needs without overbuilding. Require screening of loading docks, outdoor storage and mechanical equipment from public rights-of-way and adjacent residential areas. Require pedestrian and bicycle infrastructure to support workforce mobility and safety, including sidewalks, lighting, bus shelters, and safe crossings.

Worker and Driver Amenities – Encourage or require workforce amenities such as break areas, green space and driver facilities.

Regional Coordination – Incorporate external agencies including the Lehigh and Northampton Transportation Study (LANTA) and LVPC early and often in review processes.

Strategies for Addressing Industrial Land Uses

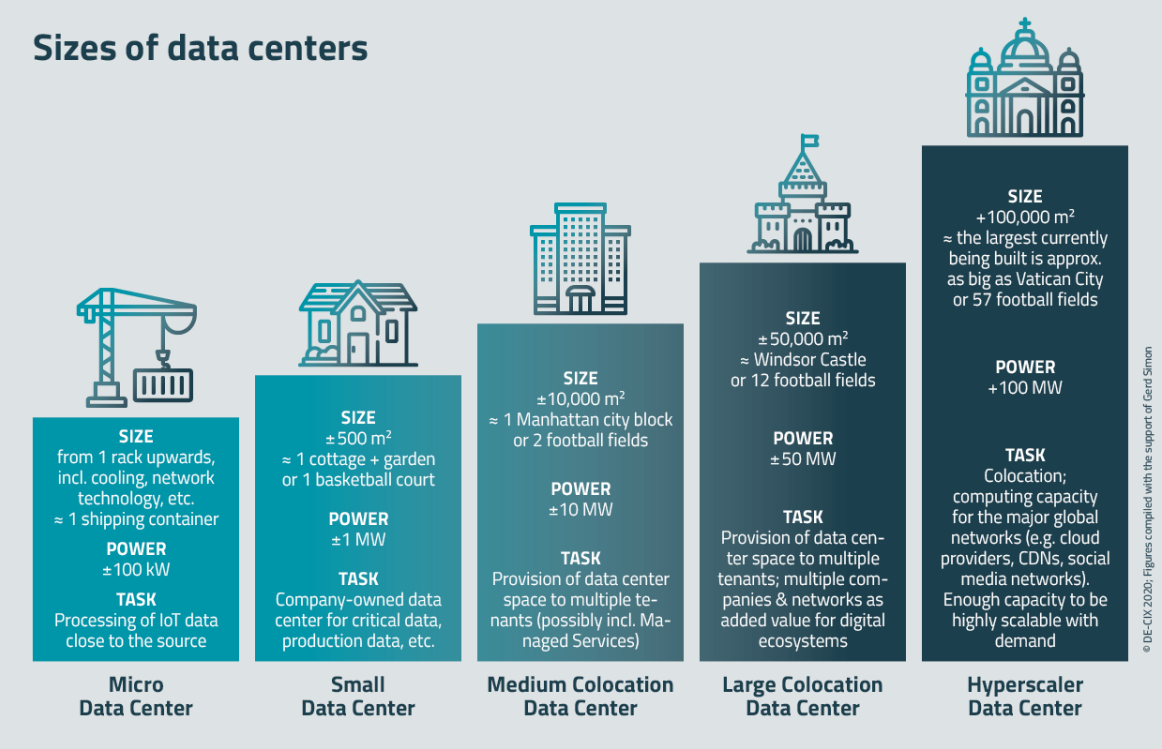
Emerging and Evolving Industrial Land Uses

Evolving and emerging industrial land uses are grouped into several categories: Digital Infrastructure and Tech Facilities driven by modern-day use of computers and data exchange, Advanced Manufacturing driven by technological advancements, Freight, Logistics and Supply Chain as systems increasingly incorporate automation to maximize efficiency, Energy Generation and Storage to power these utility-intensive land uses, and Resource Extraction as the industry's materials needs shift.

Digital Infrastructure and Tech Facilities

Data Centers

Data centers are facilities that house physical hardware, like computer servers and telecommunications and storage systems, that enable the digital world. When you use devices such as a smartphone or laptop, it's not the device itself that processes your requests. The device sends your request to a data center, where data is accessed, processed, and returned to your device to complete the request, typically within a fraction of a second. Hyperscale Data Centers are growing rapidly across the country in tandem with the proliferation of artificial intelligence and cloud computing.



Data centers must be operational 24 hours a day, seven days (24/7) a week and require uninterrupted electricity supply. The equipment produces a lot of heat, and robust

cooling systems are required for proper functioning. Most of these cooling systems are water-based and may require between 20,000 gallons per day for smaller data centers to over 500,000 gallons per day for large data centers.

Photo Credit: TierPoint.Com

TierPoint Allentown Data Center, Upper Macungie Township, Lehigh County is a medium-sized colocation center of 122,000-square-feet. *(See Ex. 1 Photo)*

Photo Credit: Morning Call

Cumulus Data, Salem Township, Luzerne County, is a hyperscale data center on a 1,200-acre campus that is tied to Talen Energy's neighboring nuclear power station.

Cryptocurrency Mining

Cryptocurrency mining facilities operate high-powered computers that validate blockchain transactions and generate digital currency. Unlike data centers, which process and store information for many users, cryptocurrency mines are single-purpose computing operations designed to solve complex mathematical equations. These facilities are often housed in warehouses or modular container units and rely on constant electricity supply and heavy-duty cooling systems to maintain safe operating temperatures.

Cryptocurrency mining is extremely energy-intensive and can create substantial strain on local power grids. While some operations locate near renewable energy sources, many depend on fossil-fuel-based electricity, leading to measurable air quality and climate impacts. The number of large-scale cryptocurrency mines in the United States remains relatively small but is expected to grow as digital currencies gain acceptance and the technology becomes more commercially viable.

Photo Credit: Morning Call

Panther Creek Power Plant, Nesquehoning Borough, Carbon County, is owned by a cryptocurrency mining operation and powers its facilities by burning waste coal for power.

Telecommunications Hubs

Telecommunications hubs, sometimes called network exchange points, carrier hotels, or telecom switching facilities, are specialized sites that house the equipment and infrastructure enabling digital communication networks. These facilities connect internet service providers, mobile carriers, data centers and cloud platforms, allowing data to move efficiently across regional, national and international systems.

While data centers primarily store and process large volumes of digital information for cloud computing, telecommunications hubs focus on transmission and routing -- the physical interconnection points that keep networks operational. Telecom hubs often occupy smaller buildings than data centers but require similar infrastructure, such as redundant power supply, advanced cooling and robust security systems.

Image Credit: Google Aerial Imagery
60 HUDSON, Manhattan, New York City, is 24-story telecommunications building that was the former headquarters of Western Union, providing telegraph services and leased office space until 1973, that is now one of the most important internet hubs worldwide.

Key Impacts Across Digital Infrastructure Uses

Energy Demand and Grid Reliability	• High and constant electricity demand • Potential strain on local substations and transmission networks • Need for redundancy and emergency power
Cooling, Water Use and Heat Generation	• Significant heat output from information-processing equipment • Cooling systems that may use water, large air-handling units or mechanical chillers • Potential opportunities for heat recovery or reuse
Noise and Environmental Factors	• Persistent noise from fans, chillers, air-handling units, transformers and generators • Air emissions from backup generators or on-site fossil-fuel power sources (more common in crypto mining) • Stormwater impacts from large impervious surfaces and roof areas
Visual and Design Considerations	• Windowless or utilitarian buildings, equipment yards, outdoor containerized units • Need for screening, buffering and architectural standards • Antenna structures and small-cell nodes at telecom hubs
Emergency Response and Resiliency	• Hazard mitigation for electrical systems, batteries and fire suppression • Requirements for 24/7 access and operations continuity • Elevated risk considerations due to heat, high voltage and redundant power systems
Community Compatibility	• Siting concerns near residential areas • Public perceptions about electromagnetic frequency (telecom), fossil-fuel dependency (crypto) or noise (all uses)
Construction Traffic	• Increased passenger vehicle traffic due to construction workers accessing site • Heavy equipment traffic when building is under construction • Truck traffic to transport data center equipment

Mitigation Strategies & Best Practices

Comprehensive Plans Should:

- Inventory and establish goals and policies for the protection of existing natural and historic resources
- Inventory, analyze and project existing and future community facilities and utility needs. Establish goals and policies directing digital infrastructure land uses to adequate utility capacity
- Establish goals and policies supporting the expansion of broadband and fiber internet infrastructure

- Identify the economic development potential of digital infrastructure facilities, as emerging industrial land uses with impacts that must also be mitigated if encouraged to locate in the community
- Establish policies that encourage protection of residential areas and community-centered land uses from environmental impacts of land uses adverse to public health and quality of life
- Establish sustainability goals and policies encouraging renewable or carbon-neutral energy usage
- Reference other planning documents such as Sewage Facilities Plans, Hazard Mitigation Plans, Energy Conservation Plans, Capital Improvement Plans; and/or identify creating or updating such documents as Comprehensive Plan implementation steps

Zoning Ordinance Considerations

- Definitions
    - Include a broad definition for “Data Centers” that encompasses all aspects of digital infrastructure land uses
    - Differentiate “Data Centers” as a primary use from an accessory data center
- Districts
    - Direct Data Centers to appropriate areas with:
        - Compatible land uses such as technology/innovation districts, light or heavy industrial districts, business parks or highway commercial areas
        - Adequate electrical capacity
        - Public water service availability
        - Public sewer service availability
        - Access to broadband and/or fiber networks
        - Adequate transportation access for construction and emergency vehicles.
    - Avoid siting in or near:
        - Areas with inadequate infrastructure, such as rural areas
        - Floodplains, wetlands and other natural constraints
        - Residential neighborhoods or community facilities
    - Consider creating overlay districts to ensure adequate siting
- Regulations and Performance Standards
    - Permit “Data Center” as a conditional use to establish criteria and a process for additional oversight
    - Specify building scale and design standards, including building height, orientation and façade treatments
    - Establish adequate setbacks and buffering
    - Establish standards limiting noise levels at property lines
    - Establish standards limiting light levels at property lines and projected onto adjacent properties
    - Specify a contextual parking requirement, such as one space per employee

Subdivision & Land Development Ordinances Should:

- Utility Capacity & Infrastructure
    - Demonstrate adequate water, sewer and electric capacity, with confirmation from utility provider.
- Site Design
    - Require Pennsylvania-native landscaping throughout sites and within buffer areas
    - Require visually aesthetic enclosures around outdoor equipment
    - Require adequate site access for emergency vehicles
        - Incorporate emergency service provides in the development review process
- Impact assessments should require community and environmental impact statements evaluating:
    - Energy and water demand
    - Emissions and air quality impacts
    - Noise levels
    - Emergency service requirements
    - Municipal fiscal impacts

Advanced Manufacturing

Biotechnology

Biotechnology or Biotech is a field using living organisms or systems to develop products, processes or services. The field includes biofabrication, which can produce lab-grown meats and animal-free materials such as leather or fur, create bio-based fuels and plastics, and manufacture advanced medical products like implantable organs and 3D tissue models for drug testing. These industries collectively hold potential to transform manufacturing, energy and healthcare while addressing global challenges such as sustainability, ethical production and resource scarcity.

In Lehigh County, the region's strong healthcare sector, higher education institutions, and established manufacturing base position it well for future growth. Facilities typically resemble research laboratories or small-scale production sites and require reliable utilities, advanced ventilation, temperature control and specialized waste management systems. As the sector evolves, municipalities will need to plan for the unique spatial, environmental and regulatory requirements of this rapidly developing field.

Example

Image Credit: Google Aerial Imagery
OraSure Technologies, in Bethlehem, manufactures medical diagnostic testing and collection devices.

3D and Large-Scale Printing

3D printing, also called *additive manufacturing*, uses computer-guided equipment to build three-dimensional objects layer by layer from digital models. While small-scale 3D printing is already common in prototyping and component fabrication, large-scale additive manufacturing applies this technology to produce full-size building elements, bridges, vehicles, and industrial components. These operations often utilize materials such as concrete, metal, polymer or composite blends and may locate within light industrial or research and development facilities.

Unlike traditional manufacturing, which removes material from a solid block, additive processes use only what is needed, significantly reducing waste and allowing greater design flexibility. As costs decrease, large-format printers are expected to become more common in construction, infrastructure and custom manufacturing sectors, changing the spatial and infrastructure needs of industrial areas.

Photos Credit: Black Buffalo 3D Corporation

Black Buffalo 3D Corporation, formerly located in East Stroudsburg Borough, Monroe County PA, 3D prints construction materials and built the first internationally code compliant 3D-printed home (located in Fort Worth, TX).

Microchip Manufacturing

Microchip manufacturing facilities, also known as semiconductor fabrication plants or “fabs”, produce the chips that power everything from smartphones and vehicles to medical devices and national defense systems. The industry includes both front-end wafer fabrication, where silicon wafers are imprinted with microcircuits, and back-end assembly, testing and packaging (ATP), where chips are cut, tested and prepared for integration into finished products.

Driven by global supply chain shifts and national security priorities, the CHIPS and Science Act of 2022 has spurred new investment in domestic semiconductor production to reduce reliance on overseas manufacturing. The Lehigh Valley’s existing logistics infrastructure, workforce base and proximity to major metropolitan markets make it a competitive location for semiconductor investment -- illustrated by proposals such as the Infinera packaging facility in Bethlehem.

These facilities typically require large-scale buildings, extensive water and energy resources, high-skill labor, and robust transportation networks for inbound materials and outbound products. Their complexity and scale make proactive planning essential to ensure compatibility with community goals, infrastructure capacity, and environmental standards.

Image Credit: Google Aerial Imagery
Coherent Corp., Palmer Township, produces materials for semiconductors.

Key Impacts Across Advanced Manufacturing Uses

Infrastructure & Utility Demand	• High and potentially continuous electric demand • Significant water demand, especially for bioengineering and semiconductor fabrication • High-capacity cooling • Potential need for substantial utility upgrades
Environmental Factors	• Air emissions and ventilation needs • Specialized waste streams • Significant heat generation from processing equipment • Noise from machinery, ventilation systems and freight activity
Freight, Logistics & Transportation	• Frequent deliveries of specialized materials • Passenger vehicle traffic associated with workforce shifts • Freight traffic from shipping materials and product
Building Scale & Site Characteristics	• Varying building footprints • High-clearance interior spaces for some 3D processes. • Outdoor equipment yards and mechanical systems
Hazard Management & Emergency Response	• Complex hazard profiles including biological materials, combustible powders/metal dust, or hazardous chemical agents • Heightened fire-suppression needs

Mitigation Strategies & Best Practices

Comprehensive Plans Should:

- Inventory and establish goals and policies for protecting natural and historic resources that may be affected by high-intensity advanced manufacturing operations.
- Inventory, analyze and project community facility and utility needs, including water, sewer, electric, broadband, and emergency service capacity. Establish policies directing advanced manufacturing uses to areas with adequate infrastructure.
- Identify the economic development potential of advanced manufacturing, particularly sectors such as bioengineering, 3D printing, and semiconductor fabrication, while recognizing the need to mitigate their utility, environmental and freight impacts.
- Designate suitable areas for advanced manufacturing within industrial, technology, or research corridors, especially near workforce, higher education institutions transportation networks, and existing utility infrastructure.
- Support sustainability and innovation goals, including energy efficiency, renewable or low-carbon energy use, waste minimization, and opportunities for material reuse or circular manufacturing processes.
- Integrate workforce and training initiatives by referencing or coordinating with higher education, technical training centers, and industry partnerships supporting biotechnology, robotics, fabrication, and semiconductor disciplines.
- Reference related planning documents (Sewage Facilities Plans, Hazard Mitigation Plans, Energy Conservation Plans, Capital Improvement Plans, etc) and identify updates to these plans as Comprehensive Plan implementation steps.

Zoning Ordinances Considerations

Definitions

- Include clear definitions for Bioengineering/Biofabrication Facilities, Additive or 3D Manufacturing Facilities, and Microchip/Semiconductor Manufacturing Facilities to distinguish them from general manufacturing or research laboratories.
- Differentiate primary manufacturing operations from accessory research, testing, or prototyping uses.

Districts

- Direct advanced manufacturing uses to districts with:
    - Compatible industrial, technology, innovation or business-park land uses
    - Adequate and reliable electric capacity
    - Adequate public water and sewer capacity (especially for biotech and semiconductor fabrication)
    - Access to freight routes and goods-movement corridors
    - Sufficient broadband or fiber-optic infrastructure

    - Adequate transportation access for deliveries, workforce and emergency services
- Avoid siting in or near:
    - Residential neighborhoods or sensitive community facilities
    - Areas with inadequate utility infrastructure
    - Floodplains, wetlands, and environmental constraint areas
- Consider overlay districts for advanced manufacturing clusters to standardize siting, design, and impact-mitigation requirements.

Regulations and Performance Standards

- Permit advanced manufacturing uses as conditional uses or special exceptions to establish evaluation criteria and provide additional oversight of facility intensity, environmental impacts, and freight activity.
- Specify building scale and design standards, including height, façade treatments, screening of mechanical equipment, and building orientation.
- Establish setbacks and buffering to protect adjacent uses.
- Establish noise and light standards at property lines.
- Require contextual parking requirements, scaled to workforce needs.
- Require compliance with specialized codes where applicable, such as biosafety regulations (bioengineering), fire and ventilation codes for industrial robotics (3D printing), or cleanroom and chemical-handling standards (semiconductors).

Subdivision & Land Development Ordinances Considerations

Utility Capacity & Infrastructure

Require applicants to demonstrate, with utility-provider confirmation:

- Adequate water capacity, critical for biotech and semiconductor fabrication.
- Adequate sewer capacity for process discharge and wastewater flows
- Adequate electric capacity, with documentation of continuous power needs and redundancy
- Adequate broadband/fiber capacity for digitally intensive manufacturing
- Identification of required infrastructure upgrades, with developer responsibility where appropriate
-

Site Design

- Require Pennsylvania-native landscaping and buffer plantings.
- Require aesthetic enclosures around outdoor equipment, mechanical systems, chemical storage areas, and utility yards.
- Require adequate emergency vehicle access, including turning radii, drive aisle widths, and fire-suppression system access.
    - Incorporate local emergency service providers into the review process.
- Require plans showing ventilation exhaust locations, emissions-control systems, and equipment requiring special containment.

Impact Assessments

Require Community and Environmental Impact Statements evaluating:

- Energy demand and reliability requirements
- Water demand and wastewater generation
- Emissions, chemical usage, and air-quality impacts
- Noise and vibration levels
- Hazardous or specialized waste streams, such as biological, chemical, particulate
- Emergency service requirements
- Municipal fiscal impacts
- Freight and truck movement patterns, especially for semiconductor and additive manufacturing

Freight, Logistics and Supply Chain

Freight is an essential function of every economy, connecting producers, suppliers and consumers both within the region and far beyond. The facilities that support freight movement vary widely in size and purpose, and accommodate a diverse range of activities, including manufacturing, assembly, storage, staging and distribution. Freight-based land uses in Lehigh County depend on efficient connectivity by road, rail and air, and can take many forms such as distribution centers, fulfillment centers, truck terminals, industrial or business parks and light manufacturing operations.

Many modern freight facilities are multi-tenant or multi-purpose, designed for flexibility so different users can cycle in and out as business needs evolve. This adaptability allows the regional industrial market to respond quickly to economic shifts but can also complicate local planning, as turnover in tenants may lead to changing traffic, infrastructure, and environmental impacts. Inside the walls of these facilities, operations are often highly integrated. Production, assembly, packaging and distribution may occur under one roof or across multiple buildings within the same business park. In some cases, adjacent or nearby facilities operate in synergy, forming industrial ecosystems that depend on proximity and shared infrastructure.

Municipalities are encouraged to align definitions for all freight-based land uses with the Institute of Transportation Engineers (ITE) Trip Generation Manual, provided below. The ITE is the industry standard for estimating the traffic impacts of land uses, and aligning definitions helps ensure that facilities with freight impacts address transportation infrastructure needs. Freight-Based Facilities can be generally classified into the following high-level categories:

- Manufacturing
- Warehousing (with subsets)
- Fulfillment Center
- Industrial/Business Parks
- General Light Industrial

Manufacturing

ITE Definition: “A manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, a manufacturing facility typically has an office and may provide space for warehouse, research, and associated functions.”

Manufacturing facilities focus on producing finished goods, often with supporting functions such as research, warehousing and office operations. While manufacturing sites generate freight movements, the majority of trips are typically employee-related. Truck volumes depend on whether raw materials are stored on-site or off-site and on the scale of distribution operations. Because operational intensity and floor area use can vary by tenant or industry, zoning and land development standards should allow flexibility to accommodate different manufacturing processes over time.

Image Credit: Google Aerial Imagery
Keurig Dr. Pepper Manufacturing/Distribution Center, Upper Macungie Township, manufactures packaged beverages in one building and robotically moves items to the adjacent warehouse and staging building.

Warehousing
ITE Definition: “A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas.”
Related uses include *high-cube transload and short-term storage warehouses (Land Use 154)*, *high-cube fulfillment centers (155)*, *parcel hub warehouses (156)*, and *cold storage warehouses (157).*

Warehouses are primarily storage and logistics facilities that may include limited office or employee support space. Transportation impacts depend on the type of operation -- short-term storage, transload, or specialized high-cube warehousing for e-commerce and parcel distribution. These facilities often generate moderate to heavy truck traffic, particularly during peak shipping hours. Zoning should distinguish among warehouse subtypes to ensure appropriate performance standards for circulation, access and buffering.

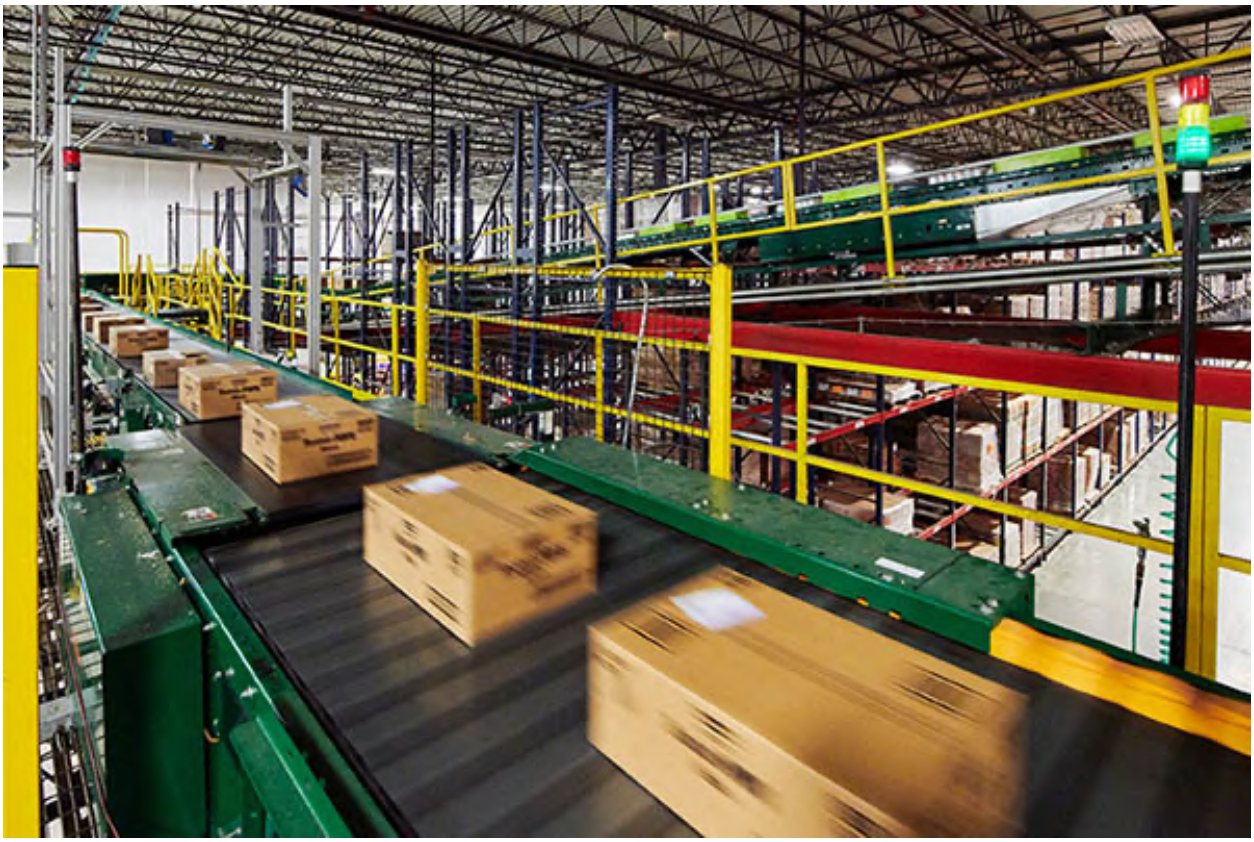


Photo Credit: Prologis

Prologis Park 33, Lower Nazareth Township, has an automated system that demonstrates advancements in smart buildings to lower carbon footprints and make supply chain and logistics systems more sustainable.

Fulfillment Centers

ITE Definition: Fulfillment centers are categorized as sort or non-sort facilities.

- *Sort facilities* handle smaller items requiring extensive manual sorting, typically with high employee counts and greater vehicle trip generation.
- *Non-sort facilities* process larger items primarily through automated systems, resulting in fewer employees per square foot but similar freight activity.

Fulfillment centers represent the most logistics-intensive subset of warehousing, driven by e-commerce operations. These facilities often operate 24/7, generating high truck volumes and employee traffic during shift changes. Because of their size and transportation impacts, municipalities should require traffic impact studies, manage truck routing and ensure adequate infrastructure capacity through the land development process.

Photo Credit: Google Aerial Imagery
Amazon Fulfillment Centers, Upper Macungie Township.

Parcel Hubs/Distribution Centers

ITE Definition: A form of high-cube warehouse that serves as a regional and local freight-forwarder facility via airfreight and ground carriers.
Parcel Hubs/Distribution Centers are high intensity freight-based land uses that often have very large building footprints and generate significant peak-hour traffic.

Photo Credit: Google Aerial Imagery
Fedex Ground Hub Lehigh Valley, Allen Township.

Key Impacts Across Freight-Based Land Uses

Transportation & Freight Movement	• High truck traffic volumes • Increased passenger vehicle traffic during employee shift changes • Need for safe truck routing from site to interchanges • Need for multiple transportation modes, especially transit, to meet workforce needs
Site Circulation & Access	• Tractor-trailer movements require large parking and circulation areas, truck staging, employee parking, and loading docks. • Internal circulation conflicts between passenger vehicles and trucks
Infrastructure & Utility Demand	• Roadway infrastructure demand, including pavement wear from heavy truck loads • Need for adequate public utilities to support industrial operations. o Cold storage and increased automation increase utility demand
Environmental Factors	• Noise from trucks, loading docks and refrigeration units. • Air quality impacts from truck emissions and generators. • Light pollution from loading dock areas and security lighting. • Impervious surface coverage contributing to stormwater runoff and heat generation.
Land Use Impacts	• Large buildings with significant height and massing • Tenant turnover may change impacts and operational intensity

Mitigation Strategies & Best Practices – Freight-Based Land Uses

Comprehensive Plans Should:

- Inventory and analyze existing transportation, utility and community facility capacity that support freight-based development.
- Identify appropriate areas for freight-based uses, such as industrial districts and areas with direct access to major roadways, rail or airports.
- Set goals and policies that protect residential and community-centered uses from freight-based land use impacts.
- Align future land use designations with regional freight networks, focusing on corridors with adequate capacity and multimodal goods-movement opportunities.
- Support economic resilience by recognizing the role of freight-oriented businesses, while balancing this with policies that mitigate transportation and environmental impacts.
- Incorporate sustainability goals, including reducing emissions, managing stormwater from large impervious surfaces, and encouraging renewable or energy-efficient systems.
- Reference related planning documents, such as Transportation Improvement Programs, Act 209 Traffic Impact Fee Studies, Hazard Mitigation Plans,

Comprehensive Parks and Recreation Plans, and Capital Improvement Plans. Identify any necessary updates as Comprehensive Plan implementation steps.
- Promote intermunicipal coordination, especially where freight activity crosses municipal boundaries or relies on shared roadway and infrastructure systems.

Zoning Ordinance Considerations:

Definitions
- Align definitions for Manufacturing, Warehousing, High-Cube Warehouses, Fulfillment Centers, Parcel Hubs, Industrial Parks, and Light Industrial Facilities with the ITE Trip Generation Manual to support accurate transportation impact evaluation.
- Differentiate primary freight-based uses from accessory functions such as small-scale storage, incidental shipping, or on-site fleet parking.

Districts
- Direct freight, logistics, and supply chain uses to zoning districts with:
    - Adequate truck access to highways and key freight corridors
    - Appropriate roadway capacity and turning geometry
    - Public water and sewer availability
    - Suitable electric and broadband infrastructure
    - Safe multimodal access for employees and emergency services
- Avoid siting freight-intensive uses in or near:
    - Residential neighborhoods
    - Schools, parks, and community facilities
    - Areas with inadequate roadway capacity or geometric constraints
    - Environmental constraint areas, such as floodplains and wetlands
- Use overlay districts to direct high-intensity uses to strategic areas.

Regulations and Performance Standards
- Permit major freight-based uses as conditional uses to allow additional oversight of traffic, noise, lighting and environmental impacts.
- Establish building design and site-scale standards, including height, façade treatments and orientation of loading docks away from sensitive uses.
- Require adequate setbacks and buffering from adjacent properties.
- Establish and enforce noise limits at property lines, especially near residential or mixed-use districts.
- Establish lighting standards that limit glare and light spillover onto adjacent properties.
- Require adequate parking, loading and queueing spaces.
    - Specify the inclusion of electrified tractor-trailer stalls and employee parking spaces.

Subdivision & Land Development Ordinances Considerations
Utility Capacity & Infrastructure
- Require site access via specified level of roadways with adequate capacity.

- Require applicants to demonstrate adequate public water and sewer service with confirmation from utility or infrastructure providers.

Site Design

- Require Pennsylvania-native landscaping and buffering, especially along building edges, loading areas, and property lines near non-industrial uses.
- Require visually aesthetic enclosures for loading docks, trailer parking, dumpsters, utilities, and mechanical equipment.
- Ensure safe and adequate site access for emergency vehicles, considering turning radii, drive aisle widths, and multiple access points for very large sites.
    - Incorporate emergency service providers in the development review process.
- Require on-site circulation plans that prevent on-road queueing and ensure safe separation between truck traffic and employee or visitor traffic.

Impact Assessments

Require Community and Environmental Impact Statements evaluating:

- Trip generation, including truck volumes and peak-hour movements
- Traffic impacts on surrounding roadways and intersections
- Noise levels from trucking, mechanical systems, and 24/7 operations
- Emissions and air-quality impacts
- Emergency service needs and response requirements
- Municipal fiscal impacts, including infrastructure maintenance
- Freight routing patterns and mitigation of cut-through traffic in residential areas

Autonomous Vehicles and Freight-Based Land Uses

Autonomous vehicles (AVs) are self-driving technologies that use sensors, cameras, radar, and artificial intelligence to navigate without or with limited human input. Within the freight and logistics sector, autonomous technologies are emerging most rapidly in long-haul trucking, last-mile delivery, and yard or warehouse operations.

Freight AVs range from autonomous tractor-trailers operating on major highway corridors to automated yard tractors, forklifts, and delivery robots functioning within controlled industrial environments. Fully autonomous trucking is permitted on public roads, with the Pennsylvania Legislature signing Act 130 into law in 2022, which authorizes automated vehicles on roadways with PennDOT certification. As technology advances, logistics companies are investing heavily in AV-ready infrastructure, such as smart distribution centers, digitally connected loading areas, and logistics corridors designed for safe, efficient automation.

In the Lehigh Valley, where freight volumes are among the highest in Pennsylvania, autonomous vehicle technologies are expected to play a growing role in improving efficiency and addressing labor shortages in trucking and warehouse operations. However, these innovations will also have land use, infrastructure, and safety implications that municipalities should anticipate in local planning and regulatory frameworks.

Best Practices

Comprehensive Plans Should:

- Recognize autonomous freight technology as a long-term trend in goods movement and incorporate related infrastructure and workforce implications into transportation, land use, and economic development elements.
- Identify AV-ready freight corridors and industrial districts where connected infrastructure can be prioritized, particularly near interstates, intermodal facilities, and business parks.
- Encourage partnerships with PennDOT, LVPC, and private-sector logistics operators to coordinate pilot programs and share data on automation impacts.

Zoning Should:

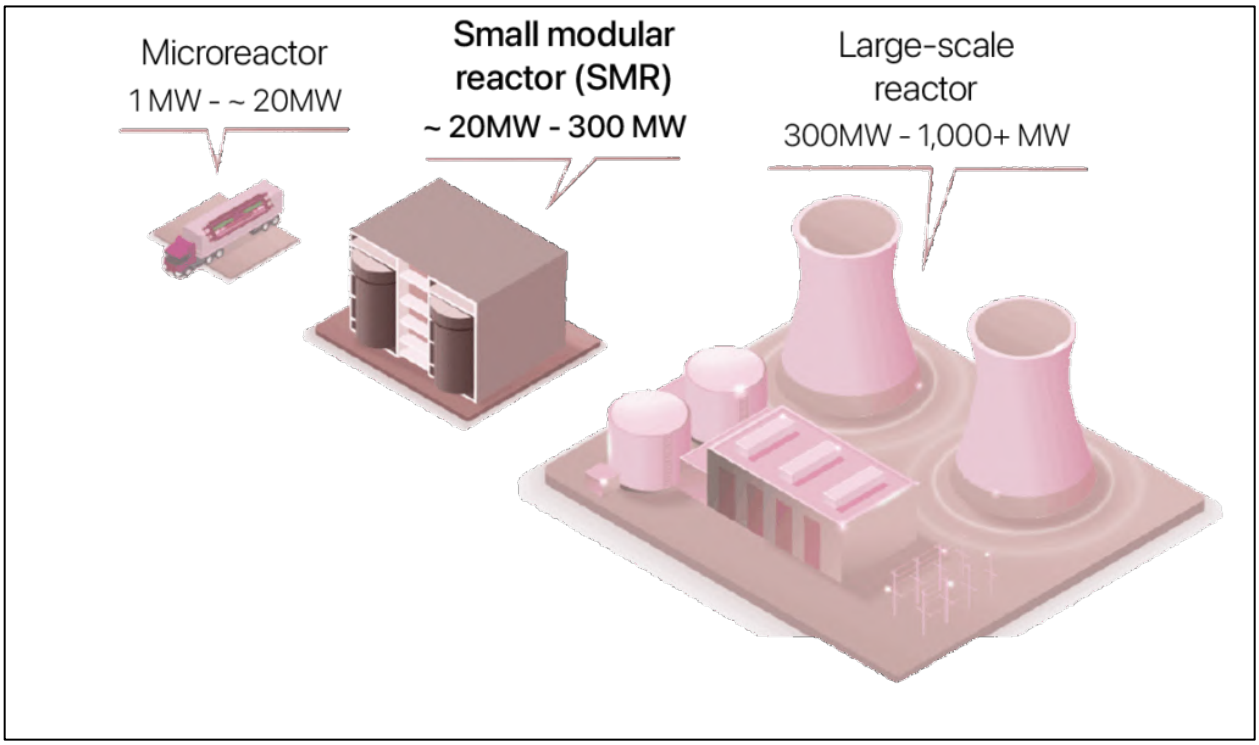
- Define autonomous vehicle facilities (such as AV truck hubs, testing centers, or charging depots) as specific use categories within industrial or logistics districts.
- Require performance standards for noise, lighting, and safety systems associated with continuous automated operations.
- Support adaptive reuse of existing freight facilities for AV staging, fleet charging, and maintenance, ensuring compatibility with surrounding uses.

Subdivision and Land Development Ordinances Should:

- Require site plans to account for automated circulation patterns, vehicle staging, and emergency access routes within industrial developments.
- Encourage the integration of smart infrastructure—including sensors, fiber optic connectivity, and electric vehicle (EV) charging stations—into new industrial park designs.
- Coordinate with PennDOT and regional planning agencies to ensure new development aligns with connected-vehicle infrastructure standards and emerging statewide AV policies.

Energy Generation, Storage and Management

Nuclear Energy
Nuclear facilities generate electricity through controlled nuclear reactions that produce heat. Although Pennsylvania hosts large regional facilities, future trends may include small modular reactors (SMRs) designed to serve regional grids, or microreactors suitable for industrial campuses.



Graphic Credit: Stanford University, adapted from U.S. Department of Energy

Impacts:

- Require extensive siting buffers for safety and security
- Large cooling water demands and potential thermal discharges to waterways
- Transportation of nuclear fuel and waste presents regional logistics and safety considerations
- Visual and psychological impacts due to public perception and security infrastructure

Best Practices

Comprehensive Plans should:

- Identify appropriate regional-scale energy generation areas near transmission infrastructure.
- Address emergency preparedness, evacuation routes, and coordination with state and federal agencies.

Zoning should:

- Establish nuclear energy generation as a conditional use or special exception, requiring review for safety, setback, and emergency coordination.
- Require substantial setbacks from residential districts, public facilities, and water supplies.
- Consider overlay zones for large-scale energy infrastructure that encompass utilities, transmission, and supporting facilities.

Subdivision & Land Development Ordinances should:

- Require detailed site plans including stormwater management, cooling water systems, and transportation access.
- Coordinate with emergency management agencies for construction and operations planning.

Solar Energy

Solar energy systems convert sunlight into electricity using photovoltaic (PV) panels or solar thermal technologies. Systems range from small rooftop installations to utility-scale solar farms spanning dozens or hundreds of acres.

Photo Credit: Morning Call

A 30-acre solar array could generate enough power for approximately 10,000 homes depending on conditions.

Impacts:

- Large ground-mounted arrays may alter rural landscapes, consume farmland and affect stormwater runoff.
- Reflectivity and glare can impact nearby roads or airports.
- Decommissioning and recycling of panels require long-term management plans.

Best Practices

Comprehensive Plans Should:

- Designate suitable areas for solar energy, prioritizing brownfields, rooftops, parking lots and other previously disturbed lands.
- Integrate solar siting goals into future land use and energy resilience planning.

Zoning Should:

- Define solar energy systems by types, such as accessory, community-scale, and utility-scale.
- Establish performance standards for glare, screening, setbacks, fencing and pollinator-friendly groundcover.
- Consider agricultural zoning flexibility for dual-use “agrivoltaics” projects that combine farming and energy production.

Subdivision & Land Development Ordinances Should:

- Require plans for grading, drainage and soil stabilization under arrays.
- Include decommissioning and financial assurance requirements to restore land to pre-development conditions.
- Ensure access roads and fire lanes meet emergency service needs.

Hydroelectric

Hydroelectric power uses flowing or stored water to turn turbines and produce electricity. While large dams are uncommon in Lehigh County, smaller run-of-river and micro-hydro projects may emerge on existing waterways or dam retrofits.

Photo Credit: Google Maps – at Riverview Park, Palmer Township, a hydroelectric plant is conceptualized adjacent to the Chain Dam along the Lehigh River that could produce two megawatts of power, enough to energize 1,000 homes.

Impacts:

- Alteration of aquatic habitats and stream flow
- Fish migration barriers and sedimentation changes
- Potential flooding, erosion, or downstream water quality effects
- Safety considerations for public recreation and access near facilities

Best Practices

Comprehensive Plans should:

- Identify opportunities for renewable energy production using existing dams or water infrastructure.
- Incorporate watershed and ecological protection objectives in energy planning.

Zoning should:

- Limit siting to areas with existing hydrologic infrastructure or previously altered waterways.
- Require coordination with the Pennsylvania Department of Environmental Protection (DEP) and U.S. Army Corps of Engineers.
- Include riparian buffer and floodplain protection requirements.

Subdivision & Land Development Ordinances should:

- Require hydrologic and environmental studies prior to approval.
- Evaluate impacts on public access, recreation, and streambank stabilization.
- Incorporate erosion and sedimentation control standards specific to water-based facilities.

Wind Energy

Wind energy facilities convert the kinetic energy of wind into electricity using turbines. Projects may be utility-scale, with large towers on ridgelines or open plains, or small-scale for agricultural or commercial sites.

Photo Credit: Morning Call

Approximately 100 acres of wind turbines powers 10,000 homes.

Potential Impacts:

- Visual and aesthetic changes to landscapes and ridgelines.
- Noise and shadow flicker effects on nearby residences.
- Bird and bat mortality, especially in migratory corridors.
- Construction access impacts on rural roadways and hillsides.

Best Practices

Comprehensive Plans should:

- Map ridgelines, open plains and other areas with sufficient wind resources while protecting scenic and environmental resources.
- Incorporate policies for renewable energy production and community benefit sharing.

Zoning should:

- Define wind energy systems by scale (small, community, utility).

- Require setbacks from dwellings, property lines, and public rights-of-way based on turbine height.
- Include performance standards for noise, shadow flicker, and decommissioning.
- Require visual impact assessments and coordination with FAA and state aviation agencies for turbine height compliance.

Subdivision & Land Development Ordinances should:

- Require construction access and grading plans that minimize erosion on steep slopes.
- Include decommissioning and site restoration requirements with financial guarantees.
- Ensure turbine foundations and electrical systems meet local and national safety codes.

Storage of Power

Battery Energy Storage Systems (BESS) capture and hold energy for later use, improving grid reliability and supporting renewable integration. Systems may include battery storage (lithium-ion or flow batteries), thermal storage, or compressed air systems, ranging from small on-site installations to large standalone “battery farms.”

Photo Credit: Energy Storage News
EOS Energy Enterprises manufactures battery storage systems in Turtle Creek Borough, Allegheny County PA.

Impacts:

- Fire safety and explosion risks from battery failures
- Noise and heat generation from cooling and ventilation systems
- Visual and compatibility issues in residential or mixed-use areas
- Decommissioning and disposal of batteries requiring specialized handling

Best Practices

Comprehensive Plans should:

- Integrate microgrids into community resilience strategies for storms, grid failures, and critical facilities (e.g., hospitals, data centers)
- Plan for integration with the utility grid, broadband, and emergency management systems.

Zoning should:

- Allow in industrial, commercial, institutional or mixed-use zones where more energy-consumptive land uses are located.
- Provide expedited permitting or density/intensity bonuses for renewable-powered facilities.
- Establish energy storage as a distinct use, separate from general utilities or manufacturing.
- Require compliance with National Fire Protection Association (NFPA) 855: Standard for the Installation of Stationary Energy Storage Systems.
- Include setbacks, screening and fire safety access standards.
- Consider requiring special exception review for large standalone systems to ensure compatibility.

Subdivision & Land Development Ordinances should:

- Require plans to show electrical connections, battery storage enclosures, emergency access, fire suppression systems and noise buffers.
- Require fire safety measures, hazardous material handling protocols and coordination with local first responders.
- Include decommissioning and recycling plans for spent batteries or equipment.

Alternative Fueling

As the transportation and industrial sectors transition toward cleaner and more efficient technologies, alternative fueling infrastructure is becoming a critical component of local and regional energy systems. These facilities support vehicles powered by electricity, hydrogen, and compressed natural gas (CNG), each with unique siting, safety, and infrastructure needs.

For municipalities, planning for these land uses helps reduce emissions, strengthen regional competitiveness, and ensure the local road network and utility systems are ready for the next generation of freight and passenger vehicles.

Electric Vehicle Charging Stations
Electric vehicle (EV) charging stations deliver electrical power to recharge battery-electric or plug-in hybrid vehicles. Facilities range from Level 1 and Level 2 chargers in parking lots or garages to Direct Current (DC) fast-charging hubs serving fleets or highway travelers.

Photo Credit: Morning Call

Impacts:

- Increased electrical load on local grids and potential need for utility coordination.
- Parking layout changes and accessibility requirements.
- Potential site design conflicts with pedestrian or traffic circulation.

Best Practices

Comprehensive Plans should:

- Incorporate EV infrastructure into transportation and sustainability elements.
- Identify strategic corridors and community destinations for charging investment (downtowns, employment centers, freight routes).
- Encourage integration with renewable energy or battery-storage systems for grid resilience.
-

Zoning should:

- Define EV charging stations as a principal or accessory use depending on scale.

- Allow Level 1 and 2 chargers by right in most zoning districts; require conditional or special exception review for large DC fast-charging plazas.
- Establish standards for signage, lighting, screening, and Americans with Disabilities Act-compliant accessibility.
- Encourage shared-use parking and integration with existing commercial or public lots.

Subdivision & Land Development Ordinances Should:

- Require site plans showing electrical connections, conduit placement, and protective bollards.
- Coordinate with utility providers early in design.
- Ensure drainage, landscaping, and pedestrian circulation maintain safety and accessibility.

Hydrogen Fueling Stations

Hydrogen fueling stations store and dispense compressed hydrogen gas used to power fuel-cell vehicles. These may serve heavy-duty fleets, transit vehicles, or long-haul trucks and often co-locate with industrial or freight facilities.

Image Credit: Air Products

Air Products, headquartered in Upper Macungie Township, is the world's largest hydrogen producer and builds hydrogen fueling stations across the globe.

Impacts:

- High-pressure gas storage presents fire and explosion risks.
- Requires significant setbacks, emergency access, and ventilation.

- Visual and compatibility concerns near residential or commercial areas.
- High capital cost and reliance on specialized supply chains.

Best Practices

Comprehensive Plans Should:

- Incorporate hydrogen fueling infrastructure into transportation and sustainability elements.
- Establish policies directing hydrogen fueling to appropriate corridors, particularly near interstate interchanges or distribution centers.
- Coordinate with regional transportation and energy providers to ensure safety and supply reliability.
- Include hydrogen infrastructure in climate and clean-energy strategies.

Zoning Should:

- Define hydrogen fueling as a distinct use under “Alternative Fueling Facilities.”
- Limit siting to industrial, highway commercial or heavy commercial districts.
- Require compliance with NFPA 2: Hydrogen Technologies Code and local fire-safety standards.
- Establish minimum setbacks from occupied structures and public rights-of-way.
- Require emergency access and signage consistent with hazardous-material regulations.

Subdivision & Land Development Ordinances Should:

- Require engineered site plans detailing storage tanks, dispensing equipment, containment and ventilation.
- Coordinate review with fire marshals and emergency management officials.
- Include drainage and containment design to prevent runoff contamination.
- Require decommissioning and inspection protocols for storage vessels.

Compressed Natural Gas (CNG) Fueling Stations

CNG stations store and dispense natural gas that has been compressed to less than 1% of its volume at standard atmospheric pressure. CNG is used by municipal fleets, buses, and freight vehicles as a lower-emission alternative to gasoline or diesel.

Photo Credit: Morning Call
The Lehigh and Northampton Transportation Authority (LANTA) runs its fleet of buses on CNG generated by landfills, and fuels buses at their facility located in the City of Allentown.

Impacts:

- Safety risks from pressurized gas storage and handling.
- Increased truck or bus traffic at fueling depots.
- Odor, noise, and visual impacts from compressors and venting equipment.
- Potential conflict with adjacent sensitive land uses if not properly sited.

Best Practices

Comprehensive Plans Should:

- Include policies supporting suitable corridor locations for CNG fueling, especially near transit or logistics facilities.
- Integrate CNG planning with municipal fleet-conversion or clean-transportation goals.
- Encourage co-location with maintenance yards or industrial parks to reduce land-use conflicts.

Zoning Should:

- Define CNG fueling as a specific land use under “Alternative Fueling” or “Utility and Energy Uses.”
- Limit to highway commercial or industrial districts with adequate buffering.
- Include standards for noise, lighting, odor, and equipment screening.
- Ensure adequate distance from residential or institutional uses.

Subdivision & Land Development Ordinances Should:

- Require detailed site plans showing compressors, storage cylinders, piping, and emergency shut-off locations.
- Include ventilation and containment systems in design review.
- Coordinate with utilities for gas-line pressure requirements and emergency response planning.
- Require ongoing maintenance and inspection documentation for compliance.

Resource Extraction

While heavy industries like mining, quarrying and raw material processing have declined in many regions, demand for certain materials is surging again due to the technologies driving today's economy.

Resource extraction and material supply industries encompass the mining, quarrying, and processing of raw materials such as stone, cement, slate, and sand that form the backbone of construction and manufacturing. In the Lehigh Valley, these industries have long shaped regional identity and economic development. The Valley's abundant limestone and cement deposits supported the rise of the American cement industry in the 19th and 20th centuries, while nearby slate, iron and aggregate operations drove industrial growth that laid the foundation for today's economy.

Image Credit: Google Aerial Imagery
Penn Slate operates an active slate mine in Washington Township just outside of Slatington Borough.

Although large-scale extraction has declined, this sector is transforming, not disappearing. Modern operations are becoming more efficient, technology-driven, and environmentally responsible, with greater emphasis on reclamation, material recycling, and circular-economy practices. Many active quarries now integrate aggregate recycling, soil blending, or material recovery operations to reduce waste and extend the life of local resources.

At the same time, global industrial evolution is reshaping material demand. The transition to clean energy, electric vehicles, advanced manufacturing, and digital infrastructure is fueling a worldwide surge in demand for minerals such as lithium, nickel, copper, and rare earth elements. While Pennsylvania is not a major source of these critical minerals, it remains a significant supplier of construction materials and cement and participates in national supply chains that depend on stable domestic sources. As U.S. policy increasingly prioritizes domestic resource security and recycling, Pennsylvania's material-processing and reclamation industries will play a key supporting role.

Locally, this means that even as new extraction slows, municipalities may see growth in material handling, secondary processing and recycling operations that function much like traditional resource extraction uses. These activities -- such as concrete and asphalt recycling, metals reclamation, or the reuse of byproducts from energy or manufacturing -- represent the modern evolution of the same land use category.

Impacts

- Environmental: Dust, noise, vibration and water quality impacts from extraction or crushing operations. Habitat disturbance and visual impacts in rural and scenic areas.
- Infrastructure: Heavy truck traffic, roadway wear and safety concerns on local roads serving quarry or processing sites.
- Land Use Compatibility - Conflicts with nearby residential or agricultural uses due to noise, hours of operation, or aesthetics.
- Post-Use Challenges: Long-term management of inactive or reclaimed sites, including safety and redevelopment readiness.
- Opportunities: Adaptive reuse of reclaimed sites for recreation, renewable energy, stormwater management, or redevelopment.

Best Practices

Comprehensive Plans should:

- Recognize existing and historic mining, quarrying and cement production areas within the Future Land Use Map.
- Designate mineral resource overlay areas consistent with the Pennsylvania Municipalities Planning Code (§603(i)) to protect known deposits and ensure compatibility with nearby uses.
- Plan for post-extraction reuse of sites for recreation, open space, energy generation (e.g., solar installations) or redevelopment.
- Address connections between resource extraction, freight routes, and industrial supply chains to ensure safe and efficient goods movement.
- Incorporate recycling, reclamation, and circular-material industries as emerging components of the regional economy.

Zoning Should:

- Define extraction-related uses clearly (e.g., *mineral extraction*, *quarrying*, *aggregate recycling*, *material processing*) to distinguish between traditional extraction and modern reclamation or recycling.
- Limit these uses to industrial or mineral-resource districts with adequate buffering from residential or institutional uses.
- Establish performance standards for blasting, dust, truck routing, and hours of operation to minimize community impacts.
- Require landscaping, berming and visual screening to reduce aesthetic impacts.
- Support transitional and circular economy uses within existing industrial areas that handle, recycle, or repurpose materials.

Subdivision & Land Development Ordinances Should:

- Require site and reclamation plans addressing grading, erosion control, stormwater management and future site reuse.
- Coordinate with Pennsylvania DEP permitting under the *Noncoal Surface Mining Conservation and Reclamation Act* and related regulations.
- Include truck circulation and access management standards to reduce conflicts with local roads.
- Require bonding or financial assurance for reclamation and long-term maintenance.
- Encourage redevelopment-ready reclamation that aligns with future land use and economic goals

Managing Industrial Land Use Impacts

Lehigh County's industrial landscape has already been shaped by decades of growth in manufacturing, warehousing and logistics. These uses remain vital to the regional economy, but they also generate ongoing impacts on infrastructure, utilities, the environment, community character and quality of life. Municipalities can address these challenges not only when new projects are proposed but also as part of managing the day-to-day realities of existing industrial operations. The following topics outline key areas of concern and provide best practices that local governments can use to manage existing industrial land uses more effectively.

The following section outlines ways municipalities can address specific impacts.

Transportation Infrastructure

Roads and Bridges

Industrial development in Lehigh County depends heavily on the regional road network. Warehousing, logistics and manufacturing generate substantial truck traffic that affects local roads and bridges, particularly near highway interchanges and industrial corridors. As freight volumes grow, municipalities must balance the economic benefits of access with the costs of maintenance, congestion, and safety.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Identify key freight routes and roadways suitable for truck access. Discourage industrial development along local streets not built for heavy vehicles.
- **Zoning**: Require industrial sites to locate near arterial roads or highway interchanges, with clearly designated truck access points.
- **SALDO**: Mandate traffic impact studies for new or expanded industrial projects and require developers to fund off-site roadway or intersection improvements.
    - Require on-site design that safely accommodates truck turning movements, staging, and parking without impacting public roads.
- Implement local truck routing ordinances or signage to keep heavy vehicles on preferred corridors.
- Coordinate with PennDOT and Lehigh Valley Transportation Study (LVTS) to prioritize freight-related infrastructure investments.

Air Travel

Air travel infrastructure, especially Lehigh Valley International Airport (ABE), is an integral part of the region's freight network, supporting time-sensitive shipments and specialized cargo. Industrial and logistics growth around the airport creates both opportunity and planning challenges, including noise exposure, airspace protection, and land use compatibility. Municipalities near flight paths or airport influence areas must balance economic development with community impacts and aviation safety.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Include airport influence areas and flight paths in land use maps to guide compatible development.
- **Zoning**: Establish airport overlay districts to limit building height, lighting and electromagnetic interference. Ensure compatible land uses near airports.
    - Encourage logistics and industrial uses that directly benefit from proximity to the airport, while maintaining appropriate buffering from residential areas.
- **SALDO**: Require Federal Aviation Administration (FAA) and airport authority coordination for developments within defined approach or transition zones.
    - Support multimodal connections between air freight facilities, roadways, and rail to reduce congestion and improve efficiency.

Rail

Rail remains a key component of Lehigh County's industrial and freight network, connecting local industries to regional and national markets. Industrial development near existing rail lines can improve efficiency and reduce truck dependency, but it also presents unique safety, noise and access challenges. Municipalities can play a role in protecting rail corridors, supporting rail-served development, and ensuring that rail-adjacent uses are compatible with surrounding communities.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Identify and protect existing rail corridors and sidings for industrial and freight uses; encourage redevelopment of brownfield or obsolete industrial sites with rail access.
- **Zoning**: Create or update industrial districts that support rail-served uses, with appropriate setbacks and buffering from sensitive land uses.
    - Promote adaptive reuse of older industrial properties near rail for modern, rail-compatible industries.
- **SALDO**: Require coordination with rail operators for developments adjacent to rail lines or crossings; ensure safe design for truck and employee access.
    - Support grade separation projects and safety enhancements at rail crossings where feasible.
- Encourage rail as part of multimodal freight planning to reduce truck dependency and roadway impacts.

Utility Infrastructure

Water

Industrial facilities can place significant demands on local water systems, whether through high-volume users like food and beverage manufacturing, cold storage, or data centers, or by expanding into areas without adequate infrastructure. In Lehigh County, where communities rely on a mix of municipal systems, private wells, and regional authorities, these pressures can strain capacity or create costly infrastructure needs.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Map existing and planned water infrastructure to guide industrial growth to serviceable areas.
- **Zoning:** Require water-intensive uses (e.g., data centers, food processors) to locate in districts with adequate public water service.
- **SALDO:** Mandate proof of adequate water supply and capacity before plan approval, including coordination letters from water providers.
- Require developers to fund necessary extensions or upgrades to municipal water systems as opportunities present themselves, rather than shifting costs to the community.
- Incorporate water conservation and efficiency requirements into zoning performance standards, especially for high-demand uses.
- Encourage industrial users to adopt alternative water systems (graywater reuse, rainwater harvesting) to reduce reliance on potable supplies.

Sewer

Industrial growth can overwhelm existing sewer systems, especially when large-scale facilities concentrate in areas not built for high wastewater flows. In Lehigh County, many municipalities with development areas rely on local sewer authorities with aging infrastructure that may already be near capacity. Uncoordinated expansion can lead to capacity shortfalls, costly upgrades and water quality risks, and service extensions may drive unplanned sprawl or conflict with preservation goals.

Mitigation Strategies and Best Practices

- **Comprehensive Plans:** Identify areas with sufficient sewer capacity for industrial growth and avoid designating sewer-dependent uses in areas without planned service.
    - Update Official Sewage Facilities Plans (Act 537)
- **Zoning:** Direct intensive industrial uses to districts with existing or expandable sewer infrastructure. Require pretreatment facilities for high-strength or specialized waste streams.
- **SALDO: Require developers to demonstrate available sewer capacity before approval, including written confirmation from the sewer authority.**
- Condition approvals on necessary upgrades or expansions being funded by the developer rather than the municipality or ratepayers.
- Establish clear standards for industrial wastewater discharge, including pretreatment requirements where needed.
- Coordinate land use approvals with regional sewer authorities early in the review process to avoid service conflicts or capacity shortfalls.

Stormwater

Industrial facilities create large impervious surfaces that increase stormwater runoff, flooding and pollution risks. In Lehigh County, where stormwater management is regulated at both the local level by the municipality and at the watershed level by LVPC, and many communities have older systems that weren't designed for today's scale of

development combined with increasing rainfall. Without proactive management, stormwater can degrade streams, overwhelm infrastructure, heighten local flood risks.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Identify flood-prone and environmentally sensitive areas, steering industrial development away from high-risk locations.
- **Zoning:** Require stormwater management practices that reduce peak runoff, protect water quality and encourage green infrastructure (bioswales, rain gardens, permeable pavement).
- **SALDO:** Mandate detailed stormwater management plans with development applications, ensuring compliance with state MS4 and Act 167 watershed requirements.
- Require developers to establish long-term maintenance agreements for stormwater facilities, with clear responsibilities and funding mechanisms.
- Encourage retrofitting of older industrial sites with improved stormwater controls during redevelopment.
- Promote site design that minimizes impervious coverage through shared parking, reduced pavement, and compact building footprints.

Waste Disposal

Industrial uses generate solid and hazardous waste that can strain local systems if not properly managed. High volumes of packaging, pallets, and other materials from warehouse and logistics operations can overwhelm local disposal and recycling systems, and certain manufacturing processes produce specialized wastes requiring pretreatment or off-site disposal. In Lehigh County, improper storage or disposal risks contaminating groundwater, impacting neighboring land uses, or burdening municipal services.

Mitigation Strategies/Best Practices

- **Comprehensive Plans**: Establish policies for sustainable waste management, including recycling and reduction goals, that industrial land uses should support.
- **Zoning**: Require on-site waste and recycling storage areas to be screened from public view and designed to prevent nuisances.
- **SALDO**: Mandate inclusion of adequate waste handling, storage and pickup facilities in site plans, sized appropriately for the scale of industrial operations.
- Coordinate with county and regional solid waste management plans to ensure capacity and compliance with broader goals.
- Encourage or require recycling and reuse programs for common industrial materials such as pallets, cardboard and plastics.
- For specialized or hazardous waste generators, require proof of compliance with Pennsylvania DEP and federal disposal standards as part of land development approval.

Electricity
Industrial operations are among the largest consumers of electricity, and demand is growing as energy-intensive uses like data centers, cold storage, and advanced manufacturing or logistics hubs expand in Lehigh County. Reliable, resilient power is essential for these facilities, and high demand can cause service disruptions and costly upgrades if siting and use is not coordinated.

Mitigation Strategies and/ Best Practices

- **Comprehensive Plans:** Coordinate future land use designations with areas that have sufficient electrical infrastructure or where upgrades are planned.
- **Zoning:** Require siting standards for substations and generators, including screening, setbacks and noise/emission controls.
- **SALDO:** Mandate documentation from utility providers confirming service capacity before project approval.
- Require developers to finance necessary electrical system upgrades rather than shifting costs to the municipality or ratepayers.
- Encourage or require energy-efficient building design and renewable energy integration, such as solar-ready rooftops and EV charging infrastructure.
- Coordinate with utilities and regional grid operators early in the planning process to align infrastructure planning with industrial growth.

Broadband
Modern industries depend on high-speed broadband for logistics, operations, and advanced technologies. In Lehigh County, gaps in broadband coverage or capacity can limit industrial growth, and if new land uses outpace broadband infrastructure, that may leave facilities and surrounding communities without reliable service.

Mitigation Strategies and Best Practices

- **Comprehensive Plans:** Identify broadband access as critical infrastructure, mapping service availability and prioritizing industrial development in connected areas.
- **Zoning:** Require new data centers or high-tech facilities to demonstrate broadband redundancy and reliability as part of approval.
- SALDO: Mandate installation of conduit or fiber-ready infrastructure in new industrial subdivisions and developments.
- Coordinate with broadband providers early in the land development review process to ensure capacity and timely installation.
- Encourage or require “dig once” policies so that when roads or utilities are opened for construction, broadband conduit is installed concurrently.
- Partner with county and regional broadband initiatives to align industrial growth with long-term digital infrastructure investments.

Community Safety

Emergency Response

Industrial facilities can present elevated risks related to fire, hazardous materials, and worker safety, and in Lehigh County many municipalities rely on volunteer emergency services and regional coordination to respond to these incidents. As industrial uses become more complex, particularly those involving high electrical loads, mechanical systems, and on-site power or energy storage, early and ongoing coordination with local emergency service providers is essential.

Applicants and municipalities should engage fire, emergency medical, and police departments early in the development review process to ensure facilities can be safely and effectively served. This coordination should include sharing detailed information on site access and circulation, security protocols, hazardous materials and battery storage, backup power systems, and specialized equipment. Emergency responders should be consulted on the adequacy of access points, turning radii, hydrant placement, fire-suppression systems, and emergency shut-off procedures, and should receive appropriate training or site orientation prior to occupancy.

Proactive coordination with emergency services helps protect responders, workers, and nearby residents, supports continuity of critical operations, and ensures communities are prepared to respond effectively to both routine incidents and larger-scale emergencies.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Include coordination with emergency services in land use policies; identify response time gaps and plan for mutual aid agreements.
- **Zoning**: Require safety and hazard mitigation plans for high-risk industrial uses, including materials storage, evacuation routes, and suppression systems.
- **SALDO**: Mandate review of site plans by local fire and emergency services to ensure adequate access, hydrant placement, and water flow.
- Require industrial developers to provide on-site fire protection infrastructure, such as hydrants, sprinklers, or water storage where public supply is limited.
- Coordinate with local emergency management agencies for training and response planning tailored to facility operations.
- Encourage or require developers to contribute to emergency service infrastructure or equipment needs when projects significantly increase risk exposure.

Access

Safe, efficient site access is a key factor in managing industrial land use impacts. Facilities generate frequent truck and employee traffic, and poorly designed entrances or internal circulation can create hazards for both site users and the public. In Lehigh County, industrial access design plays a critical role in maintaining safety, reducing congestion and ensuring emergency responders can reach facilities when needed.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Identify preferred access routes for industrial areas, linking them to major corridors while minimizing neighborhood impacts.
- **Zoning**: Require separate truck and passenger vehicle access points where feasible and set minimum driveway spacing and turning radius standards.
- **SALDO**: Mandate transportation impact studies that evaluate access design, intersection function and safety improvements. Require developer-funded mitigation.
- Require adequate turning radii, internal circulation loops and designated truck staging areas to prevent queuing on public streets.
- Coordinate access design with PennDOT and county agencies to ensure consistency with highway occupancy and freight movement standards.
- Require signage, lighting and pavement markings that clearly separate truck, employee, and visitor routes within large sites.

Parking

Visitor Parking

Visitor parking at industrial sites supports business operations, meetings, and deliveries but is often overlooked during site planning. While visitor traffic is typically lower than employee or truck traffic, inadequate parking or poor placement can create safety conflicts and accessibility issues, especially when visitors must navigate active loading or truck areas.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Promote safe, accessible design for visitor parking areas as part of overall site circulation policies.
- **Zoning**: Require visitor parking to be located near primary entrances and separate from loading and truck areas.
- **SALDO**: Mandate pedestrian connections from visitor spaces to building entrances that are ADA-compliant and well-lit.
- Encourage clear signage and wayfinding to distinguish visitor parking from employee and truck areas.
- Allow reduced visitor parking requirements where demand is low or shared parking arrangements are appropriate.
- Require landscaping or green buffers to soften visual impacts along road frontages.

Employee Parking

Employee parking directly influences site design, land use efficiency and transportation patterns. Industrial facilities often operate multiple employee shifts, leading to varying parking demands and concentrated traffic peaks during shift changes. Large parking lots can consume significant amounts of land, increase stormwater runoff and reduce space available for buildings, landscaping, or sustainable site features. At the same time, insufficient parking can affect employee accessibility and operations, especially in areas without robust transit service.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Encourage right-sizing parking to balance availability with land conservation; promote safe and efficient site access and use of alternative transportation modes.
- **Zoning**: Establish employee parking minimums and maximums by industrial use type.
- **SALDO**: Require site plans to demonstrate safe pedestrian circulation between employee parking and building entrances; require separation of employee parking from loading areas.
- Encourage alternative transportation options such as carpooling, public transit, biking and walking to lower parking demand.
- Support transit-oriented development and shared mobility infrastructure near industrial employment centers to reduce the need for large surface lots.

Truck Parking

Truck parking, loading, and staging are among the most critical and challenging aspects of industrial site design in Lehigh County. The region's role as a major freight and logistics hub means that industrial facilities depend on the safe and efficient movement of heavy vehicles. When on-site truck parking or loading areas are insufficient, drivers often resort to idling or parking along public roads, creating congestion, safety hazards, and community concerns. Truck parking and loading facilities also consume large land areas, influencing site layout, traffic circulation, and the overall efficiency of industrial land use. Poorly planned or oversized facilities can generate noise, air pollution and visual impacts that affect nearby residents, workers and property values.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Identify freight infrastructure as part of goods-movement planning; map preferred industrial corridors and suitable sites for truck parking facilities that minimize neighborhood impacts.
- **Zoning**: Require industrial developments to provide dedicated on-site truck parking and staging areas separated from employee and visitor parking.
- **SALDO**: Mandate circulation plans that include designated truck entrances, queuing areas, and turning radii suited to large vehicles. Minimize community impacts by prohibiting truck parking and loading areas from facing residential districts. Require aesthetic, noise and light mitigation strategies such as downward lighting, buffering, berms and landscaping, and sound level restrictions and monitoring. Require electric plug-in infrastructure or anti-idling measures to reduce emissions at parking and loading areas.
- Support regional initiatives, such as the Eastern Pennsylvania Freight Infrastructure Plan (EPFA) which emphasize expanding overnight truck parking capacity to meet growing freight demands.

Environmental Factors

Noise

Noise is one of the most common community concerns associated with industrial land uses. Truck movements, loading docks, refrigeration units, cooling systems, backup generators and around-the-clock operations can create constant or intermittent noise that affects nearby residents and businesses. In Lehigh County, where industrial areas are often close to residential neighborhoods or mixed-use corridors, managing noise is essential to maintaining quality of life and community compatibility.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Identify noise-sensitive land uses like residential neighborhoods, schools, healthcare facilities, and high-priority natural habitats to guide industrial growth away from these areas.
- **Zoning**: Establish clear noise performance standards and maximum decibel levels at property lines. Require noise mitigation strategies such as setbacks, sound walls, or landscaped buffers between industrial and non-industrial uses.
- **SALDO**: Require proposals to submit acoustic studies and/or noise impact assessments and encourage orientation of loud equipment, loading docks, and truck parking away from nearby non-industrial uses.
    - Encourage applicants to incorporate insulated and soundproofing building materials into site design.
- Monitor and enforce noise standards.

Light

Industrial facilities require exterior lighting for safety, security and operations. Excessive or poorly directed lighting can spill into neighboring properties, disrupt wildlife habitats, and degrade nighttime visibility. In Lehigh County, industrial growth near residential and rural areas causes concern for light pollution.

Mitigation Strategies and Best Practices

- **Comprehensive Plans**: Encourage dark-sky compliant lighting policies and balance safety/operations needs with environmental quality.
- **Zoning:** Establish maximum illumination levels at property lines and require lighting standards such as height limits for lighting poles, maximum illumination levels at property lines and cutoff fixtures that direct light downward.
- **SALDO:** Require lighting plans with photometric data to evaluate impacts and compliance.
    - Incorporate landscaping or fencing to screen light from adjacent properties.

Air Quality

Industrial operations can affect local and regional air quality through emissions from both stationary sources such as generators, boilers, and manufacturing processes, and mobile sources like trucks, forklifts, and equipment. The most common pollutants include volatile organic compounds (VOCs)**,** nitrogen oxides (NOx)**,** particulate matter (PM) such as dust, and greenhouse gases (GHGs) from fuel combustion. While modern facilities are increasingly efficient and regulated, cumulative emissions from industrial sites and freight activity can still impact public health, visibility, and environmental

quality, particularly in areas with high concentrations of industrial and transportation uses.

Mitigation Strategies / Best Practices

- **Comprehensive Plans**: Recognize air quality as a health and environmental priority. Specify that high-emission uses should be located away from sensitive areas. Incorporate goals to minimize emissions that reduce air quality.
- **Zoning:** Require air quality performance standards for emissions and dust control. Regulate outdoor storage, truck idling, and the location of exhaust vents to minimize community exposure.
- **SALDO:** Require air quality impact assessments for large-scale or high emission uses.
    - Encourage or require installation of electric vehicle charging infrastructure to support clean fleets.
    - Encourage and/or incentivize alternative energy sources such as solar panels or green roofs to reduce energy needs for industrial buildings.

Building Form and Aesthetics

The mass, height and design of industrial buildings can have a profound impact on the visual character and identity of surrounding communities. Large-scale warehouses, logistics centers and production facilities often feature tall, box-like forms, expansive façades, and wide parking areas that can dominate the landscape. When located near residential, commercial or rural areas, these visual and spatial differences can create a sense of imbalance and affect perceptions of neighborhood quality and property values. Thoughtful building design, orientation and screening can help integrate industrial development into the community form while maintaining operational efficiency and supporting high-quality economic growth.

Mitigation Strategies and Best Practices

- **Comprehensive Plans:** Identify design and aesthetic goals for industrial structures as part of broader placemaking and community character objectives. Identify gateways, corridors and transition areas where design quality and landscaping are especially important. Promote site and building design that reflect local identity.
- **Zoning:**
    - Establish bulk, height and setback requirements appropriate to the surrounding context, ensuring smooth transitions between industrial and non-industrial areas.
- **SALDO:**
    - Require façade articulation, roofline variation and architectural detailing to reduce the monotony of large walls and enhance visual interest.
    - Limit or screen outdoor storage, loading docks, and mechanical equipment from public view through fencing, landscaping, and building placement.

- Require site plans to show how building orientation, service areas, and loading docks are placed to minimize visibility from public roads and neighboring properties.
- Encourage or require enhanced landscaping along public rights-of-way, including tree rows, berms, and pollinator-friendly vegetation to soften views and reduce environmental impacts.
- Promote building materials and color palettes that complement local character and minimize visual contrast with surrounding landscapes.
- Require pedestrian-scale design features, lighting and signage standards that contribute to safe and attractive site environments.

Unknown End Users and Shifting Users

Industrial buildings are often constructed speculatively, without a confirmed end user or tenant at the time of development approval. These speculative projects allow for rapid occupancy once demand arises but can present challenges for municipalities when evaluating site impacts, infrastructure needs and compatibility during the review process. Because the ultimate user may have operational characteristics different from those assumed in the original design -- such as higher truck volumes, longer hours of operation, or more intensive energy use -- unknown or changing tenants can lead to unanticipated community or environmental impacts.

Even after occupancy, industrial buildings frequently change users or shift functions over time as markets evolve. A warehouse may become a light manufacturing facility, or an assembly operation may expand distribution activity. These shifts can significantly alter traffic patterns, utility demands and emissions, underscoring the importance of adaptable regulations and ongoing coordination between municipalities, developers and operators.

Mitigation Strategies and Best Practices

- **Comprehensive Plans:** Encourage flexible land use designations that allow for the evolution of industrial and employment centers over time. Identify infrastructure corridors capable of supporting a range of industrial activities -- from light manufacturing to logistics or high-tech uses -- without overburdening surrounding neighborhoods.
    - Incorporate policies promoting adaptive reuse and building design flexibility to extend the life and usefulness of industrial structures as market demands change.
- **Zoning:** Define performance standards that apply regardless of tenant, focusing on measurable outcomes such as truck trips per day, noise thresholds or hours of operation.
    - Consider use classification systems that group industrial activities by intensity or impact rather than narrow use type (e.g., “low-impact manufacturing,” “high-intensity logistics”), giving flexibility to assess future users without constant ordinance amendments.

- **SALDO:** Require applicants to identify anticipated user types and conservatively estimate operational characteristics, while maintaining flexibility for future occupancy.
    - Include conditions of approval or occupancy permit triggers requiring municipal review when a new user significantly changes the operational intensity of a site.
    - Encourage property owners to maintain ongoing communication with municipalities regarding user changes to ensure continued compliance with zoning and performance standards.

Addressing Existing Land Use Impacts
While the MPC tools are targeted to regulating development proposals, there are numerous approaches municipalities can take to address the impacts already being created by existing industrial land uses:

1. **Use Existing Ordinances for Operations and Maintenance**
   Zoning Ordinance Enforcement: Municipalities can enforce ongoing compliance with conditions of approval (e.g., landscaping, lighting, noise limits).
   Property Maintenance Codes: If adopted, these codes can be used to address blight, nuisance and unsafe site conditions.
   Nuisance Ordinances: Municipalities can regulate excessive noise, odor, dust or vibrations that impact nearby residents.
2. **Targeted Infrastructure Partnerships**
   Work with water and sewer authorities to manage capacity and monitor impacts from high-demand users.
   Coordinate with PennDOT and county agencies for roadway improvements near freight clusters.
   Seek funding (PennDOT Multimodal Fund, DCED grants, federal programs) for infrastructure that mitigates existing strain.
3. **Monitoring and Data Collection**
   Use traffic counts**,** air quality monitoring**,** or noise studies to document ongoing impacts. This data supports enforcement, future planning and funding applications.
   Require periodic reporting from facilities with high truck volumes or energy/water usage, where legally feasible.
4. **Community Engagement and Complaint Tracking**
   Establish hotlines or online reporting systems for residents to log issues such as truck idling, noise, litter or drainage problems.
   Tracking complaints over time provides leverage for working with operators and shows trends that can justify ordinance updates.
5. **Intergovernmental and Regional Coordination**
   Partner with adjacent municipalities to address impacts that cross borders such as truck traffic or utility demand. Enter into intergovernmental agreements to share costs and enforcement capacity, particularly for infrastructure and stormwater.
6. **Incentives and Voluntary Compliance**

Work with operators to implement best practices like truck idling limits, electric vehicle hookups or improved landscaping to reduce visual and environmental impacts. Explore recognition programs for businesses that adopt sustainability measures (LEED certification, renewable energy use).

7. **Amend Local Plans and Ordinances to Minimize Future Impacts**
   While ordinances typically regulate new development proposals, municipalities can update ordinances with retrofit standards that would apply if a use changes or a building redevelops. For example, requirements for stormwater upgrades or truck circulation improvements can be added into SALDOs for when expansions or major renovations are proposed.

In general, municipalities should monitor the impacts of existing development and continuously update regulations to improve performance and ensure new or future land uses align with community goals.

Reusing Brownfields and Existing Industrial Sites
Brownfields are former industrial properties where redevelopment or reuse is complicated by the presence or potential presence of hazardous pollutants or contaminants. In Lehigh County, legacy sites such as former rail yards, manufacturing or processing facilities have the potential for reuse. Sites are often strategically located near highways and population or employment centers and redevelopment can direct growth to areas with existing infrastructure, reduce pressure on farmland and open space, and deliver jobs, tax revenue and environmental cleanup.

How Brownfield Reuse Can Address Industrial Land Uses:
Promote Revitalization and Economic Growth: Reuse of underutilized industrial sites brings new employers, creates long-term jobs, and expands the local tax base by increasing property values and signaling that a community is "investment ready."
Support Environmental Cleanup and Public Health: Remediation of contaminated sites prevents pollution, improves soil, water and air quality, and restores environmental functions to degraded lands.
Reduce Development Pressure on Greenfields: Channeling redevelopment to existing industrial areas conserves farmland and open space while strengthening established urban and suburban centers.
Leverage Existing Infrastructure: Brownfield redevelopment utilizes existing water, sewer, road and energy networks, reducing the cost and environmental impacts of new extensions.
Encourage Adaptive Reuse through Zoning: Zoning provisions that allow flexible redevelopment options, mixed-use conversions or performance-based standards make reuse more feasible for property owners and developers.
Coordinate Planning and Mapping Efforts: Maintain a community inventory of vacant and underutilized industrial parcels. Align these locations with comprehensive plan goals to target infrastructure investment and guide redevelopment priorities.
Coordinate with the Lehigh County Redevelopment Authority (RALC): RALC is focused on repurposing blighted properties in Lehigh County's boroughs and townships, and partners with communities to pursue a variety of financing and incentives.
Address Barriers Early: Conduct site assessments to identify contamination risks, evaluate cleanup needs and clarify liability issues. Incorporate demolition, asbestos abatement, or historic preservation costs into redevelopment planning.

Resources

- Questions to ask developers
- Funding strategies
- Comprehensive Plan Best Practice Policies
- Industrial Land Use Definitions

Questions To Ask Developers

Asking questions during the plan review process positions municipalities to be proactive rather than reactive and is one of the most important ways to ensure that industrial projects align with community goals, protect public health and safety and comply with local ordinances. Developers are experts in their own projects, but municipalities are the guardians of community interests. Without asking the right questions, local governments may miss opportunities to identify impacts, negotiate improvements or require conditions that make a development compatible with its surroundings.

Written plans don't always show the full picture. Asking the right questions will:

- **Clarify project details** – How operations will affect traffic, infrastructure, utilities, and nearby residents
- **Ensure compliance** – Confirm that municipal requirements are correctly interpreted and met by applicants
- **Identify impacts early** – Issues are less costly to address during the review process than after construction
- **Encourage transparency** – Build trust between local government, applicants, and residents
- **Promote collaboration** – Open a dialogue that can lead to creative solutions and community benefits
- **Plan for emerging uses** – Understand unique needs and impacts that may not yet be reflected in ordinances

Site Location and Compatibility

- Why was this site chosen for the proposed industrial use, and how does it align with the municipality's zoning and comprehensive plan?
- Is there an identified end user? If not, are there particular end users speculated?
- What adjacent land uses exist, and what potential impacts could the project have on those uses (e.g., noise, lighting, traffic, environmental)?
    - What noise levels will be generated (vehicular traffic, load/unloading, manufacturing, utility)?
    - What light will be emitted, in what directions (parking areas, building lighting/security lighting, signage lights)?
- How will the development affect nearby (not adjacent) land uses, including residential areas, schools, businesses or community facilities?

Workforce and Operations

- How many employees will work at the site, and what shifts or hours of operation are anticipated?
- What workforce amenities (sidewalks, break areas, transit connections, driver facilities) are provided to support safety and quality of life?
- Will multiple tenants occupy the building (e.g., flex space or subleases), and how will operations be coordinated to comply with zoning?

Transportation and Freight Impacts

- What is the anticipated volume of truck and passenger vehicle traffic at peak and average levels?
- What routes will trucks use to access highways, and how will you minimize impacts on local streets?
- Have traffic impact studies been conducted, and what improvements or mitigations are proposed?
- Will on-site truck parking, loading and staging areas prevent trucks from queuing on public roads?

Utilities and Infrastructure

- What are the utility needs of the facility, such as amount of electricity usage, water consumption, wastewater disposal, etc.
- Does the site have adequate water, sewer, power and broadband capacity to support the proposed use?
- Will the project require infrastructure upgrades, and who will pay for them?
- Are backup systems, such as generators for data centers or cooling for cold storage, designed to minimize noise, emissions or neighborhood disruption?

Environmental Considerations

- How will stormwater runoff be managed, and what low-impact development or green infrastructure techniques will be used?
- Are there wetlands, floodplains, or steep slopes on site, and how will they be protected?
- What measures will be taken to minimize air, noise, light, and vibration impacts?
- What steps are being taken to reduce the building's energy consumption and carbon footprint?

Site and Building Design

- How will building design and landscaping reduce visual impacts, especially for large-scale facilities?
- How will the site accommodate pedestrian and bicycle access, both within the site and connections to nearby transit or roads?
- Where will outdoor storage, loading docks, and mechanical equipment be located, and how will they be screened?

Emerging Uses and Safety

- For specialized facilities, such as data centers, battery storage, cold storage or indoor agriculture, what unique infrastructure or safety needs should the municipality be aware of?
- What emergency response coordination has been conducted with local fire, EMS, and police departments?
- Are hazardous materials or alternative energy systems involved, and how will risks be mitigated?

- What is the size of the proposed building (height and lengths), and does the municipality have adequate equipment and training to provide emergency services?

Funding Strategies

Addressing the impacts of industrial development and preparing for emerging industrial land uses requires not only sound planning and policy but also strategic investment. Municipalities often face financial constraints when updating land use regulations, maintaining and upgrading infrastructure, or mitigating impacts associated with industrial activity. A range of funding and financial incentive tools are available at the federal, state, regional and local levels to provide community assistance.

Regional: Lehigh Valley Transportation Study (LVTS)

- The Metropolitan Transportation Plan (MTP) is a multi-billion-dollar transportation investment plan that spans 25 years. The program opens every four years, and only projects that apply are eligible to be listed for funding.
- Funding categories include Bridges, Road, Road Reconstruction, Modernization, and Automation, Roadway Expansion, Multimodal, Planning + Research, Safe Routes to School, Rail, and Transit.
- Project funding is determined by a Project Selection Process:

Project Selection Process: Tips for Communities/Developers Applying for Industrial Land-Use Funding

Communities/developers pursuing federal, state, or regional funding for industrial land-use projects, including manufacturing, logistics, warehousing, light industry, and emerging technology, can increase their competitiveness by following the recommendations below. This guidance applies to standalone development proposals as well as local government infrastructure improvements that support future industrial growth.

1. Align Your Project with Regional and Local Plans
Tip for Applicants:

Demonstrate clear consistency with adopted plans, such as:

- *FutureLV: The Regional Plan*
- *Eastern PA Freight Alliance Freight Infrastructure Plan*
- *Walk/Roll LV: The Active Transportation Plan*
- *Priority Climate Action Plan for Transportation Decarbonization*
- Your municipality's comprehensive plan, zoning ordinance, capital improvement plan or official map

Funding agencies want assurance that proposed investments support long-term regional goals and fit into an integrated land-use and transportation strategy. Projects explicitly tied to adopted plans score higher and are viewed as lower risk.

2. Understand Key Evaluation Criteria and Prepare to Address Each One

Most funding programs evaluate projects using several common criteria. Communities should tailor their applications to address the following:

Economic Impact

- Potential for job creation and workforce development

- Support for key sectors such as manufacturing, logistics, clean tech, emerging industries
- Long-term effects on local tax base and economic resilience

Transportation Efficiency
- Site access to interstate highways, freight corridors, rail connections, ports and airports
- Reduction of bottlenecks or congestion on regional routes
- Ability to improve freight mobility and reduce travel times

Land Use Compatibility
- Siting near existing industrial clusters or economic hubs
- Adequate buffering from neighborhoods, schools, parks and environmentally sensitive areas
- Alignment with zoning, future land-use maps, and local development standards

Environmental Sustainability
- Brownfield remediation and adaptive reuse
- Emissions reduction, decarbonization strategies, and clean-energy technologies
- Stormwater management and green infrastructure
- Minimization of impacts on wetlands, waterways and habitats

Community Impact
- Access to employment via transit, walking and biking
- Reduced impacts on overburdened or vulnerable populations
- Opportunities for upskilling, training and equity-focused benefits

Project Readiness
- Site control secured
- Engineering and design progress
- Zoning compliance
- Committed funding partners
- Public engagement completed

Tip for Applicants:
Organize your narrative around these topics. Clear, structured responses make your application easier to evaluate and more competitive.

3. Build a Strong, Evidence-Based Application
Use both quantitative data (e.g., vehicle counts, freight volumes, crash patterns, job projections) and qualitative insights (e.g., community priorities, local lived experience). Strengthen your application with:
- Geospatial analysis showing proximity to freight networks, workforce clusters or brownfields
- Cost-benefit and life-cycle analyses
- Environmental screening or preliminary engineering

- Letters of support from businesses, residents and agencies such as the LVPC
- Documentation of community outreach and stakeholder feedback

Tip for Applicants:
Most programs use weighted scoring. Reviewers compare applications side-by-side, so data clarity, completeness, and consistency make a substantial difference.

4. Engage Stakeholders Early and Often
Tip for Applicants:
Before submitting, coordinate with:

- Municipal leadership and planning commissions
- Industrial facility operators or developers
- PennDOT/Federal Highway Administration and Metropolitan Planning Organization staff
- Workforce development boards
- Local emergency responders
- Environmental and community organizations

Projects that demonstrate multi-sector alignment and community backing tend to score higher and move more efficiently through review.

5. Leverage Technical Assistance and Data Resources
Tip for Applicants:
Use external support to collect data, document conditions and identify improvements. The PennDOT Local Technical Assistance Program (LTAP), with support from LVPC, can help municipalities by providing:

- Corridor, intersection, and school zone safety reviews
- Traffic counts, speed studies, and freight movement analysis
- Pavement, drainage, and signage/marking assessments
- Walkability and bikeability audits
- Heavy-vehicle impact evaluations
- Analysis of land-development impacts and traffic circulation needs
- Recommendations for short-term and long-term roadway improvements
- Staff training, workshops, and follow-up assistance

LTAP-supported data can significantly strengthen funding applications, demonstrating due diligence and professional validation.

6. Plan for Transparency and Public Engagement
FYI About the Process:
Many funding programs require public transparency as a condition of award. Communities with existing communication channels, websites, boards and public meetings are better positioned to meet these expectations.

Tip for Applicants:
Prepare to publish evaluation results and project information on your municipal website or through community outreach.

7. Stay Updated on Evolving Criteria and Regional Priorities
FYI About the Process:
Criteria change as regional freight plans, climate plans, and transportation strategies evolve.
Tip for Applicants:
Check program guidance every cycle. Update your data, language, and design to reflect new state or federal directives.

8. Prepare Local Government Infrastructure to Support Industrial Land Uses
To increase project readiness and strengthen funding applications communities should proactively invest in infrastructure that supports industrial development.

Transportation Infrastructure
- Upgrade intersections to handle heavy trucks (signal timing, radii, geometric design)
- Improve last-mile freight connections from industrial parks to major corridors
- Replace weight-restricted bridges or culverts
- Enhance roadway pavement design for heavy-vehicle loads
- Expand or improve rail sidings, transload facilities, or spur connections

Utility and Site Infrastructure
- Expand water and sewer capacity for industrial-intensive uses
- Modernize stormwater and drainage systems to manage large impervious areas
- Upgrade electrical capacity to support advanced manufacturing and clean-tech facilities
- Evaluate broadband needs for technology-driven industries

Active Transportation and Transit
- Add sidewalks, trails, bike lanes, or shared-use paths connecting workers to job sites
- Coordinate with transit providers to serve industrial parks with job-access routes
- Improve pedestrian safety near industrial driveways and corridors

Environmental and Resilience Investments
- Conduct brownfield assessments and environmental due diligence
- Include green infrastructure for stormwater mitigation
- Improve tree canopy and buffer plantings around industrial edges
- Plan flood-resilient design for sites in risk-prone areas

Land Use and Policy Tools
- Update zoning to permit target industries while ensuring compatibility with neighbors
- Create overlay districts or special industrial corridors
- Adopt an official map to reserve key road, trail, or utility corridors
- Develop capital improvement plans (CIPs) identifying infrastructure gaps

- Use tax increment financing (TIF), LERTA, or other tools to support project feasibility

Tip for Applicants:
Infrastructure investments, even preliminary ones, signal readiness to funding agencies and make your industrial project far more competitive.

The next section details some assistance programs at all levels that these tips and processes can help communities utilize.

State Assistance

- Municipal Assistance Program (MAP):
  Offers grants for comprehensive plans, zoning and SALDO updates, and multi-municipal planning to manage industrial growth and mitigate impacts.
- Local Share Account (LSA):
  Funded by gaming revenues for local infrastructure improvements supporting industrial or brownfield redevelopment.
- Brownfield Cleanup and Industrial Site Reuse Program (ISRP):
  For remediation and redevelopment of industrial or contaminated sites.
- Energy Programs (Alternative Fuels Incentive Grant, etc.):
  For the applicants and developers of industrial sites incorporating cleaner technologies or energy-efficient operations.
- Community Conservation Partnerships Program (C2P2):
  Supports green buffers, trail connectivity, and open space preservation near industrial zones to mitigate environmental impacts.

Federal Assistance

- BUILD / INFRA **Grants (USDOT):**
  Large-scale, competitive grants that municipalities can pursue jointly with LVPC or counties for freight and industrial corridor improvements.
- Brownfields Assessment and Cleanup Grants (USEPA):
  For planning, assessment and remediation of former industrial sites.
- Climate Pollution Reduction Grants (CPRG):
  Can support planning for industrial decarbonization or energy transition strategies.

Local Fiscal Tools and Resources

Transportation Impact Fees + Capital Improvement Plans (MPC Tools)

- Municipalities can adopt impact fee ordinances under the MPC to recover costs from industrial traffic impacts (Section 501-A).
- Capital Improvement Plans (CIPs) can strategically fund long-term infrastructure to support or mitigate industrial growth (Section 504-A).

Tax Increment Financing (TIF) and Local Development Districts

- Through county or municipal authorities, TIFs can help pay for infrastructure and remediation needed for industrial redevelopment.

Lehigh Valley Government Academy Local Technical Assistance Program (LTAP)

- Free training and technical assistance designed to help with roadway maintenance.

Lehigh County Redevelopment Authority

- Partners with municipalities with the goal of remediating and repurposing blighted properties in Lehigh County's Boroughs and Townships.

Comprehensive Plan Best Practices Checklist for Industrial Land Uses

Identify Suitable Locations that Balance Land Use Priorities

- Designate industrial growth in areas with direct access to major highways, freight corridors or rail facilities to minimize truck traffic through residential neighborhoods.
- Preserve agricultural and environmentally sensitive lands by steering industrial development toward brownfields, underutilized sites and already serviced land.
- Cluster industrial uses to maximize infrastructure efficiency and reduce conflicts with other land uses.

Ensure Adequate Design and Compatibility

- Require site design standards that buffer industrial operations from adjacent residential and community uses through landscaping, setbacks, berms and architectural treatments.
- Encourage context-sensitive building design to minimize visual impacts of large-scale warehouses and manufacturing facilities.
- Promote sustainable site planning that incorporates green infrastructure, low-impact stormwater management and energy-efficient building design.

Set Transportation and Freight Management Policies

- Plan for roadway networks that separate truck traffic from local streets, schools and pedestrian areas.
- Coordinate with PennDOT, LANTA and regional planning partners to ensure freight movement is efficient and safe.
- Support the development of truck parking facilities and driver amenities in appropriate locations to reduce illegal or unsafe parking.

Set Infrastructure and Utilities Policies

- Direct new industrial development to areas with adequate sewer, water, energy and broadband capacity.
- Establish policies for coordinating infrastructure investment with anticipated industrial demand to prevent overextension of services.
- Encourage the use of renewable energy and on-site energy generation where feasible.

Anticipate Emerging and Evolving Uses

- Anticipate new industries such as data centers, cold storage, advanced manufacturing and alternative energy facilities by including them in land use planning policies.
- Support flexible industrial spaces that can accommodate multiple tenants or hybrid uses, while ensuring zoning and site standards address parking, noise and safety impacts.

- Monitor evolving technologies such as additive manufacturing, life sciences and battery storage, and update policies regularly to stay current.

Facilitate Economic and Workforce Development

- Align industrial land use planning with workforce development initiatives to ensure facilities are accessible to employees by transit, bike and pedestrian routes.
- Encourage industrial employers to provide amenities that support employee well-being, such as safe break areas, mobility options and sustainable workplaces.
- Promote redevelopment of older industrial areas to support new job growth and modern business needs.

Leverage Regional Coordination

- Coordinate industrial land use planning with neighboring municipalities to manage shared impacts of traffic, infrastructure, and environmental systems.
- Support consistency with *FutureLV: The Regional Plan* and county economic development goals.
- Partner with agencies such as LVEDC, PennDOT, and Pennsylvania DCED to leverage resources for industrial site readiness and infrastructure improvements.

Industrial Land Use Definitions

These are definitions that may be necessary to craft an effective municipal ordinance.

A

Additive Manufacturing or 3D Printing Facility
A facility where the primary activity is the fabrication of objects by additive processes such as 3D printing, typically using plastics, metals, concrete, resins or composites. Operations may include design, prototyping, limited production runs, finishing, assembly and associated office or research space. Additive manufacturing may occur as a stand-alone use or as part of a larger manufacturing, research or industrial operation.

Advanced Manufacturing
High-tech production facilities using automation, robotics, 3D printing, or clean rooms for industries such as aerospace, medical devices or electronics.

Alternative Energy Generation
Facilities generating renewable energy such as solar farms, wind turbine assembly sites, hydrogen plants or biofuel refineries.

Autonomous Vehicle Support Facility
A facility or area designed to support automated or semi-automated vehicles serving freight, logistics or industrial operations, including staging areas, calibration zones, equipment storage, charging or fueling infrastructure, maintenance bays, and control rooms. This use may be accessory to a truck terminal, distribution center, warehouse, or industrial park.

B

Battery Energy Storage Facility
A facility where electrochemical energy storage systems, such as large-scale batteries or battery containers, are installed to store and discharge electricity to the grid or to serve one or more principal uses on the site. The facility may include inverters, transformers, control equipment, fire suppression systems and security fencing. This use excludes small, building-integrated storage serving a single principal use as an accessory component.

Bioengineering or Biofabrication Facility
A facility where biological materials, cells, tissues or bio-based products are engineered, produced or fabricated for commercial, medical, industrial or research purposes. Operations may include laboratory functions, controlled-environment production, quality control, warehousing of inputs and outputs, and associated office or research space. Facilities may handle biological, chemical, or hazardous materials subject to applicable biosafety and environmental regulations.

Business Park
A planned development containing one or more buildings on a common internal roadway network, designed for flexible tenant space that may include offices, light manufacturing, warehousing, research and development, laboratories and related uses. Buildings are typically one or two stories, with shared access, parking, utilities, stormwater management and landscaping.

C

Cold Storage Warehouse
A warehouse primarily devoted to the storage and handling of refrigerated or frozen goods, including food products and temperature-sensitive materials, generally consistent with the cold storage warehouse land use in the ITE Trip Generation Manual. The facility may include loading docks, limited processing or packaging areas and associated office space, and typically requires mechanical refrigeration and higher energy demand.

Cryptocurrency Mining Facility
A facility where specialized computers or servers perform cryptographic calculations to validate blockchain transactions or generate digital assets, with high ongoing electricity demand and cooling requirements. The facility may be located within a building or in modular or containerized units and may include associated office, security and electrical infrastructure.

D

Data Center
An establishment engaging in the storage, management, processing or transmission of digital data, and housing computer network equipment, systems, servers, appliances, and other associated components related to digital data operations.

Data Center Mechanical Equipment
On-site exterior machines used to sustain and/or provide energy for the operations of a Data Center.

Decibel
A unit for measuring the volume of sound using the A-weighting network on a sound level meter. Decibel may be expressed as dB, dB(A), dBA, dba, or db(A).

Distribution Center, High-Cube
A warehouse or distribution facility characterized by a large building footprint, high ceiling clearances and high-bay racking designed for the storage and distribution of goods, consistent with high-cube warehouse/distribution land use categories in the ITE Trip Generation Manual. The facility primarily handles palletized or containerized goods, with frequent truck loading and unloading and limited retail or customer activity.

E

Electric Vehicle Charging Space
An automobile parking space that includes an electrical component assembly or cluster of component assemblies (battery charging station) designed and intended to transfer Level 2 charging, as defined by the United States Department of Energy, electric energy by conductive or inductive means from the electric grid or other off-board electrical source to a battery or other energy storage device within a vehicle that operates, partially or exclusively, on electric energy, and is marked to indicate that such spaces are reserved for the sole use by plug-in electric vehicles.

Electric Vehicle Supply Equipment (EVSE)

Devices that provide electric power to a vehicle to recharge the vehicle's batteries. EVSE systems include the electrical conductors, related equipment, software and communications protocols that deliver energy to the vehicle.

Energy Storage Facility

Energy storage equipment or technology that can absorb energy, storing such energy and redelivering energy after it has been stored.

A. **Energy Storage, Utility Scale:** One or more devices, assembled together, capable of storing energy to supply electrical energy at a future time, greater than 600kWh in nameplate capacity.
B. **Energy Storage, Site-Specific:** One or more devices, assembled together, capable of storing energy to supply electrical energy at a future time, less than or equal to 600kWh in nameplate capacity. Storage devices are an accessory use located on the property providing the energy generation source. This does not include energy storage facilities or devices associated with Solar Facility, Utility Scale.

F

Façade

The exterior wall of a building exposed to public view or a wall viewed by persons not within the building.

Flex Industrial or “Flex Space”

A building or group of buildings designed with adaptable floor plans that can accommodate a mix of uses such as light manufacturing, warehousing, research and development, small-scale assembly, laboratories and office space. Interior spaces may be reconfigured over time without substantial exterior changes. Flex space is typically located in business or industrial parks and is intended for low- to moderate-intensity industrial and commercial activity.

Fulfillment Center, High-Cube

A specialized high-cube distribution facility serving e-commerce or direct-to-customer operations, generally aligned with high-cube fulfillment center categories in the ITE Trip Generation Manual. The facility may include automated storage and retrieval systems, sorting and packaging operations and high employee densities. Fulfillment centers typically generate significant truck and delivery vehicle traffic and may operate extended or continuous hours.

G

General Industrial Use

A facility engaged in manufacturing, processing, assembly, repair, storage or similar industrial activities. General industrial uses may involve the use of machinery, handling of raw or finished materials, truck traffic and associated office or warehouse functions, but do not rise to the intensity of heavy manufacturing or hazardous industrial operations.

H

Hours of Operation:

The time period during which an activity or enterprise is active, including any times during which the activity is open to customers or other members of the public, employees are present and working, deliveries are made, or equipment (other than utilities or ordinary indoor appliances) is being actively operated on the site.

I

Indoor Vertical Farming/Ag-Tech
Warehouses or controlled-environment structures used to grow crops year-round with advanced hydroponic or aeroponic systems.

Industrial Park
A planned development containing multiple industrial, manufacturing, warehousing, logistics or related facilities served by a shared internal roadway and utility network, generally consistent with the industrial park land use category in the ITE Trip Generation Manual. Uses within an industrial park may include manufacturing, distribution, research and development, support services and accessory office space.

Industrial Storage
A fixed installation where any of the following are stored, either for subsequent transshipment to a smaller fixed installation or for pick-up by truck for transport to the site where the product will be used by the consumer:

A. Oil and gas storage
B. Petroleum products
C. Natural gas
D. Coal
E. Lumber
F. Building material
G. Construction equipment
H. Empty solid waste vehicles and containers
I. Building materials.

Intermodal Freight Terminal
A facility where freight is transferred between at least two modes of transportation, such as truck-to-rail or truck-to-air. The facility includes associated loading areas, container storage, staging tracks, maintenance areas and administrative offices. Intermodal terminals typically generate high truck, rail, or cargo activity and require direct access to major transportation corridors.

L

Last-Mile Distribution Centers
Logistics and warehouse facilities closer to population centers that facilitate rapid delivery of goods ordered online.

Light Industrial Facility
A free-standing building or complex used for lower-intensity industrial activities such as assembly, packaging, testing, small-scale fabrication or craft production, generally consistent with light industrial land use categories in the ITE Trip Generation Manual. These uses typically have limited heavy truck traffic, minimal outdoor storage, and lower noise and emissions than heavy manufacturing, and may be suitable at transitions between industrial and commercial or mixed-use areas.

Logistics Center
A facility or complex primarily devoted to coordinating the movement, storage and distribution of goods in the supply chain. A logistics center may include one or more warehouses, cross-dock or transload facilities, truck terminals, fleet parking and associated office or dispatch functions. The use is characterized by significant freight activity and connections to regional highway, rail or air networks.

M

Manufacturing, Heavy
A facility where raw materials or basic commodities are converted into finished products through intensive industrial processes that may involve large machinery, high energy use, outdoor storage, or more significant noise, vibration or emissions. Heavy manufacturing may include metal fabrication, chemical processing, large-scale fabrication or similar operations and typically requires greater separation from residential or sensitive uses.

Manufacturing, Light
A facility where raw materials, parts or components are assembled, processed or fabricated into finished products using relatively clean and quiet processes with limited emissions, outdoor storage or heavy truck traffic. Light manufacturing operations often occur within enclosed buildings and may include associated office, research and warehousing functions.

Microchip or Semiconductor Manufacturing Facility
A facility where semiconductor wafers, microchips, or related components are fabricated, processed, assembled, tested, or packaged. Operations may include cleanrooms, specialized equipment, and the use of chemicals, gases and ultrapure water. The facility may consist of front-end wafer fabrication, back-end assembly, test and packaging, or a combination thereof, along with support, utility and office areas.

Micro-Fulfillment Centers
Highly automated, compact warehouse facilities designed to speed up grocery and retail deliveries within urban and suburban areas.

O

Outdoor Storage Yard, Industrial
An area used for the outdoor storage of equipment, vehicles, materials or containers associated with industrial, construction, utility or logistics operations. The use may be a principal use or accessory to a permitted industrial use and typically includes fencing, screening and surfacing for vehicle and equipment maneuvering.

P

Parcel Hub Warehouse
A freight facility, generally consistent with parcel hub or parcel sorting land use categories in the ITE Trip Generation Manual, where parcel carriers receive, sort and dispatch packages for regional or local delivery. Operations may include conveyor systems, loading docks, staging areas for delivery vehicles and associated office or dispatch space, with high trip generation by trucks and smaller delivery vehicles.

R

Recycling and Materials Recovery Facility
A facility where recyclable materials such as paper, cardboard, plastics, metals, glass, or construction and demolition debris are received, sorted, processed, baled or temporarily stored for shipment to end users. The facility may include enclosed processing areas, outdoor storage of containers or baled materials and associated office space. This use does not include landfills, waste incineration or hazardous waste treatment facilities.

T

Telecommunications Hub or Network Facility
A facility where telecommunications, broadband, fiber-optic or data network equipment is housed to route, switch or process communications signals. The use may include server rooms, switching equipment, backup power systems, cooling equipment and associated office or maintenance space. It does not include broadcast towers, which may be separately regulated.

Truck Stop or Travel Plaza
A facility designed primarily to serve truck drivers and long-distance motorists, providing services such as fuel, parking, restrooms, showers, food service and limited maintenance. The facility may include convenience retail and ancillary uses and typically generates frequent truck movements and 24-hour activity.

Truck Terminal or Truck Freight Station
A facility, generally consistent with truck terminal or truck freight station land use categories in the ITE Trip Generation Manual, where freight is staged, sorted, or transferred between trucks, or between trucks and local delivery vehicles. Operations may include fleet parking, loading docks, cross-docks, dispatch offices and minor maintenance areas, and are characterized by high truck traffic and frequent vehicle movements.

U

Utility-Scale Energy Generation Facility
A facility used to generate electricity for delivery to the electric grid or to serve multiple off-site users, using renewable or non-renewable energy sources. This may include gas-fired peaker plants, solar or wind farms, combined heat and power plants or similar installations, along with associated equipment such as inverters, transformers, substations, control buildings, access drives and security fencing. Small-scale systems serving a single principal use as an accessory component are not included.

W

Warehouse, General
A facility primarily used for the storage of goods, materials or merchandise, generally consistent with general warehouse land use categories in the ITE Trip Generation Manual. The facility may include office, maintenance or limited processing areas, and is

characterized by truck loading and unloading, indoor storage and minimal customer or retail activity.

Warehouse, High-Cube Storage

A warehouse facility with a large footprint and high interior clear heights designed for high-bay racking and high-density storage, consistent with high-cube storage land use categories in the ITE Trip Generation Manual. High-cube warehouses may be used for long-term storage, transload operations or as part of larger logistics or business parks.

Wholesale Trade Establishment

A facility where goods, merchandise or equipment are sold or distributed primarily to retailers, contractors or other businesses rather than to the general public. Wholesale trade establishments may include indoor storage, showrooms, loading docks and associated offices, with regular truck traffic and limited walk-in customer activity.

Lehigh Valley Planning Commission

DR. CHRISTOPHER R. AMATO
Chair

CHRISTINA V. MORGAN
Vice Chair

ARMANDO MORITZ-CHAPELLIQUEN
Treasurer

BECKY A. BRADLEY, AICP
Executive Director

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

December 18th, 2025

Kerry Rabold
Planning & Zoning Officer
Salisbury Township
2900 South Pike Avenue
Allentown PA 18103
krabold@salisburylehighpa.gov

RE: **Street Vacation Petition**
Portion of unopened alley north of 1801 Broadway
Salisbury Township, **Lehigh County**

Ms. Rabold,

The Lehigh Valley Planning Commission (LVPC) will consider the subject street vacation petition at its Transportation Planning Committee and Full Commission meetings, pursuant to the requirements of the Pennsylvania Municipalities Planning Code (MPC). Discussion on agenda items largely happens during the Committee meeting. Both meetings were virtual, and held on:

- LVPC Transportation Committee Meeting
  - December 18, 2025 at 9:30 AM
- LVPC Full Commission Meeting
  - December 18, 2025 at 11:00 AM

The proposed street vacation petition was reviewed for recommendations under Section 304 of the Pennsylvania Municipalities Planning Code, and for general consistency with the goals, policies and actions of *FutureLV: The Regional Plan*.

The street vacation application was submitted by Salisbury Township on behalf of Ester Cosme of 1801 Broadway, Bethlehem, PA 18103. The proposed request is to vacate the rights-of-way for an unopened, unnamed alley between Broadway and Acker St. in the Township. The petitioner currently has ownership of property on the north and south sides of the area of rights-of-way for the unnamed alley. The petitioner has also received agreement from the owner of the surrounding property at 1849 Susquehanna Street. However, the Township Solicitor should be consulted to ensure that if additional property owners must also agree this is coordinated.

The proposed location does not appear to have any public utilities built through the proposed vacation location. But, a garage building and shipping containers are within the rights-of-way. The proposed location is in a mixed commercial and residential area. For reference, an engineered plan provided to the LVPC by Salisbury Township is included at the end of this letter.

Aerial view of the area petitioned to be vacated roughly in red, Courtesy of Google Maps

If the petition is granted by Salisbury Township, it is recommended that the utilities running along Acker Street, and just north of the proposed vacation, remain accessible in the event of maintenance or repair. This ensures maintenance of essential power, telecommunications, emergency services or other utilities required to sustain the public health, safety and welfare of the community. It is also recommended that any emergency access to utilities and to access properties be maintained to ensure proper response by emergency services personnel. The utility and emergency services needs, and access related to this street vacation petition, support *FutureLV: The Regional Plan* policy 5.1 to “Promote safe and secure community design and emergency management”.

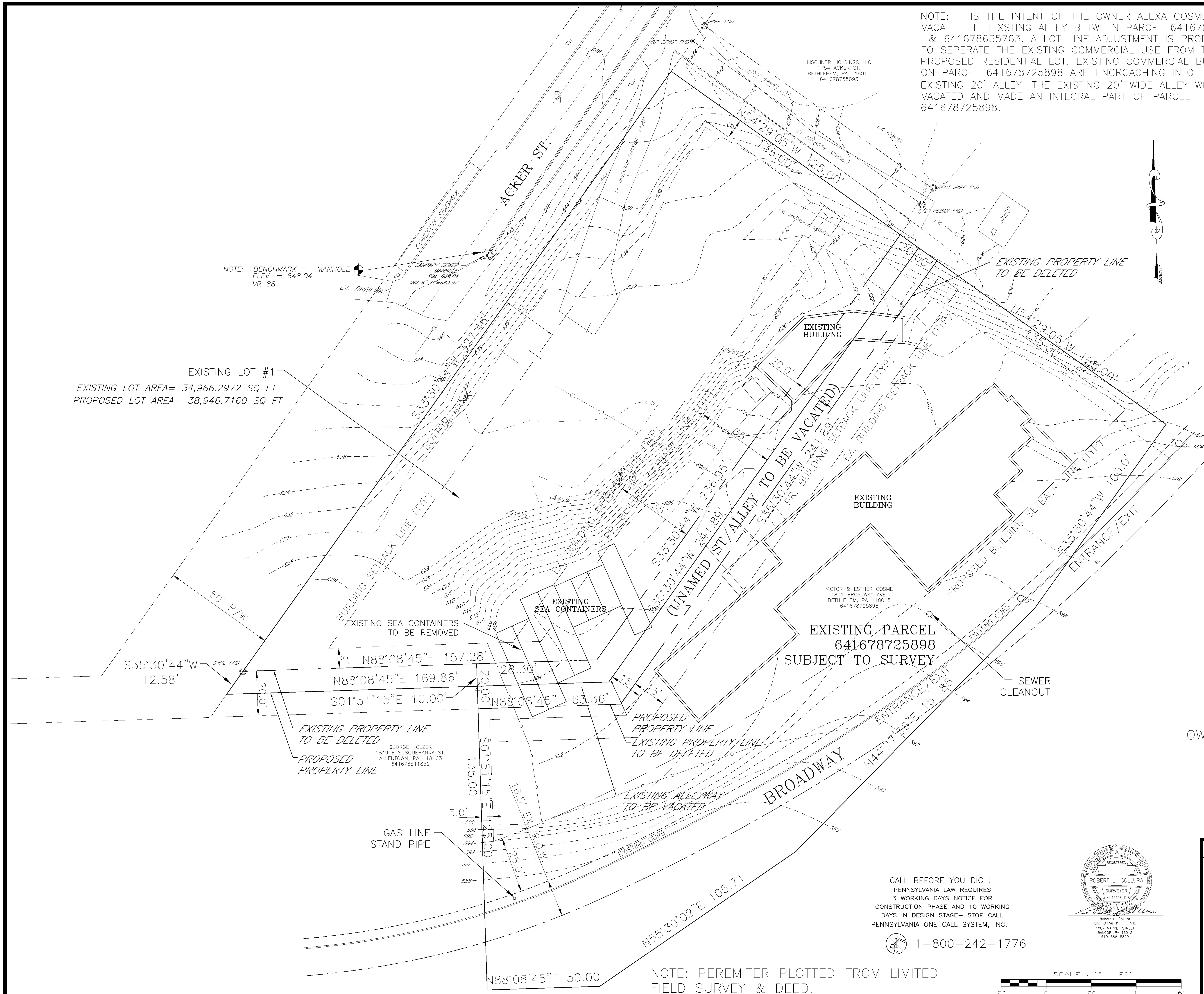
Parcel Map view of location proposed to be vacated, highlighted in pink, Courtesy of Lehigh County GIS

The LVPC appreciates Salisbury Township's consideration of the goals and policies of *FutureLV: The Regional Plan* related to the street vacation petition. In this case, the petition appears to support the use of underutilized property generally (*FutureLV* Policy 5.4).

It is also recommended that if Salisbury Township grants the petition to vacate, that the Township communicate with and notify the LVPC of the change so street maps may be maintained. Please feel free to reach out with any questions or concerns you may have regarding the LVPC review.

Evan Gardi
Transportation Planner

NOTE: IT IS THE INTENT OF THE OWNER ALEXA COSME TO VACATE THE EIXSTING ALLEY BETWEEN PARCEL 641678725898 & 641678635763. A LOT LINE ADJUSTMENT IS PROPOSED TO SEPERATE THE EXISTING COMMERCIAL USE FROM THE PROPOSED RESIDENTIAL LOT. EXISTING COMMERCIAL BUILDINGS ON PARCEL 641678725898 ARE ENCROACHING INTO THE EXISTING 20' ALLEY. THE EXISTING 20' WIDE ALLEY WILL BE VACATED AND MADE AN INTEGRAL PART OF PARCEL 641678725898.



LEGEND

PROPERTY LINE	
PROPOSED PROPERTY LINE	
16.5' EXISTING R/W LINE	
25' ULTIMATE R/W LINE	
SETBACK LINE	
UTILITY/DRAINAGE EASEMENT LINE	
RIGHT-OF-WAY EASEMENT LINE	
NEIGHBORING PROPERTY	
SEPTIC LINE	—S—S—S—
SOILS LINE W/ DESCRIPTIONS	
TREE LINE	
CONCRETE MONUMENT FOUND	
IRON PIPE FOUND	
PROP. IRON PIN	
OVERHEAD WIRE & POLE	—E—E—
CONSERVATION ZONE AREA	
SECONDARY SEPTIC SITE	
PRIMARY SEPTIC SITE	
SOIL PROBE	P1
PERC HOLE	

SALISBURY TOWNSHIP
LOT 1 PARCEL 641678635763
ZONE: (R4)MEDIUM DENSITY RESIDENTIAL
MIN. BUILDING SETBACK :

FRONT = 25'
ONE SIDE = 6'
BOTH SIDE = 18'
SIDE YARD ABUTTING STREET= 25'
REAR = 35'

WATER : PUBLIC
SEWER : PUBLIC
ZONE : R4)

CONTOURS : VR 88 (FIELD SURVEY)
MINIMUM LOT AREA= 6,000 SQ FT
EXISTING LOT AREA= 34,966.2972 SQ FT
PROPOSED LOT AREA= 38,946.7160 SQ FT
MINIMUM LOT WIDTH= 50'
MAXIMUM BUILDING COVERAGE= 35%
MAXIMUM IMPERVIOUS COVER= 60%
EXISTING IMPERVIOUS COVER= 2,834 S.F./8.1%
PROPOSED IMPERVIOUS COVER= 12.8%
PROPOSED TOTAL IMPERVIOUS AREA= 3,889 S.F.
MAXIMUM BUILDING HEIGHT= 35'

SALISBURY TOWNSHIP
LOT 2 PARCEL 641678725898
ZONE: (C2)MEDIUM DENSITY RESIDENTIAL
MIN. BUILDING SETBACK :

FRONT = 40'
ONE SIDE = 5'

SIDE YARD ABUTTING STREET= 30'
REAR = 35'

WATER : PUBLIC
SEWER : PUBLIC
ZONE : C2)

CONTOURS : VR 88 (FIELD SURVEY)
MINIMUM LOT AREA= 7,000 SQ FT
EXISTING LOT AREA= 41,333.1025+/- SQ FT
PROPOSED LOT AREA= 44,338.1582+/- SQ FT
MINIMUM LOT WIDTH= 200'
MAXIMUM BUILDING COVERAGE= 30%
MAXIMUM IMPERVIOUS COVER= 85%
PROPOSED IMPERVIOUS COVER= 26,357 S.F./63.8%
PROPOSED IMPERVIOUS COVER= 34,791 S.F./66.9%

MAXIMUM BUILDING HEIGHT= 35'

OWNER: ALEXIA COSME
1770 ACKER ST.
ALLENTOWN, PA 18103

PIN # 641678635763
PIN # 641678725898

REVISIONS

ALLEY VACATION PLAN
FOR
COSME

SALISBURY TOWNSHIP
LEHIGH COUNTY, PA

ROBERT L. COLLURA
Civil Engineers & Land Surveyors
727 Molasses Road Bangor, PA 18013

SCALE: 1" = 20'	DRAWN: R.F.E.	SHEET 1 OF 1
DATE: 10/27/2025	CHECKED:	DWG. NO.:E-25-2699

LVPC / LVTS
Lehigh Valley Planning Commission / Lehigh Valley Transportation Study

2025-2028

TRANSPORTATION IMPROVEMENT PROGRAM

Accomplishments + Annual Listing of Obligated Projects

OCTOBER 1, 2024 THROUGH SEPTEMBER 30, 2025

The preparation of this report has been financed in part through grants from the U.S. Department of Transportation (USDOT) and the Pennsylvania Department of Transportation (PennDOT). The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official policies of either the USDOT, Federal Highway Administration (FHWA), Federal Transit Administration (FTA) or the Commonwealth of Pennsylvania at the time of publication. This report does not constitute a standard, specification or regulation.

The Lehigh Valley Transportation Study (LVTS) Metropolitan Planning Organization (MPO) is committed to compliance with nondiscrimination requirements of civil rights statues, executive orders, regulations and policies applicable to the programs and activities it administers. Accordingly, the MPO is dedicated to ensuring that program beneficiaries are not excluded from participation in or denied the benefits of its services based upon race, color, national origin, religious creed, sex, age, disability or economic status.

This document is available in other formats upon request, in accordance with applicable state and federal laws. The LVPC will provide translation or interpretation services upon request. For more information, please call the LVPC at 610-264-4544.

Spanish:

Este documento está disponible en otros formatos cuando se soliciten, de conformidad con las leyes estatales y federales correspondientes. La LVPC le proporcionará servicios de traducción o interpretación si los solicita. Para obtener más información, llame a la LVPC al 610-264-4544.

Traditional Chinese:

根據適用的州和聯邦法律，本文件可按要求提供其他格式。LVPC將根據需求提供翻譯或口譯服務。如需更多資訊，請致電610-264-4544聯絡LVPC。

Simplified Chinese:

根据适用的州和联邦法律，本文件可按要求提供其他格式。LVPC将根据要求提供翻译或口译服务。如需更多信息，请致电610-264-4544联系LVPC。

Arabic:

هذا المستند متاح بصيغ أخرى عند الطلب، وفقًا للقوانين الحكومية والفدرالية المعمول بها. ستقوم لجنة LVPC بتقديم خدمات الترجمة أو التفسير عند الطلب. لمزيد من المعلومات، يرجى الاتصال بلجنة LVPC على الرقم 610-264-4544.

Vietnamese:

Chúng tôi có thể cung cấp tài liệu này theo các định dạng khác nếu quý vị yêu cầu, chiếu theo luật hiện hành của tiểu bang và liên bang. LVPC sẽ cung cấp các dịch vụ thông dịch và chuyển ngữ tài liệu khi có yêu cầu. Để biết thêm thông tin, vui lòng gọi LVPC tại số 610-264-4544.

Lehigh Valley Transportation Study

MEMBERS

TECHNICAL COMMITTEE

Brendan Cotter, *Chair*

Ryan Meyer, *Vice Chair*

Becky A. Bradley, AICP, *Secretary*

Matthew Tuerk, City of Allentown

David Petrik (Alt.), City of Allentown

J. William Reynolds, City of Bethlehem

Basel Yandem (Alt.), City of Bethlehem

Salvatore J. Panto, Jr., City of Easton

David Hopkins (Alt.), City of Easton

Jennifer Ruth, PennDOT District 5-0

Nick Raio, PennDOT Central

Nyomi Evans (Alt.), PennDOT Central

COORDINATING COMMITTEE

Richard Molchany (Alt.), *Chair*

David Hopkins (Alt.), *Vice Chair*

Becky A. Bradley, AICP, *Secretary*

Phillips Armstrong, Lehigh County

Lamont G. McClure, Jr., Northampton County

Mike Emili (Alt.), Northampton County

Matthew Tuerk, City of Allentown

David Petrik (Alt.), City of Allentown

J. William Reynolds, City of Bethlehem

Michael Alkhal (Alt.), City of Bethlehem

Salvatore J. Panto, Jr., City of Easton

Owen O'Neil, LANTA

Thomas Stoudt,
Lehigh-Northampton Airport Authority

Chris Kufro, PennDOT District 5

Jim Mosca, PE, PennDOT Central

Nick Raio (Alt.), PennDOT Central

TABLE OF CONTENTS

LVTS
Lehigh Valley Transportation Study

INTRODUCTION

PURPOSE OF THE ACCOMPLISHMENTS + ANNUAL LISTING OF OBLIGATED PROJECTS

This report was prepared as an overview of transportation investments in the Lehigh Valley. It also serves as a reference to specifically highlight the accomplishments of transportation improvement projects within the region. Additionally, this report is the convey to the public the Annual Listing of Obligated Projects to fulfill federal transportation requirements. Federal regulation states that: "An annual listing of projects, including investments in pedestrian walkways and bicycle transportation facilities, for which federal funds have been obligated in the preceding program year shall be published or otherwise made available through the cooperative effort of the state, public transportation operator(s), and metropolitan planning organization. The listing shall be consistent with the categories identified in the TIP."

These requirements were first established under the Fixing America's Surface Transportation Act (FAST Act) and continued in the subsequent Infrastructure Investment and Jobs Act (IIJA) commonly referred to as the Bipartisan Infrastructure Law (BIL), which authorizes federal funding for transportation projects. The BIL enables the United States Secretary of Transportation to authorize funding to Metropolitan Planning Organizations (MPOs) across the United States, through the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).

2025 ACCOMPLISHMENTS

A listing of projects and programs that were completed or substantially completed where no additional federal funding obligations have been authorized and the project is open for public use.

2025 UNDER CONSTRUCTION

Projects that are actively under construction where physical work is happening during the federal fiscal year 2025. Not all projects that are accomplished or under construction were obligated funding during 2025. These projects may have had prior federal fiscal years obligations that authorized the project to commence, however construction time frames can sometimes last many years, sometimes past the original obligation year.

DEOBLIGATED PROJECTS

Deobligations are monies not used during a particular phase of the project and have funding that can be reallocated to other eligible phases of other projects. The deobligations or funding may not reflect the current federal fiscal year obligations, and they may have been obligated several years prior as the project progressed through the various phases.

WHAT IS THE TRANSPORTATION IMPROVEMENT PROGRAM?

The Transportation Improvement Program (TIP) is the Lehigh Valley's four-year plan to maintain and enhance the transportation system in Lehigh and Northampton Counties. It is updated every two years, and this update is just one part of an overall plan to create a seamless network where roads, trails, sidewalks, technology and transit connect everyone to every place. The TIP is critical to the economic and social future of the region, targeting infrastructure investments that support a vibrant, inclusive, resilient and growing Lehigh Valley.

The TIP details the planned expenditure of federal funds and state capital funds for specific projects and programs within specified limits of fiscal constraint. Fiscal constraint requires only utilizing the amount of money allocated for specific funding categories and project types. TIP development is a rigorous process that includes significant opportunities for public engagement to provide for involvement and comment on transportation projects considered with a look at the region as a whole and indiscriminate of individual municipal boundaries within Lehigh and Northampton Counties.

The TIP and the overall plan are administered by the Lehigh Valley Transportation Study (LVTS), the federally designated Metropolitan Planning Organization (MPO) for Lehigh and Northampton Counties. As the MPO, the LVTS completes and implements two major foundational planning products, along with additional plans, studies and report. All of this work is done with the input of local officials, transportation agencies and the public. This is achieved through collaboration and meetings of the LVTS Technical and Coordinating Committees.

Federal Regulations Require That the TIP Shall:

Cover a period of at least **3 YEARS**

Consist of projects from *FutureLV: The Regional Plan*, the locally developed transportation plan

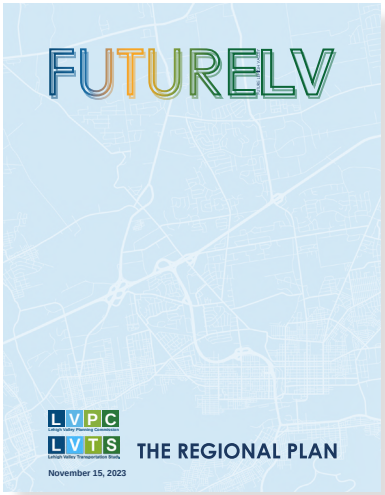
Reflect the area's transportation needs and priorities

Include realistic cost and revenue estimates for all projects

Include all highway, bridge and transit projects to be funded with federal money

Lehigh Valley Transportation Study

PLANNING PRODUCTS



The Metropolitan Transportation Plan (*FutureLV: The Regional Plan*)

FutureLV sets the vision and direction to carry the Lehigh Valley to 2050 and beyond. It provides a blueprint for managing future growth, making the most of our assets and creating a Lehigh Valley where everyone has access to health, opportunity and a livable neighborhood. A key component of *FutureLV* maps out a 25-year plan to maintain and enhance the transportation network. This 25-year plan is the result of the Transportation Needs Assessment community engagement campaign, which included 30 public meetings around the region and more than 1,000 responses to a survey on transportation policy priorities.

The Transportation Improvement Program (TIP)

The TIP covers the most current four-year period of the Long-Range Transportation Plan and is the means by which funds are allocated to regional transportation projects. As part of implementing these plans, the LVTS is responsible for developing and updating the TIP to meet federal planning requirements and address local needs.

LVTS
Lehigh Valley Transportation Study

ACCOMPLISHMENTS

October 1, 2024 Through September 30, 2025

The Transportation Improvement Program (TIP) is the locally endorsed list of highway, bridge and transit projects proposed to be implemented with federal assistance. The federal and state governments designated the Lehigh Valley Transportation Study (LVTS) as the body responsible for preparing the TIP for Lehigh and Northampton Counties. This report of completed projects in federal fiscal year 2025 for the 2025-2028 TIP that was adopted June of 2024.

Every two years, the LVTS works in partnership with PennDOT, LANTA and area local officials to identify priority transportation needs and develop a new TIP to address these needs over the next four-year period. The TIP sources projects from the Metropolitan Transportation Plan (MTP) within *FutureLV: The Regional Plan*, the comprehensive plan for Lehigh and Northampton Counties.

MTP delineates how available and projected transportation funds will be spent over a 25-year period. MTP also outlines a vision of the future of transportation in the Lehigh Valley through a series of projects that involve the Goals and Policies of *FutureLV: The Regional Plan.*

The TIP details the planned expenditure of federal funds and state capital funds for specific projects and programs within specified limits of fiscal constraint. Fiscal constraint requires only utilizing the amount funding allocated for specific funding categories and project types. TIP development is a rigorous process that includes significant opportunities for public engagement to provide for involvement and comment on transportation projects considered with a look at the region as a whole and indiscriminate of individual municipal boundaries within Lehigh and Northampton Counties.

PERFORMANCE-BASED PLANNING + PROGRAMMING

The LVTS TIP follows a Performance-Based Planning and Programming (PBPP) process, with a focus on collaboration between PennDOT, FHWA, and the LVTS at the county and regional levels. These activities are carried out as part of a cooperative, continuing, and comprehensive (3C) planning process which guides the development of various plans and programs. The 3C process enables valuable coordination and public engagement with a focus on the policies of the LVTS and state and federal guidelines.

The completion of these projects also aligns with the FHWA and PennDOT Asset Management as well as Transportation Performance Management through Performance Measures. These Performance Measures are a set of targets to address various aspects of transportation. These targets and goals are related to safety, infrastructure condition and system performance with a relationship to air quality. Projects are selected to align with adopted Transportation Performance Management, Performance Measures by LVTS to ensure a safe and efficient transportation system.

Transportation Performance Management (TPM) is a strategic approach that uses data to make investment and policy decisions to achieve national performance goals. 23 CFR 490 outlines the national performance goal areas for the federal-aid program. TPM is systematically applied through a regular ongoing process. It provides key information to help decision makers understand the consequences of investment decisions across transportation assets or modes or transportation. Communication between decision makers, stakeholders and the public is provided through this management strategy. Ensuring targets and measures developed in cooperative partnerships and based on data and objective information.

These goals are embedded within three specific Performance Measures and targets adopted by the Lehigh Valley Transportation Study. Performance targets should be data-driven, realistic, and attainable and should align with the performance management framework and legislative intent.

PERFORMANCE MEASURES

Safety Performance Measures (PM1)

Five safety performance targets have been established and are updated annually. The measures are based on crashes that result in fatal and/or serious injuries. The targets assist the LVTS and PennDOT in addressing areas of concern for fatalities and serious injury.

Safety Performance Measures:

- Number of fatalities
- Rate of fatalities per 100 million vehicle miles traveled
- Number of serious injuries
- Rate of serious injuries per 100 million vehicle miles traveled
- Number of non-motorized fatalities and serious injuries

Pavement/Bridge Performance Measures (PM2)

The Pavement/Bridge Performance Measures (PM2) apply to both pavement and bridge condition and are only applicable to the National Highway System (NHS). Conditions are rated as either Good or Poor and provide targets that are consistent with PennDOT's asset management objectives of maintaining the system in the state of good repair, managing to lowest life cycle costs, and achieving national and state transportation goals.

System Performance Measures (PM3)

The System Performance Measures (PM3) are six measures which assess performance of the National Highway System (NHS), Freight Movement on the Interstate System, and the Congestion Mitigation and Air Quality (CMAQ) Improvement Program. The LVTS and PennDOT continue their efforts to ensure the TIP and the LRTP are developed and managed to support progress toward the achievement of the statewide system performance targets.

System Performance Measures:

- Interstate Reliability
- Non-Interstate National Highway System Reliability
- Truck Reliability Index
- Annual Peak Hours Excessive Delay Hours Per Capita
- Percentage Non-Single Occupied Vehicle Travel
- Vehicle Emission Targets

The goal of the Performance Measures is to collect data and target transportation investments to improve the system with the end result of a project selection process rooted in data and analysis to enhance transportation system performance.

Projects for the MTP and the TIP have been selected to align with adopted Performance Measures by LVTS to ensure a safe and efficient transportation system consistent with state and national transportation objectives.

LVTS
Lehigh Valley Transportation Study

Total for
ACCOMPLISHED PROJECTS
October 1, 2024 through September 30, 2025

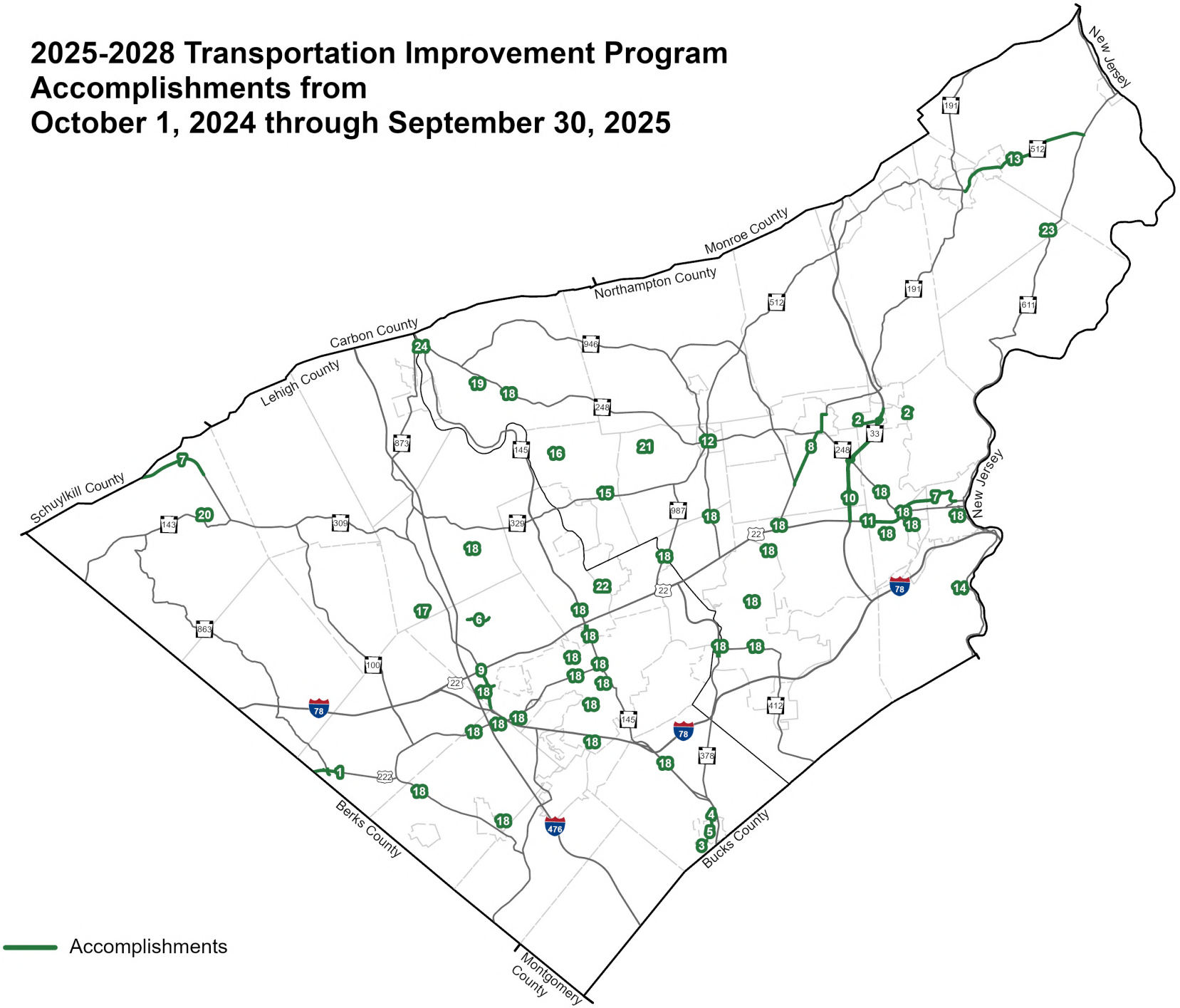
During 2025, TIP projects with investments of

$92,846,194

were completed and open for public use.

The following projects are critical infrastructure projects to the long-term sustainability and mobility of the Lehigh Valley. These projects were the result of a comprehensive planning and programming of various current and prior Transportation Improvement Programs.

2025-2028 Transportation Improvement Program
Accomplishments from
October 1, 2024 through September 30, 2025



HIGHLIGHTED ACCOMPLISHMENTS

October 1, 2024 through September 30, 2025

Coopersburg Main Street Streetscape Phase 3

Description: Installation of crosswalks, Americans with Disabilities Act-compliant (ADA) ramps, curb, sidewalk and pedestrian lighting along Main Street (Route 2045) between East Fairmount Street and Tilghman Street.

Location: Coopersburg Borough

Performance Measure: PM1

Total Project Cost: $175,000

MPMS #: 110988

Project Administrator/Owner: PennDOT District 5

Map ID #: 3

Coopersburg Main Street Streetscape Phase 5

Description: Bicycle and pedestrian improvements along Main Street (Route 2045) from East Fairmont Street to Fairview Street that will included ADA ramps, crosswalks, pedestrian lighting, signage, on-street parking and sharrows, in Coopersburg Borough.

Location: Coopersburg Borough

Performance Measure: PM1, PM2, PM3

Total Project Cost: $609,128

MPMS #: 112628

Project Administrator/Owner: PennDOT District 5

Map ID #: 4

Coopersburg Main Street Streetscape Phase 7

Description: Bicycle and pedestrian improvements along Main Street (Route 2045) from East Fairmont Street to Fairview Street that will included ADA ramps, crosswalks, pedestrian lighting, signage, on-street parking and sharrows, in Coopersburg Borough.

Location: Coopersburg Borough

Performance Measure: PM1

Total Project Cost: $1,131,515

MPMS #: 113303

Project Administrator/Owner: PennDOT District 5

Map ID #: 5

Howertown Road Bridge Replacement/Rehabilitation

Description: Replacement/rehabilitation of the Howertown Road Route 3017) bridge over Dry Run in Allen Township.

Location: Allen Township

Total Project Cost: $2,912,857

Project Administrator/Owner: PennDOT District 5

Performance Measure: PM2

MPMS #: 105371

Map ID #: 15

Jordan Creek Greenway in Covered Bridge Park

Description: Extension of the Jordan Creek Greenway Trail.

Location: South Whitehall Township

Total Project Cost: $1,000,000

Project Administrator/Owner: PennDOT District 5

Performance Measure: PM3

MPMS #: 118438

Map ID #: 6

Route 309 & Tilghman Street Interchange Demolition

Description: Demolition of properties needed for the Route 309 and Tilghman Street Interchange project in South Whitehall Township.

Location: South Whitehall and Upper Macungie Townships

Total Project Cost: $667,207

Project Administrator/Owner: PennDOT District 5

Performance Measure: PM2, PM3

MPMS #: 121093

Map ID #: 9

Race Street Bridge Replacement/Rehabilitation

Description: Replacement and rehabilitation of the precast deck of the Race Street (Route 1004) bridge over the Lehigh River in Whitehall Township and in the Borough of Catasauqua.

Location: Whitehall Township and Catasauqua Borough

Total Project Cost: $6,879,075

Project Administrator/Owner: PennDOT District 5

Performance Measure: PM2, PM3

MPMS #: 108134

Map ID #: 22

Route 512 Resurface S. Main Street to Route 611

Description: Resurfacing Bill Scott Boulevard, Central Avenue and Mount Bethel Highway(all section of Route 512) from Main Street in Bangor through East Bangor to Route 611 in Upper Mount Bethel Township.

Location: Upper Mount Bethel Township, and the Boroughs of Bangor and East Bangor

Total Project Cost: $6,879,075

Project Administrator/Owner: PennDOT District 5

Performance Measure: PM2, PM3

MPMS #: 101571

Map ID #: 13

TOTAL ACCOMPLISHMENTS

October 1, 2024 through September 30, 2025

Map ID	MPMS #	Project Title	Project Description	Project Administrator/ Owner	Total Cost of Project
1	79554	Route 222 & Shantz Road & Route 863 Improvements	Safety improvements in Upper Macungie Township.		$26,529,510
14	110055	Route 611 Culvert Replacement	Emergency project in Williams Township.		$1,530,319
2	112129	Amazon Offsite Improvements	Highway reconstruction in Forks and Palmer Townships.		$5,000,000
16	12310	Indian Trail Road over Hokendauqua Creek Bridge Replacement	Replacement of the bridge carrying Indian Trail Road over Hokendauqua Creek, in Allen Township.		$5,118,330
17	89627	Kernsville Road Bridge Restoration	Restoration Kernsville Road Bridge.		$4,310,710
7	117521	All Weather Pavement Markers 2023	Installation of all weather pavement markings at various locations in Lehigh and Northampton Counties.		$539,181
18	116663	Low Cost Signal Upgrades	Signal upgrades at various locations throughout Lehgh and Northampton Counties.		$198,675

Map ID	MPMS #	Project Title	Project Description	Project Administrator/ Owner	Total Cost of Project
19	12318	Maple Drive over Tributary to Bertsch Creek	Replacement of bridge carrying Maple Drive over Bertsch Creek.		$1,233,473
20	85692	Mosserville Road over Ontelaunee Creek	Replacement of bridge carrying Mosserville Road over Ontelaunee Creek.		$2,283,183
8	101560	Nazareth Pike Resurfacing	Resurfacing of Nazareth Pike in Lower Nazareth Township and Nazareth Borough.		$2,627,510
21	110058	Old Carriage Road Bridge Replacement	Replacement of Old Carriage Road Bridge.		$2,081,469
10	114351	Route 33 Resurfacing	Resurfacing of Route 33 from the Tatamy intercange to Route 22 in Whitehall Township and Catasauqua Borough.		$6,879,075
23	12084	Richmond Bridge Replacement	Replacement of the Richmond Bridge in Washington Township.		$2,982,010

Map ID	MPMS #	Project Title	Project Description	Project Administrator/ Owner	Total Cost of Project
11	114350	Route 22 Resurface, Bethman Road to 25th Street	Highway restoration on Route 22 from Bettman Road to 25th Street in Bethlehem and Palmer Townships, and Wilson Borough.		$3,988,792
24	110176	Route 248 Signal Upgrade	Signal upgrades along Route 248 in Lehigh Township.		$2,449,928
12	113887	Route 512 Bath Borough Corridor Signal Optimization	Signal upgrades along Route 512 in Bath Borough.		$1,890,797

LVTS
Lehigh Valley Transportation Study

UNDER CONSTRUCTION

October 1, 2024 Through September 30, 2025

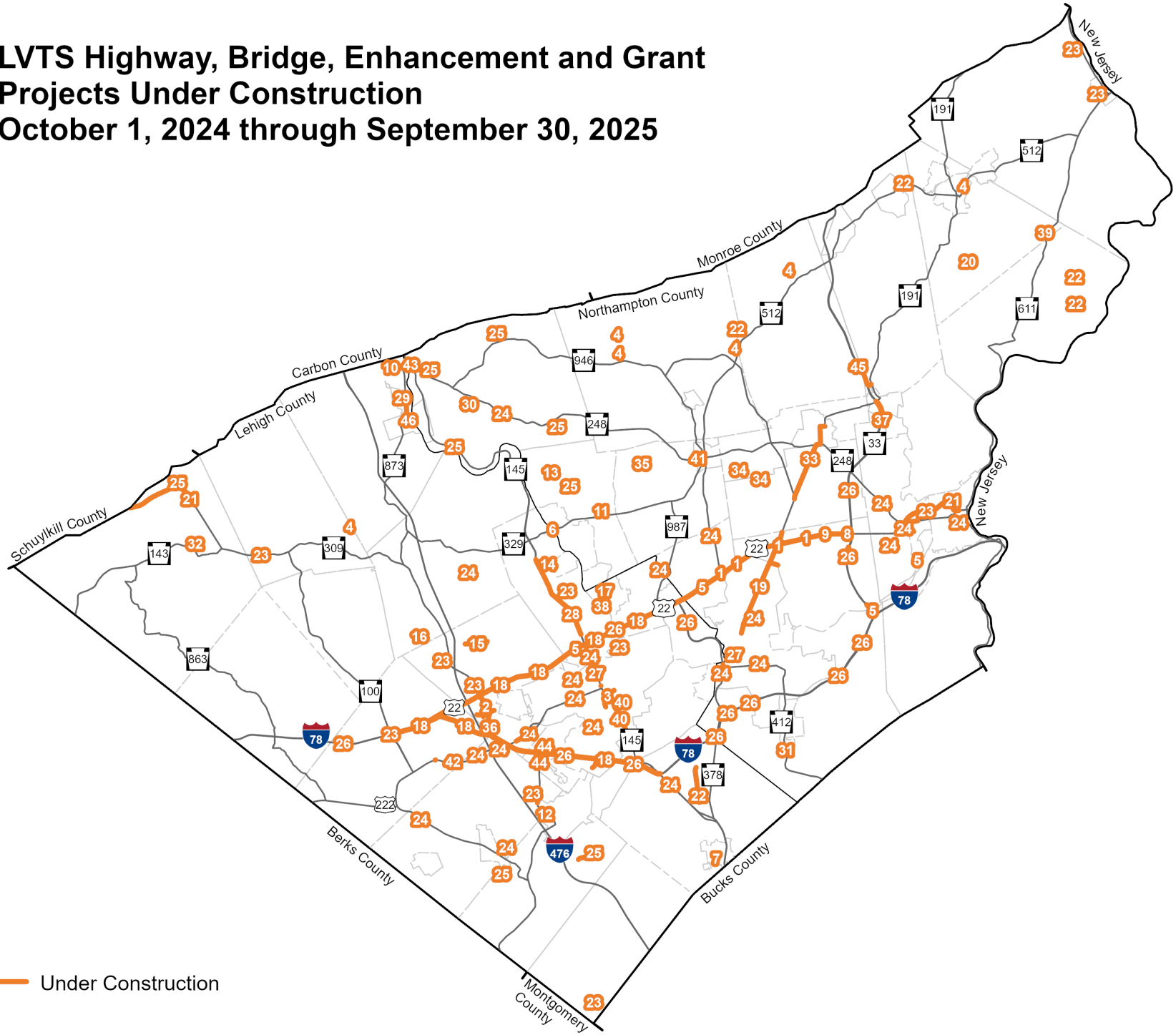
LVTS
Lehigh Valley Transportation Study

Total for Projects
UNDER CONSTRUCTION
October 1, 2024 through September 30, 2025

$401,659,004

Projects listed in this section are physical construction for Federal Fiscal Year (FFY) 2025. There are certain projects that may appear to be complete and are in fact open for transportation purposes. However, there are elements remaining to close out the project. These projects also may have small amounts of funding in the 2025-2028 TIP and will be closed out in the current FFY 2025 annual listing of obligated projects and accomplishments element within the report. Dollar totals are programmed amounts combined with past expenditures. These amounts are subject to change as projects develop.

LVTS Highway, Bridge, Enhancement and Grant Projects Under Construction
October 1, 2024 through September 30, 2025



HIGHLIGHTED UNDER CONSTRUCTION

October 1, 2024 through September 30, 2025

Route 22 from Farmersville Road to Route 512

Description: Highway resurfacing/restoration of Route 22 from Farmersville Road to the Route 512 and restoration of Route 191 and Route 512 Interchange ramps in Bethlehem and Hanover Townships. Will include replacing all guiderails.

Location: Bethlehem Township, Hanover Township

Total Project Cost: $24,099,476

Project Administrator/Owner: PennDOT District 5

Status: Started Summer 2022, Estimated Completion Fall 2023

MPMS #: 110070

Map ID #: 1

Route 309 & Tilghman Street I/C Recon

Description: Reconfiguration of the Route 309/Tilghman Street (Route 1002) Interchange and two bridge replacements at Route 309 over Tilghman Street and Route 309 over Broadway Street. Will also include rehabilitation of the Route 309 culvert over Little Cedar Creek, roadway drainage improvements, base repair, overlay, and two new signals at the end of the reconfigured ramps.

Location: South Whitehall Township, Lehigh County

Total Project Cost: $129,594,328

Project Administrator/Owner: PennDOT District 5

Status: Started Summer 2024, Estimate Completion Spring 2030

MPMS #: 96432

Map ID #: 2

Cementon Bridge Replacement

Description: Replacement of the Cementon Bridge carrying Route 329 over the Lehigh River in Whitehall Township.

Location: Whitehall Township, Northampton Borough

Total Project Cost: $34,871,088

Project Administrator/Owner: PennDOT District 5

Status: Started Winter 2023, Estimated Completion Fall 2028

MPMS #: 11413

Map ID #: 6

Lehigh Race Street Intersection

Description: Corridor improvements to Race Street (State Route 1004) in Catasauqua Borough, including installation of traffic signals at the intersections of Race Street/Lehigh Street, Race Street/Front Street and Race Street/Second Street. Will also include widening the Race Street structure over the Lehigh Canal, and installation of a right turn lane eastbound onto Lehigh Street (State Route 1007). A westbound left turn lane will be provided for westbound Race Street onto Lehigh Street. The widening of Lehigh Street to provide separate right turn lane will require the removal and replacement of the existing bridge over Catasauqua Creek which will also accommodate pedestrian traffic from the Delaware and Lehigh (D&L) trail. A left turn lane will be provided for eastbound Race Street onto Second Street. Both Front Street and Second Street will be converted into two-way streets.

Location: Catasauqua Borough

Total Project Cost: $18,256,853

Project Administrator/Owner: PennDOT District 5

Status: Started Winter 2023, Estimated Completion Summer 2026

MPMS #: 57433

Map ID #: 17

Newburg Road over Trib Monocacy Creek

Description: This project involves a replacement of the bridges that carry Newburg Road (SR 3020) over a tributary of Monocacy Creek in Lower Nazareth Township and East Branch Monocacy Creek, Upper Nazareth Township.

Location: Lower Nazareth Township, Upper Nazareth Township

Total Project Cost: $9,620,635

Project Administrator/Owner: PennDOT District 5

Status: Started Fall 2023, Actual Completion Spring 2025

MPMS #: 85940

Map ID #: 34

Route 33 Bushkill Creek Bridges

Description: PA 33 Northbound and Southbound bridge replacements over Bushkill Creek in Stockertown Borough, Northampton County.

Location: Stockertown Borough

Total Project Cost: $28,382,770

Project Administrator/Owner: PennDOT District 5

Status: Started Winter 2023, Estimated Completion Fall 2025

MPMS #: 96431

Map ID #: 37

Route 248 Realignment

Description: The proposed realignment would straighten Route 248 and reduce the number of turning movements in the Borough, reduce traffic on Main Street between Bridge Street and Chestnut Street, and direct traffic away from the Downtown Historic Area. The length of Northampton Street up to its intersection with Main Street will be designated as Route 248.

Location: Bath Borough

Total Project Cost: $8,645,693

Project Administrator/Owner: PennDOT District 5

Status: Started Summer 2024, Estimated Completion Summer 2027

MPMS #: 86853

Map ID #: 41

Walnut Street Bridge

Description: Replacement of the bridge that carries South Walnut Street over Trout Creek in the Borough of Slatington, Lehigh County.

Location: Slatington Borough

Total Project Cost: $14,291,380

Project Administrator/Owner: PennDOT District 5

Status: Started Winter 2024, Estimated Completion Summer 2028

MPMS #: 94680

Map ID #: 46

TOTAL UNDER CONSTRUCTION

October 1, 2024 through September 30, 2025

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
3	116849	Allentown Martin Luther King Jr. Drive	Installation of a Rectangular Rapid Flashing Beacons at Martin Luther King Jr. Drive and 4th Street to cross pedestrians between the parking lot and Parkettes. School flashers will be placed at the Building 21 at MLK Jr. Drive and Lehigh Street in the City of Allentown.	Started Winter 2023, Estimated Completion Spring 2025	PennDOT	$181,471
4	110062	Box Culvert Bundle-Round 1	Box culvert replacements at various locations in Lehigh and Northampton Counties.	Started Fall 2024, Estimated Completion Fall 2026	PennDOT	$6,074,638
5	117154	Bridge Overlay Bundle #2	Bridge overlays and other preventative maintenance activities of various structures in Lehigh and Northampton Counties.	Started Fall 2022, Estimated Completion Summer 2025	PennDOT	$2,545,883
N/A	116648	Coalition for Appropriate Transportation Bicycle Education 2021	Bicycle education for grades K-8, in the Easton Area School District, and the Cities of Allentown and Bethlehem.	Started Summer 2022, Actual Completion Summer 2025	PennDOT	$154,036

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
7	118434	Coopersburg Streetscape Improvements Phase 6	Traffic, pedestrian and bicycle improvements to South Main Street (Route 2045) from Thomas Street to Tilghman Street in Coopersburg Borough.	Started Spring 2024, Estimated Completion Summer 2025	PennDOT	$1,534,014
8	89616	Country Club Road over Route 22	Replacement of the bridge that carries Country Club Road (Roue 2031) over Route 22 in Bethlehem Township.	Started Summer 2022, Actual Completion Fall 2024	PennDOT	$5,985,188
9	71707	Farmersville Road Bridge over Route 22	Replacement of the Farmersville Road (Route 2029) bridge over Route 22 in Bethlehem Township.	Started Fall 2024, Estimated Completion Summer 2027	PennDOT	$6,144,395
10	107552	Gap Bridge Repairs	Rehabilitation of the Lehigh Gap Bridge (Route 873) over the Lehigh River & Norfolk Southern Railroad in Washington Township, Lehigh County.	Started Summer 2024, Estimate Completion Spring 2026	PennDOT	$10,736,235
11	105371	Howertown Road Bridge	Replacement/Rehabilitation of the Howertown Road (Route 3017) Bridge over Dry Run in Allen Township.	Started Spring 2023, Estimated Completion Fall 2024	PennDOT	$2,912,857
12	79127	Indian Creek Road over Leibert Creek	Replacement/Rehabilitation of the Indian Creek Road (Route 2018) bridge over Leibert Creek in Upper Milford Township.	Started Spring 2025, Estimated Completion Winter 2027	PennDOT	$1,603,447

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
13	12310	Indian Trail Road over Hokendauqua Creek	Replacement of the bridge carrying Indian Trail Road Route 3016) over Hokendauqua Creek in Allen Township.	Started Winter 2023, Actual Completion Fall 2024	PennDOT	$5,118,330
14	118436	Ironton Rail Trail Trailhead Improvement Project	Bicycle/Pedestrian safety improvements at Ironton Rail Trail Trailhead at the intersection of North Ruch Street and Chestnut Street in Whitehall Township.	Started Winter 2024, Estimated Completion Fall 2025	PennDOT	$320,000
15	118438	Jordan Creek Greenway in Covered Bridge Park	Extension of the Jordan Creek Greenway Trail through Covered Bridge Park in South Whitehall Township.	Started Winter 2023, Actual Completion Fall 2024	PennDOT	$1,000,000
16	89627	Kernsville Road Bridge	This project consists of a rehabilitation of the bridge carrying Kernsville Road (Route 4003) over Jordan Creek in Whitehall Township.	Started Summer 2023, Actual Completion Fall 2024	PennDOT	$4,310,710
18	68190	Lehigh Valley Freeway Service Patrol	Two roaming tow trucks to respond quickly to incidents on Interstate 78 in Lower Macungie Township, from Route 100 to Route 22, and along Route 22 from the split with I-78, and Route 33 in Bethlehem Township.	Ongoing	PennDOT	$1,340,592

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
19	11981	Linden Street Improvements	Selective highway reconstruction and paving of Linden Street (Route 3015) from Elizabeth Avenue to Brodhead Road within the City of Bethlehem and Bethlehem Township. Improvements include milling and overlay throughout the corridor with select sections of base repair. Additionally, there will be Americans with Disabilities Act (ADA) ramps updated to current standards, traffic signal updates, the installation of pedestrian push buttons, pedestrian crossing improvements, signing and pavement marking improvements.	Started Summer 2023, Estimated Completion Fall 2024	PennDOT	$8,266,545
20	85930	Lower South Main Street over Martins Creek	Replacement of the bridge carrying Route 1015 over Martins Creek in Washington Township.	Started Winter 2023, Estimated Completion Winter 2024	PennDOT	$3,521,496
21	117521	All Weather Pavement Markers 2023	Installation of All Weather Pavement Markings at various locations, in Lehigh and Northampton Counties.	Started Spring 2023, Actual Completion Summer 2024	PennDOT	$539,181
22	117528	BPN-4 Guide Rail Upgrades	Addressing guide rail upgrades at various locations, in Lehigh and Northampton Counties.	Started Summer 2024, Estimated Completion Summer 2026	PennDOT	$100,000

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
23	112231	Bridge Preservation #7	Consultant design and construction of bridge repairs and preservation of various bridges in Lehigh and Northampton Counties.	Started Winter 2024, Estimated Completion Fall 2027	PennDOT	$5,295,878
24	116663	Low Cost Signal Upgrades	Adding retroreflective backplates and increasing signal head size from 8-inch to 12-inch lens at urban intersections at various locations in Lehigh and Northampton Counties.	Started Summer 2023, Actual Completion Fall 2024	PennDOT	$198,675
25	117823	Systemic Safety Improvements	This districtwide design build project involves implementing low-cost safety systemic countermeasures to address lane departure sites on curves in various locations in Lehigh and Northampton Counties. Combined with similar projects in Berks, Carbon, Monroe and Schuylkill Counties.	Started Fall 2022, Estimate Completion Fall 2025	PennDOT	$4,706,567
26	110086	Urban Intelligent Transportation Systems	Installation of Dynamic Message Signs (DMS) & Closed Circuit Television Cameras (CCTV) at various locations along Route 22 in Lehigh County. Locations added after the 2021 TIP adoption were various locations along Route 22, Route 33, Route 378 and Interstate 78.	Started Spring 2023, Estimated Completion Summer 2025	PennDOT	$6,297,006

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
27	119413	Vulerable Road User Project - Tier 1	Implementation of a systemwide safety improvement for Vulnerable Road User by implementing pedestrian countdown timers on various routes in Lehigh and Northampton Counties.	Started Fall 2023, Estimated Completion Summer 2025	PennDOT	$748,591
28	110170	MacArthur Road Signal Upgrades	Synchronization of twelve signalized intersections along MacArthur Road (Route 145), including two signalized adjacent ramp intersections in Whitehall Township.	Started Fall 2022, Estimated Completion Fall 2025	PennDOT	$8,196,320
29	113099	Main Street (Route 873) & Walnut Street Intersection Improvements	The realignment of the /North Walnut Street (Route 873) intersection in the Borough of Slatington.	Started Summer 2025, Esitmated Completion Summer 2028	PennDOT	$440,000
30	12318	Maple Drive over Tributary to Bertsch Creek	Replacement of the Route 4020 bridge over tributary to Bertsch Creek in Lehigh Township.	Started Spring 2023, Actual Completion Summer 2024	PennDOT	$1,233,473
31	12286	Meadows Road Bridge (County Bridge #15)	Bridge improvements of the Meadows Road Bridge over Saucon Creek in Lower Saucon Township.	Started Spring 2024, Estimated Completion Summer 2026	PennDOT	$5,855,085
32	85692	Mosserville Road over Ontelaunee Creek	Replacement of the Mosserville Road (Route 4024) bridge over Ontelaunee Creek in Lynn Township.	Started Spring 2024, Actual Completion Fall 2024	PennDOT	$2,283,183

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
33	101560	Nazareth Pike Resurface	Milling, base repair, ADA ramps, resurfacing and new pavement markings on Route 191, from Newburg Road in Lower Nazareth Township to North New Street in Nazareth Borough.	Started Winter 2023, Actual Completion Spring 2024	PennDOT	$2,627,510
35	110058	Old Carriage Road Bridge Replacement	Replacement of the Old Carriage Road (Route 3018) bridge over a tributary of the Catasauqua Creek in East Allen Township.	Started Winter 2023, Actual Completion Spring 2024	PennDOT	$2,081,469
36	121093	Route 309 & Tilghman Street Interchange Demolition	Demolition of properties needed for the Route 309 and Tilghman Street Interchange project in South Whitehall Township.	Started Spring 2024, Actual Completion Fall 2024	PennDOT	$667,207
38	108134	Race Street Bridge over Lehigh River	Precast deck replacement and rehabilitation of the Race Street (Router 1004) bridge over the Lehigh River in Whitehall Township and the Borough of Catasauqua.	Started Fall 2022, Actual Completion Winter 2023	PennDOT	$8,226,856
39	12084	Richmond Bridge Replacement	Replacement of the bridge that carries Route 611 over Oughoughton Creek in Washington Township, Northampton County.	Started Spring 2023, Actual Completion Fall 2024	PennDOT	$2,982,945

Map ID	MPMS #	Project Title	Project Description	Status	Project Administrator/ Owner	Total Cost of Project
40	109971	Route 145 Safety Improvements	Safety improvements on Fourth Street/Susquehanna Street (Route 145)) from Emmaus Avenue to West Wyoming Street in the City of Allentown. Includes milling, overlay, ADA, restriping of protected left turn bays at signals, alignment of opposing left turns, installation of two-way left turn signals throughout the corridor, and implementation of access management.	Started Fall 2023, Estimated Completion Fall 2026	PennDOT	$11,313,390
42	118306	Route 222 & Grange Road Improvements	Intersection improvements, pedestrian crosswalks and traffic signal improvements at Route 222 and Grange Road/Mill Creek Road in Upper Macungie Township.	Started Spring 2023, Actual Completion Summer 2024	PennDOT	$140,041
43	110176	Route 248 Signal Upgrades	Improvements to the traffic signal operation at two intersections along Route 248 in Lehigh Township.	Started Summer 2023, Actual Completion Fall 2024	PennDOT	$2,449,928
44	110169	Route 29/Cedar Crest Boulevard Signal Upgrades	Improvements of the traffic signal operation at four intersections along Route 29 in Salisbury Township.	Started Fall 2022, Estimated Completion Fall 2025	PennDOT	$5,109,603
45	107761	Two Rivers Trail Gap 9A Construction	Construction of a pedestrian trail along Route 33 from Sullivan Trail to Henry Road in Plainfield and Bushkill Townships. The trail installation will include signage, pavement markings and fencing.	Started Summer 2022, Estimated Completion Summer 2024	PennDOT	$654,036

LVTS
Lehigh Valley Transportation Study

ANNUAL LISTING OF OBLIGATED PROJECTS

October 1, 2024 Through September 30, 2025

Obligations are shown for all projects in Lehigh and Northampton Counties, including those projects outside of the control of the Lehigh Valley Transportation Study funding allocations and formulas such as the Interstate Program. Obligations for the Interstate System for example are shown in this report. The Interstate Management Program is administered by PennDOT Central Office.

Obligations are shown by project phases and include the funding source. Projects have many phases even before construction can begin. These phases include Preliminary Engineering (PE), Rights-Of-Way (ROW), Utilities (UTL), Final Design (FD), Construction (CON) and Study/Planning (S/P) or implementation of the project.

To fulfill this requirement, the 2025 LVTS Annual Listing of Obligated Projects shows all money obligated for highway, bridge, transit, bicycle and pedestrian projects within Lehigh and Northampton Counties for the Federal Fiscal Year (FFY) 2025, which is the time period of October 1, 2024, to September 30, 2025.

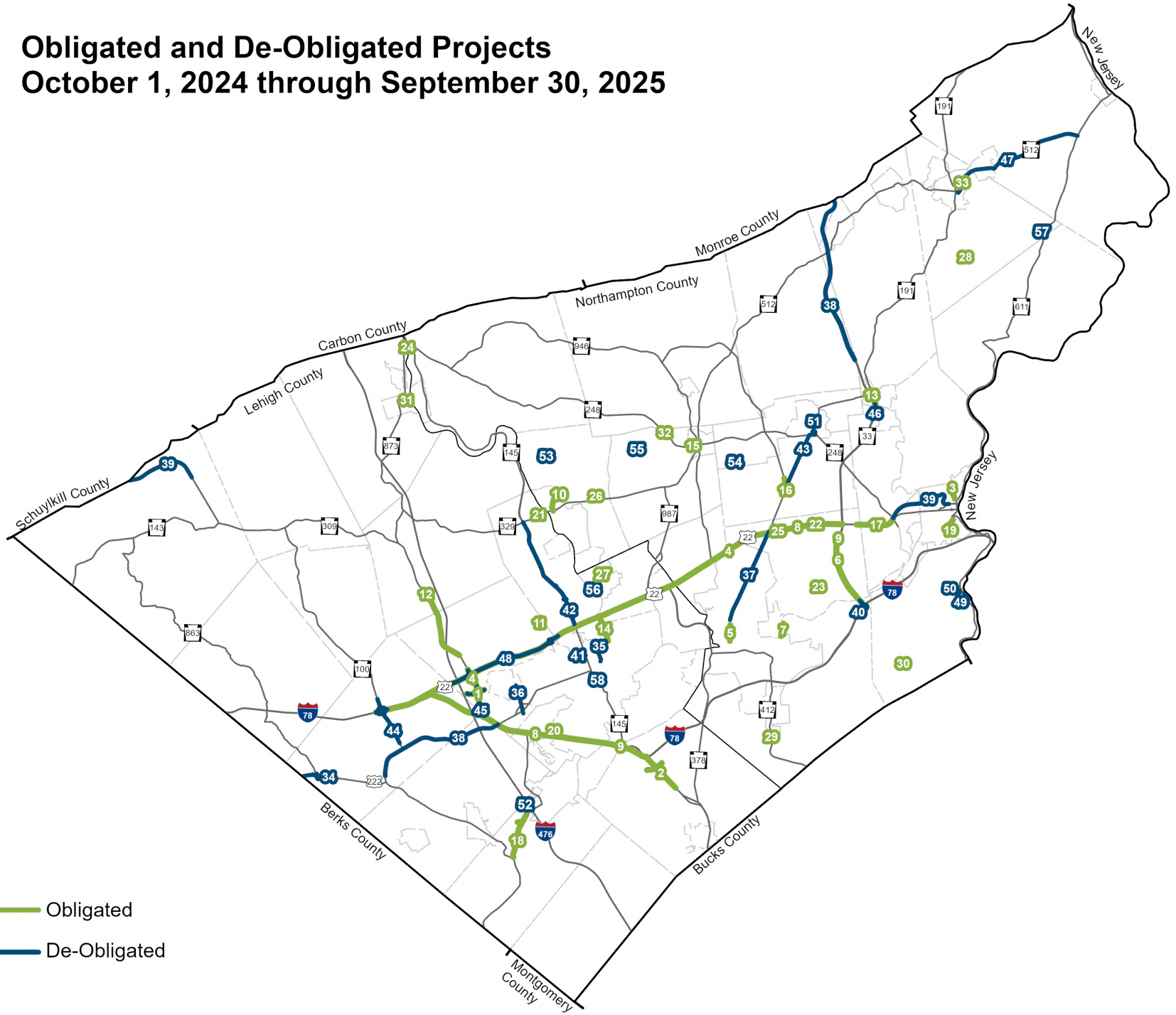
LVTS
Lehigh Valley Transportation Study

Total Obligations for HIGHWAY/BRIDGE ENHANCEMENTS/ GRANT PROJECTS

October 1, 2024 through September 30, 2025

$53,742,280

Obligated and De-Obligated Projects
October 1, 2024 through September 30, 2025



HIGHWAY/BRIDGE OBLIGATIONS

October 1, 2024 through September 30, 2025

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
1	96432	Route 309 & Tilghman Street Interchange Reconstruction	Reconfigures the Tilghman Street (Route 309/Route 1002) Interchange. Will also include two bridge replacements at Route 309 over Tilghman Street and Route 309 over Broadway Street, rehabilitation of the Route 309 culvert over Little Cedar Creek, roadway drainage improvements, base repair, overlay, and two new signals at the end of the reconfigured ramps.	CON	PennDOT	$20,730,300	$17,826,116	$38,556,416
2	102160	Route 309 Center Valley Interchange Improvements	Geometric improvements to the Route 309 Center Valley Interchange, in Upper Saucon Township. The existing signalized intersection will be converted into a full direction grade separated interchange.	PE	PennDOT	$1,259,824	$0	$1,259,824
20	118404	Bogert's Bridge Rehabilitation	Rehabilitation of Bogert's Covered Bridge over Little Lehigh Creek in Lehigh Parkway to restore structural integrity and ensuring future use in the City of Allentown. Items of work include evaluation and replacement of bridge members, replacement of roof system and timber siding.	CON	PennDOT	$200,000	$0	$200,000

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
N/A	122781	Coalition of Appropriate Transportation Bike Education 2025	This project involves bicycle education for grades K-8 through bike safety assemblies, bike day events, small group events, and promotional campaign at various locations within Lehigh and Northampton Counties.	CON	PennDOT	$468,860	$165,262	$634,122
21	11413	Cementon Bridge Replacement	Replacement of the Cementon Bridge carrying Route 329 over the Lehigh River in Whitehall Township and Northampton Borough.	CON	PennDOT	$1,728,664	$0	$1,728,664
NA	97953	Construction Assistance	This project provides funding for consultant assistance for the inspection and/or oversight of approved Transportation Improvement Program construction projects that are eligible for federal funding. These include highway, bridge and transportation alternative projects in Lehigh and Northampton Counties.	CON	PennDOT	$194,978	$225,000	$419,978
3	118435	Easton/Lafayette College Pedestrian Safety Project - Phase 3	Pedestrian safety enhancements in the College Hill neighborhoods along Cattell Street from College Avenue to High Street City of Easton.	CON	PennDOT	$93,000	$0	$93,000
22	71707	Farmersville Road Bridge over Route 22	Replacement of the Route 2029 (Farmersville Road) bridge over Route 22 in Bethlehem Township.	CON	PennDOT	$2,418,032	$0	$2,418,032

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
23	117509	Freemansburg Avenue Safety Improvements	Intersection safety improvements of Freemansburg Avenue (Route 2018) and Farmersville Road in Bethlehem Township. Improvements will include realignment of the northern leg of the intersection to align with the southern leg, a signalization and turning lanes.	FD	PennDOT	$839,445	$0	$839,445
23	117509	Freemansburg Avenue Safety Improvements	Intersection safety improvements of Freemansburg Avenue (Route 2018) and offset Farmersville Road in Bethlehem Township. Improvements will include realignment of the northern leg of the intersection to align with the southern leg, a signalization and turning lanes.	ROW	PennDOT	$683,000	$0	$683,000
4	68190	Freeway Service Patrol	Funding for two roaming tow trucks to respond quickly to incidents on Interstate 78. The service limits are from Route 100 to the Route 309 split and Interstate 78/Route 22 (at Route 100) to Route 22/Route 33 in Upper Macungie, Lower Macungie, South Whitehall, Whitehall, Hanover and Bethlehem Townships, and the City of Bethlehem.	CON	PennDOT	$377,250	$1,218,064	$1,595,314

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
24	107552	Gap Bridge Repairs	Rehabilitation of Route 873 (Lehigh Gap Bridge) over the Lehigh River & Norfolk Southern Railroad in Washington Township, Lehigh County.	CON	PennDOT	$2,941,040	$0	$2,941,040
25	89614	Hecktown Road Bridge over Route 22	Replacement of the Route 2027 (Hecktown Road) bridge over Route 22 in Bethlehem Township.	CON	PennDOT	$4,649,468	$743,321	$5,392,789
26	105371	Howertown Road Bridge	Replacement/rehabilitation of Howertown Road (Route 3017) bridge over Dry Run in Allen Township.	CON	PennDOT	$127,600	$0	$127,600
27	57433	Lehigh and Race Street Intersection Improvement	Corridor improvements to Race Street (Route 1004) in the Borough of Catasauqua. The intersections of Race Street/Lehigh Street, Race Street/Front Street and Race Street/Second Street will be signalized. The Race Street structure will be widened over the Lehigh Canal to provide a right turn auxiliary lane eastbound onto Lehigh Street (Route 1007), and the bridge over the Catasauqua Creek will be replaced. A left turn lane will be provided for eastbound Race Street onto Second Street. Front Street and Second Street will be converted into two-way streets.	CON	PennDOT	$85,540	$276,000	$361,540

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
5	120976	Linden Street Two-Way Conversion	The conversion of Linden Street to improve circulation and congestion by converting Linden Street from a one-way southbound street to a two-way street in the City of Bethlehem.	PE	PennDOT	$206,000	$0	$206,000
28	85930	Lower South Main Street over Martins Creek	Replacement of the bridge carrying Route 1015 over Martins Creek in Washington Township, Northampton County.	CON	PennDOT	$40,000	$0	$40,000
6	120951	All Weather Pavement Markers 2025	Installation of All Weather Pavement Markings at various locations in Lehigh and Northampton Counties.	CON	PennDOT	$165,688	$400,000	$565,688
7	120949	High Friction Surface - 2025	Installation of high friction surface on Routes 412, 2014 and 8018 in City of Bethlehem and Lower Saucon Township.	CON	PennDOT	$173,840	$440,000	$613,840
8	114344	Traffic Operations Center	This project funds an operator working in the Traffic Operations Center in District 5-0. The operator monitors cameras, message boards and radio systems along Interstate 78, Route 309, and Route 22 in Lehigh and Northampton Counties.	CON	PennDOT	$49,941	$150,059	$200,000

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
9	110086	Urban Intelligent Transportation Systems Enhancements	Installation of Dynamic Message Signs (DMS) & Closed Circuit Television Cameras (CCTV) at various locations along Route 22, Interstate 78, Route 33 and Route 378 in Lehigh and Northampton Counties.	CON	PennDOT	$120,000	$0	$120,000
10	113812	Main Street– 21st Street to Cherryville Road	Resurfacing Main Street from 21st Street to Cherryville Road in Northampton Borough.	CON	PennDOT	$350,000	$589,451	$939,451
11	110174	Mauch Chunk Road Signal Upgrade	Improvements of the existing traffic signal operation at two existing intersections along Mauch Chunk Road in South Whitehall Township.	UTL	PennDOT	$250,000	$0	$250,000
29	12286	Meadows Road Bridge Improvements	Bridge Improvements of Meadows Road Bridge, (County Bridge #15) over Saucon Creek in Lower Saucon Township.	CON	PennDOT	$25,891	$0	$25,891
12	102312	Route 309 Resurfacing	Pavement restoration of Route 309 from Walbert Avenue to Shankweiler Road in North and South Whitehall Townships. This betterment work involves mill and overlay, concrete patching, guiderail upgrades and movement markings. Also included is the reconstruction of Orefield Road (Route 4003) and Route 309 intersection to accommodate truck turning movements and signal replacement.	FD	PennDOT	$152,736	$0	$152,736

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
13	96431	Route 33 Bushkill Creek Bridge Replacements	Route 33 Northbound and Southbound bridge replacements over Bushkill Creek in Stockertown Borough.	CON	PennDOT	$3,377,600	$0	$3,377,600
30	109914	Raubsville Road over Frey's Run	Replacement of the Raubsville Road (Route 2006) bridge over Freys Run in Williams Township.	CON	PennDOT	$2,074,868	$0	$2,074,868
14	118070	Riverside Drive RAISE Grant	Convert approximately two miles of an abandoned railroad bed along the west side of the Lehigh River in Whitehall Township and the City of Allentown, from Lehigh Avenue to Furnace Street, to a complete two-lane street with an adjacent multi-use path. The multi-use path will continue north to connect to the existing Delaware and Lehigh Trail just north of Race Street. The project will also convert another 450 feet of an abandoned railroad bed between Hamilton Street and Union Street within the City of Allentown to complete the southern terminus of Riverside Drive. Proposed Riverside Drive will vary in width from 24 feet to 36 feet, providing one lane in each direction and allowing for turn lanes where warranted. The multi-use path will be 10 feet wide and located between Riverside Drive and the Lehigh River.	PE	PennDOT	$725,000	$0	$725,000

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
15	86853	Route 248 Realignment	Realignment to straighten Route 248 and reduce the number of turning movements in the Borough, reduce traffic on Main Street between Bridge Street and Chestnut Street, and direct traffic away from the Downtown Historic Area. The length of Northampton Street up to its intersection with Main Street will be designated as Route 248.	CON	PennDOT	$1,207,816	$0	$1,207,816
31	94680	South Walnut Street Bridge	Replacement of the bridge that carries South Walnut Street over Trout Creek in the Borough of Slatington.	ROW	PennDOT	$480,000	$0	$480,000
31	94680	South Walnut Street Bridge	Replacement of the bridge that carries South Walnut Street over Trout Creek in the Borough of Slatington.	CON	PennDOT	$4,247,718	$3,806,906	$8,054,624
16	116936	Route 191 Lower Nazareth Intersection Improvements	Improving signalization at the intersection of Nazareth Pike (Route 191) and Newburg Road (Route 3020) and the separate stop-controlled Y-intersection of Daniels Road (Route 946) at Nazareth Pike approximately 500 feet to the north in Lower Nazareth Township. Left turn lanes will he added at Newburg Road and Nazareth Pike and Route 946 will be realigned.	FD	PennDOT	$67,421	$748,330	$815,751

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
17	114350	Route 22 Resurface, Bethman Road to 25th Street	Milling, concrete patching, binder course, wearing course, sawing and sealing, joint cleaning and sealing, guide rail, shoulder rumble strips, pavement markings, and other miscellaneous construction, for Route 22, in Bethlehem and Palmer Townships and Wilson Borough.	CON	PennDOT	$89,153	$0	$89,153
32	120952	Route 248/Airport Road Intersection Improvements	Improving traffic signalization and other upgrades such as left turning lanes at intersection of Route 248 and Airport Road in East Allen Township.	PE	PennDOT	$645,611	$0	$645,611
18	110183	Route 29 - Shimersville Hill Safety Improvements	Corridor safety improvements on Shimersville Hill (Route 29) from Buckeye Road to Route 100, including the removal and relocation of fixed objects, the widening of the roadway for left turn lanes, the installation of new signal equipment and signal interconnection between signals at Buckeye Road and Ramer Street. Will also include systematic signing and pavement marking upgrades in Upper Milford Township.	FD	PennDOT	$146,421	$0	$146,421

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
18	110183	Route 29 - Shimersville Hill Safety Improvements	Corridor safety improvements on Shimersville Hill (Route 29) from Buckeye Road to Route 100, including the removal and relocation of fixed objects, the widening of the roadway for left turn lanes, the installation of new signal equipment and signal interconnection between signals at Buckeye Road and Ramer Street. Will also include systematic signing and pavement marking upgrades in Upper Milford Township.	UTL	PennDOT	$81,673	$0	$81,673
18	110183	Route 29 - Shimersville Hill Safety Improvements	Corridor safety improvements on Shimersville Hill (Route 29) from Buckeye Road to Route 100, including the removal and relocation of fixed objects, the widening of the roadway for left turn lanes, the installation of new signal equipment and signal interconnection between signals at Buckeye Road and Ramer Street. Will also include systematic signing and pavement marking upgrades in Upper Milford Township.	ROW	PennDOT	$1,170,000	$0	$1,170,000
33	85945	Route 512 over Brush Meadow Creek	Bridge replacement of Route 512 Washington Street over Brush Meadow Creek in Bangor Borough.	FD	PennDOT	$23,420	$0	$23,420

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Federal Funds Remaining	Total Cost of Project
19	120975	St. John Street Improvements	Roadway and pedestrian improvements along St. John Street in the City of Easton.	PE	PennDOT	$215,412	$212,000	$427,412
NA	89055	Transportation Alternative/ Multimodal Project Management	Provides funding for a consultant contract to assist local sponsors in developing approved transportation enhancement/alternative projects in Lehigh and Northampton Counties.	PE	PennDOT	$236,948	$150,052	$387,000
NA	121551	Youth Bike Education-Community Bike Works	Bicycle education for children and teens in K-12 in the Lehigh Valley is offered through Earn-a-Bike and Junior Earn-a-Bike classes, as well as organized bike rides throughout the region in various municipalities in Lehigh and Northampton Counties.	CON	PennDOT	$634,122	$0	$634,122

LVTS
Lehigh Valley Transportation Study

Total Deobligations for HIGHWAY/BRIDGE ENHANCEMENTS/ GRANT PROJECTS

October 1, 2024 through September 30, 2025

-$7,563,600

Deobligated funds represent the amount a project came in under budget. These funds can be allocated for other projects. The deobligations may not reflect the current federal fiscal year obligations, and may have been from funds obligated several years prior as the project progressed through previous phases.

HIGHWAY/BRIDGE DEOBLIGATIONS

October 1, 2024 through September 30, 2025

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
34	79554	Route 222 & Shantz Road & Route 863 Improvements	Improve safety, traffic operations and mobility at the Independent Road (Route 222/Route 863)/ Schantz Road (Route 3012) intersection through installation of a roundabout. Will include widening on Route 222, and elimate the structural deficiency of the bridges on Schantz Road (Route 3012) and Route 222.	FD	PennDOT	$37,212	$0	$0
34	79554	Route 222 & Shantz Road & Route 863 Improvements	Improve safety, traffic operations and mobility at the Independent Road (Route 222/Route 863)/ Schantz Road (Route 3012) intersection through installation of a roundabout. Will include widening on Route 222, and elimate the structural deficiency of the bridges on Schantz Road (Route 3012) and Route 222.	ROW	PennDOT	-$2,452,684	$0	$0
50	110055	Route 611 Culvert Replacement	Replacement of the South Delaware Drive (Route 611) culvert over a tributary to the Delaware River in Williams Township.	PE	PennDOT	-$118,061	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
35	111442	Allentown Jordan Creek Greenway Trail	Construction of Jordan Creek Greenway Trail segment in the City of Allentown, from Turner Street along the Jordan Creek to Sumner Avenue.	CON	PennDOT	-$115	$0	$0
51	98094	Broad Street Nazareth Railroad Crossing	Safety improvements to upgrade railroad safety equipment where Route 191 crosses the track of Norfolk Southern Railway in the Borough of Nazareth. Work includes replacement of antiquated equipment with one mast arm and one cantilever to cover three lanes of southbound traffic.	CON	PennDOT	-$193,896	$0	$0
36	117879	Cedar Crest Corridor Improvements Study	Corridor safety improvements study to include signal upgrades, widening, adding turn lanes, conversion of signalized intersections into roundabouts (where warranted) along Cedar Crest Boulevard from South Drive to Shrewsbury Road in South Whitehall Township. A corridor evaluation study will be performed during the study phase, which will include a Roadway Safety Audit. Recommendations in the phase will be used to determine alternatives to move ahead within the design phase.	S/P	PennDOT	-$34,475	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
52	11419	Chestnut Street over Norfolk Southern Railroad Bridge	Replacement of the bridge carrying Route 29 over the Reading Railroad in Upper Milford Township.	CON	PennDOT	-$2,366	$0	$0
53	12310	Indian Trail Road over Hokendauqua Creek	Replacement of the bridge carrying Indian Trail Road (Route 3016) over Hokendauqua Creek in Allen Township.	CON	PennDOT	-$1,006,306	$0	$0
37	11981	Linden Street Improvements	Selective highway reconstruction and paving of Linden Street (Route 3015) from Elizabeth Avenue to Brodhead Road within the City of Bethlehem and Bethlehem Township. The proposed roadway improvements include mill and overlay throughout the corridor with select sections of base repair. Will also include Americans with Disabilities Act (ADA) ramps updated to current standards, traffic signal updates, signal retiming, pedestrian crossing improvements, signing and pavement marking improvements, and drainage improvements.	FD	PennDOT	-$127,600	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
37	11981	Linden Street Improvements	Selective highway reconstruction and paving of Linden Street (Route 3015) from Elizabeth Avenue to Brodhead Road within the City of Bethlehem and Bethlehem Township. The proposed roadway improvements include mill and overlay throughout the corridor with select sections of base repair. Will also include Americans with Disabilities Act (ADA) ramps updated to current standards, traffic signal updates, signal retiming, pedestrian crossing improvements, signing and pavement marking improvements, and drainage improvements.	UTL	PennDOT	-$41,884	$0	$0
38	114342	All Weather Pavement Markers 2021	Installation of all weather pavement markings in various locations throughout Lehigh and Northampton Counties.	CON	PennDOT	-$34,460	$0	$0
39	117521	All Weather Pavement Markers 2023	Installation of all weather pavement markings at various locations in Lehigh and Northampton Counties.	CON	PennDOT	-$80,348	$0	$0
40	116659	High Friction Surface - 2023	Application of epoxy high friction surface treatment with bauxite aggregate to various locations in Lehigh and Northampton Counties.	CON	PennDOT	-$31,511	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
41	119413	LVTS Vulnerable Road User Project - Tier 1	Implementation of a systemwide safety improvement for Vulnerable Road User by implementing pedestrian countdown timers on various routes in Lehigh and Northampton Counties.	PE	PennDOT	-$100,206	$0	$0
42	96387	MacArthur Road Resurface	This partial design/build project involves mill and overlay of MacArthur Road (Route 145) from a quarter-mile south of Grape Street to Main Street (Route 329), including pavement markings, crack-seal, guide rail updates and concrete ADA ramps in Whitehall Township.	CON	PennDOT	-$236,539	$0	$0
43	101560	Nazareth Pike Resurface	Milling, base repair, ADA ramps, resurfacing and new pavement markings on Route 191 from Newburg Road in Lower Nazareth Township to North New Street in Nazareth Borough.	CON	PennDOT	-$134,269	$0	$0
54	85941	Newburg Road over E. Branch Monocacy Creek	Replacement of the bridge that carries Newburg Road (Route 3020) over the East Branch of Monocacy Creek in Upper Nazareth Township.	ROW	PennDOT	-$74,009	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
55	110058	Old Carriage Road Bridge Replacement	Replacement of the Old Carriage Road (Route 3018) bridge over a tributary of the Catasauqua Creek in East Allen Township.	ROW	PennDOT	-$38,610	$0	$0
55	110058	Old Carriage Road Bridge Replacement	Replacement of the Old Carriage Road (Route 3018) bridge over a tributary of the Catasauqua Creek in East Allen Township.	CON	PennDOT	-$52,747	$0	$0
44	102311	Route 100 Reconstruction	Roadway reconstruction Route 100 from Industrial Boulevard to Tilghman Street in Upper Macungie Township. The work will include overlay on the Interstate 78 ramps.	ROW	PennDOT	-$112,843	$0	$0
44	102311	Route 100 Reconstruction	Roadway reconstruction Route 100 from Industrial Boulevard to Tilghman Street in Upper Macungie Township. The work will include overlay on the Interstate 78 ramps.	CON	PennDOT	-$725,521	$0	$0
45	121093	Route 309 & Tilghman Interchange Demolition	Demolition of properties needed for the Route 309 and Tilghman Street Interchange project in South Whitehall Township.	CON	PennDOT	-$92,920	$0	$0
46	96431	Route 33 Bushkill Creek Bridges	Route 33 Northbound and Southbound bridge replacements over Bushkill Creek in Stockertown Borough.	PE	PennDOT	-$205,735	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
56	108134	Race Street over Lehigh River Rehabilitation	Precast deck replacement and rehabilitation of the Route 1004 (Race Street) bridge over the Lehigh River in Whitehall Township and in the Borough of Catasauqua.	ROW	PennDOT	-$29,160	$0	$0
57	12084	Richmond Bridge Replacement	Replacement of the bridge that carries Route 611 over Oughoughton Creek in Washington Township.	PE	PennDOT	-$174,007	$0	$0
47	101571	Route 512 Resurface South Main Street to Route 611	Resurfacing Bill Scott Boulevard, Central Avenue and Mount Bethel Highway (Route 512) from Main Street in Bangor through East Bangor to Route 611 in Upper Mount Bethel Township.	CON	PennDOT	-$15,000	$0	$0
48	96385	Route 22 Resurface 15th Street to Route 309	Resurfacing of Route 22 from Route 309 to 15th Street in Whitehall and South Whitehall Townships.	CON	PennDOT	-$712,880	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Federal Funds Remaining	Total Cost of Project
49	79468	Williams Township Canal Wall Replacements	Replacement of the retaining wall supporting Route 611 alongside the Delaware Canal in Williams Township. Will include the full depth pavement reconstruction of northbound and southbound Route 611 in the area of the newly constructed wall, as well as the installation of new guiderail, where applicable. A temporary traffic signal controlled, single lane pattern will be implemented during the construction.	CON	PennDOT	-$609,428	$0	$80,000
58	94682	Wire Mill Bridge	Replacement/rehabilitation of the Wire Mill Bridge that carries Lehigh Street (Route 145) over the Little Lehigh Creek in the City of Allentown.	CON	PennDOT	-$88,810	$0	$0

LVTS
Lehigh Valley Transportation Study

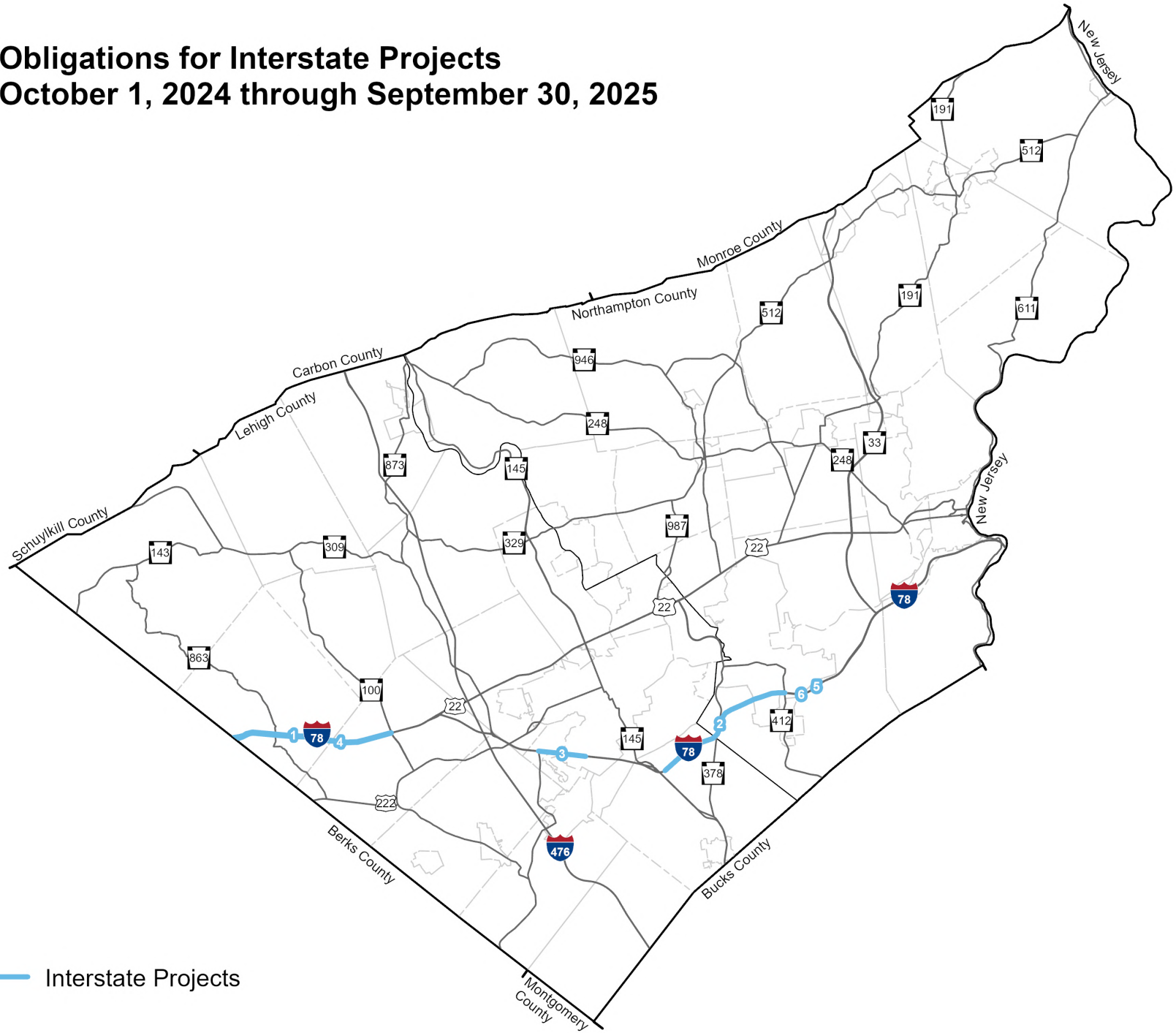
Total Obligations for PENNDOT INTERSTATE PROJECTS

October 1, 2024 through September 30, 2025

$5,603,640

The following $5,603,640 in Obligated Interstate Projects are for projects located on Interstate 78 that are programmed on the State Transportation Improvement Program (STIP). These projects are programmed by PennDOT Central Office and are reported to the LVTS as a point of information and to meet federal guidelines for the PennDOT Interstate Management Program.

Obligations for Interstate Projects
October 1, 2024 through September 30, 2025



INTERSTATE OBLIGATIONS

October 1, 2024 through September 30, 2025

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Total Cost of Project
5	75849	Dual Bridges over Easton Road	Engineering study for substructure conditions on dual structures that carry Interstate 78 over Route 2006 in Lower Saucon Township.	FD	PennDOT District 5	$0	$0
6	75849	Dual Bridges over Easton Road	Engineering study for substructure conditions on dual structures that carry Interstate 78 over Route 2006 in Lower Saucon Township.	CON	PennDOT District 5	$0	$10,609,000
4	92780	Interstate 78 Reconstruction	Full reconstruction of Interstate 78 from the Berks County Line to Route 100 Interchange with ramps reconfiguration, including drainage system improvements, guide rail updates, safety barriers, signing, pavement marking, delineators and truck climbing lanes, in Weisenberg and Upper Macungie Townships.	PE	PennDOT District 5	$0	$0

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Obligation	Total Cost of Project
NA	120146	Districtwide Interstate Concrete Patching	Isolated concrete patching of failed slabs on Interstate 78 in Northampton County, Interstate Interstate 76 in Berks County, and Interstates 80 and 380 in Monroe County.	CON		$4,740,600	$4,740,600
1	120648	Interstate Berks County Line to Route 100 Patching	Patching of failed slabs and resurfacing of eastbound and westbound lanes of Interstate 78 from Berks/ Lehigh County Line to the Route 100 Interchange in Weisenberg and Upper Macungie Townships.	CON		$863,040	$863,040

INTERSTATE DEOBLIGATIONS

October 1, 2024 through September 30, 2025

Map ID	MPMS #	Project Title	Project Description	Phase	Project Administrator/ Owner	Deobligation	Total Cost of Project
2	72822	Interstate 78 Eastbound - Route 309 S to Saucon Viaduct Alkali-Silica Reaction	The treatment of rough pavement along eastbound mainline and shoulders of Interstate 78 with Ultra Thin Bonded Wearing Course and Stone Matrix Asphalt overlay, bituminous milling, concrete patching, guiderails, reflective tape pavement markers, line painting and bridge preservation activities, along with other miscellaneous construction items, in Upper and Lower Saucon Townships and the City of Bethlehem.	CON	PennDOT District 5	-$1,380,535	$0
3	11551	Interstate 78 in Lehigh County Improvements	Roadway improvements from Cedar Crest Boulevard to Lehigh Street, in Salisbury Township and the City of Allentown.	CON	PennDOT District 5	-$890,128	$0

LVTS
Lehigh Valley Transportation Study

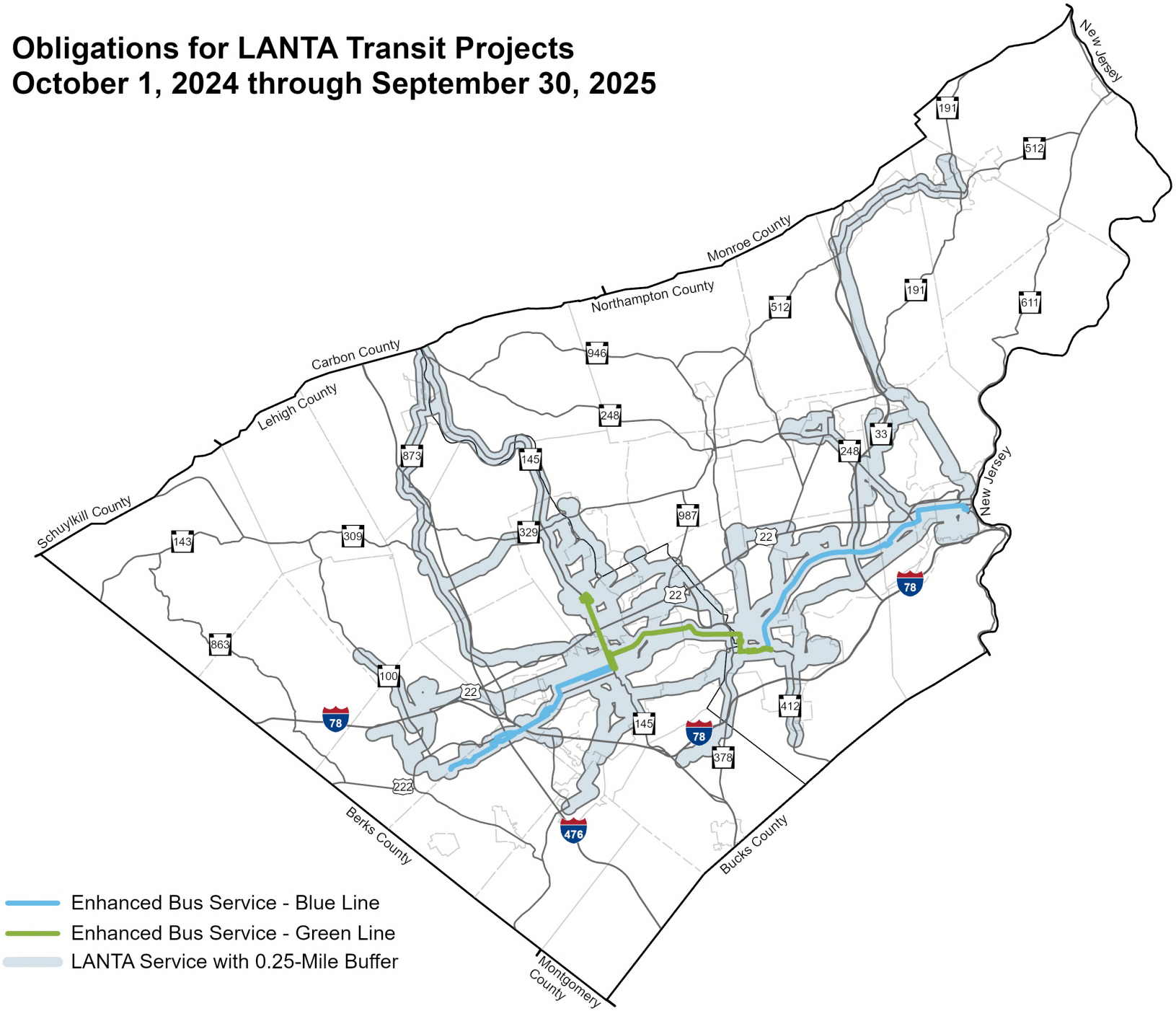
Total Obligations for LANTA TRANSIT PROJECTS

October 1, 2024 through September 30, 2025

$2,031,823

The Lehigh and Northampton Transportation Authority (LANTA) was the recipient of $2,031,823 in Federal Transit Administration (FTA) funding obligations for various public transit grants that were awarded. These funding obligations differ from the FHWA obligations for highway, bridge and enhancements/grant projects. These Transit funding categories and authorizations ensure safe and efficient public transit for the Lehigh Valley as a whole. LANTA's services are to meet basic transportation needs, support desired economic and environmental goals, and appeal to an increasing number of people. Services are to be comprised of a range of types, provided directly or through contract. The Transit Obligations through FTA grants awarded to LANTA help provide these services and ensure a safe and efficient public transit system for the Lehigh Valley.

Obligations for LANTA Transit Projects
October 1, 2024 through September 30, 2025



TRANSIT OBLIGATIONS

October 1, 2024 through September 30, 2025

MPMS #	Project Title	Project Description	Project Administrator/ Owner	Obligation	Federal Funds Remaining
95008	Revenue Rolling Stock - 30-Foot Buses	Acquiring seven buses to provide shared ride service.	LANTA	$626,994	$0
95008	Revenue Rolling Stock - 30-Foot Buses	Acquiring three buses to provide shared ride service.	LANTA	$536,592	$0
95183	Bus Passenger Shelters	Bus Passenger Shelters	LANTA	$128,042	$32,842
110172	Easton Garage Gate Reader	Easton Garage Gate Reader	LANTA	$5,504	$1,264
110172	Allentown Garage Gate Reader	Allentown Garage Gate Reader	LANTA	$5,800	$0
110172	Allentown Gate Replacement	Allentown Gate Replacement	LANTA	$13,804	$0
110172	Easton Garage Tire Mounting Equipment	Easton Garage Tire Mounting Equipment	LANTA	$16,450	$0

MPMS #	Project Title	Project Description	Project Administrator/ Owner	Obligation	Federal Funds Remaining
95178	Fixed Route Scheduling Software	Fixed Route Scheduling Software	LANTA	$19,752	$0
110172	Easton Garage Security Camera Additions	Easton Garage Security Camera Additions	LANTA	$21,320	$0
110172	Allentown HQ Interior Door Access Controls	Allentown Headquarters Interior Door Access Controls	LANTA	$12,520	$2,200
110172	Bethlehem Transportation Center (BTC) Door Access Control	Bethlehem Transportation Center (BTC) Door Access Control	LANTA	$5,769	$0
95178	Masabi Fare Collection Project	Masabi Fare Collection Project	LANTA	$359,432	$65,140
110172	Maintenance Department Tablets for AssetWorks	Maintenance Department Tablets for AssetWorks	LANTA	$2,620	$2,620
110171	2017 Buses - Operator Seat Replacement	2018 Buses - Operator Seat Replacement	LANTA	$36,467	$0
110171	2018 Buses - Operator Seat Replacement	2019 Buses - Operator Seat Replacement	LANTA	$21,792	$0
110172	Allentown Fuel Tank Monitoring Upgrade	Allentown Fuel Tank Monitoring Upgrade	LANTA	$20,745	$1

MPMS #	Project Title	Project Description	Project Administrator/ Owner	Obligation	Federal Funds Remaining
110172	Allentown Bus Wash Update	Allentown Bus Wash Update	LANTA	$27,520	$0
95178	Token Transit Fare Collection	Token Transit Fare Collection	LANTA	$40,320	$0
95178	South Bethlehem Transit Center Digital Display	South Bethlehem Transit Center Digital Display	LANTA	$15,180	$0
110171	Associated Capital Maintenance Items	Associated Capital Maintenance Items	LANTA	$115,200	$28,967

LVTS
Lehigh Valley Transportation Study

CONCLUSION

Accomplishment + Annual Obligated Projects

The Accomplishments + Annual Listing of Obligated project is a product of the continuing, comprehensive and cooperative process of the LVTS, FHWA, FTA and other transportation stakeholders including the general public. This process is the foundation of the region's Long-Range Transportation Plan/Metropolitan Transportation Plan and Transportation Improvement Program which leads to projects being obligated or accomplished in this report.

Federal investments, or obligations, of $53,754,280 were committed to 41 Highway, Bridge, and Enhancements/Grant projects during the federal fiscal year of 2025. During the same period, $7,563,600 was deobligated, or saved, on 29 projects that came in under budget, enabling those funds to be committed to other approved projects in the region. Investments, or obligations, of $5,603,640 were committed to five Interstate 78 projects, through the Interstate Management Program for projects that were included on the State Transportation Improvement Program. During the same period, $2,260,663 was deobligated on two interstate projects in the region. In addition, another $401,659,004 in projects remain under construction. Finally, $2,031,823 was obligated to the Lehigh and Northampton Transportation Authority (LANTA) public transit operation through the Federal Transit Administration to ensure and equitable and robust public transportation system regionwide.

All together, these investments show a continuing federal and state commitment to maintaining the transportation network of a region of more than 700,000 people.

LVTS
Lehigh Valley Transportation Study

GLOSSARY

Activity Line Item (ALI) is the Federal Transit Administration (FTA) coding for specific activities related to grants and funding of transit projects and operations.

Agency Name identifies the public transportation agency responsible for administering and implementing projects sourced with public transportation funding streams.

Annual Listing of Obligated Projects (ALOP) is a federally required listing of highway, bridge and transportation projects, including investments in pedestrian walkways and bicycle infrastructure transportation facilities, for which federal funds have been obligated in the preceding year, which shall be published or otherwise made available by the cooperative effort of state, transit operators and metropolitan planning organizations for public review. In accordance with regulations 23 U.S.C. 134 (j)(7)(B), 49 U.S.C. 5303 (j)(7)(B) or 23 CFR §450.334.

Category describes the type of project.

- **Highways** are roadway projects that restore an existing highway to an acceptable condition or improves the roadway through the following types of work: pavement resurfacing, widening, shoulders, alignments, stormwater management, guiderails and other infrastructure.
- **Bridges** are projects related to elevated structures carrying modes of transportation over another physical feature such as another roadway, natural features such as a river or other transportation facilities such as rail lines.
- **Enhancements/Grants** are projects that received competitive grant awards for alternative transportation projects and improvements. They may also involve substantial grants awarded to projects from federal competitive grant award(s) that must be reported by the LVTS and the Annual Listing of Obligated Projects.
- **All** are generally line-item projects that support all aspects of transportation projects Highway, Bridge and Enhancements / Grants.

CMAQ is Congestion Mitigation and Air Quality.

Congressional District is a territorial division of a state from which a member of the United States House of Representatives is elected.

County is the geographic county in which the project is taking place. Specific locations are geographically categorized by PennDOT. All projects for LVTS are of regional importance to both Lehigh and Northampton Counties identified during collaboration through the project selection process during TIP development.

Deobligations represent the amount of federal authorizations no longer need for a specific phase of a project during federal fiscal year 2024. These funds may be reallocated to other regional projects that meet the funding criteria.

Federal Fiscal Year is the calendar timeframe from October 1, 2023 through September 30, 2024.

Federal Funds Awarded is the amount of funding associated with a specific public transit project or task for a certain time period.

Federal Fund Category is funding associated with specific tasks related to implementation of various public transit projects.

Federal Funding Code is the numerical number for a specific fund category related to public transit funding

Federal Funds Remaining is the amount of funding remaining not obligated to a prior phase or year(s) from the overall allocation of funding for the project.

Federal Transit Funding Codes

- **5339 Funds** are Federal grants to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities.
- **5307/5340 Funds** are funds for transit capital and operating assistance in urbanized areas and for transportation related planning
- **5310 Funds** provide formula funding to states and designated recipients to meet the transportation needs of older adults and people with disabilities when the public transportation service provided is unavailable, insufficient, or inappropriate to meeting the needs of these individuals.

FHWA is the Federal Highway Administration.

FTA is the Federal Transit Administration.

FTA Grant Number is the Federal Transit Administration Identification number for a specific grant allocation source.

ITS are intelligent transportation systems.

LANTA is the Lehigh and Northampton Transportation Authority.

LVTS is the Lehigh Valley Transportation Study, the federally designated Metropolitan Planning Organization for Lehigh and Northampton Counties.

Map Identification Number represents the location number on the map depicting the location of the project.

MPMS is the project identification number in the PennDOT Multimodal Project Management System for locating, tracking and reporting on the status of phases of various projects.

MPO is the Metropolitan Planning Organization, an organization created and designated to carry out the metropolitan transportation planning process. MPOs are required to represent localities in all urbanized areas (UZAs) with populations over 50,000, as determined by the U.S. Census.

Municipality is the county, city, town, borough, or township of the Commonwealth of Pennsylvania associated with the project general location.

Obligations represent federal authorizations to proceed with specific project phases for the federal fiscal year of 2024.

Obligated Federal Amount FFY 2024 is the amount obligated towards public transportation for a specific project or task during Federal Fiscal Year 2024.

OTH-Flex CMAQ are funds provided by LVTS to the public transit operator LANTA utilizing CMAQ funding to support various public transit projects.

PennDOT is the Pennsylvania Department of Transportation.

PennDOT District is the PennDOT engineering District in which the project is taking place. PennDOT District 5-0 is the engineering district that encompasses Lehigh and Northampton counties for the LVTS.

Performance Based Planning and Programming (PBPP) is a process focused on collaboration between PennDOT, FHWA, and MPOs at the county and regional levels.

Performance Measures are adopted metrics for evaluating various transportation aspects related to safety, mobility, infrastructure condition and air quality.

- **PM1:** Safety
- **PM2:** Asset Condition
- **PM3:** Mobility and Congestion Mitigation and Air Quality (CMAQ)

Phase of Work is the list of phases associated with a particular project that is on the Transportation Improvement Program (TIP).

Not every project will have every phase of a project. However, generally, the projects will have several of the following phases:

- **Study/Planning (S/P) –** In this phase, a general overview or analysis is performed to identify elements for improvements to an identified project. This phase can be for corridors, potential connections and for enhancing and improving the projected need of a transportation asset.
- **Preliminary Engineering (PE) –** In this phase, a preliminary field survey, utility location, environmental/historical studies, road design alternatives, drawings, final field inspections, and initial public engagement are done. This process can take a few months to several years to complete.
- **Right-of-Way (ROW) –** This is the portion of the project in which negotiations with property owners take place, payments are made, and arrangements with utility companies are finalized to obtain the land necessary for the project. Right-of-Way work does not begin until most of the Preliminary Engineering steps are complete.
- **Utilities (UTL) –** In this phase, ownership of existing or potential new utilities are identified. Coordination of infrastructure that may need to be relocated or otherwise changed to accommodate the project are done with the entities responsible for various utilities. Electric, telecommunications and pipelines are examples of utilities.
- **Final Design (FD) –** is the phase that identifies project-related improvements, materials, quantities and activities. The plans must include sufficient detail to inform project stakeholders (designers, reviewers, contractors, suppliers, etc.) of the actions required to advance the project from design through completion of construction and to satisfy permit conditions. Final Design Plans must also provide reasonable information needed by the contractor to submit a sound, equitable bid and to build the project to PennDOT's standards.
- **Construction (CON) –** In this phase, the project is advertised to prospective contractors for bids. Once the bids are opened and a contract is awarded, construction can begin.

Program Total is the overall cost associated and programmed for a project on the Transportation Improvement Program (TIP). Entries that contain “0” are for projects that were deobligated funds and had no obligations associated with it.

Projects Administrator/Owner is the agency responsible for implementation of the project/owner of the project location or structure.

Project Title is the name assigned to the project.

Project Description provides details and the intent of the project as applicable.

Public Narrative is a version of the Project Description simplified.

Requested Federal Amount FFY 2024 is the amount of funding requested by the public transit operator for Federal Fiscal Year 2024 projects and tasks.

State Match are Commonwealth of Pennsylvania funds to match certain federal funding requirements.

State Route (SR) is the State Route identification number of a PennDOT owned or supported roadway associated with the project if applicable.

Sub-Recipient is the public transportation provider receiving the transit funds

TIP is the Transportation Improvement Program.

Transportation Improvement Program (TIP) is a list of transportation projects—covering a period of at least four years. The TIP must be developed in cooperation with the MPO, state and public transit providers. The TIP should include capital and non-capital surface transportation projects, bicycle and pedestrian facilities and other transportation enhancements to address various Transportation Performance Management requirements.

Transportation Performance Management is a strategic approach that uses transportation system information to make investment and policy decisions to achieve national transportation performance goals for safety, asset condition and mobility / air quality. (see Performance Measures)

STAFF

Becky A. Bradley, AICP
Executive Director

David Cohen, AICP
Director of Regional Planning

Tracy L. Oscavich
Director of Administration

Susan Myerov, AICP
Director of Environmental Planning

Samantha Pearson
Director of Development

Vicki Weidenhammer
Controller

Matt Assad
Managing Editor

Denjam Khadka
Senior Civil/Environmental Engineer

Subham Kharel, PhD
Senior Data and Analytics Planner

Geoffrey A. Reese, PE
Master Planner and Engineer

Jill Seitz
Chief Community and Regional Planner

Faria Urmy, AICP, CNU-A, LEED AP
Regional Plan Program Manager

Chris Embert
Creative Manager

Minsoo Park
Economist

Giovanna Rizkallah
Artificial Intelligence (AI) Engineer and Innovation Planner

Evan Gardi
Transportation Planner

Peter Lantz
Environmental Engineer

Taylor Beasley
Graphic Design and Publications Coordinator

Mary Grace Collins
Community and Regional Planner

Mackenzie Geisner
Geographic Information Systems (GIS) Planner

Clay Karnis
Geographic Information Systems (GIS) Planner

Christian Martinez
Environmental Planner

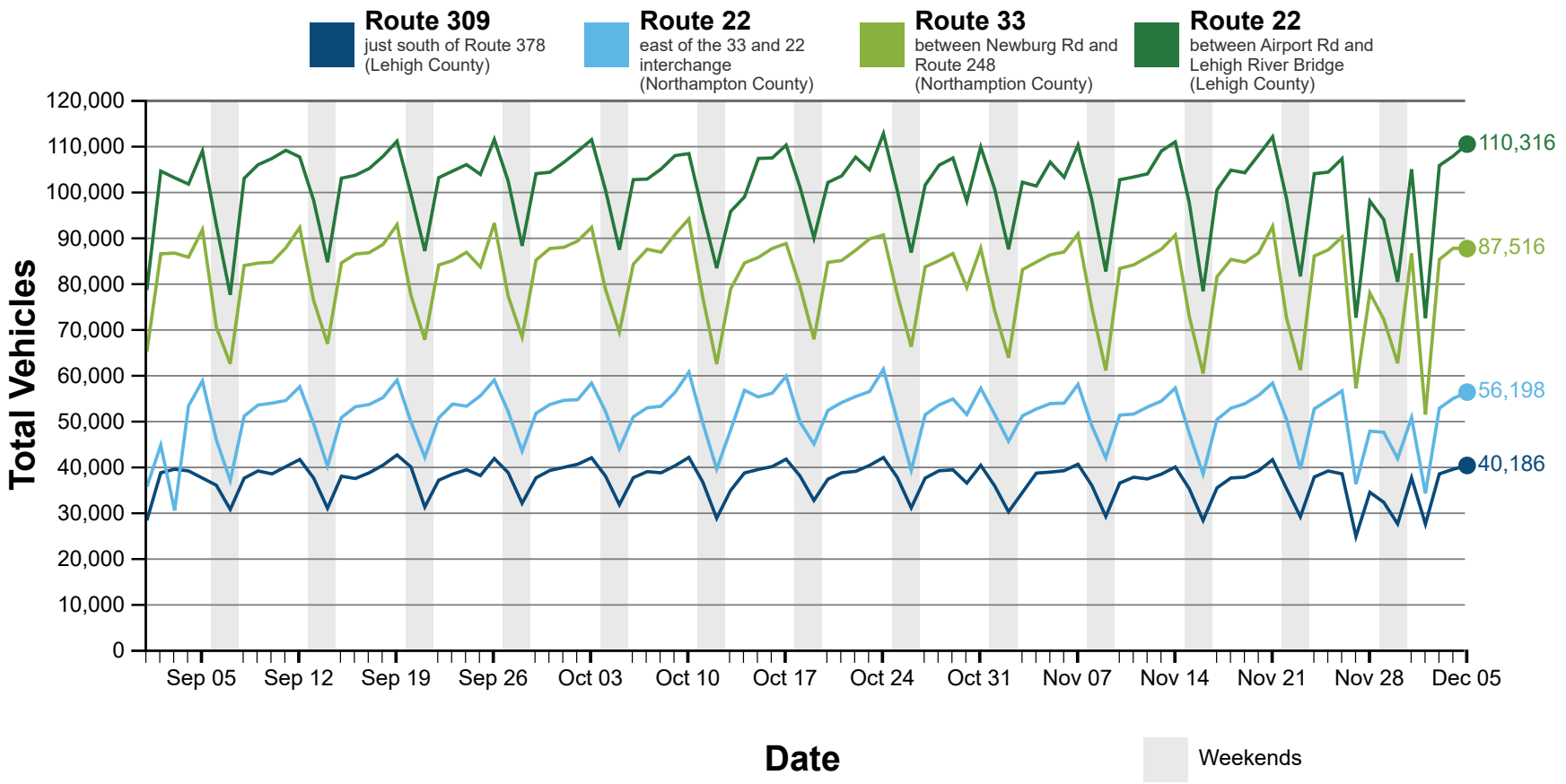
Hannah Milagio
Regional Planner for Community Engagement

Corinne Ruggiero, SEO
Environmental Planner

Jacob Weinberg
Community and Regional Planner

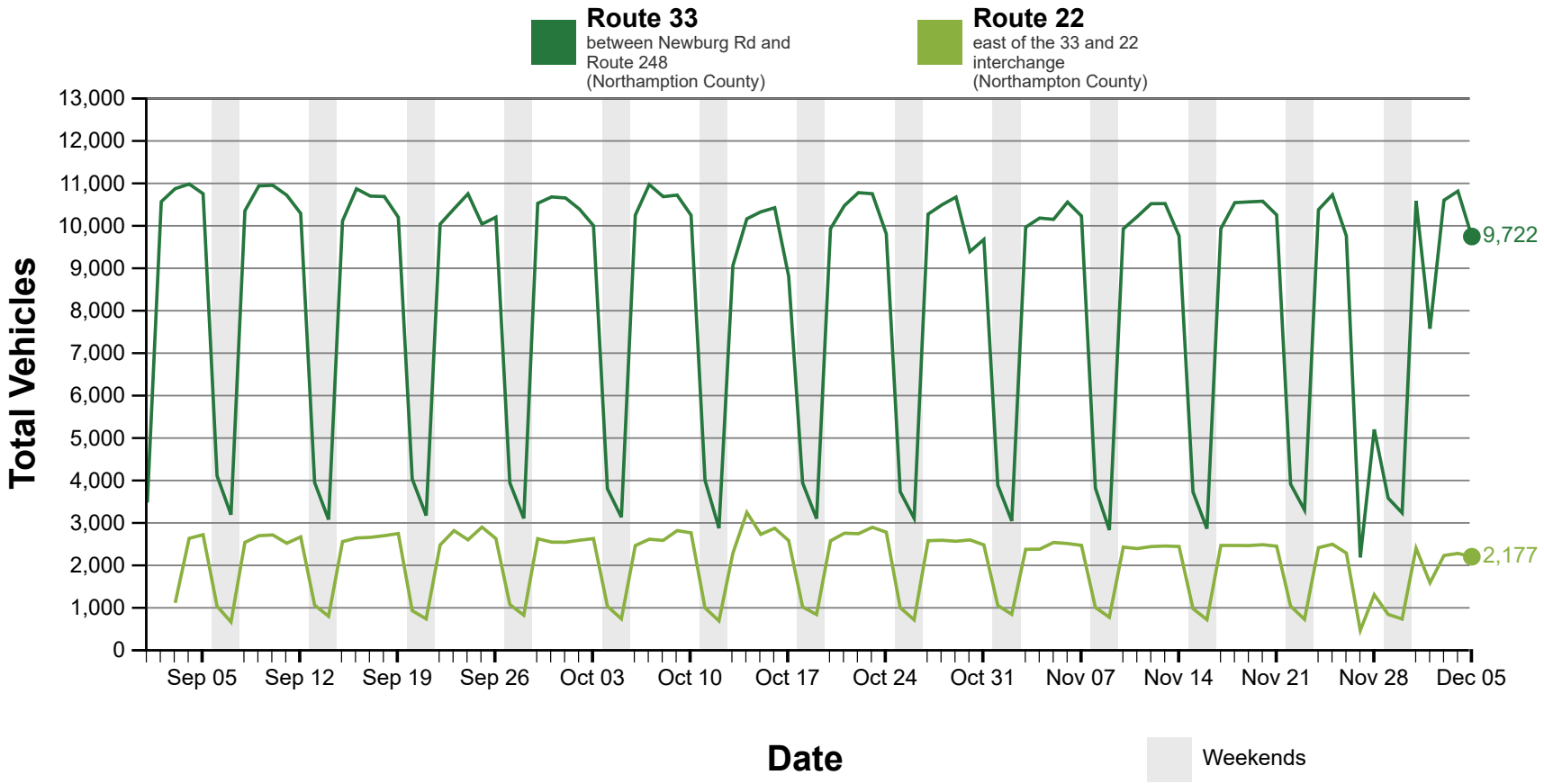

LVPC / LVTS
Lehigh Valley Planning Commission
Lehigh Valley Transportation Study
615 Waterfront Drive
Suite 201
Allentown, PA 18102
(610) 264-4544
www.lvpc.org
planning@lvpc.org
Follow Us on Social Media
@lvpcommish
Deli & Grocery

Traffic Volumes Throughout the Lehigh Valley



**Data from Sep/1/2025 - Dec/5/2025 at daily intervals*

Truck Volumes Throughout the Lehigh Valley



**Data from Sep/1/2025 - Dec/5/2025 at daily intervals*