

FUTURE LEHIGH VALLEY



The Regional Plan

YOU ARE THE

FUTURE

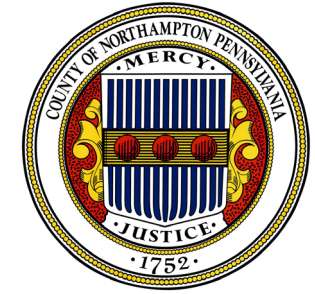


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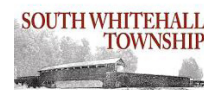
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1 Plan

1 Vision

1 FUTURELV
FUTURE LEHIGH VALLEY

TABLE OF CONTENTS

| | | | |
|--|-----------|---|------------|
| Introduction | | Goal 4. Competitive Creative and Sustainable Region | 92 |
| Forward | 10 | Shopping Mall Redevelopment Concept | 96 |
| Plan Interrelationships | 12 | Entrepreneurialism | 98 |
| Community Engagement | 18 | Farming as a Business | 102 |
| People Have Spoken | 20 | Suburban Infill Concept | 106 |
| #Trending | 22 | Funding | 108 |
| Overview | 24 | Goal 5. Safe, Healthy, Inclusive and Livable Communities | 110 |
| Growing | 28 | Canal Trail Eastside Concept | 114 |
| Future Forces | 32 | Healthy Communities | 116 |
| Building Our Best Future | 40 | Commuter Trail Westside Concept | 118 |
| | | Parks, Outdoor Recreation, Open Space and Scenic Plan | 122 |
| Goals, Policies and Actions | | Historic Corridor Revitalization Concept | 124 |
| Goal 1. Efficient and Coordinated Development Pattern | 42 | Regional Collaboration | 126 |
| Suburban Corridor Concept | 46 | | |
| FutureLV Map Descriptions | 48 | Call To Action | |
| General Land Use Plan | 52 | Implementation | 130 |
| Goal 2. Connected Mixed-Transportation Region | 56 | Key Initiatives | 132 |
| Centers and Corridors | 59 | Land Uses of Regional Significance | 136 |
| Transportation Plan | 60 | Transportation Funding | 140 |
| MacArthur Road Concept | 66 | Unmet Needs | 166 |
| Density | 71 | Acknowledgements/Thank You | 182 |
| Freight | 72 | Resources | 194 |
| Goal 3. Protected and Vibrant Environment | 76 | More Information | 196 |
| Natural Resources Plan | 80 | | |
| Crossroads Village Concept | 82 | | |
| Farmland Preservation Plan | 86 | | |
| Brownfield Redevelopment Concept | 88 | | |
| Climate Change | 90 | | |



THE FUTURE IS NOW

Development. Technology. Climate change. Equity. The future is coming at us faster than ever before, and the Lehigh Valley is in position to lead the way. *FutureLV: The Regional Plan* sets the vision and direction to carry this region to 2045 and beyond.

Seven decades of uncommon growth and a unique identity—built on a foundation of beautiful natural resources, a strong workforce and close access to almost anything anyone could want—has created a prime opportunity to compete in the global economy.

The region’s town centers can be the focus of new growth, while its historic, cultural and natural assets remain a selling point for people and businesses looking for a high quality of life. An already-robust transportation system is poised to become the multimodal network of the future, connecting walkable and bikeable neighborhoods, workers and job centers.

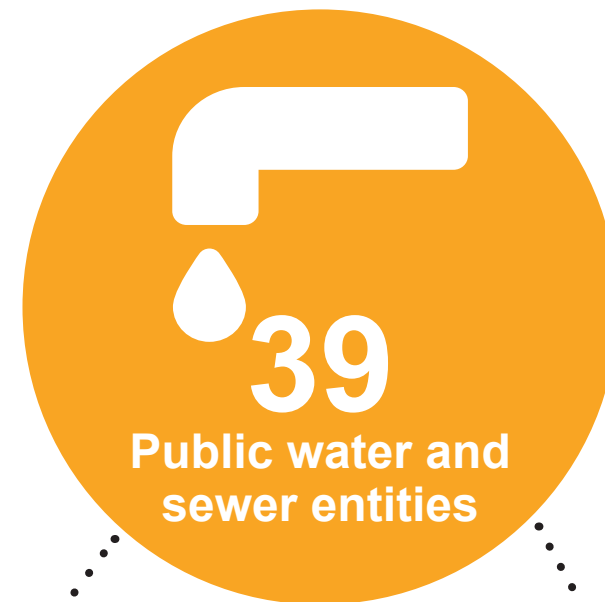
But getting there will require overcoming the challenges of balancing growth against preservation and bringing about profound change, while resources remain limited.

This plan 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.

PLAN INTERRELATIONSHIPS

The LVPC and the LVTS are bi-county resources that provide balanced, accurate, timely and reliable information, data, analysis, planning and guidance on all relevant aspects of the Lehigh Valley community and society.

Subdivision, development and zoning regulation in Pennsylvania, as well as comprehensive planning, is delegated through the Municipalities Planning Code (MPC). County planning agencies, such as the Lehigh Valley Planning Commission (LVPC), are tasked with the creation of the comprehensive plan to set the overall vision, goals, policies and actions for Lehigh and Northampton counties. Metropolitan Planning Organizations, such as the Lehigh Valley Transportation Study (LVTS), plan for the overall safety, maintenance, asset management, expansion and coordination of the region's mobility network. This includes a funding program for roads, bridges, transit, trails and rail systems. *FutureLV: The Regional Plan* serves this role by identifying known assets, sensitive lands, facilities, and current and proposed land uses, among other significant resources that make up, reinforce and change the way the Lehigh Valley functions. Overall, the LVPC and LVTS serve as advisors, collaborators and supporters of:



Lehigh Valley Planning Commission and Lehigh Valley Transportation Study are committed to and *FutureLV: The Regional Plan* supports and reinforces:

- REGIONAL VISIONING + GOAL-SETTING
- LAND USE PLANNING + COORDINATION
- RESEARCH + ANALYSIS
- PUBLIC ENGAGEMENT + COLLABORATION
- ATTAINABLE + SUSTAINABLE HOUSING
- UTILITY PLANNING + MANAGEMENT
- IMPACT ASSESSMENT
- ENERGY CONSERVATION + DIVERSIFICATION
- ENVIRONMENTAL PROTECTION
- FARMLAND PRESERVATION
- ARTS + CULTURE DIVERSITY
- EQUITY ENHANCEMENT
- MULTI-JURISDICTIONAL COOPERATION
- CLIMATE CHANGE
- OPEN SPACE + NATURAL LANDS CONSERVATION
- HISTORIC + SCENIC RESOURCE PRESERVATION
- PARKS + RECREATION
- CARTOGRAPHIC + ECONOMIC MODELING
- REUSE, REDEVELOPMENT + REVITALIZATION
- HEALTHY COMMUNITIES + OUTCOMES
- EDUCATIONAL ENHANCEMENT
- WORKFORCE PREPARATION
- OPEN + ACCESSIBLE GOVERNMENT
- EFFICIENT + SUSTAINABLE PUBLIC FUNDING



- TRANSPORTATION DIVERSIFICATION
- TRANSPORTATION-LAND USE CONNECTION
- FREIGHT MOBILITY + MANAGEMENT
- INFRASTRUCTURE ASSESSMENT + MANAGEMENT
- INFRASTRUCTURE INVESTMENT
- PERFORMANCE MEASUREMENT
- TRANSPORTATION MODE EQUALITY + EQUITY
- ENVIRONMENTAL JUSTICE
- CROSS-MODE INTERCONNECTIVITY
- TRANSPORTATION SAFETY
- FUNDING STABILITY + INNOVATION
- TECHNICAL ASSISTANCE + EDUCATION
- INTELLIGENT TRANSPORTATION SYSTEMS
- DATA MODELING + FORECASTING
- ENHANCED MOBILITY
- CORRIDOR PRESERVATION + IMPROVEMENT
- SYSTEM INVENTORY + PLANNING
- TRANSIT-SUPPORTIVE LAND USE
- WALKABILITY, ROLLABILITY + BIKEABILITY
- UNIVERSAL DESIGN + ACCESSIBILITY
- FUTURE SYSTEM PREPARATION
- OFF-ROAD SYSTEM DEVELOPMENT
- PARTNER COORDINATION + COLLABORATION
- TECHNICAL ASSISTANCE

Authority to Develop a Comprehensive Vision, Goals, Policies, Actions and to Invest in the Lehigh Valley

This bi-county comprehensive plan and long-range transportation plan were developed in accordance with state and federal laws and are intended to comply with applicable laws, rules, regulations, executive orders, policies, guidelines and requirements.

Pennsylvania Municipalities Planning Code and the Lehigh Valley Planning Commission

The Lehigh Valley Planning Commission (LVPC), founded in 1961, is the Northampton County and Lehigh County Planning Commission with powers outlined in the Pennsylvania Municipalities Planning Code (Act of 1968, P.L. 805, No. 247, as reenacted and amended). Specifically, the Pennsylvania Legislature grants authority to county planning commissions to “protect and promote safety, health, morals and general welfare through coordinated development, guidance and protection of amenity, conveniences, future governmental, economic, practical, social and cultural facilities, growth and development, as well as the improvement of governmental processes.” This translates to the guidance of uses of land and structures, type and location of streets, public grounds, utilities and other facilities through bi-county comprehensive planning. The Commonwealth also requires identification of land uses of regional significance, preservation of natural and historic resources and prime agricultural lands be incorporated into plans. Municipal governments are encouraged to adopt municipal or multi-municipal land use plans and regulations that balance the needs of individual communities with that of the counties. These state-mandated requirements support small business development, facilitate the present and future viability of existing agricultural operations and encourage revitalization, all fostering a business-friendly environment that permits municipalities and counties to minimize impacts to communities and society as a whole. *FutureLV: The Regional Plan* is the comprehensive plan for the region, as required by the Pennsylvania Municipalities Planning Code.

United States Code, Title 23 and the Lehigh Valley Transportation Study

The Lehigh Valley Planning Commission staffs and participates in the Lehigh Valley Transportation Study (LVTS), as the federally designated, mandated and funded Metropolitan Planning Organization (MPO) for transportation policy-making. The LVTS includes representation from state and county governments and governmental transportation authorities that ensure regional cooperation in transportation planning. MPOs were introduced by the Federal-Aid Highway Act of 1962, which required the formation of an MPO for any urbanized area with a population greater than 50,000. Federal funding for transportation projects and programs are channeled through this planning process. Congress created MPOs to ensure that existing and future expenditures of governmental funds for transportation projects and programs are based on a continuing, cooperative and comprehensive planning process. Specifically, the LVTS assesses data, congestion, feasibility, land use, transportation system performance and operations, safety and security, travel demand, freight and environmental linkages to develop a cohesive plan for the reliable movement of people and goods. This planning effort consults and coordinates with local, county, state and federal governments, transit operators, adjacent regions, transportation advocates, trail partners, the mobility-impaired, environmental justice communities and the public. The Long-Range Transportation Plan, which is *FutureLV: The Regional Plan*, incorporates and synthesizes metrics, research, partnerships and collaborations that plan context-sensitive transportation land use solutions, supporting a livable, sustainable and resilient infrastructure system.

A Single Region and Plan

FutureLV: The Regional Plan establishes a single comprehensive plan for the community. This plan is innovative because it merges the land use, community, economic, natural resources, agricultural, historic preservation, housing, utilities and community facilities planning of the Lehigh Valley Planning Commission with the transportation planning and investment of the Lehigh Valley Transportation Study. The combined effort creates a balanced and forward-thinking series of strategies that will lead the Lehigh Valley into the future, while addressing the needs of today.



FUTURELV
THE REGIONAL PLAN
1 Plan | 1 Vision | 1 Future

COMMUNITY ENGAGEMENT

88

Community events in which the Lehigh Valley Planning Commission engaged the public. Ranging from Galas to downtown BBQs and bike tours, the LVPC provided interactive opportunities for the community to voice its thoughts and ideas on the Lehigh Valley's growth and development.

154

Public planning workshops presented by the LVPC during the development of *FutureLV: The Regional Plan*. These included Planning + Pizzas, Strategy Labs, LVPC Board + Committee meetings, Lehigh Valley Transportation Study Board meetings, Multimodal Working Group meetings and Regional Planning Action Team meetings.

279

People from across the region were invited to identify strengths and needs in their communities. Using an interactive chalkboard cube, residents shared their aspirations for the area, pinpointing the coming trends of the Valley and what needs to be addressed for the future.

1,064

Citizens responded to a regional outlook survey that focused on transportation, open space, development, housing, employment, etc., and the strengths, weaknesses, opportunities and threats of each.



9,439

Total attendance at public meetings and forums



345,888

Total number of people reached through Facebook and Twitter

24,025

FutureLV website page views

PEOPLE SPOKEN

HAVE

How important will the following planning issues be over the next ten years?

In March and April of 2018, a survey given online and through the mail reached every corner of the Lehigh Valley. The 31-question survey asked residents about their likes, dislikes and ideas for the future. It gave us a window into who we are and how people view our future. Here's a sample of what people think:

- Preservation and protection of natural resources
- Road and bridge construction and maintenance
- Public water supply and sewage disposal facilities
- Economic development

>95%
IMPORTANT OR
VERY IMPORTANT

**80-
90%**
IMPORTANT OR
VERY IMPORTANT

- Broadband, cable and telephone service
- Housing supply, variety and affordability
- Social, cultural and recreational opportunities
- Expanding walking, biking and public transportation options
- Historic preservation

- Promotion of the agricultural economy
- Schools and educational opportunities
- Revitalization of boroughs/cities
- Managing and coordinating development
- Emergency services and disaster preparedness
- Energy conservation, renewable resources and climate change

**90-
95%**
IMPORTANT OR
VERY IMPORTANT

<80%
IMPORTANT OR
VERY IMPORTANT

- Gas and electric service
- Air travel
- Freight improvements

Through public meetings, private conferences, community events and strategy labs, we talked with thousands of Lehigh Valley residents, most of them passionate about their view of the region. These are the topics they talked about most:



What strategies would best address the Lehigh Valley's future transportation and mobility needs?

89% Designing walkable/bikeable communities

85% Installing new sidewalks and closing gaps in the existing sidewalk network

84% Promoting walking, biking and carpooling to work

84% Building new roadways and widening existing roads

82% Extending local public transit/bus service to new areas

What do you like most about living in the Lehigh Valley?

61% Parks, trails and recreational activities

59% Natural lands and farmlands

55% Proximity to New York City and Philadelphia

47% Mix of urban, suburban and rural areas

46% Near family and friends

The Lehigh Valley is a community with an old world soul and new economy innovation—an uncommon combination that’s made it one of Pennsylvania’s fastest-growing regions.

While its extensive trail network, rolling farm fields and historic sites are what residents say keeps them here, more than 1,000 miles of waterways, 123 natural heritage sites and many cultural attractions have made the region number one in the state for tourists on recreation visits.

Its natural assets are the kind that can’t be found in the big metros, yet a key to its success rests with its location within commuting distance of New York City, Philadelphia and Washington D.C. It’s close enough to experience the best that the world’s largest metros have to offer, yet far enough away to develop its own unique identity—one built on balance.

The historic character of Bethlehem, Catasauqua and Easton are balanced by Allentown’s contemporary downtown rebirth, as the rust veneer of the century-old SteelStacks concert venue is balanced by the shine of the Tower 6 office complex. While the region’s three cities and 27 boroughs evolve into a new period of urbanism, the farmland that’s helped define its agricultural economy is accented by an eclectic mix of crossroads villages.

More than 300 miles of pathways, which include the D&L and Appalachian trails, are balanced by a highway network that provides easy access to much of the Northeast, the Jersey Shore and the Port of New York and New Jersey. The weekend warriors who have long used the expanding trail network are increasingly being joined by people using it to commute.

Ultimately, the region’s diverse population of native residents, who value a history that began before the American Revolution, is balanced by waves of newcomers who have been adding more than 4,000 people a year for seven decades. Many arrive to find that their search for more attainable housing and a greater

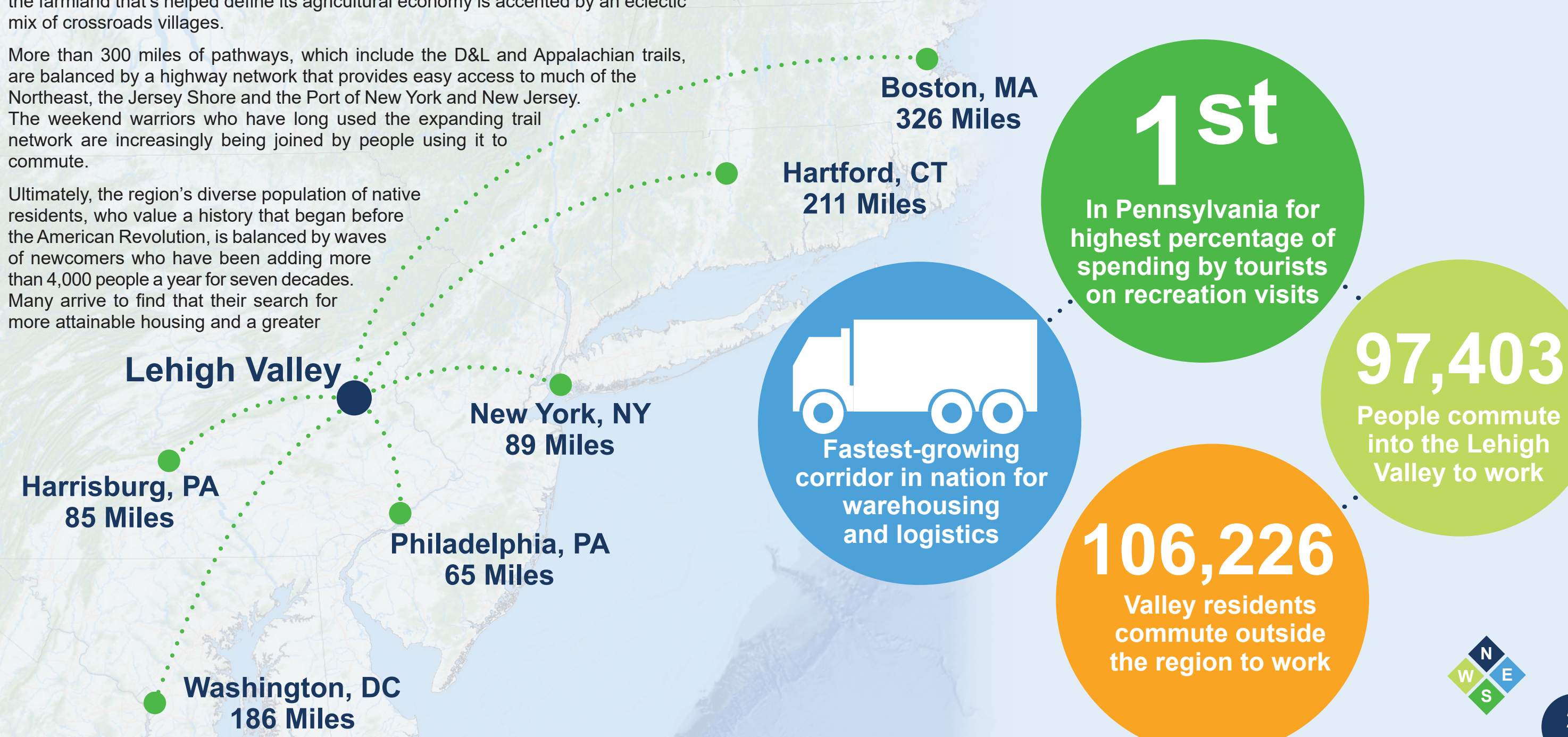
sense of community can end in a place where they can aspire for more.

A result of that steady growth is a resilient economy driven by education, healthcare, manufacturing, retail sales and an arts and culture industry that adds more than \$200 million to the local economy, while attracting more than 15 million visitors a year.

Thousands of acres of former manufacturing sites have been repurposed into modern industrial and business parks occupied by nearly 500 companies, while 16 colleges, universities and technical schools prepare a new generation of workers for a future that will require everyone to be lifelong learners.

Now, the Lehigh Valley is well-positioned to embrace a future of profound change by enhancing its historic core and nurturing its economic and cultural strengths, while maintaining the balance that’s made it a destination for so many searching for a higher quality of life.

Doing that will require embracing our farming industry and preserving our environment by directing inevitable growth toward existing population and job centers, designing a transportation network focused on moving people—not simply vehicles—and maintaining a strong economy by training the workforce of tomorrow.



1st
In Pennsylvania for highest percentage of spending by tourists on recreation visits

Fastest-growing corridor in nation for warehousing and logistics

97,403
People commute into the Lehigh Valley to work

106,226
Valley residents commute outside the region to work



Natural Landscape – From River to Ridge

Below the Kittatinny Ridge, locally known as Blue Mountain, a low shale plateau with undulating hills, stream headwaters and a rural setting gradually descends into a seven-mile-wide limestone valley to the foot of South Mountain. Through this landscape, the Lehigh River flows southward from the Lehigh Gap to Allentown, where it turns eastward through Bethlehem towards its confluence with the Delaware River in Easton. These waterways and topographic features create natural landscapes and scenic beauty that are treasured by the region's residents.

Cultural – Industrial Landscapes

The geography and natural landscapes of the Lehigh Valley have fundamentally shaped the region's history and development patterns. The rich soils have supported an agricultural economy that has been essential to the region's identity for nearly 300 years. In the 19th century, canals and railroads following the path of the Lehigh River provided a vital corridor for transporting anthracite from the Coal Region. Similar deposits of mineral wealth within the Lehigh Valley gave rise to major extractive and manufacturing industries in the cement and slate belts. Remnants of the area's industrial past are woven throughout the region and include the monumental SteelStacks in Bethlehem, the Coplay Cement Kilns, Lock Ridge Iron Ore Furnace, the Slate Belt quarries, the Lehigh and Delaware canals, and the Simon Silk Mill.



Human Settlements – An Abundance of Places

These rich and varied natural landscapes gave rise to an abundance of distinct human settlements and man-made landscapes. The area's three cities and many of its major boroughs grew along the banks of the Lehigh and Delaware rivers. The rural landscape of Lehigh and Northampton counties is dotted with dozens of crossroads villages that give form and character to the region. The highways, shopping malls, office complexes, industrial parks and residential suburbs testify to the continuity of the region's growth and prosperity, while also posing challenges to preserving the very features that gave rise to that growth and prosperity.

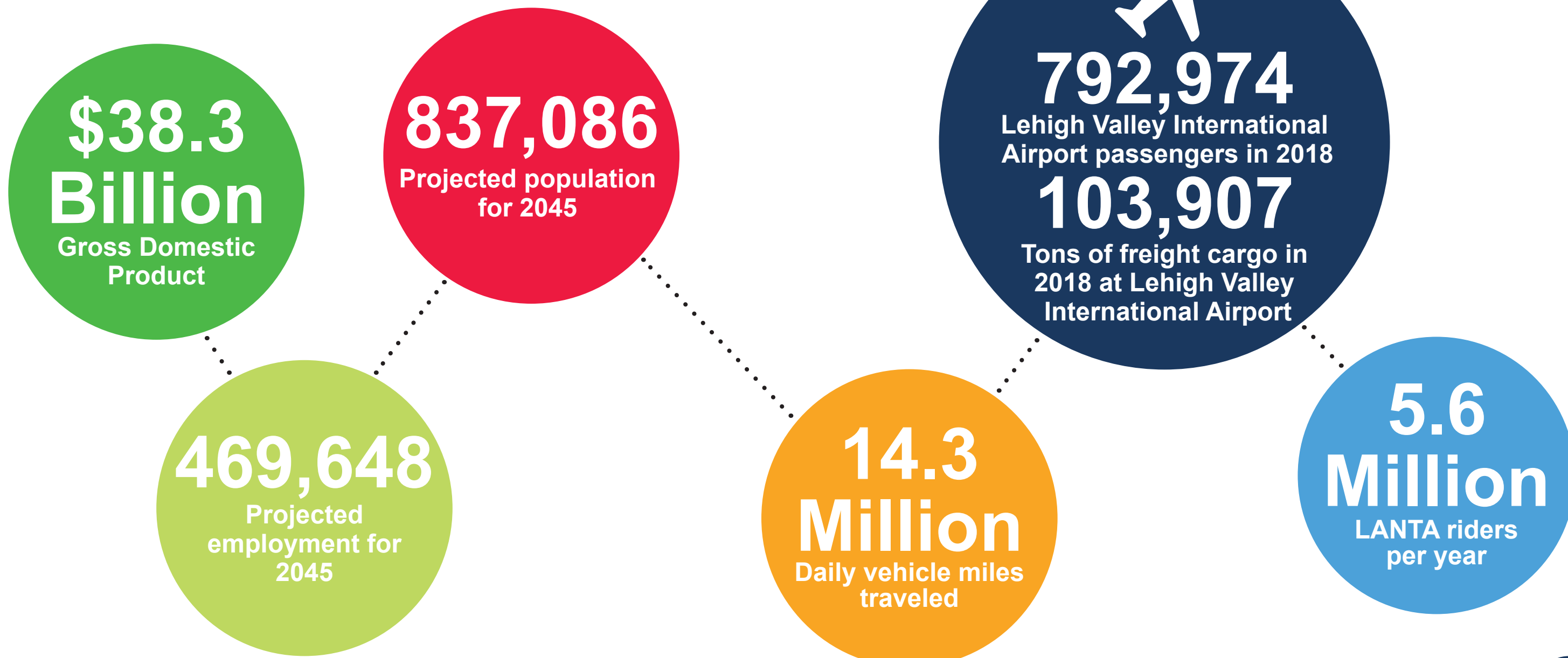


GROWING

The Lehigh Valley is one of the fastest-growing regions in Pennsylvania, with a projected 24% population increase by the year 2045. This growth is largely driven by the migration of people into the region, as more workers and families are attracted to the Valley for its natural and historic character, high quality of life, affordability and convenient location. As the region grows, the demographics are shifting. People older than 65 will have the most significant increase as our population ages, while children and young adults under 20 are expected to increase as a growing number of families flock to the region.

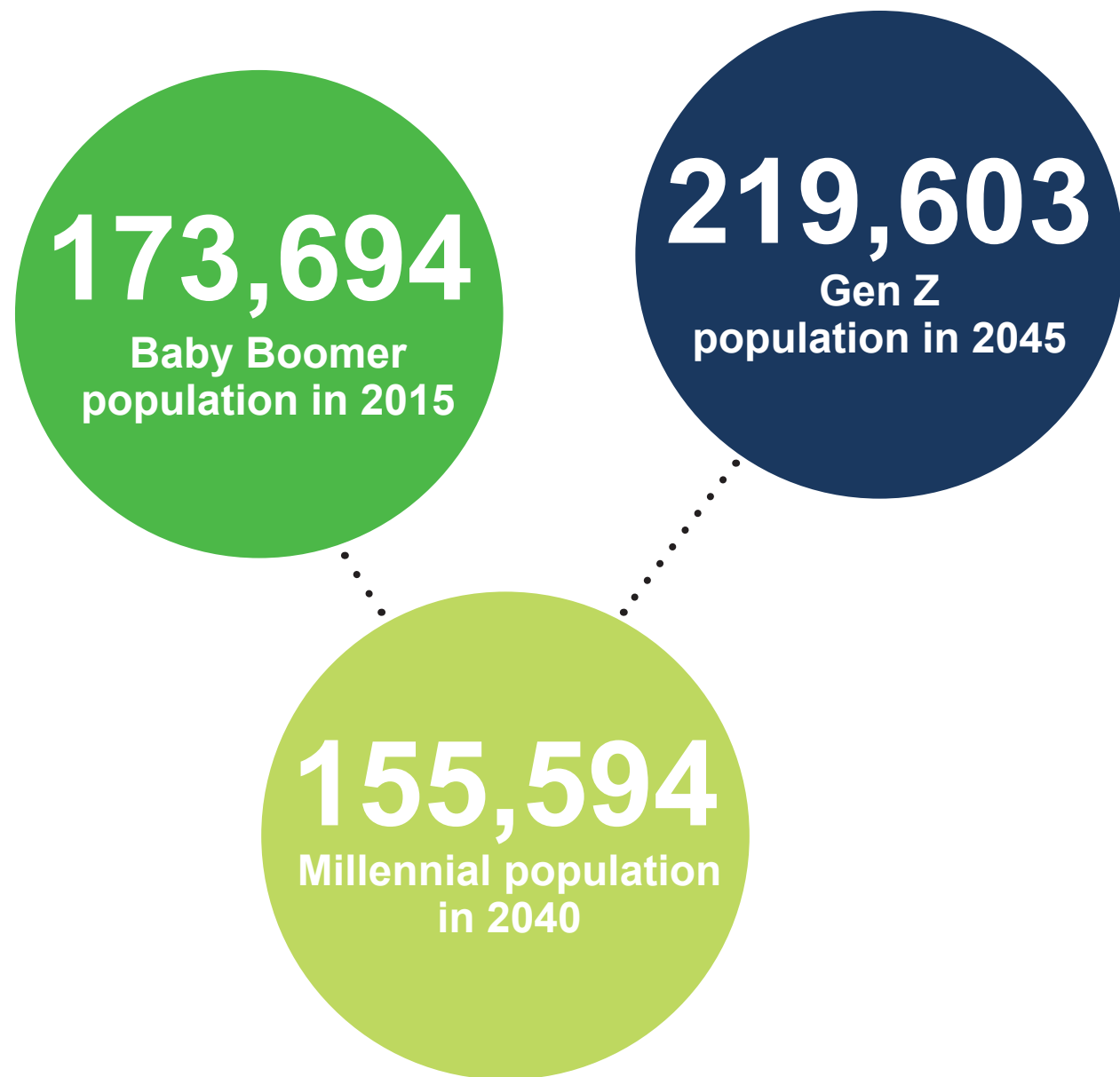
The Lehigh Valley has been growing more diverse as well, particularly over the past three decades. The minority population has become a more significant part of the community, growing from 8% of the population in 1990 to 18% in 2017, with Hispanic, Black and Native American populations each doubling between 2000 and 2010.

Employment in the Lehigh Valley is projected to increase by 17% before the year 2045. Many of the region's fastest-growing occupations are in the healthcare, manufacturing, warehousing, recreation, and technical and professional service industries. Its close proximity to major metropolitan areas has helped make the Lehigh Valley one of the busiest freight corridors in the nation. As technology improves and people live longer, there is an increasing need for healthcare professionals. The occupation of home health aide is expected to experience the biggest growth among Lehigh Valley jobs, with a 30% employment increase by 2045.

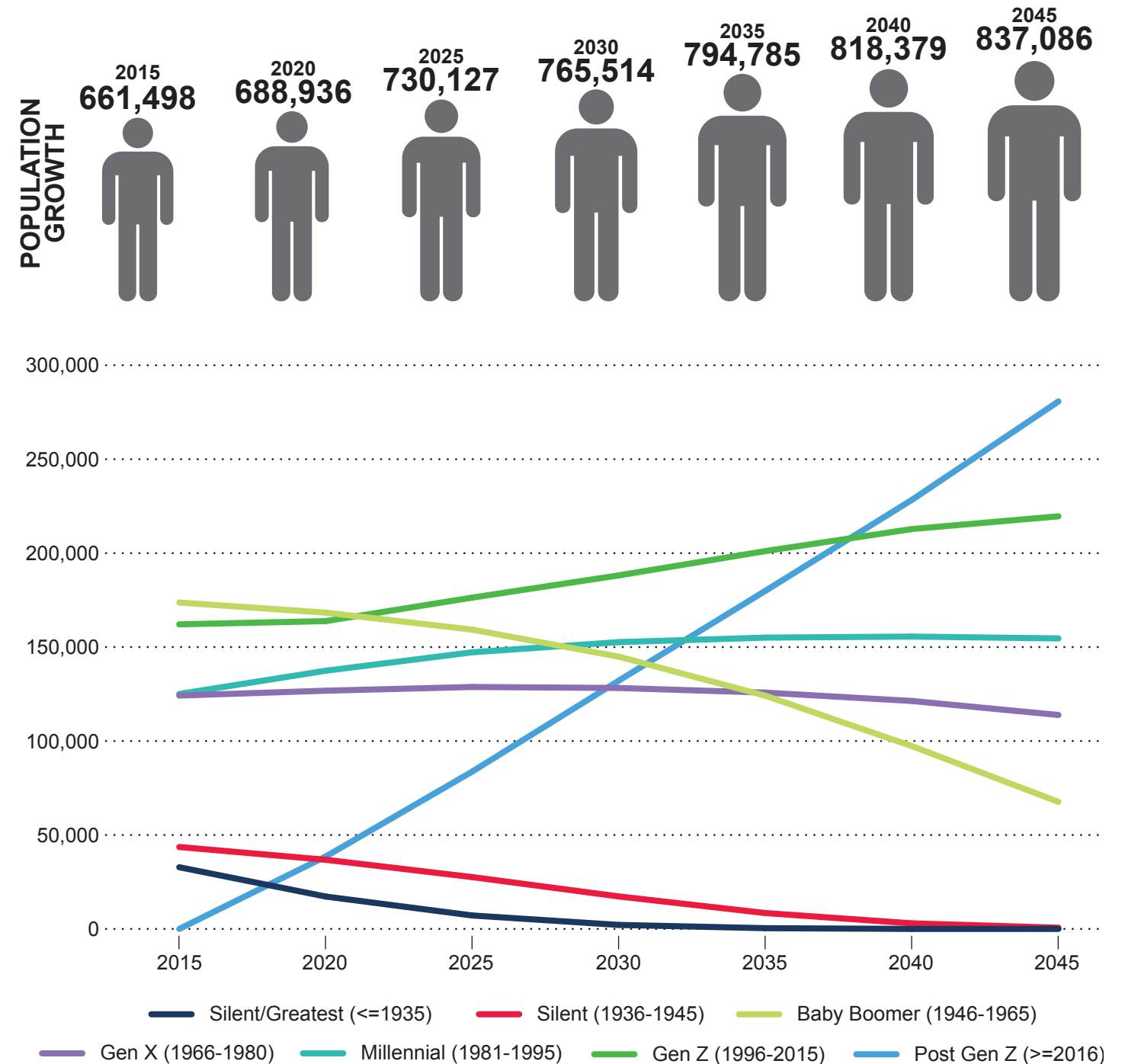


GENERATIONAL GROWTH

The Lehigh Valley has seen steady population growth since after World War II, and for several decades the Baby Boom Generation has dominated the region's demographic make-up. That will change in the coming decades as Generation Z becomes the most populous generation in the history of the Lehigh Valley, with nearly 220,000 members by 2045, easily surpassing the current total of 173,694 Baby Boomers who live in the region. The trajectory of the region's population projections suggest a high amount of in-migration of Millennials and Generation X members. Both are expected to grow steadily, bringing balance and stability to the Lehigh Valley's overall population in the coming decades.



Consistent, sustainable growth has added an average of more than 4,000 new residents a year to the Lehigh Valley for seven decades. However, the latest projections expect the region to grow by closer to 6,000 residents a year over the next 25 years. That will force municipal, business, government and planning leaders to make innovative choices about how to manage all the new growth, without detracting from the assets that have made the region so attractive to new residents and businesses.



FUTURE FORCES

FutureLV: The Regional Plan is created to support the current and future population, businesses, environment and culture of the Lehigh Valley. We know that many global and national megatrends will disrupt the region as we know it today. Some are already changing the way we live, such as on-demand and shared services like Uber and Airbnb. Others, like vehicle automation and blockchain, are evolving rapidly and will have a larger impact on our individual lives, government and business functions in the mid- and long-term. These current and future forces will substantially change the physical and regulatory landscape of the Lehigh Valley, altering how we work, consume goods and services, and compete in the global marketplace. They'll change how we view our communities, our quality of life and ultimately ourselves. These factors will reshape who we are as a region by having a profound effect on all aspects of our lives. These societal disruptors are not entirely known, but where possible, these future forces have been outlined and underpin the goals, policies and actions of the plan. Your future begins now.

We are in the midst of the 4th Industrial Revolution

Internet of Things and Enhanced Connectivity

5 BILLION

Number of people predicted to be using the internet by next year—half of them by mobile devices

5 BILLION GIGABYTES

Amount of data the world uses every two days—roughly the same amount used during the 6,000 years before 2003

We can expect:

- Increased need for real-time information to make decisions, including the development of algorithms that support automation.
- People will be more connected in every aspect of life. More connectivity means more prediction modeling of the future.
- New expectations of privacy and security as more real-time user information is collected, analyzed, packaged and sold to consumers, businesses and governments.
- Connectivity will define the 21st century, making possible everything from long-distance medical care to vehicle automation to the 3D printing of homes.
- Individuals and businesses without access in a connected economy could be left behind without support. This could exacerbate poverty and increase social and economic isolation.

Automation, Artificial Intelligence and 3D Printing

Advancements in materials science, connectivity and computer design platforms are helping to accelerate automation, artificial intelligence and 3D printing beyond industrial uses and into people's daily lives. This trend will substantially change all supportive sectors of the industrial economy and nearly every portion of the consumer market worldwide. Everything from clothing to commercial office buildings will be able to be, in whole or in part, 3D printed and automated. Machine learning will be able to identify usage patterns and adjust to demand in real time. Automated vehicles already exist and rapid advancements are occurring that will substantially change how people, goods and services are moved. All of these innovations are built on artificial intelligence and machine learning, pillars of the 4th Industrial Revolution.

20%
of the global workforce will need to change occupations by 2030

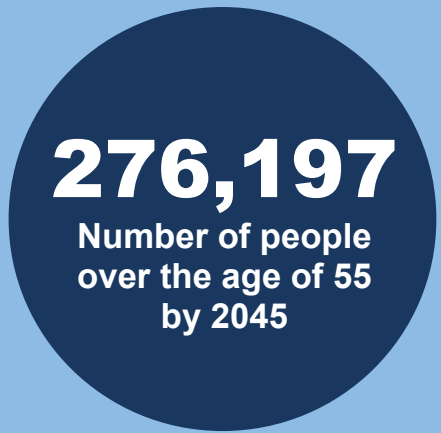
We can expect:

- 3D printers and artificial intelligence-driven systems will replace some of today's workers, but some jobs will adapt and some new jobs will be created to meet the needs of a more technologically advanced society.
- The current workforce—white, gray and blue collar—will need to retrain to perform the jobs of tomorrow as 8-9% of today's jobs won't exist by 2030.
- Preparing education, government, manufacturing and retail institutions for the disruptive shift in jobs and the skills needed to fill them will be critical.
- Schools and training centers at all levels will need to shift focus to advanced mathematics, critical thinking and analysis, coding, machine learning, post-processing, computer-assisted design, artificial intelligence and other technological skills.
- Planning, zoning and land development regulation changes in almost every community will be needed in the coming decades to repurpose warehousing facilities, retail businesses and other building spaces made obsolete by the "on-demand" nature of 3D printing.
- Building code and permitting requirements will need to evolve to accommodate 3D printed homes, automated building systems and increased electrical demand.
- Through 3D printing and artificial intelligence, the cost and time it takes to build homes, bridges and even roads could decline, creating benefits and negative consequences that must be handled through a sea change in zoning, subdivision and land development regulations and funding mechanisms at the local, state and federal levels.

CHANGING DEMOGRAPHICS

Living Longer

Advances in medical technologies will help everyone understand our bodies and how they can be modified to live longer, healthier lives.



We can expect:

- People will work longer and our perception of work will change.
- Changing jobs and careers at mid and later life will become common.
- Filling job vacancies becomes more difficult as workplace tenure declines.
- Employer and employee expectations will change as the burden of healthcare, lessened tenure and retirement benefits increases.
- New consumer and service businesses will emerge.
- Demand will shift to accommodate the needs of an older consumer base.
- We will need more housing with access to multiple modes of travel.
- Semi-assisted and assisted-living needs will increase.

Diversification

The Lehigh Valley and nation have been becoming more diverse for decades. The Lehigh Valley minority population has more than doubled since 1990. People from a variety of cultures, backgrounds and identities will continue to join the Lehigh Valley family.

We can expect:

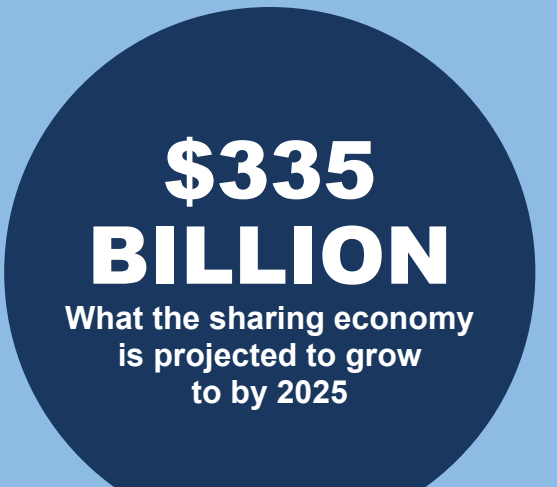
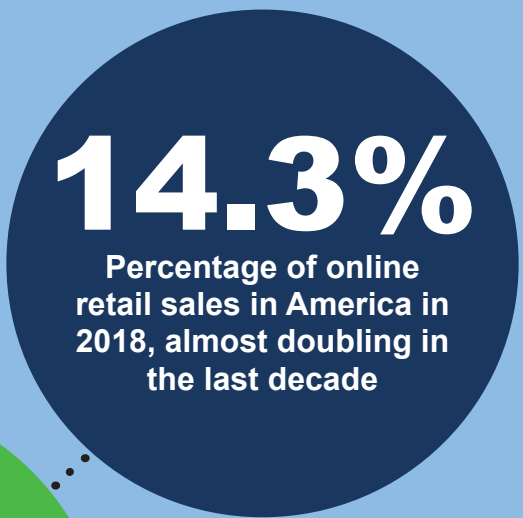
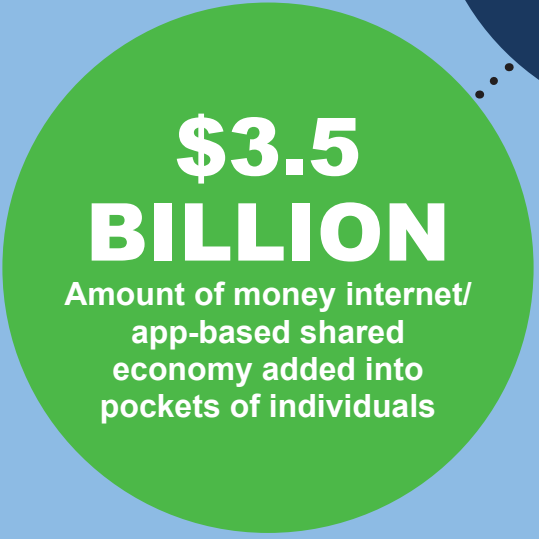
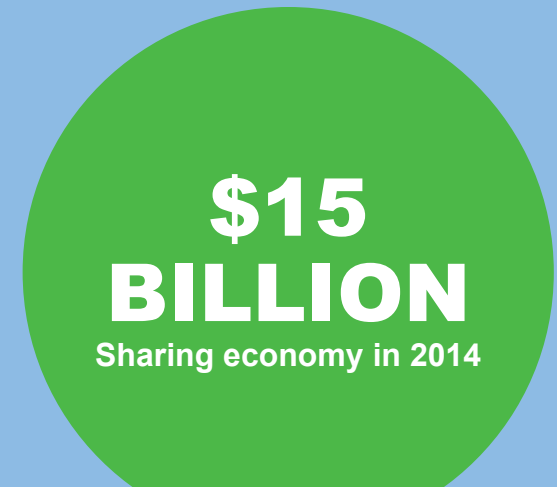
- Increased number of languages spoken. More bilingual and trilingual people. Nearly 29,000 Lehigh Valley residents speak Spanish as a first language and live in 55 out of 62 of the region's municipalities. Additionally, Arabic, Chinese (all), Vietnamese, Polish, Gujarati, Italian, German, Portuguese, French, African and other Indic languages are spoken. More than 41,000 Valley residents have limited English proficiency. That number is projected to quadruple in less than four decades.
- As cultural activity options grow, the number of culture-based opportunities, businesses, services and non-profit agencies will increase.
- Increased diversity will strengthen the Valley's ability to compete in a global economy.
- The concept of community identity will evolve to meet the new social and cultural make-up of the region. This will affect public, non-profit and private institutions.
- Cultural institutions such as entertainment venues and historical societies will add new and adapt existing programming.
- All schools, at all levels of education, must prepare to teach across multiple languages from Spanish to Arabic.
- Businesses will need to increase cultural and cross-cultural competencies to attract and retain workers and remain profitable with shifting demand.

RISE OF THE SHARED AND ON-DEMAND ECONOMY

Smart phones, social media and the internet have rapidly evolved the notion of the peer-to-peer platform over the last decade. Airbnb, Uber, Lyft, Peapod, Grubhub, Amazon, Spotify, Hulu and the millions of other time-saving, cost-saving, enhanced-access and experience companies that deliver bigger, faster, smarter, less stressful products and services have changed the nature of consumption. These and other effects of the shared and on-demand economy will grow exponentially and have wide-reaching impacts on nearly every sector of the economy, especially consumer-facing industries like retail and restaurants.

We can expect:

- The private demand on public infrastructure will continue to grow.
- Demand for drop-off and loading zones will increase as online, in-app purchasing and car-share services grow.
- Scooter and bike-share will compete for the largely privately owned sidewalk network of the region.
- The number of vehicles on the road and trips will increase as people utilize their privately owned transportation for micro-delivery businesses.
- Morning and afternoon peak travel will extend into other portions of the day as ride-sharing and on-demand travel increases.
- A decline in the need for retail square footage, including grocery, will lead to the need to redevelop indoor and outdoor malls, stand-alone sites and traditional first floor commercial spaces. Urban, suburban and rural communities will all be affected by the changes in land use.



BLOCKCHAIN

Dr. Andrew Ward, Management Professor at Lehigh University, describes blockchain as a “decentralized database that stores an encrypted registry of assets and transactions”. Bitcoin is the most widely known creation utilizing blockchain technology today. The potential for an ultra-secure, highly versatile way of verifying ownership, transactions and other information will revolutionize everything from supply chains to the way we vote.

NASDAQ has identified six real world applications of blockchain that could disrupt the business sector, including decentralized financial systems and cloud information storage, more secure digital identity, supply chain authentication, automated “smart” contracts and digital voting.

We can expect:

- Businesses and consumers will know exactly where their supplies, including food, originated. This will increase the knowledge base and information flow, allowing consumers to understand the value and even ethics of their purchase. This could create a great opportunity for agricultural and agri-processing businesses, among other sectors, to promote their authentic, locally made goods.
- New forms of money and the exchange of money.
- Financial markets, banking facilities, brokerage houses and other financial services sectors will greatly reduce the physical space they occupy.
- Connection to physical locations could be minimized. This will continue to support the alteration of “community,” “quality of life” and “sense of place,” in much the way that online communities of choice have already.
- Municipal governments will need to evolve zoning, subdivision and land development plans, and planning to support the new variety of businesses and redevelopment opportunities that blockchain technology offers.
- Blockchain to support significant business and government innovation that will allow existing institutions and entities to become more secure, efficient, reliable and even profitable.



RAPID URBANIZATION AND REGENERATION

In the Lehigh Valley, we have seen the move back to the cities and even an increase in building, business and population density in suburban and exurban areas. The World Bank predicts that over 80% of the global population will live in urbanized areas by 2030.

The Lehigh Valley population has grown more than 4,000 people a year since the 1950s. As a result, developable land has declined, values have increased and will continue to increase. The need to densify and more efficiently use land will grow.

We can expect:

- Land values of all types to increase as demand increases.
- Competition between land uses, from housing to farmland to industrial to institutional, will grow.
- Municipal governments will need to reprioritize land assets, public and private, in their planning, zoning and development regulations to account for increased demand and density.
- Single-use zoning districts will be challenged with the increased need to diversify and densify land uses to accommodate more people, new and evolving business types, parks and recreational facilities.
- The demand on infrastructure of all types, especially roads and bridges, technology, electric, water, sewer and stormwater, will increase with more people and jobs. Asset management systems to support increased usage will need to change to meet demand, affecting both the public and private sectors.
- A need to re-evaluate community priorities as more land is developed, environmental and agricultural assets are challenged, and the poor, elderly and other sensitive populations are stressed and dislocated by increased land values.
- Urbanization and densification raises the potential to reduce individual carbon footprints, reduce vehicle miles traveled, support a more robust transit system and more efficiently deliver public and private services.



CLIMATE CHANGE

More intense storms, higher rainfall amounts, less snow and rising temperatures have impacted the Lehigh Valley over the last decade. US Government agencies, like the National Aeronautics and Space Administration and the National Oceanic and Atmospheric Administration, agree that climate change is causing significant changes in our environment. The specific effects on the Lehigh Valley are addressed in the later special section of this plan, however, climate change and adaptation affects nearly every aspect of the economy, society and environment—in the region and world.



We can expect:

- Global water shortages that will:
 - Put people at risk, causing the value of the Lehigh Valley's rich water resources to increase.
 - Make supply chains more vulnerable worldwide, causing a ripple effect that will not only change how the region's logistics industry functions, but change expectations of access to goods and services.
- Wholesale systems change will occur to rise to the challenges and adapt to new climate realities. New governance and management models will emerge and be:
 - Comprehensive
 - Cross-sector with public, quasi-governmental and private partnerships.
 - Cross-state, regional and mega-regional.
- Changes in the willingness of people to pay for services and manage assets, from roads and bridges to police and fire departments.
- Federal, state and local governments will regulate differently to protect the public. This will mean less regulation in some cases and more in others. Regulating floodplains and steep slopes will become a higher priority for Lehigh Valley governments, as water-related issues grow.
- Emergency management will become a greater priority for municipal, county and state governments, as weather events become more severe and unpredictable.
- Cross-community and regional partnerships for Emergency Management Services will grow.
- State governments will need to evolve building codes, infrastructure construction standards and environmental regulations to support a natural, systems-based approach to community management and resiliency.
- Existing structures will need to be rebuilt, redeveloped and retrofit to be more resilient to the impacts of climate change.

ENERGY DIVERSIFICATION

Electricity is a foundational element of society. Without it, we don't function. We will consume more as we become more technologically advanced, connected and interconnected. In the US, electricity generation and distribution is privately controlled, with few exceptions. However, in recent decades, significant focus has been paid to the vulnerabilities and age of the electric generation and distribution system. New efficiencies, and especially technologies, are helping to overcome challenges and will be significant economic drivers in the global, national and regional economy in the 21st century.



We can expect:

- New electric generation and distribution technologies that will be scalable, more efficient and affordable, disaggregating the energy sector.
- Power will become more personal, as everything from cars to houses and businesses will be able to generate their own power.
- State government will need to evolve regulations from building codes to industrial distribution and production to adapt to the demand for a combination of multi-regional, regional, local and hyper-local energy production and distribution.
- Municipal governments will need to develop new zoning, development categories and amend comprehensive plans and official maps to adapt to a new energy future.
- National, state, regional and mega-regional planning for vehicle electrification and other post-oil future fuels.
- The rise of new business models built on new energy generation and distribution technologies. Traditional electric utilities and battery companies will adapt and change with market forces.
- Significant increase in energy consumption as more and more consumer and industrial goods and services need more power.



BUILDING OUR BEST FUTURE

The Lehigh Valley has evolved into a region growing in population, diversity, commerce and, ultimately, national stature. Long known for its beautiful open space and abundant recreation options, some of the nation's largest companies have also made it the Northeast epicenter for the e-commerce boom. That boom bolsters an already-strong economy anchored by healthcare, education and retail sales.

But that success has brought the Lehigh Valley to a tipping point in which government, community and planning leaders will have to make tough decisions. Decisions about how and where to build the homes needed for the more than 4,000 new residents who arrive every year. Decisions about preserving natural resources, while managing millions of square feet of new industrial development annually. Decisions about overcoming declining resources to build a transportation system that welcomes not only drivers, but walkers, bicyclists and people with disabilities. Decisions about making all of the region's many benefits accessible to everyone in our diverse population. And ultimately, decisions about how to choose a future with automation, e-commerce, the sharing economy and climate change, before it chooses us.

If the Lehigh Valley is to capitalize on its many assets—culture, location and diversity—then we must collectively tackle difficult issues now.

Themes



Balance

Development patterns are changing, there is less available land and the region's population continues to grow—all increasing pressure on farms and open space. Striking a balance between growth and preservation will be key to meeting the needs of tomorrow, while retaining our identity.



Mobility

People and goods are moving in, out and around the Lehigh Valley in greater numbers than ever before. The next generation of mobility improvements will rely on increasing access, moderating cost, diversifying transportation options and incorporating new technology.



Resiliency

The job market is changing, the economy continues to diversify, temperatures are rising and weather is becoming wetter. Improving economic and environmental resiliency will help to meet the challenges of a less predictable future.



Equity

Housing costs are increasing, new jobs often are far from population centers and education is more important than ever. Increasing access to opportunity will improve equity so all residents can benefit from continued growth and prosperity.



Health

Obesity, diabetes and high blood pressure are on the rise due to low physical activity, long commutes and poor diets. Increasing the accessibility and opportunities for active lifestyles will improve physical, social and mental health.



Culture

In a connected world, social, economic, technological and political changes can have huge effects on identity. Local culture can be strengthened by investing in our values, sense of community, arts, language, traditions and food.



Funding & Finance

Government revenues are down and resources are increasingly limited. Advocating for funding and financial stability will help sustain our infrastructure, transportation network and governments.



Technology

More devices are connecting to faster internet, renewable energy is replacing fossil fuels, automation is entering every aspect of life and the sharing economy is here to stay. Keeping up with changes in technology will enable us to capitalize on new economic and social opportunities.



Governance

Resources are tight, generations are aging into new roles and technology is radically changing how things get done. Increasing the capacity and adaptability of governance will be key to meeting the future challenges faced by our communities.

FUTURELV

FUTURE LEHIGH VALLEY

THE REGIONAL PLAN

GOAL

1

2

3

4

5

Efficient and Coordinated Development Pattern

A booming economy, beautiful topography and a wide variety of arts and cultural activities define a region that is growing in people, jobs and opportunities. Managing that growth is key as our 62 municipalities strive to build on a regional sense of place that attracts thousands of new residents every year. Directing growth toward a series of Centers and Corridors will help create the dynamic communities of the future, while preserving our natural beauty, history and agricultural land. Working together as a region, we can prepare for a future in which lifestyles, technology and climate are changing dramatically.

1.1

Preserve natural areas and farmland by managing growth and development to enhance and strengthen cities, boroughs, suburbs and rural communities.

- Guide the location and intensity of development.
- Encourage reuse and redevelopment within urban areas.
- Increase the social, economic and environmental well-being of the region.
- Match development intensity with sustainable infrastructure capacity.
- Improve the utility and mobility infrastructure of the region.
- Provide transportation options that are cost-effective and sustainable.
- Preserve agricultural and natural lands.
- Integrate efficiency measures and emerging technologies.
- Support evolution and adaptability of government.
- Organize and advocate for changes to the Pennsylvania Municipalities Planning Code that support regional and municipal planning.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh and Northampton Transportation Authority

Related Policies



1.2

Direct growth by establishing a network of mixed-use centers and mixed-transportation corridors.

- Increase density of residential and mixed-use development in centers.
- Link centers with high-capacity, mixed-transportation corridors.
- Support pedestrian-scale development.
- Encourage quality, sustainable design and construction.
- Locate educational, social and civic institutions in centers or along corridors.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh and Northampton Transportation Authority, Developers

Related Policies



Suburban Corridor Concept

Walbert Avenue, South Whitehall Township

Centers and Corridors are good places for the region to grow because they support a variety of uses, housing types, lifestyles and transportation options. Low-density commercial areas can accommodate growing demand for more pedestrian-friendly, mixed-use development, and wide public rights-of-way can be reconfigured to carry drivers, walkers, rollers and transit users in the same amount of space. Investing in quality public space, green infrastructure and community art will make them unique, attractive and desirable places for the next generation of residents and businesses, while also creating a strong social and financial foundation for the future.



Bike Path

Green Infrastructure



Mixed Building Uses
With Parking Behind

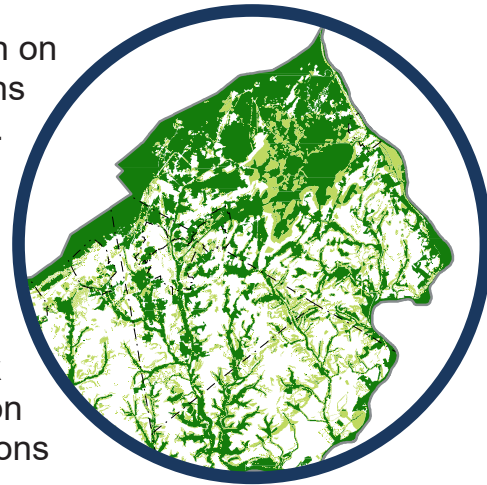
Public Space
Branded to Reflect
Community Identity

Sidewalks That Connect
Neighborhoods & Businesses

FUTURELV PLAN MAPS

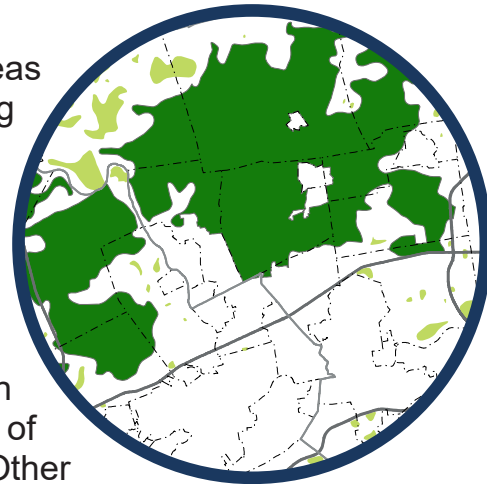
1. Natural Resources Plan

The High Conservation Priority Natural Resource areas shown on the plan take precedence over other land use recommendations presented in FutureLV, including the General Land Use Plan. This represents a conservation first perspective. The High and Medium Conservation Priority areas are used by the LVPC in review of subdivision and land development proposals, plans and ordinances created by municipalities, grant applications and work with municipalities on municipal or multi-municipal comprehensive plans, and any other aspects of LVPC work involving natural resources. The High and Medium Conservation Priority areas should also be used by conservation organizations and government agencies to prioritize conservation efforts.



2. Farmland Preservation Plan

The High and Medium Priority Farmland Preservation areas on the plan represent the most significant clusters of existing farmland based on the overall size of the cluster combined with agricultural soils quality. The LVPC uses this plan as an important component of proposal review. High Priority areas are the largest clusters and represent the best opportunity for infill with farmland-supportive businesses and services. This plan should be used by government agencies and conservation organizations to prioritize areas for preservation of farming operations, typically through the acquisition of easements to permanently preserve the land as farming. Other farmlands not shown on the plan, either due to small size, lower soils quality or lack of proximity to other farmlands, should also be considered for preservation as the opportunity arises. High Priority areas are shown on the General Land Use Plan for Farmland Preservation or certain Preservation Buffer areas. In the Preservation Buffer area, Farmland Preservation is preferred.



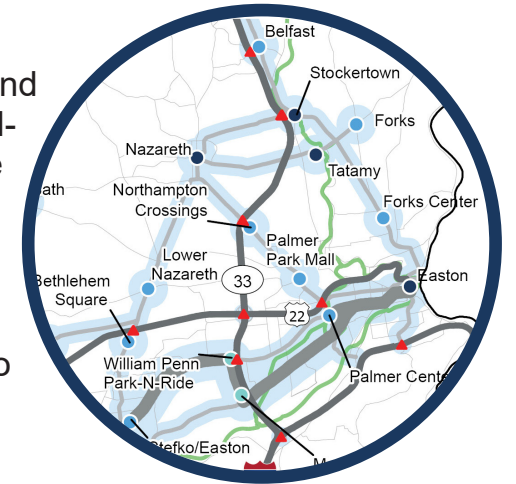
3. Parks, Outdoor Recreation, Open Space and Scenic Plan

This plan shows major existing and planned park, outdoor recreation, open space and scenic facilities and should be used to guide efforts by public/private organizations and government agencies to expand, improve and connect regional assets. The LVPC uses this plan in concert with the Livable Landscapes plan for each county and other regional plans to establish priorities for funding and work efforts for these facilities. Recommended improvements shown on this plan are compatible with any land use depicted on the General Land Use Plan.



4. Transportation Plan

This plan shows major transportation infrastructure and opportunities for creating denser, mixed-use, mixed-transportation development and should be used to guide efforts to improve the transportation network by private and non-profit organizations and government agencies. The LVPC uses this plan as an important component of development review and highly encourages projects that expand, improve or connect the mixed-transportation network. The LVTS also utilizes this plan for transportation planning and investment.



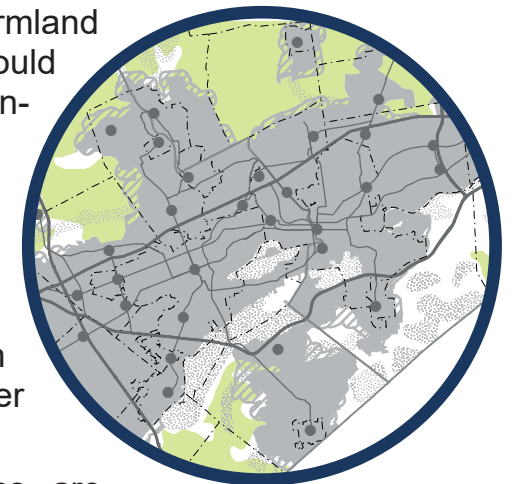
5. General Land Use Plan

This plan shows areas recommended for Development, Farmland Preservation, Preservation Buffer and Exurban uses and should guide development and preservation efforts by private and non-profit organizations, government agencies and individuals.

High Priority Areas from the Natural Resources Plan are recommended to be conserved regardless of the General Land Use Plan recommendation. High Priority areas from the Farmland Preservation Plan are included on the General Land Use Plan as recommended for Farmland Preservation or certain Preservation Buffer areas. In the Preservation Buffer area, Farmland Preservation is preferred.

Centers and Corridors located within Development areas are recommended for denser, mixed-use, mixed-transportation development. Centers and Corridors located in Preservation Buffer areas or Exurban areas are only recommended for denser, mixed-use, mixed-transportation development if they meet the development criteria. Centers and Corridors located within Farmland Preservation areas are not generally recommended for denser development.

Proposed improvements shown on the Parks, Outdoor Recreation, Open Space and Scenic Plan are compatible with any land use depicted on the General Land Use Plan.



GENERAL LAND USE PLAN

DEFINITIONS

Development

These areas have most or all of the factors needed to support growth, such as sewer and transportation infrastructure capacity and contiguity to existing development, and are capable of accommodating a substantial amount of additional development. These areas are appropriate for a variety of uses, including major commercial, residential and industrial development.

Exurban

These areas have few or none of the factors necessary for development and should remain in rural uses, including agriculture and related businesses, and parks and open space. Housing in or adjacent to rural crossroads villages or at low densities is also compatible.

Preservation Buffer

These are areas where factors may be present and capable of accommodating additional development. Conversely, these are areas where farming may be the existing land use, and it may be appropriate to preserve these areas for agriculture or to maintain rural uses. The most appropriate future land use for these areas should be based on a planning analysis of the development criteria. Natural resources conservation and farmland preservation are strongly preferred in these areas.

Farmland Preservation

These areas are predominantly agriculture and are recommended to remain agriculture. The types of uses recommended include agriculture and related housing and businesses, parks and open space, and housing not related to agriculture on a very limited scale.

Character-Defining Area

These areas represent the natural and scenic character of the Lehigh Valley as a simplified version of the Natural Resources Plan, with highest elevation areas representing scenic resources. The types of uses recommended are parks and open space, woodlands, agriculture, and low-intensity, limited scale development that preserves natural and scenic resources.

Centers

Centers are opportunities for mixed-use areas that are a focal point of social, cultural and economic activity. The goal for these areas is to offer a variety of housing prices and types close to shops, restaurants and jobs. They should feature streets that encourage walking and biking—expanding safe transportation options within the community. Further, they should be well-connected to nature and surrounding neighborhoods, promoting an active lifestyle that is good for the social, physical and psychological well-being of all people.

Corridors

Corridors are opportunities for linear mixed-use districts that connect centers with high-quality roads, trails and mass transit lines. Each corridor contains a variety of uses and development types that help to support a variety of transportation modes. Anchored by a Center on each end, Corridors unify residential neighborhoods to social, cultural and economic opportunities and make the Lehigh Valley a more livable, equitable and connected place.

Development Criteria

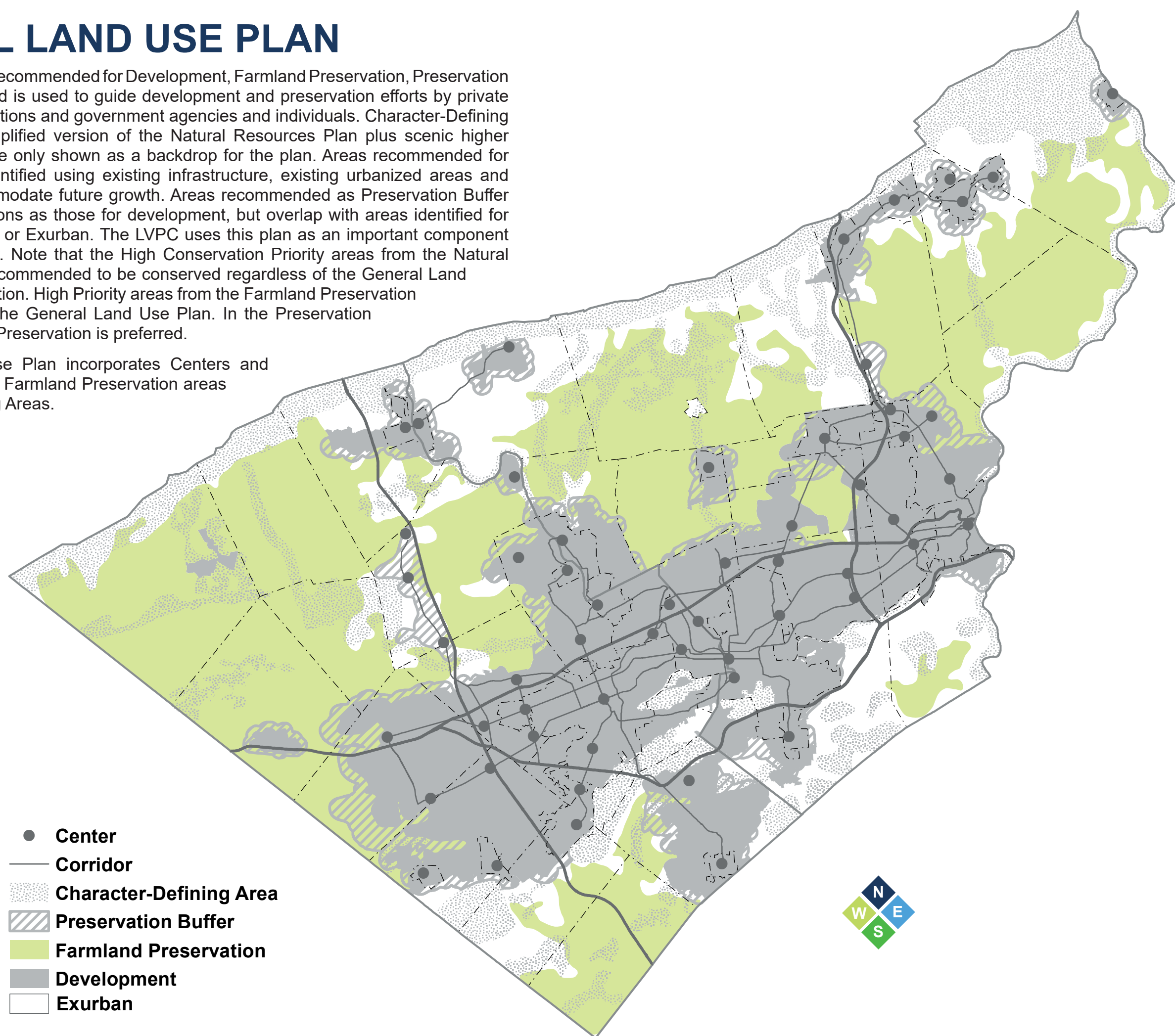
Areas shown on the General Land Use Plan as Preservation Buffer areas or Exurban areas may be considered appropriate for development if the following criteria are met:

- The proposal is consistent with the conservation of high priority natural resources
- The site is contiguous to existing development
- Adequate sewage conveyance capacity is available from the site to the sewage treatment facility
- Adequate sewage allocation for the site is available in the sewage treatment facility
- Adequate sewage treatment capacity is available for the site
- The site is identified in the municipal comprehensive plan, zoning ordinance and Act 537 sewage facilities plan for development/public sewage disposal
- The site will be served by public water with adequate supply and delivery capacity
- The development will not create adverse impacts to the transportation system with respect to roads, bridges, transit facilities and bicycle/pedestrian facilities, including traffic safety or congestion, based on accepted transportation planning and engineering professional standards

GENERAL LAND USE PLAN

This plan shows areas recommended for Development, Farmland Preservation, Preservation Buffer and Exurban and is used to guide development and preservation efforts by private and non-profit organizations and government agencies and individuals. Character-Defining Areas represent a simplified version of the Natural Resources Plan plus scenic higher elevation areas and are only shown as a backdrop for the plan. Areas recommended for Development were identified using existing infrastructure, existing urbanized areas and the potential to accommodate future growth. Areas recommended as Preservation Buffer meet the same conditions as those for development, but overlap with areas identified for Farmland Preservation or Exurban. The LVPC uses this plan as an important component of development review. Note that the High Conservation Priority areas from the Natural Resources Plan are recommended to be conserved regardless of the General Land Use Plan recommendation. High Priority areas from the Farmland Preservation Plan are included on the General Land Use Plan. In the Preservation Buffer area, Farmland Preservation is preferred.

The General Land Use Plan incorporates Centers and Corridors, High Priority Farmland Preservation areas and Character-Defining Areas.



1.3

Maintain regional character by preserving priority environmental, historic, cultural, scenic and agricultural assets.

- Identify assets that are critical to the character of the region.
- Protect assets from potential threats.
- Enhance the long-term viability of assets.
- Connect assets to diverse transportation options.
- Mitigate the effects of climate change.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, US Department of Transportation, Pennsylvania Department of Transportation, Pennsylvania Department of Conservation and Natural Resources, Preservation Organizations

Related Policies



1.4

Encourage an efficient development process that is responsive to regional needs.

- Coordinate land use decisions across municipal boundaries.
- Facilitate discussion among residents, stakeholders, appointed officials and elected representatives.
- Provide guidance on best practices.
- Minimize impacts of Land Uses of Regional Significance.
- Serve as the regional expert on planning, zoning and development.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities

Related Policies



FUTURELV

FUTURE LEHIGH VALLEY

THE REGIONAL PLAN



Connected Mixed- Transportation Region

A seamless network where roads, trails, sidewalks and technology connect everyone to every place—that’s the goal. For the Lehigh Valley to reach its potential, we must design a transportation system that is welcoming to drivers, walkers and rollers—regardless of age, income or ability—and lay the groundwork for the next generation of technology and communications. Our network of the future will provide transportation and communications options that connect work, home and places where people want to go, both locally and regionally.

Compact walkable, bikeable and safe neighborhoods improve job accessibility and enable people to spend less time in a car. Investing in existing roads, bridges, transit lines and utilities, while using next generation technology to manage freight traffic and enable new job opportunities, will create a dynamic system that improves the flow of goods, services and people.

2.1

Develop a mixed-transportation network to support a more compact development pattern, optimize roadway capacity and encourage alternative travel options.

- Establish mixed-transportation corridors.
- Support high-frequency bus service through denser, mixed-use development in Centers and along Corridors as a potential precursor to future light rail service.
- Link transportation funding to desired housing outcomes.
- Integrate automated transportation technologies.
- Enhance THE LINK – the Lehigh Valley’s multi-use trail network.
- Connect regional trails to Centers and Corridors.
- Promote funding opportunities for mixed-transportation and recreation facilities.
- Advocate for sustainable, long-term transportation funding solutions at the state and federal levels.
- Support and assist local, state and federal governments to develop innovative solutions in transportation finance.

Themes



Implementation Partners

Lehigh Valley Planning Commission, US Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh and Northampton Counties, 62 Municipalities, Lehigh Valley Greenways, Federal Transit Administration, Pennsylvania Department of Transportation, Pennsylvania Department of Community and Economic Development

Related Policies



CENTERS AND CORRIDORS

The future of the Lehigh Valley is built around Centers and Corridors. Centers are existing active economic districts near residential neighborhoods that are interconnected by busy roads, trails and transit corridors. This network already makes up the economic and transportation backbone of our region and offers the best and most sustainable opportunity for meeting the future needs of our community.

By concentrating future development in these mixed-use and transportation areas, we will increase the accessibility and diversity of housing, strengthen retail, support more active lifestyles and reduce sprawl. This shift in development will help meet growing demand for housing, while relieving development pressure on our remaining farms and open space. The resulting density will increase the activity and vibrancy in our communities, while strengthening our mixed-transportation system in a way that makes it more usable for pedestrians, bicyclists, the mobility impaired and drivers.

Not all Centers and Corridors are the same. Some are older or larger, while others have more people and traffic. To help these areas reach their potential, Centers and Corridors have been divided up into categories—centers by age and development pattern, and corridors by mix of transportation types and how many people they move. These different categories help ensure the right policies are focused in the right areas, helping the Lehigh Valley grow into a more sustainable future with greater options for transportation.

CENTERS AND CORRIDORS ARE ORGANIZED BY

- Age and development pattern
- Mix of transportation types and how many people they move

TRANSPORTATION PLAN

This plan shows major transportation infrastructure and opportunities for creating denser, mixed-use and transit-supported development and is used to guide efforts to improve the transportation network by private, non-profit organizations, government agencies and individuals. The plan identifies a series of Centers and Corridors that may be appropriate for higher-density development and improved mixed-transportation options, as well as critical regional highways and major intersections between highways and mixed-transportation corridors. The LVPC uses this plan as an important component of development review, and highly encourages projects that expand, improve or connect the mixed-transportation network. The LVTS also utilizes this plan to guide transportation policy and investments.

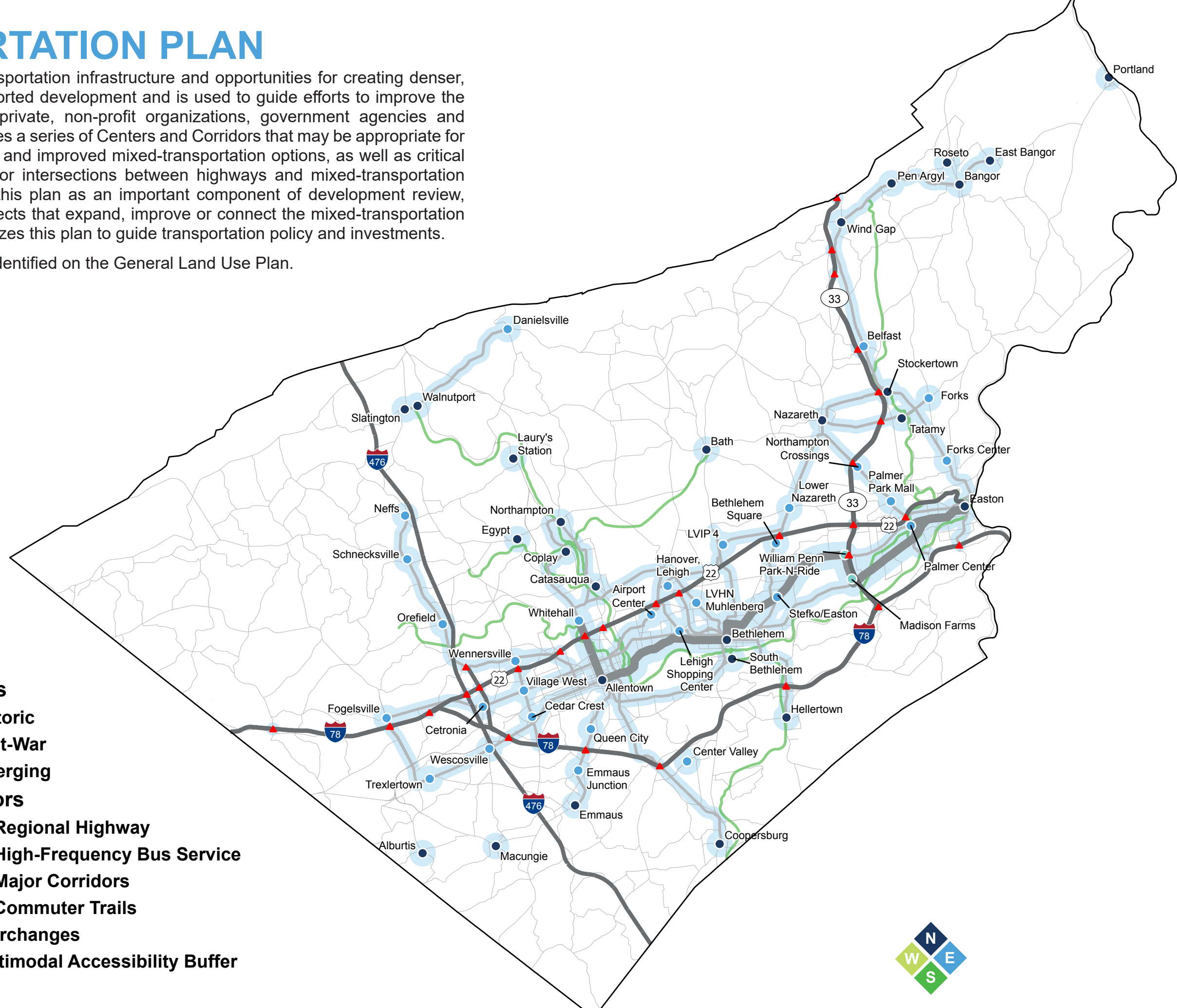
Centers and Corridors are identified on the General Land Use Plan.

Centers

- Historic
- Post-War
- Emerging

Corridors

- 1 - Regional Highway
- 2 - High-Frequency Bus Service
- 3 - Major Corridors
- 4 - Commuter Trails
- ▲ Interchanges
- Multimodal Accessibility Buffer



CENTERS AND DEFINITIONS

Centers

Centers are opportunities for mixed-use areas that are a focal point of social, cultural and economic activity. The goal for these areas is to offer a variety of housing prices and types close to shops, restaurants and jobs. They should feature streets that encourage walking and biking—expanding safe transportation options within the community. Further, they should be well-connected to nature and surrounding neighborhoods, promoting an active lifestyle that is good for the social, physical and psychological well-being of residents and visitors.

Historic Centers are communities that were largely designed and developed for people without a car. They are dense, pedestrian-friendly communities that offer a variety of social, cultural, transportation, economic and housing opportunities. Many of these Centers have retained their mix of uses, street networks and unique architecture that provide a strong foundation for bicycle, pedestrian, mass transit and automotive-friendly communities.

Historic Centers will need to build upon and strengthen existing assets, adapt buildings to meet new needs, allow additional new construction and work to incorporate improvements that expand transportation choice to meet the future needs of the community.

Post-War Centers were largely developed after the automobile became central to American culture. Designed during and after the inception of the national highway network, they are auto-oriented, generally low-density districts that are difficult to access with anything but a car. Though often near residential neighborhoods and businesses, bicycle, pedestrian and mass transit connections are often limited.

Post-War Centers will require a diversification of uses that include residential. These Centers should focus on development density and investments to expand transportation choice to meet the future needs of the community.

Emerging Centers have developed largely since the 2008 recession and have a mix of both Historic and Post-War features. They are mixed-use and may have sidewalks, bike lanes and mass transit facilities, but are still very auto-oriented. Connections between commercial areas and surrounding neighborhoods might not be strong or safe.

Emerging Centers are still developing. By emphasizing diversity of uses, increased development density and transportation choice on their development and redevelopment sites, they can meet the future needs of the community.

Corridors

Corridors are opportunities for linear mixed-use districts that connect centers with high-quality roads, trails and mass transit lines. Each corridor contains a variety of uses and development types that help to support all transportation modes. Anchored by a Center on each end, Corridors connect residential neighborhoods to social, cultural and economic opportunities and make the Lehigh Valley a more livable, equitable and connected place.

CORRIDORS

Corridor Definitions

| | Regional Highway Corridors | High-Frequency Bus Corridors | Major Corridors | Commuter Trail Corridors |
|--|--|---|--|--|
| Transportation Service Type | Auto-oriented, limited-access corridors | Mixed-transportation corridors | Mixed-transportation corridors | Bicycle and pedestrian/roller corridors |
| Purpose | Moving both people and goods long distance at relatively high speed | Move people between major regional centers | Move people between centers | Move people between centers |
| Volume of Transportation | Carries the highest amount of traffic | Carries a high amount of car, bus, bicycle and pedestrian traffic | Carries a moderate amount of car, bus, bicycle and pedestrian traffic | Carries a high amount of bicycle and pedestrian/roller traffic |
| Mobility and Access | High mobility and limited access | High mobility and access | Moderate mobility and access | High mobility and access |
| Future Potential for Mixed-Transportation | Not appropriate for bicycle or pedestrian transportation | Good candidate for expanding mixed transportation options, including High-Frequency Bus Service | Good candidate for expanding mixed-transportation options | Good candidate for expanded bicycle and pedestrian/roller transportation |
| Future Potential for Mixed-Land Use | Best for highway-dependent businesses | Best location for high-density, mixed-use development within one-half mile of the corridor | Good location for high and medium density, mixed-use development within one-quarter mile of the corridor | Best for connecting centers, scenic and recreational areas |
| Funding and Investment | High level of funding for maintenance and repair | High level of funding for design, construction, maintenance and repair | Moderate level of funding for design, construction, maintenance and repair | High level of funding for design and construction |
| Examples | <ul style="list-style-type: none"> • Interstate 78 • Interstate 476 • Route 22 • Route 33 • Portions of Route 309 | <ul style="list-style-type: none"> • Route 145 • Hamilton Street (East of Route 145) • Hanover Avenue • William Penn Highway • Emrick Boulevard • Freemansburg Avenue • Butler Street • Walnut Street | <ul style="list-style-type: none"> • Route 512 (Slate Belt) • Hamilton Street (West of Route 145) • Tilghman Street • Lehigh Street • Route 412 • Route 309 (North of Route 22 and south of Interstate 78) | <ul style="list-style-type: none"> • Delaware and Lehigh National Heritage Corridor Trail • Jordan Creek Greenway Trail • Ironton Rail Trail • Nor-Bath Trail • Saucon Rail Trail • South Bethlehem Greenway Trail |

2.2

Provide a safe, well-maintained transportation network to move people and goods efficiently, while capitalizing on existing infrastructure.

- Improve efficiency of existing infrastructure.
- Right-size transportation infrastructure projects.
- Encourage an interconnected street network.
- Facilitate transportation education programs.
- Enhance incident management strategies.
- Reduce transportation-related emissions.
- Protect existing and future Lehigh Valley International Airport runway approaches.
- Support interregional transportation services.
- Educate and collaborate across public, private and governmental entities on the effects of land use decision-making on mobility, resiliency and quality of life.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh and Northampton Airport Authority, Lehigh and Northampton Counties, 62 Municipalities

Related Policies



2.3

Encourage enhanced transit connections to improve mobility and job access.

- Enhance public transit service and pedestrian and bicycle facilities along corridors.
- Link growing job and population centers.
- Strengthen mixed-transportation access to regional transit hubs.
- Improve connections between mass transit and pedestrian and bicycle infrastructure.
- Support mass transit access to neighboring regions.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh and Northampton Counties, 62 Municipalities, Workforce Board Lehigh Valley, Community Advocates

Related Policies



MacArthur Road Concept

MacArthur Road, Whitehall Township

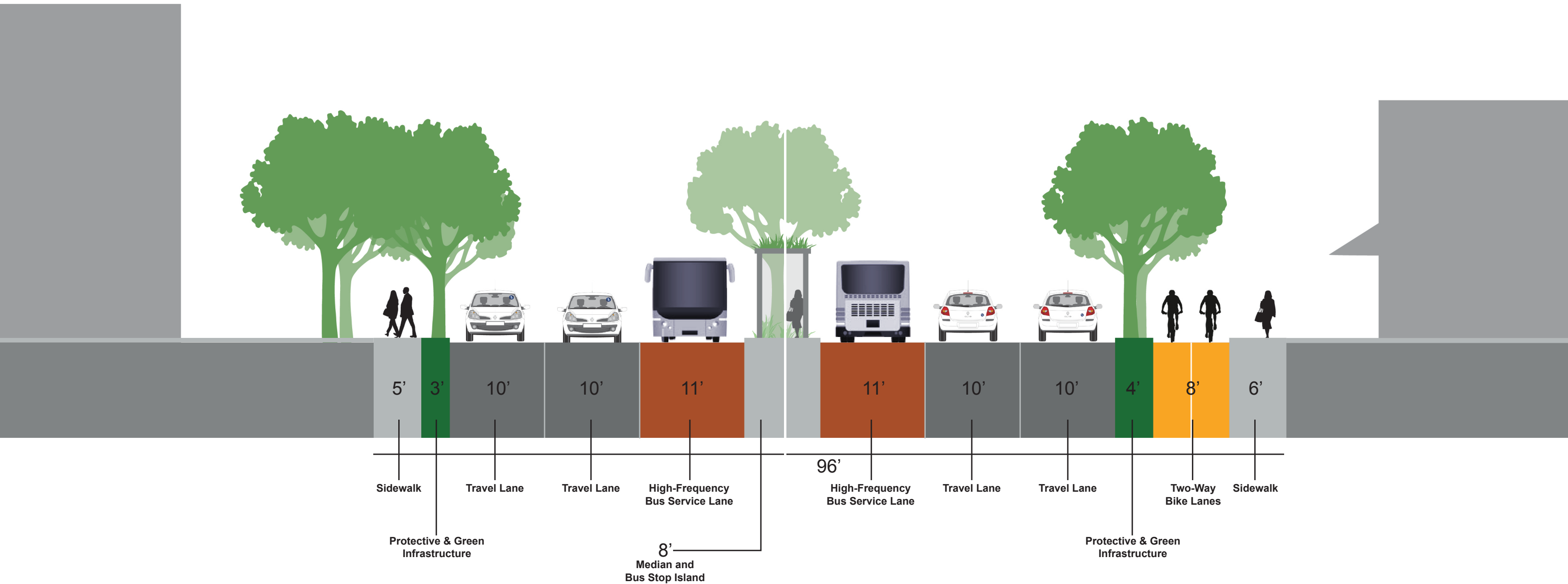
High-Frequency Bus Service, bike lanes and good sidewalks expand transportation options and move people around the region efficiently. This new infrastructure can be supported by planning for the decline of in-store shopping and repurposing developed land for new housing and mixed-use development, a transformation that is key to maintaining and growing the economy. Areas like MacArthur Road are good places to start because the concentration of people, jobs and large lots make them good candidates for new and expanded uses.



MacArthur Road Cross Section

MacArthur Road, Whitehall Township

MacArthur Road is one of the widest public roads in the Lehigh Valley. This width creates problems for bicycle, pedestrian and transportation circulation because it only focuses on moving cars and trucks. By redesigning the road to focus on people and a mix of transportation options, we can create a road that moves more people, while being safe and attractive for walkers, bikers, rollers and public transit users. Reworking the public realm also adds better, safer access to adjacent businesses and neighborhoods, reinforcing private investment and value.



2.4

Strengthen freight mobility to minimize quality of life impacts to residents.

- Locate freight facilities in areas with available and planned transportation capacity.
- Encourage designation of truck routes.
- Expand truck parking options and amenities.
- Support increased use of rail and air freight.
- Improve rail and highway grade crossings.
- Municipalities are discouraged from approving land use plans that have freight impacts, without the existing infrastructure to support it.
- Municipalities must consider the global effects of new or expanded freight businesses.
- Municipalities must assess the impact of freight-based businesses on the entire regional transportation system.
- Municipalities with transportation-based facilities must consider business turnover and its impact on the infrastructure system, economy, tax base, environment and community.

Themes



Implementation Partners

Lehigh Valley Planning Commission, 62 Municipalities, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh-Northampton Airport Authority, Freight Providers

Related Policies

- 2.1
- 2.2
- 3.4

DENSITY

Adds value to neighborhoods and business districts

With its prime location, extensive road network and high quality of life, the Lehigh Valley has for decades been an attractive landing spot for new residents and developers. The result is hundreds, and in some cases, thousands of new homes and millions of square feet of commercial and industrial development every year. The downside of all that growth is that it often happens on the farm and open space lands that make the region such an attractive place to live, work and play.

Greenfield development can also threaten agricultural industries, food and beverage manufacturing, transportation, water, sewer emerging management services and school districts if not managed properly.

Density and infill development are powerful strategies to preserve those character-defining lands and add value to the business districts and neighborhoods where they're used, while keeping the tax base intact.

That strategy is at the core of *FutureLV: The Regional Plan*. The concept is simple. By adding density to areas that are already developed, it prevents sprawl, inefficient development patterns and, in general, the churning up of farmland and open space to accommodate the growth that is inevitable in a region as attractive as the Lehigh Valley.

All that farmland and open space—there's roughly 40,000 acres of protected farmland Valleywide—adds value to the overall housing and key manufacturing sectors in the region.

Using existing infrastructure keeps taxpayers from funding new road, sewer and water projects. And adding mixed-use development to a business district increases the value of the existing businesses by



adding foot traffic and vibrancy that makes the district more attractive to shoppers, workers and residents. It also addresses a trend in which people increasingly want more dense, urban and mid-scale housing in walkable neighborhoods—a fact that's spurred nearly 700 new apartments in downtown Allentown and more than 7,600 new renters in urban and suburban neighborhoods regionwide since 2012.

Ultimately, density helps create a better transportation network. More people living or working in a particular area makes it a better candidate for more mass transit stops, further adding value to the district and making the transit system more efficient. When Amazon hunted for a second headquarters, a fully developed mass transit system was among its requirements.

If used properly, and paired with good design, density and infill development can be key tools in adding value to existing assets and protecting the quality of life Lehigh Valley residents and businesses have come to rely on.

FAST GROWING FREIGHT

The Lehigh Valley's location at the heart of nearly 100 million potential consumers has helped make it one of the world's fastest-growing corridors for the movement of freight. As the nation's appetite for online shopping—and the need to get those goods within two days—grows, the amount of goods moving through the region increases with it. By 2040, the flow of freight is projected to increase by 96% to more than 80 million tons a year.

Some of those consumer goods are coming into the region by planes and trains, but nearly 90% are moving by truck. Many of these

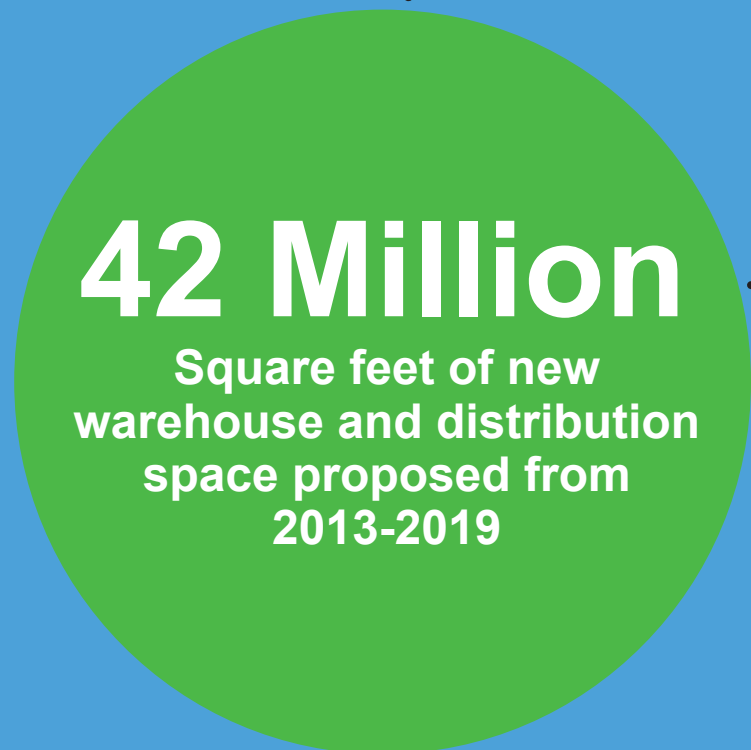
goods are moving through massive warehouses—some exceeding 1 million square feet—before they're delivered across the Northeast. The change in how goods are purchased and delivered is having a dramatic impact on how we develop land and how we plan our transportation system of the future.

The implications of such drastic changes to the transportation network require significant investments and further coordination with partners such as PennDOT, the Lehigh Valley Transportation Study, the Federal Highway Administration and communities across the region.

Increases in population, consumer demand and expectations of immediate delivery of goods have contributed to heavier congestion, which has a profound effect on the quality of our transportation network.

KEY CONSIDERATIONS

- Complete inventory of assets related to movement of all cargo types.
- Monitor truck traffic pattern changes.
- Inventory and plan for weight-restricted bridges near warehousing.
- Legislative policy reform concerning freight movement regulation.
- Alternative freight routes.
- Deployment of autonomous freight vehicles.



2.5

Support the expansion of technology, communications and utilities to reduce travel demands, optimize traffic flow and prepare for the next generation of jobs.

- Prepare for a driverless future.
- Develop smart streets that use adaptive traffic signals.
- Support uniform traffic control standards.
- Encourage trip planning technology applications for all modes of travel.
- Support telecommuting options to reduce travel demands.
- Advance autonomous and electric vehicle technologies.
- Expand broadband, 5G and future wireless capacity.
- Expand electric utility capacity.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh-Northampton Airport Authority, Lehigh and Northampton Counties, 62 Municipalities, Utilities, Workforce Board Lehigh Valley

Related Policies



2.6

Ensure the highest and best use of transportation funds to maximize available financial resources.

- Improve transportation performance measures.
- Adjust transportation projects to meet changing needs of the region.
- Expand capacity only in areas recommended for development.
- Maintain existing transportation infrastructure.
- Support collaboration among project partners.
- Employ new techniques to minimize cost and speed construction.
- Utilize cost and consumer-benefit analyses.
- Advocate for innovative funding for all transportation types.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Pennsylvania Department of Transportation, US Department of Transportation, Lehigh and Northampton Transportation Authority, Lehigh and Northampton Counties, 62 Municipalities, Professional Associations

Related Policies



FUTURELV

FUTURE LEHIGH VALLEY

THE REGIONAL PLAN



Protected and Vibrant Environment

Lehigh Valley residents have come to consider our urban parks, rolling farmlands and scenic vistas as core to the regional identity. Whether it's enabling people to have active lifestyles, providing food or helping to make the region more resilient against climate change, those assets provide health, economic and environmental benefits that are key to our success.

Protecting our land, water and air preserves our region's character and makes it an attractive place to live, work and visit. Enhancing those assets will improve our quality of life and puts the region on a path to a sustainable future.

3.1

Conserve and manage natural lands and water resources for environmental and recreational benefits.

- Protect high-priority natural lands and water resources.
- Preserve natural, recreational, cultural, historical and scenic assets.
- Expand habitat connectivity.
- Maximize preservation of woodlands and critical habitats.
- Preserve natural resources in the land development process.
- Enhance natural resources that make our communities more resilient.
- Promote sustainable stewardship of natural lands, water resources and open space.
- Educate elected officials and the public on the benefits of conservation and preservation.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Conservation and Natural Resources, Preservation Organizations, Environmental Organizations, Community Advocates, Lehigh Valley Greenways

Related Policies



3.2

Minimize environmental impacts of development to protect the health, safety and welfare of the public.

- Protect the quality and quantity of surface water and groundwater.
- Ensure that mineral extraction and commercial agriculture, which impact water supply sources, are managed according to law.
- Manage the rate, volume and quality of storm runoff.
- Discourage development in hazard-prone areas.
- Promote development in areas with public sewer and water capacity.
- Strengthen public sewer and water in Centers and along Corridors, as needed.
- Discourage use of packaged sewage treatment plants.
- Provide environmentally responsible and economical solid, electronic and hazardous waste disposal and recycling.
- Educate elected officials and the public on the importance of sustainable sewer, water and green infrastructure.
- Improve regional air quality.
- Prevent adverse impacts to high-priority natural, historic and cultural resources associated with megaregional and regional utilities.
- Minimize and mitigate the impacts of utility expansion associated with technological advancements, population and business growth.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Environmental Protection, Preservation Organizations, Environmental Organizations, Utilities

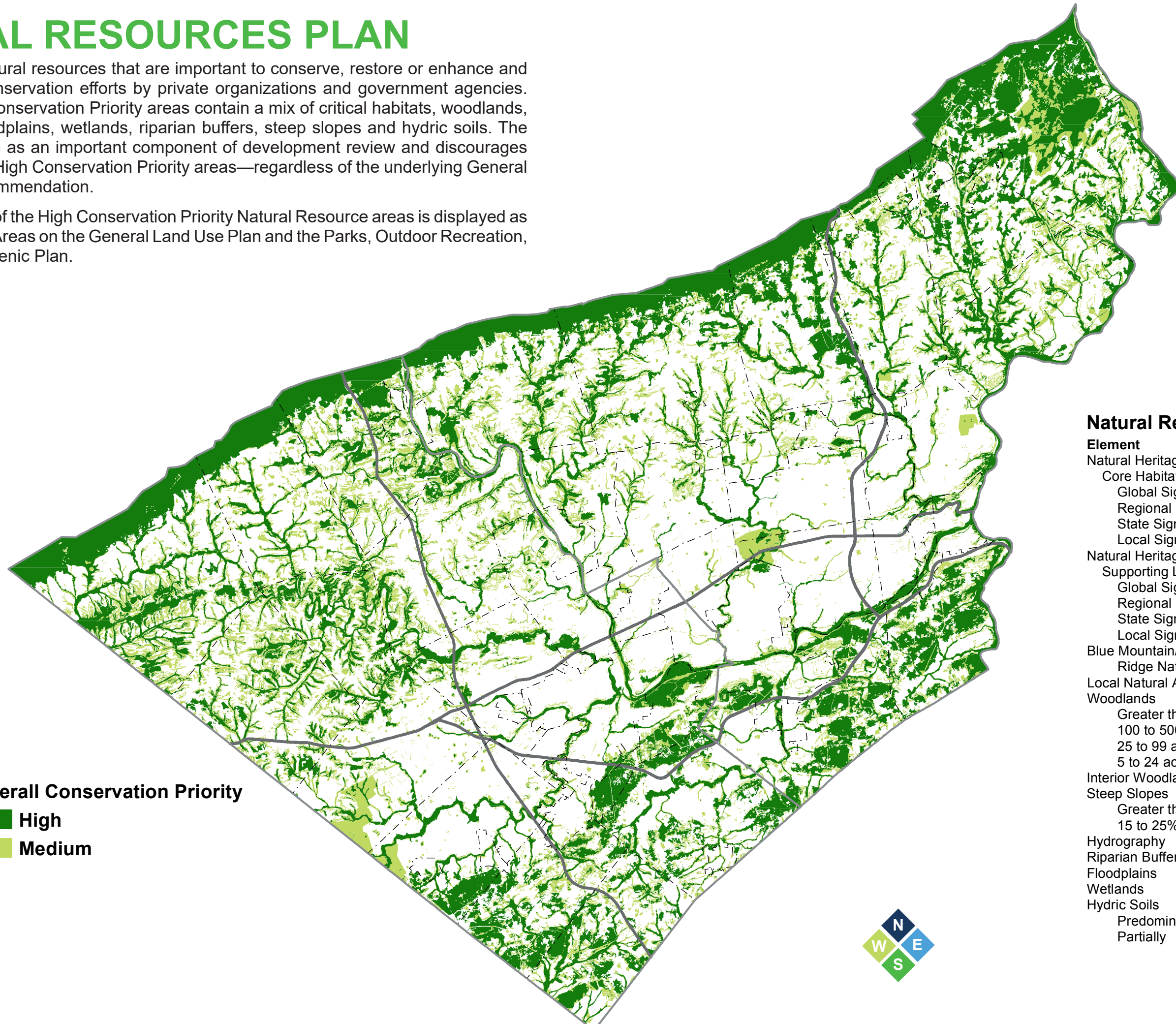
Related Policies



NATURAL RESOURCES PLAN

This plan shows natural resources that are important to conserve, restore or enhance and is used to guide conservation efforts by private organizations and government agencies. High and Medium Conservation Priority areas contain a mix of critical habitats, woodlands, surface waters, floodplains, wetlands, riparian buffers, steep slopes and hydric soils. The LVPC uses this plan as an important component of development review and discourages development in the High Conservation Priority areas—regardless of the underlying General Land Use Plan recommendation.

A simplified version of the High Conservation Priority Natural Resource areas is displayed as Character-Defining Areas on the General Land Use Plan and the Parks, Outdoor Recreation, Open Space and Scenic Plan.



Overall Conservation Priority

- High
- Medium

Natural Resources Plan Elements

| Element | Priority |
|--|----------|
| Natural Heritage Inventory - Core Habitat | |
| Global Significance | High |
| Regional Significance | High |
| State Significance | Medium |
| Local Significance | Medium |
| Natural Heritage Inventory - Supporting Landscapes | |
| Global Significance | Medium |
| Regional Significance | Medium |
| State Significance | Low |
| Local Significance | Low |
| Blue Mountain/Kittatinny Ridge Natural Area | High |
| Local Natural Areas | Medium |
| Woodlands | |
| Greater than 500 acres | Medium |
| 100 to 500 acres | Medium |
| 25 to 99 acres | Medium |
| 5 to 24 acres | Medium |
| Interior Woodlands | Medium |
| Steep Slopes | |
| Greater than 25% | Medium |
| 15 to 25% | Medium |
| Hydrography | High |
| Riparian Buffers | Medium |
| Floodplains | High |
| Wetlands | High |
| Hydric Soils | |
| Predominantly | Medium |
| Partially | Low |



Crossroads Village Concept

Belfast, Plainfield Township

Expanding crossroads villages is a good way to preserve rural character, farmland and open space, while accommodating growth and preventing sprawl. Many of these villages already have medium and large lots that can support new businesses and homes. Adding farm and outdoor recreation businesses to these communities will support the economy and identity of the surrounding area, while mixed-use development expands housing options and maintains historic development patterns.



3.3

Preserve farmland to maintain rural character and provide open space.

- Retain and expand family farms.
- Support effective farmland preservation techniques.
- Preserve farmland of all sizes, when possible.
- Encourage natural areas protection on farmland properties.
- Promote the use of inactive agricultural lands for wildlife habitat.
- Support adoption of ecologically friendly farming practices.
- Cluster development near crossroads villages in exurban and agricultural areas.
- Support funding programs and initiatives that protect farmland and farming.
- Encourage residents and local food stores and restaurants to buy local farm-produced products.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Environmental Protection, Preservation Organizations, Environmental Organizations

Related Policies



3.4

Reduce climate change impacts through mitigation and adaptation.

- Reduce greenhouse gas emissions.
- Encourage reuse, sustainable building, site design and community design practices.
- Advocate for use of native, climate-adaptive and carbon-sequestering landscaping.
- Promote energy conservation and efficiency.
- Support renewable energy and diversification of sources.
- Incorporate environmentally sensitive transportation technologies.
- Support business practices that mitigate the effects of climate change.
- Educate elected officials and the public on climate change impacts, adaptation and mitigation.
- Encourage and support government officials in the development and implementation of climate action plans.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Transportation, Federal Highway Administration, Pennsylvania Department of Environmental Protection, Environmental Organizations, Utilities

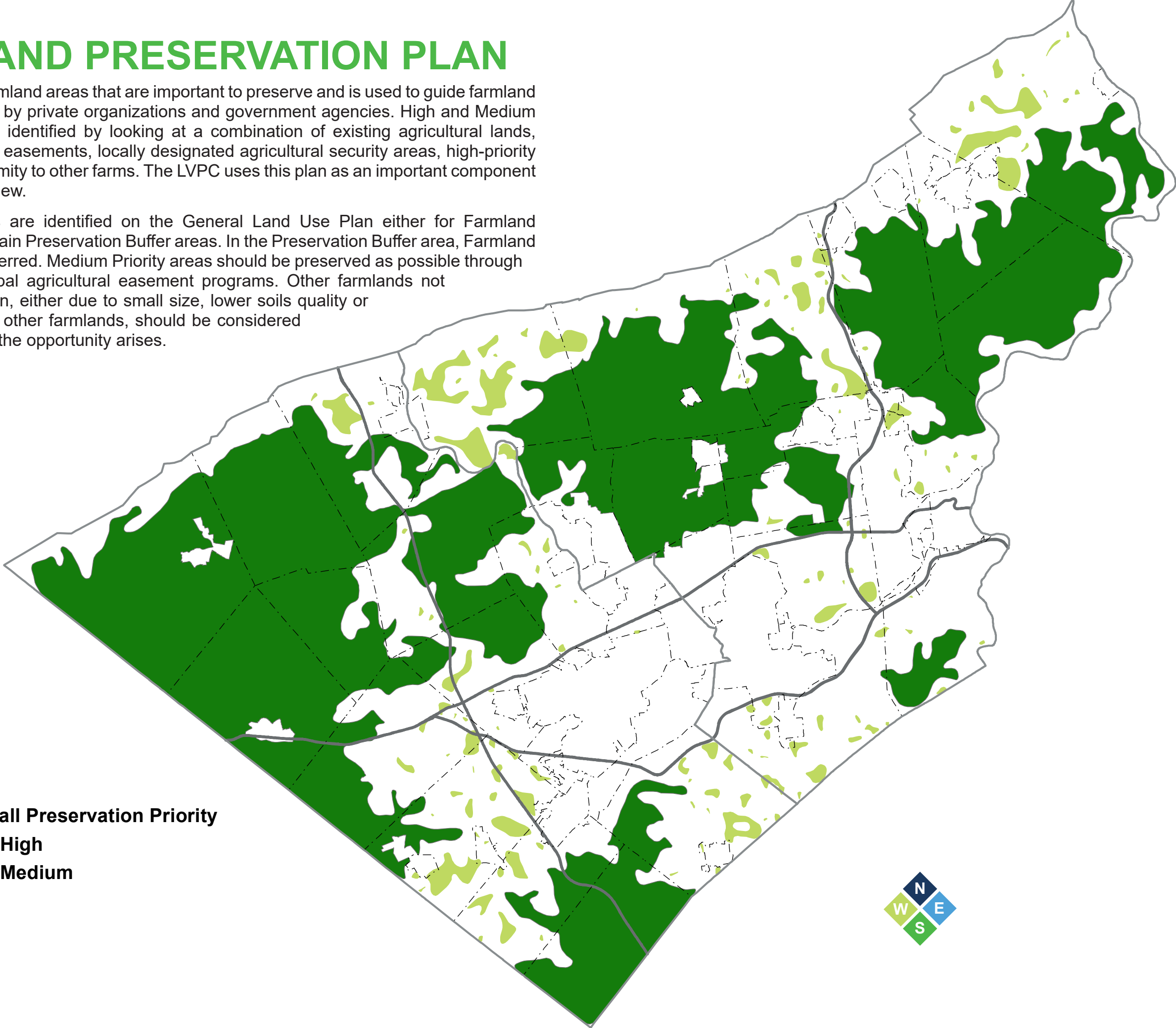
Related Policies



FARMLAND PRESERVATION PLAN

This plan shows farmland areas that are important to preserve and is used to guide farmland preservation efforts by private organizations and government agencies. High and Medium Priority areas were identified by looking at a combination of existing agricultural lands, existing agricultural easements, locally designated agricultural security areas, high-priority soils and their proximity to other farms. The LVPC uses this plan as an important component of development review.

High Priority areas are identified on the General Land Use Plan either for Farmland Preservation or certain Preservation Buffer areas. In the Preservation Buffer area, Farmland Preservation is preferred. Medium Priority areas should be preserved as possible through county and municipal agricultural easement programs. Other farmlands not depicted on the plan, either due to small size, lower soils quality or lack of proximity to other farmlands, should be considered for preservation as the opportunity arises.



Overall Preservation Priority

- High
- Medium



Brownfield Redevelopment Concept

Lehigh Valley Dairy, Whitehall Township

Former industrial sites are scattered throughout the region. Many of these facilities have good access to public space and programming. Incorporating sustainable design elements, such as green roofs, natural stormwater management, solar panels and mixed-transportation, can return them to their historic status as anchors of their communities. These sites offer redevelopment opportunities as well, and can be repurposed for a variety of uses.



CLIMATE CHANGE

Average temperatures are increasing, the oceans are warming, sea levels are rising and weather events are becoming more extreme. The Industrial Revolution in the 1700s and 1800s began having an impact on the rate of climate change. The discovery of fossil fuels (coal, natural gas and oil) used for heat, transportation and manufacturing have increased the release of heat-trapping gases or “greenhouse gases” into the Earth’s atmosphere, accelerating climate change in the 20th and 21st centuries. Carbon dioxide is the most important greenhouse gas influenced by humans. It is produced from fixed sources, such as coal-fired electricity generation, cement production and non-electric fueled vehicles. Today, fossil fuel-burning vehicles have a major impact on the region’s atmosphere.

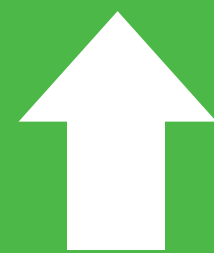
The increase in greenhouse gases is resulting in global climate warming, and the Lehigh Valley is not immune. Due to the Lehigh Valley’s high particulate matter and ozone counts, the region is classified by the US Environmental Protection Agency as a “nonattainment region” for ozone and a maintenance region for particulate matter.



Daily Vehicle Miles Traveled in the Lehigh Valley

9.3
MILLION
in 1990

14.3
MILLION
in 2017



54%
in less than
30 years

PROJECTED IMPACTS

- More extreme weather—More rain and heat.
- More water runoff problems and floods that damage property, roads and other infrastructure.
- Increased local water temperature, damaging aquatic life, while opening the door for unwanted invasive species.
- Forests will become unsuitable for some valued hardwood tree species, while southern species, such as oak and hickory, will thrive.
- Health Effects—Increased risk of respiratory disease, heart disease, airborne allergies and death.
- Farming changes will include a decline in cool temperature adapted fruits and vegetables, such as potatoes and apples, while warm temperature fruits and vegetables, such as sweet corn, are likely to rise. Dairy farming will become more difficult.



HOW CAN WE LESSEN IMPACTS?

- Bike, walk and use mass transit more.
- Drive less.
- Conserve water and protect our waterways.
- Switch to cleaner, more sustainable energies.
- Preserve and enhance our natural resources.
- Build more resilient infrastructure.
- Create more compact urban areas with a mix of uses.
- Conserve energy in homes and businesses.
- Create more energy-efficient building sites.
- Keep hazard mitigation planning and risk assessments up-to-date and implement mitigation projects as funding allows.

Even if we do all that, we’ll need to take steps to prepare for more flooding, more extreme weather and more health problems. The time to start is now.



FUTURELV

FUTURE LEHIGH VALLEY

THE REGIONAL PLAN



Competitive, Creative and Sustainable Region

Our dynamic economy draws on our location, people and natural assets. Nearly 100,000 people commute to the Lehigh Valley daily for its bustling job market. Another 15 million flock here each year to experience recreation and cultural attractions. To keep the region's advantage in a global economy, we need to leverage our prime location and unique character, diversify the regional economy and train the workforce of tomorrow. A key part of that plan includes supporting agriculture and natural resources as economic assets and giving everyone equal access to attainable housing, jobs and transportation. Cooperation among local governments and institutions will be essential to reaching these targets and preparing the region for the challenges to come.

4.1

Enhance growth by rooting economic development strategies in the unique competitive advantages of the region.

- Leverage proximity and connection to major metropolitan regions.
- Maintain quality and affordability of life.
- Enhance the character and economic viability of natural, mineral, cultural and historic assets.
- Expand access to education and job training.
- Encourage local institutions to invest in their surrounding communities.
- Encourage strategies at all levels that are geared toward preparing students for the workforce of tomorrow.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Economic Development Agencies, Lehigh and Northampton Counties, 62 Municipalities, Financial Institutions, Educational Institutions, Workforce Board Lehigh Valley, Preservation Organizations, Business Community

Related Policies



4.2

Continue diversification of the regional economy to strengthen economic resilience.

- Adapt to the contemporary retail economy.
- Revitalize historic centers and redevelop post-war centers.
- Expand small businesses and entrepreneurship.
- Promote next generation manufacturing and technology.
- Increase social, cultural and artistic opportunities.
- Encourage the purchase of local goods and services.
- Identify and support the region's natural resource assets to maximize potential for recreation and ecotourism.
- Reduce blight to improve safety, quality of life and promote sustainable economic activity.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Financial Institutions, Educational Institutions, Workforce Board Lehigh Valley, Lehigh Valley Economic Development Corporation, Business Community

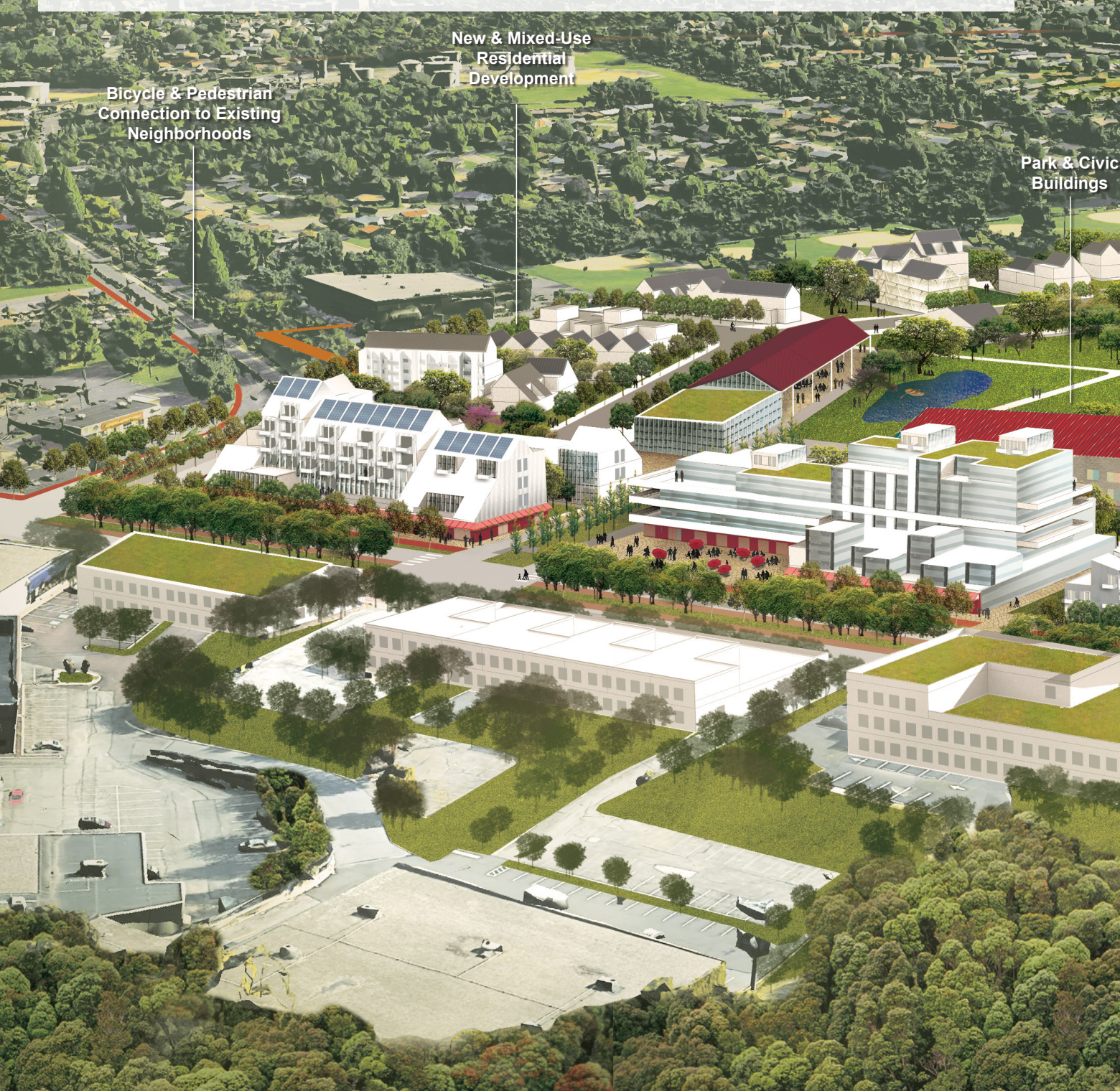
Related Policies



Shopping Mall Redevelopment Concept

Whitehall Mall at MacArthur Road and Grape Street, Whitehall Township

Post-War Centers are good places for new mixed-use development because they are centrally located and connected to transportation. Many of these areas are changing as the retail economy evolves—creating opportunities for new growth and development. These large sites can accommodate two- to six-story buildings with a mix of housing, businesses, public spaces and recreational uses that support investments in bicycle, pedestrian and transit infrastructure. Furthermore, transforming declining malls and shopping centers helps stabilize the tax base by recapturing existing infrastructure investments, while meeting new market demands for apartments, recreational facilities and smaller commercial spaces.



ENTREPRENEURIALISM

Entrepreneurialism drives innovation, business development and job creation. The Lehigh Valley has a long history of entrepreneurialism that has led to the creation of great industries and has remained adaptive as economic conditions have changed, thanks to the region's spirit, access to resources and proximity to major markets. Fostering that culture of innovation will be key to continuing economic growth of the region and maintaining competitiveness in an increasingly global and new economy.

Fostering new entrepreneurial businesses is key because they create new jobs and support the innovation needed to compete in the midst of the fourth industrial revolution. The challenge will be to balance local innovation with mega-regional and global connectivity that ultimately supports and enhances the position of the local talent and businesses, creating stable, well-paying jobs that drive regional stability and growth.

To be successful, these businesses need an educated and adaptable workforce. The Lehigh Valley needs to ensure the workforce is ready with the technological know-how and skills in life-long learning necessary for this rapidly changing environment. Partnerships between educational institutions, businesses, planners and economic development agencies will be important to meeting this demand, but so will creating the kinds of communities that these new workers want to live in—with easy access to transportation options, unique shops, fresh food and attainable housing. Partners will need to be simultaneously hyperlocal, local, regional, mega-regional, statewide, interstate, national and global,

as educational and economic systems are now this interconnected. People attend classes and training in London from their desks in the Lehigh Valley, and researchers collaborate with others all across the globe. Business is global. Learning is global.

To position the region for short-, mid- and long-term success, new businesses and innovators need affordable places to start and grow, access to markets that allows them to quickly scale up, and test products and services before going national or global. Many of the spaces needed to incubate these start-ups can be modest in size and can easily be incorporated into plans to revitalize historic centers. Once established, larger facilities are often needed—which can fit well into the redevelopment of post-war centers and growth along major corridors. At all stages, these businesses can benefit from the Lehigh Valley's easy access to adjacent, larger metropolitan areas, New York City and Philadelphia, and the supply chain afforded by the Lehigh Valley's role as a transportation hub, making the world physically accessible to more people and businesses within a day's drive or hour's flight. When coupled with enhanced access to communications networks, the Lehigh Valley is an instantly available, truly connected and an ideal economic and political environment for entrepreneurs. The region has a history of incubating, thriving and growing industry, from mining to cement and steel production to the more recent cross-sector medical innovations. The Lehigh Valley will continue to grow entrepreneurs and their businesses, as long as we rise to the educational, training, technological and communications needs of the fourth industrial revolution.

Why the Lehigh Valley Thrives as a Business Center



“I asked, where’s the next East Coast Austin, Texas or Boulder, Colorado? I was looking for something special. I needed to be near smart people and have easy access to the world. I drew a circle around the Lehigh Valley. I told prospective startups, if you want to learn how to do this - if you want to go to the Harvard of food, beverage and pet health products, you gotta move to the Lehigh Valley.”

— Richard Thompson, Managing Partner, The Factory, LLC, Bethlehem

4.3

Improve equity by encouraging the creation of living wage jobs, the expansion of technology access, the development of a well-trained workforce and the removal of barriers to employment.

- Support job training programs in industries with an identified workforce need.
- Prioritize development that provides living wages and career path opportunities.
- Promote education that improves social and economic opportunities.
- Locate schools, colleges, hospitals and clinics in centers or along corridors.
- Improve mixed-transportation access to areas with high or growing employment opportunities.
- Encourage the purchase of local goods and services.
- Expand equitable access to technology.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Developers, Educational Institutions, Workforce Board Lehigh Valley, Economic Development Agencies, Lehigh and Northampton Transportation Authority

Related Policies



4.4

Support agriculture and open space as essential components of the regional economy and identity.

- Provide for the operational needs of regional farms.
- Support agricultural processing and distribution facilities.
- Create opportunities for new farmers.
- Expand municipal agricultural security areas.
- Strengthen local markets for regional agricultural products.
- Promote sustainable agritourism.
- Connect regional trails to centers, corridors and historic assets.
- Diversify outdoor recreation opportunities.
- Preserve key scenic corridors and viewsheds.
- Mitigate impacts of invasive species on natural resources and agriculture.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Preservation Organizations, Economic Development Agencies, Lehigh Valley Greenways, Penn State Extension

Related Policies



FARMING AS A BUSINESS

Lehigh Valley residents value farming—probably because they like food and appreciate the scenic open space—but most don't value farms enough as businesses.

This region reaps the benefit of a wide mix of farm types that add more than \$115 million a year to our local economy, ranging from corn to soy to dairy to alpacas.

So how do we preserve the farms we have before we lose them, and thus a piece of our regional identity?

- Lehigh and Northampton counties can continue their commitment to preserve farmland, so farmers have a financial incentive to continue.
- More multi-municipal agreements that give municipal leaders greater control over development.
- State and federal legislators can support laws and programs that incentivize farming as an industry.
- We can all support more diversified farming operations, including urban farms, suburban cooperatives and you-pick operations.
- We can support food processing operations in which farmers turn their crops into products, like hops into beer, grapes into wine and peaches into jam.
- We can all buy fresh and buy local at farmers markets, farms and local shops, and support restaurants that use local ingredients.

Mostly, we can value these farms for the important role they play in this region. They not only raise the quality of life for everyone, but they're a huge asset to our regional economy. As long as it's easier—and more profitable—to just sell off the land for development, we're going to continue to lose our farms. Unless we're going to be okay with that, our farming community needs our support.



840

Farms in the
Lehigh Valley

99%

Of all Lehigh Valley
farms are
family-owned

60%

Of all Lehigh Valley
farms are
smaller than
50 acres

140

Farms lost between
2012 and 2017

8,400

Acres lost between
2012 and 2017

122

Farms preserved between
2012 and 2017

6,619

Acres preserved between
2012 and 2017

133,706

Farm acres

4.5

Provide a wide variety of attainable housing in locations that maximize social and economic opportunities for everyone.

- Diversify price points and types of available housing.
- Create a local balance between housing and jobs.
- Increase housing density in centers and along corridors.
- Reduce barriers to accessory dwelling units.
- Expand housing options near employment areas.
- Encourage land use regulations to facilitate development in centers and along corridors.
- Promote mixed-income neighborhoods.
- Use publicly owned property to meet housing needs.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh-Northampton Airport Authority, Lehigh and Northampton Counties, 62 Municipalities, Developers, Housing Organizations, Workforce Board Lehigh Valley

Related Policies



4.6

Promote the fiscal health and sustainability of municipalities.

- Educate municipalities on the long-term impacts of subdivision, development, zoning and planning.
- Promote use of cost-benefit analysis in planning, development and infrastructure decisions.
- Encourage reinvestment in commercial areas.
- Coordinate infrastructure investments that support Centers and Corridors.
- Expand collaboration on planning and development between neighboring communities.

Themes



Implementation Partners

Lehigh Valley Planning Commission, State of Pennsylvania, Lehigh and Northampton Counties, 62 Municipalities, Council of Mayors

Related Policies



Suburban Infill Concept

Palmer Township

Granny flats and cottage houses are an efficient way to increase density, diversity and affordability in suburban areas. Expanding housing options is critically important to attracting younger adults who cannot generally afford large suburban homes, and it makes it easier for older adults looking to downsize to stay in the community. Such multi-generational communities have longer and healthier lives, and support investments in parks, trails and green infrastructure that improve quality of life.



FUNDING

Funding the services residents need is becoming more difficult. A fast-growing region means increasing demand for water, wastewater and stormwater systems, schools, fire, police and ambulance services, park and recreation facilities and transportation infrastructure. Aging infrastructure means increasing costs for rehabilitation or replacement of these systems. Stricter state and federal requirements mean higher costs, whether for improving the quality of our rivers and streams, the safety of our infrastructure or the quality of the air we breathe. Even the weather is increasing the stress on our infrastructure. Traditional assistance from state and federal governments for funding needed improvements is unstable or diminishing.

Funding infrastructure costs and services will require innovative approaches to raise funds, whether through taxes or dedicated

fees. Many municipalities are working together to share costs of emergency services and plan together to minimize future impacts of growth on infrastructure or services. School districts also make up the largest portion of taxes in communities. While the school facilities are themselves infrastructure, education taxes fund services and programs as well. Examples and opportunities for school systems to partner with neighboring districts are abundant and can help mitigate the costs for institutions themselves and for taxpayers. Communities and school districts need to focus on maintenance, rather than expansion, of infrastructure and services. Generally, taxing entities should look for ways to cooperate, to spread the burden of increasing infrastructure and services costs and provide the highest quality, most financially and environmentally responsible services possible.

“The decline in volunteers has forced us to install a 2-mill fire tax. We had to find a way to pay for the training that’s now required of every volunteer.”

— Portland Borough Mayor Lance Prator

Water infrastructure in the Lehigh Valley is aging and facing increased regulation. Statewide, public water systems face an estimated \$10 billion funding gap over the next ten years

Education costs are already the largest portion of tax bills in the Lehigh Valley—10 times that of municipal tax rates in 1/3 of all communities—and the Valley population increase will require a greater investment in education

The 300,000 volunteer firefighters statewide in the 1970s have declined to about 38,000

As climate change increases the incidents of extreme weather and flooding, about 250 critical infrastructure facilities, including bridges, water and wastewater facilities and electric power facilities, are at risk of damage because they are partially located within the floodplains of the Lehigh Valley

FUTURELV

FUTURE LEHIGH VALLEY

THE REGIONAL PLAN



Safe, Healthy, Inclusive and Livable Communities

The Lehigh Valley's identity begins and ends with quality of life. It rests in safe, walkable neighborhoods, where housing is attainable and public space is designed for everyone. We'll get there through targeted investments, innovative community design and the integration of housing, jobs and transportation that everyone can use. The American Dream is here for the taking.

5.1

Promote safe and secure community design and emergency management.

- Implement complete street and traffic-calming measures.
- Reduce bicycle and pedestrian fatalities towards zero.
- Incorporate resiliency and hazard mitigation into planning and design, including 100- and 500-year floodplains.
- Educate the public on hazard impacts and mitigation techniques.
- Enhance planning and emergency response efforts among emergency management personnel.
- Reduce blight to improve safety and accessibility in communities.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh-Northampton Airport Authority, Lehigh and Northampton Counties, 62 Municipalities, Pennsylvania Department of Transportation, Federal Highway Administration, Pennsylvania Emergency Management Agency, Federal Emergency Management Agency, Community Advocates

Related Policies



Increase social and economic access to daily needs for all people.

5.2

- Encourage use of universal design.
- Promote safe routes to schools and playgrounds.
- Create public spaces in underserved areas.
- Support cultural and social programs.
- Ensure transportation accessibility for all persons.
- Integrate mixed-transportation into public space design.
- Improve connections between bus stops and pedestrian and bicycle infrastructure.
- Improve data accessibility in public spaces.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Transportation Authority, Pennsylvania Department of Transportation, Federal Highway Administration, Lehigh and Northampton Counties, 62 Municipalities, Educational Institutions, Community Advocates

Related Policies



Canal Trail Concept

Delaware & Lehigh National Heritage Corridor Trail — Eastside

Green infrastructure is an important part of reducing environmental impacts from stormwater and development. While existing stormwater infrastructure helps to prevent flooding, it often doesn't look attractive or do a good job of cleaning and filtering runoff before it ends up in our creeks, streams and rivers. Constructing wetlands and rain gardens, such as converting the old canal bed, will help to clean and manage future stormwater, creating new habitats and improving the beauty of our communities.



Canal Bike Trail



HEALTHY COMMUNITIES

The Lehigh Valley is a relatively healthy place to live with great access to parks and open space, which contributes to the two counties ranking high statewide. However, many of these health benefits are unequally distributed, and overall public health has declined regionally in recent decades. Heart disease, diabetes, obesity and low physical activity are more concentrated in our lower income neighborhoods and communities of color, but decades of auto-oriented development have made healthy active lifestyles difficult for everyone. Our dependency on driving has also contributed to poor air quality that exacerbates conditions like asthma.

This simple directive means fundamental changes to how we live and think about our communities. Things like regional bike trails and farmers markets are not just nice features, but are critical infrastructure that enables biking to work and improves access to fresh produce. Street trees and public parks don't just look beautiful, they cool neighborhoods during the summer, improve mental health and increase

opportunities to socialize with neighbors. Seemingly little things like making sure sidewalks are available and in good condition can have major impacts because they increase choice and opportunity for everyone.

By focusing on people, rather than cars, we can make our communities more connected, socially vibrant and economically successful, while promoting healthy lifestyles.

To improve public health, we need to design communities to encourage healthy living



Access to parks, recreation and open space reduces depression, anxiety and stress

Access to preventative care drastically reduces high blood pressure, diabetes and obesity

Having a walkable neighborhood promotes better health. A 25-minute walk to the corner store burns 150-200 calories, compared to 15-20 burned driving there

Commuter Trail Concept

Delaware & Lehigh National Heritage Corridor Trail — Westside

Regional trails provide excellent opportunities for active commuting and recreation for all people, while creating opportunities to connect to our heritage, natural areas and recreational opportunities. While commuting by car often leads to weight gain and added stress, biking or walking to work improves physical health, mental well-being and workplace performance. High-quality trails make it easier to choose these healthy commuting options by providing safe routes between neighborhoods and regional destinations.



5.3

Create community spaces that promote physical and mental health.

- Promote revitalization of walkable historic centers.
- Improve walkability of post-war centers.
- Ensure equitable access to fresh food and produce.
- Support urban farming and community gardens.
- Improve access to green spaces.
- Promote street trees and pedestrian-scale lighting.
- Strengthen sidewalk, bike route and trail infrastructure.
- Diversify park programming.

Themes



Implementation Partners

Lehigh Valley Planning Commission, Lehigh and Northampton Counties, 62 Municipalities, Health Organizations, Environmental Organizations, Housing Organizations, Community Advocates, Lehigh Valley Greenways

Related Policies



5.4

Promote development that complements the unique history, environment, culture and needs of the Valley.

- Promote context-specific design solutions.
- Encourage reuse of vacant and underutilized properties.
- Promote adaptive reuse of historic buildings.
- Strengthen historic main streets and cultural centers.
- Create public spaces that reflect and enhance local culture.
- Integrate visual and performing art into public space.
- Support community arts.

Themes



Implementation Partners

Lehigh Valley Planning Commission, 62 Municipalities, Historic Organizations, Arts Organizations, Tourism Organizations

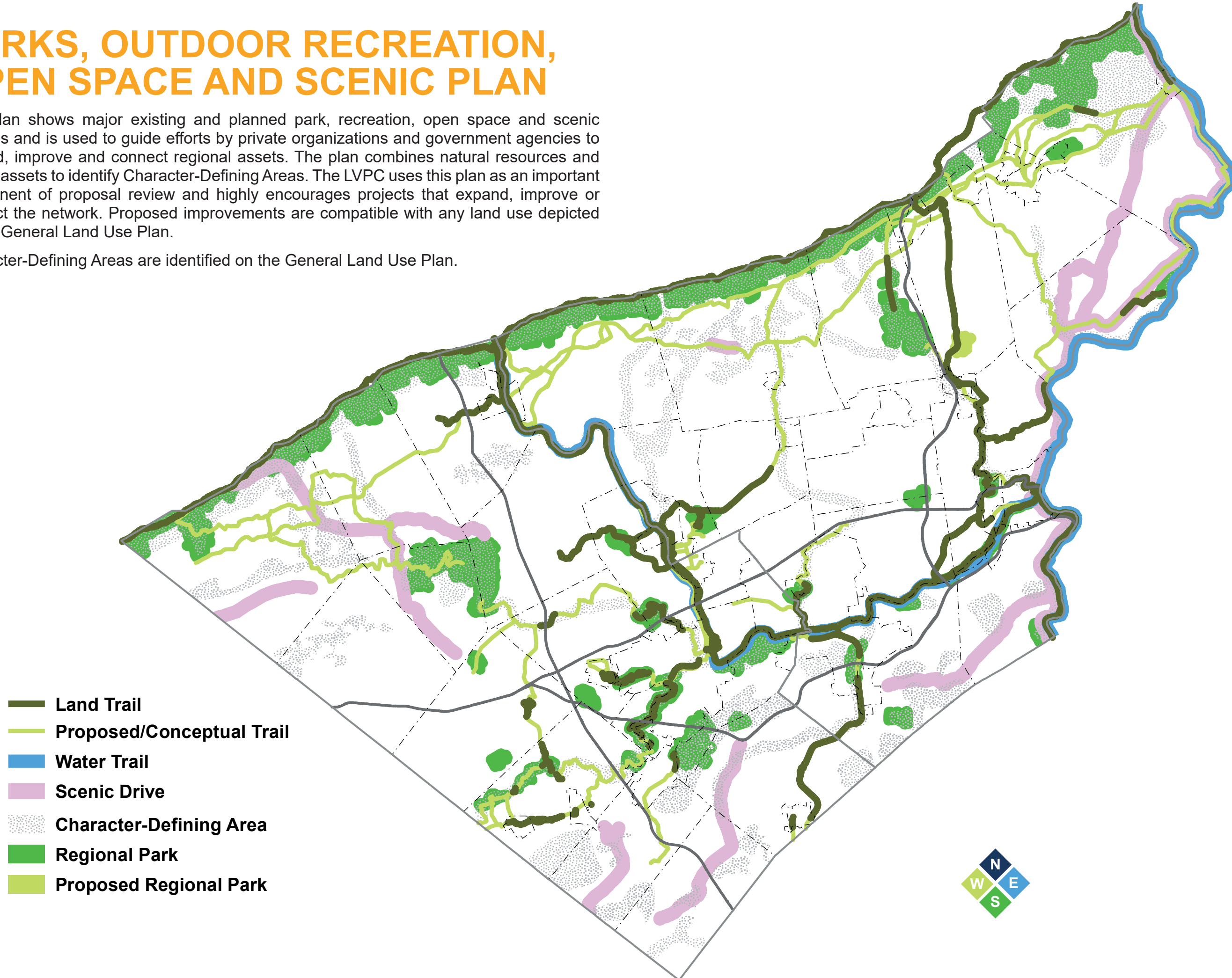
Related Policies



PARKS, OUTDOOR RECREATION, OPEN SPACE AND SCENIC PLAN

This plan shows major existing and planned park, recreation, open space and scenic facilities and is used to guide efforts by private organizations and government agencies to expand, improve and connect regional assets. The plan combines natural resources and scenic assets to identify Character-Defining Areas. The LVPC uses this plan as an important component of proposal review and highly encourages projects that expand, improve or connect the network. Proposed improvements are compatible with any land use depicted on the General Land Use Plan.

Character-Defining Areas are identified on the General Land Use Plan.



Historic Corridor Revitalization Concept

Hanover Avenue, Allentown

Mixed-transportation, infill development, green infrastructure, public space and community art are all important parts of strengthening historic main streets. These core neighborhoods help incubate small local businesses, serve the daily needs of residents and are the backbone of the local community. Their mix of housing, schools, transportation and commerce support social interaction and overall community well-being. The combination of historic, social, cultural, economic, recreation and transportation creates a high quality of life for Lehigh Valley residents.



REGIONAL COLLABORATION

The Lehigh Valley is extremely successful, as evidenced by nearly “full employment”, development activity, city and borough revitalization and the continued desire for people to move to the region. Local leaders are advancing policy and investment around economic mobility, technology, housing attainability, rethinking infrastructure systems, climate change, resiliency, workforce training and education, among other key issues. The entire region is diligently preparing for the future.

However, no public, private or government entity can rise to the social, technological, environmental, economic, educational, health, equity or infrastructure changes, challenges or even opportunities on their own.

Most challenges, after all, span multiple jurisdictions. Carbon emissions don’t stop at city borders. Workers look for housing and jobs, consumers buy groceries and other goods, and parents seek out schools for their children across city, county and even state lines. Cities, suburbs and rural communities must work together to tackle the major issues of our time. The best local climate change plans will reflect regional commuting patterns and industry activities, just as the most effective economic strategies will connect neighborhoods to broader regional opportunities.

A unified voice is critical to state and federal governments and between local and county entities that supports revenue creation and innovative finance. Without a single message, the Lehigh Valley may miss out on vital opportunities to grow our economy, raise new revenue, pursue regulatory reforms and co-invest in shared regional priorities. Regional collaborations do already exist, but today’s economic and political realities demand more if our region is to remain an attractive and even envied place to live, work and play.

Thinking and acting regionally is key to our success, but notoriously difficult. Our region is not a single government, but instead is governed by dozens of elected officials, chief executive officers, philanthropists, educators, skills providers, neighborhood groups and other civic leaders, each of whom has different self-interests and priorities. Gathering these leaders together to agree on shared challenges and potential solutions—with action—requires significant time and resources.

Ultimately, successful regional initiatives carry political risk, can require millions of dollars of public and private funds and take years, or even decades to fully implement. Yet the limits of single-jurisdiction approaches can be even more expensive.

Five communities each owning \$1 million ladder trucks within a ten-minute fire response radius is an example of inefficiency. With resources scarce, neighboring communities can strike agreements to collectively provide for police, fire and other critical services.

Without regional partnerships, individual municipal priorities can easily be dismissed by state and federal governments. The over \$500 million in road and bridge funding recently cut by Pennsylvania is an example where municipal and county governments, the Lehigh Valley Planning Commission (LVPC), Lehigh and Northampton Transportation Authority and Lehigh-Northampton Airport Authority can rally around the restoration and increase of critical transportation resources. But a single, organized message to Pennsylvania Legislators must be sent and reinforced to resolve the long-term \$4 billion transportation funding shortage.

Regional collaborations that will guide the Lehigh Valley through the 21st century will need to:

- Trade traditional self-interest for shared regional aspirations.
- Unify leaders around land use, infrastructure, municipal revenue sharing, governance reforms, economic growth and inclusion.

- Rely on an expanded network of participants to create change, including businesses, non-profits, civic groups, interested members of the public and governments themselves.
- Recognize that regionalism has many forms and that subregional, multi-jurisdictional and regionwide approaches must be tailored to scale and to solve specific issues.

When the LVPC asked a roundtable of the region’s Chief Executive Officers what the biggest threat to the region and their businesses is overall, there was resounding agreement that the inequitable educational system and a declining civic infrastructure were the top two concerns. These certainly are harder challenges and may be place-specific, but the larger impact is on a much greater scale. Neighborhood-level initiatives can work simultaneously with regional programs and businesses to build a healthier, prepared workforce living in safe and supported communities.

Overcoming challenges is not easy, quick or glamorous and requires compound-complex thinking and cross-sector collaborations. However, regional leaders of all types have set high expectations. There’s no reason why, through regional collaboration, we can’t exceed them—together.

CALL TO ACTION

At the core of the Lehigh Valley's success is the ability to agree to a common set of ideals that serve as a foundation for management, preservation and growth of the region. This is reflected in the Lehigh Valley's ability to overcome challenges like the decline in the demand for slate and closing of Bethlehem Steel. We have always come together during times of change—positive, negative and everything in between. We have evolved our organizational and management structures to adapt to changing needs. We've done it through the formation of organizations like the Lehigh Valley Planning Commission, Lehigh and Northampton Transportation Authority and Lehigh-Northampton Airport Authority. We've enhanced it with the development of multi-municipal partnerships like the Nazareth Area Council of Governments and Colonial Regional Police. We've built cross-industry partnerships through entities like the Workforce Board Lehigh Valley and Greater Lehigh Valley Chamber of Commerce, and we've marketed our many assets through Discover Lehigh Valley and the Lehigh Valley Economic Development Corporation.

In the face of so many future forces, whether it's globalization, the shared economy, energy diversification, living longer, or substantial population growth, we will do what we've always done: Rise to the challenge, innovate, adapt, evolve and succeed. We are a can do entrepreneurial region that values our people, families, communities, assets, environment, businesses, parks and recreation, farming and farmland, housing, buildings, educational and training institutions, land, transportation systems and connectivity. We value our history, too, and we don't revise it. We own it. We understand it. We accept that we do not need to destroy the past because it is already gone, just as we understand that the destruction of the past is one of the greatest of crimes.

We are substantive and never build on the passing novelty that plagues the fading regional beauties in other places. We are well-researched and strategic in our thinking and actions. Who we are and what we are is our single strongest asset. We compete in a global marketplace well because of it. We manage our communities well because of it. We run our businesses well because of it. We are well-positioned for the future because of it. We can never lose sight of it, and this plan is key to the continued realization of our collective, collaborative, unified future.

The goals, policies and actions in *FutureLV: The Regional Plan* are built from a foundation of those ideals. It is a blueprint for a vibrant, sustainable, resilient and forward-moving region. The most successful regions in the US and World are built on collaboration, partnerships and a

collective understanding that everyone is an owner. Our quality of life, culture and identity as the Lehigh Valley is challenged by the rapid population growth, explosion of transportation-based businesses and changes in technology and consumer preference, among other things. These factors will continue to grow, underpinning the need for change and asset management to become primary, overarching strategies to building and evolving the region to rise above the challenges and be prepared for a very advanced, technology-based economy and society. This starts with what designer, planner and educator, Bruce Mau, calls "fact-based optimism," where we approach our current and future conditions from a perspective of possibility. We must start now. We must begin together. We must be leaders. We must create the Future Lehigh Valley we want and need. We are all owners.



WE ARE THE
FUTURELV



WE ARE
1 LEHIGH
VALLEY

IMPLEMENTATION

Role of the Lehigh Valley Planning Commission and Lehigh Valley Transportation Study in Implementation

The LVPC has a leadership role in the implementation of goals, policies and actions of *FutureLV: The Regional Plan*. However, the plan is not a strategic organizational plan for the LVPC or the LVTS alone, but instead is a shared regional vision and global regulatory and policy guide for the entire Lehigh Valley community. The plan is for the region and by the region, as reflected in broad public participation through the entire plan development process.

The Lehigh Valley Planning Commission has several key roles in the implementation of *FutureLV: The Regional Plan*, including but not limited to:

- Implementation of formal county planning requirements outlined in the Pennsylvania Municipalities Planning Code, from advisory review of subdivision and land development plans to the writing of *FutureLV: The Regional Plan*.
- Coordinating, collaborating and supporting people, governments, non-profit organizations and private sector entities that share implementation responsibilities outlined in this plan and associated specific plans.
- Monitoring and communicating changes in the community, economy, environment, land use and other comprehensive plan elements that affect the functioning of the Lehigh Valley.
- Serving as a liaison and resource to local, county, state and federal governments and their boards, commissions and authorities on matters of land use, development, parks and recreation, planning, zoning and other matters outlined in this plan and supporting specific plans.
- Researching, writing and implementing specific plans, such as Act 167 stormwater management, green infrastructure, housing and parks, recreation and open space plans.
- Conducting new research and developing guidance documents, specific plans and supportive materials that assist in the implementation of *FutureLV: The Regional Plan*.
- Hosting and/or participating in events, information-sharing and collaborative ventures that implement *FutureLV: The Regional Plan*.
- Committing to the regular update of *FutureLV: The Regional Plan* to rise to the latest community needs, challenges and opportunities, ensuring a strategic, organized and well-prepared Lehigh Valley at all times.
- Serving as the managing entity and staff for the Lehigh Valley Transportation Study, a federally designated Metropolitan Planning Organization.

The Lehigh Valley Transportation Study serves as the Metropolitan Planning Organization for the region and has a variety of transportation planning and investment responsibilities, including but not limited to:

- Collection, analysis and reporting of PennDOT assigned traffic counts.
- Monitoring infrastructure conditions and roadway assets for strategic investments.
- Safety and high-crash data management and analysis for all modes of transportation.
- Coordination of funding and timeline changes to programmed projects on the Transportation Improvement Program.
- Utilizing performance measures to monitor the success of the transportation investment program.
- Transportation, demographic and economic analysis for coordination of transportation programs and scheduling of service with LANTA.
- Assistance in municipal and multi-municipal grant programs concerning transportation infrastructure investments, trail and recreational facilities, local roadway improvements and downtown revitalization efforts.
- Facilitation of public outreach and education on transportation-related programs.
- Coordination of a comprehensive planning process through PennDOT Connects.
- Freight transportation and intermodal freight planning.
- Partner with others and work on developing new ways to fund transportation and other critical community infrastructure maintenance, including asset management, repair, replacement and innovation that meets the goals, policies and actions of *FutureLV: The Regional Plan*.
- Planning and programming of transportation and transit projects for the Transportation Improvement Program, on a bi-annual basis.
- Maintaining and updating the Long-Range Transportation Plan, *FutureLV: The Regional Plan*, every four years.
- Establishing targets for Performance-Based Planning and Programming, as well as monitoring and reporting the progress for reaching Performance Management goals.
- Congestion Mitigation and Air Quality Program data.
- Mitigating impacts of transportation and transit projects on Environmental Justice populations, consistent with federal regulations.
- Monitoring, analyzing and developing materials and plans on current and future transportation issues, such as freight and vehicle electrification.

KEY INITIATIVES

Several key planning initiatives have been identified for research and development, monitoring or updating specific projects or plans. These ideas are key to implementing *FutureLV: The Regional Plan* and should be considered for LVPC and LVTS planning programs.

- Integrated Water Resources Management Plan
- Comprehensive Lehigh Valley Act 167 Stormwater Plan
- Lehigh Valleywide Municipal Separate Storm Sewer (MS4) Action Plan
- Infrastructure Capital Improvements Assessment
- Water Supply and Sewage Facilities Plan
- Flood Insurance/Community Rating System Community Support
- Lehigh Valley Arts and Culture Plan Update
- Scenic/Viewshed Inventory and Plan
- Trail-Oriented Design Guide
- Regional Housing Plan Update
- Rural Design Guide
- Recreational Economy Plan
- Regional Density Increase Analysis
- Regional Climate Action Plan
- Micromobility Assessment
- Routes 22, 33 and I-78 Interscape/Naturalization Plan
- MacArthur Road Multimodal Corridor Redesign
- Area Plans for Mixed-Use Centers and Mixed-Transportation Corridors
- Electric Vehicle Plan
- Regional Complete Streets Guide
- Autonomous Vehicle Planning
- Regional Bicycle and Pedestrian Wayfinding Plan
- Small Cell Technology Design Guide
- Expanded Equity and Opportunity Analysis
- Expanded Lehigh Valley Government Academy
- Greyfields and Retail Conversion Redevelopment Guide
- Regional Adaptive Transportation Signal and Corridor Plan
- Drop-off and Loading Zone Guide
- Freight Facilities and Impacts Guide
- Smart Regions Planning and Integration

SUBDIVISION AND LAND DEVELOPMENT, PLAN, ORDINANCE, OFFICIAL MAP AND IMPACT REVIEWS

One of the key county planning responsibilities granted by the Pennsylvania Municipalities Planning Code is to provide guidance to the region on the potential impacts of proposed subdivision and land development projects, municipal, school district and utility plans, maps, ordinances and associated impact fees.

Municipal governments in Pennsylvania have the “final say” on all subdivision and land development activities, zoning matters and local comprehensive and specific plans. The important role that the LVPC plays comes from the fact that the Pennsylvania Municipalities Planning Code does not give authority to any local government to act upon a development in a neighboring community. In cases where a property boundary extends across municipal borders, each community acts on the basis of its own regulations. In cases where municipalities have agreed to create and implement a multi-municipal plan, the local governments are authorized to coordinate at a minimum and even create a single zoning ordinance. Municipal and multi-municipal plans must be consistent with *FutureLV: The Regional Plan*. The interrelationships and cooperation outlined in the state statute between the LVPC and local governments help shape optimal outcomes for the region.

The LVPC utilizes *FutureLV: The Regional Plan* as well as statistics, analyses, goals, objectives, policies and specific plans for the Commission and Lehigh and Northampton counties to assess the regional impact of proposed physical, policy and regulatory changes to the Lehigh Valley.

The Lehigh Valley Planning Commission reviews proposals and comments on the following:

- Subdivision plans
- Land development plans
- School facility plans
- Utility extensions, changes and permits
- Sewage facilities plans
- Water withdrawal permits
- Solid waste permits
- Municipal comprehensive plans
- Multi-Municipal comprehensive plans
- Municipal agricultural security area designations
- Municipal zoning ordinances, amendments and maps
- Municipal official maps
- Agricultural easements
- Open space and recreation acquisition proposals
- Municipal parks, recreation and open space plans
- Traffic impact studies
- Municipal transportation impact fee ordinances
- Municipal street vacations
- Municipal subdivision and land development ordinances
- Serves as municipal planning staff in communities without a comprehensive plan or subdivision and land development ordinance.

LAND USES OF REGIONAL SIGNIFICANCE

While every change to the land has an impact, some have a greater effect than others, requiring more detailed review and analysis by the Lehigh Valley Planning Commission. Land Uses of Regional Significance (LURS) have substantial impacts that may cross municipal boundaries and can impact the transportation system, critical natural features and habitats, water management, school enrollment, government and non-profit services, utility capacity, parks and recreational facilities, air quality, and the economy—among all other aspects of the region’s functionality and quality of life.

County planning agencies are given broad review authority under the Pennsylvania Municipalities Planning Code to assess these impacts on the community and to forward comments and suggestions to the municipal government(s) where LURS are proposed and to those that may be affected.

LURS receive special attention during the subdivision and land development review process. The Lehigh Valley Planning Commission will:

- Review and comment on the governmental and intergovernmental impacts of land uses of regional significance based on planning goals and policies outlined in *FutureLV: The Regional Plan* as well as applicable Pennsylvania Act 167 stormwater management plans, climate, energy, green infrastructure, greenways, livable landscapes, parks, recreation and open space, historic and cultural assets, housing, blight reversal and remediation, farmland preservation, environmental justice, equity, freight, transportation and traffic safety, multimodal transportation data and plans, among other LVPC, Lehigh County and/or Northampton County adopted goals and policies.
- Send reviews to all potentially impacted municipalities and agencies.
- Call on entities proposing land uses of regional significance to conduct studies that clearly indicate environmental, land use, transportation and other impacts on all municipalities that may be affected by a development.
- Provide mediation services to municipalities desirous of such services consistent with the provisions of the Pennsylvania Municipalities Planning Code.

| Land Use Category | Minimum Criteria |
|--|---|
| Major Shopping Center | Greater than 200,000 square feet |
| Large Residential Developments | Greater than 300 dwelling units |
| Office Buildings | Greater than 100,000 square feet |
| Mixed-Use Developments | Greater than 100,000 square feet or 50,000 square feet and 150 dwelling units |
| Regional Entertainment or Resort Complexes | All |
| Regional Recreation Complexes | Identified in an LVPC inventory or plan |
| Educational Facilities | All (including dormitories) |
| Medical Facilities | Greater than 100,000 square feet |
| Research and Development Facilities | Greater than 100,000 square feet |
| Warehouse, Logistics and Storage Facilities, Freight Facility, Local Freight Generator | Greater than 250,000 square feet or a.) any proposed development located more than 1,320 feet from an interstate, principal arterial, freeway or expressway interchange, as defined by the Pennsylvania Department of Transportation functional classification system, b.) any proposed development located outside the defined Development Area as illustrated in the FutureLV General Land Use Plan |
| Regional Freight Center, Intermodal Freight Facility, or Port attracting or producing freight trips regardless of mode | All |
| General Industrial Facilities | Greater than 50,000 square feet |
| Major Industrial and Office Parks | Greater than 50 acres (phased or unphased) |
| Major Redevelopment | Five acres or 100,000 square feet |
| Mines and Related Activities | All |
| Airports | All |
| Railways and Rail Facilities | All |
| Power Plants | All |
| Landfills and other Solid Waste Facilities | All |

GUIDING ORDERLY GROWTH, DEVELOPMENT AND REDEVELOPMENT

Overall, the goal of the LVPC, counties and local governments is to minimize negative impacts associated with subdivisions, land developments and the regulatory environment in general. Additionally, a clear historic, current and future commitment to the renewal, revitalization and redevelopment of communities, groups of parcels, specific tracts of land and infrastructure is critical to the health, safety and public welfare of the region. This latter commitment to the reuse and repurposing of developed property is key to meeting all of the goals in *FutureLV: The Regional Plan*.

The Lehigh Valley Planning Commission will:

- Commit to providing high-quality, reliable research, statistics, data, information and analysis that supports the goals, policies and actions of the region.
- Review, gather data, analyze and report changes to the land, environment, economy, utilities, water supply, community facilities, farmland preservation, housing, agriculture, transportation, equity, historic preservation, arts and cultural assets, energy conservation and diversification, educational systems and future forces.
- Support the reuse, revitalization, repurposing and redevelopment of developed property in preference to new development on greenfield sites.

- Support the use of public programs, public-private partnerships, public-private-non-profit partnerships, and incentive innovations for the renewal and redevelopment of places and communities over greenfield sites.
- Promote consistency with *FutureLV: The Regional Plan*.
- Review and comment on local, county, regional, state and federal plans, policies, regulations and programs as they relate to the implementation of *FutureLV: The Regional Plan*.
- Coordinate land use and development across the Lehigh Valley based on *FutureLV: The Regional Plan*.
- Facilitate open, equitable public dialogue on comprehensive planning and utilize this information as the basis for LVPC and LVTS work.
- Partner with others and work on developing new ways to fund transportation and other community critical infrastructure maintenance, asset management, repair, replacement and innovation that meet the goals, policies and actions of *FutureLV: The Regional Plan*.

TRANSPORTATION FUNDING

The Long-Range Transportation Plan spans a 25-year time horizon, beginning in 2019 and continuing through 2045, with a budget of \$2,480,130,108. The budget for projects and programs included in the Long-Range Transportation Plan was determined by referencing years 2019-2020 of the existing Transportation Improvement Program (TIP), years 2021-2032 of the 2021 Financial Guidance 12-year expenditure projections published by the Pennsylvania Department of Transportation, and years 2033-2045 projections of future funding at a 3% inflation rate.

Funding stages for the Long-Range Transportation Plan consist of short-range, mid-range and long-range elements. The short-range element is comprised of programming for projects and plans included in the 2019-2022 TIP, with a budget of \$534,440,108. Projects and programs included in the Transportation Improvement Program are considered high-priority, having phases of work started/completed during the four-year Program timeframe.

The budget for the mid-range element consists of \$815,772,065. It is comprised of projects that were programmed to be started, but not completed, during the 2019-2022 TIP timeframe, as well as projects listed on the State Transportation Commission's 2019 Twelve Year Program. The Twelve Year Program projects are selected by a 15-member board of elected and appointed officials, chaired by the Secretary of Transportation. The Twelve Year Program project list is determined by anticipated project completion timetables, goals and targets for infrastructure through a policy-driven decision process based upon performance conditions and statewide asset needs.

The long-range element covers years 13 through 25, calculated using a 3% annual inflation rate. The long-range element budget consists of \$1,129,917,935 and is comprised of projects programmed, but not completed, during the State Transportation Commission's Twelve Year Program, as well as candidate projects or plans selected from the FutureLV: Open Call for Plans and Projects list.

The FutureLV: Open Call for Plans and Projects program was a formal process for public outreach to municipalities and potential project sponsors, fulfilling State Long Range Transportation Plan goals of extensive public and stakeholder involvement in project programming. It was open to the public for an opportunity to propose projects or programs that will improve operating efficiency and preservation of transportation assets for all modes within the Lehigh Valley. These plans and projects were submitted by the public during an open call period from December 5, 2018 through January 25, 2019.

Projects from the Open Call for Plans and Projects were then individually analyzed using a standardized methodology for assessment of candidacy by Lehigh Valley Planning Commission staff. Evaluation of regional transportation projects was based upon established federal and regional goals of safety, asset management, equity and environmental justice, freight movement and economic vitality, congestion reduction, and overall cost effectiveness, considering the available budget.

Projects and plans included in the Long-Range Transportation Plan are separated by type and year of expenditure. The short- and mid-range elements of the Long-Range Transportation Plan depict road, rail and trail projects as one category, bridge projects as another category, and transit projects as the final category. Projects selected for inclusion into the long-range element are listed under the following project categories: bridge projects, traffic management projects, roadway reconstruction/modernization/automation projects, roadway expansion projects, multi-use trail and bicycle facility projects, pedestrian facility projects, safe routes to school projects, and transit projects.

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---|--------|---|-----------------------|---------------------|----------------------|
| State Route 309 & Tilghman Intersection Reconstruction - Involves reconstruction and upgrade of State Route 309/ Tilghman Street Interchange. Also includes replacement and rehabilitation of State Route 22 Bridge over State Route 309 and roadway drainage improvements, base repair and overlay | South Whitehall Township | L | Pennsylvania Department of Transportation | \$65,121,365 | | |
| US 22 Widening - Highway widening to six lanes from 15th Street to Airport Road | Hanover, South Whitehall, Whitehall Townships | L | Pennsylvania Department of Transportation | \$26,148,110 | \$219,381,200 | |
| State Route 100 Reconstruction - From Industrial Boulevard to Tilghman Street | Upper Macungie Township | L | Pennsylvania Department of Transportation | \$19,131,090 | | |
| State Route 222 Schantz & State Route 863 Improvements - Improve safety and traffic operations and mobility at the State Route 222/State Route 0863 (Independent Road)/State Route 3012 (Schantz Road) intersection. Eliminate structural deficiency of the bridges on State Route 3012 and State Route 222. Scoped as a roundabout project | Upper Macungie Township | L | Pennsylvania Department of Transportation | \$15,000,000 | | |
| State Route 309 Resurface - Includes pavement restoration from Walbert Avenue to Shankweiler Road. Also, reconstruction of Orefield Road & State Route 309 intersection to accommodate truck turning movements & signal replacement | North Whitehall, South Whitehall Townships | L | Pennsylvania Department of Transportation | \$14,056,285 | | |
| Lehigh Race Street Intersection - Involves signalization of Race Street/Lehigh Street, Race Street/ Front Street, and Race Street/Second Street intersections. Conversion of Front and Second streets to two-way streets | Catasauqua Borough | L | Pennsylvania Department of Transportation | \$7,118,650 | | |
| Route 145 Safety Improvements - Safety improvements including milling, overlaying, accessibility ramps, restripe-protected left turn bays at signals, aligning opposing left turns, two-way left turn signals, and access management features on State Route 145 (Fourth Street/Susquehanna Street) from Emaus Avenue to W. Wyoming Street | City of Allentown | L | Pennsylvania Department of Transportation | \$6,575,095 | \$1,876,530 | |
| US 22 - Farmersville Road to State Route 512 - Resurface/restoration of US 22 from Farmersville Road to State Route 512, and State Route 191 and State Route 512 interchange ramps | Bethlehem Township | N | Pennsylvania Department of Transportation | \$6,170,620 | \$2,878,500 | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---|--------|---|-----------------------|---------------------|----------------------|
| State Route 248 Realignment - Realigns Route 248 through the borough to eliminate difficult truck turning issues | Bath Borough | N | Pennsylvania Department of Transportation | \$5,428,100 | | |
| US 22 Resurface - Highway resurface from State Route 309 to 15th Street | Whitehall, South Whitehall Townships | L | Pennsylvania Department of Transportation | \$5,407,500 | | |
| US 22 - Highway resurface/restoration from 25th Street to Farmersville Road, including William Penn Highway and State Route 33 interchanges | Bethlehem, Palmer Townships | N | Pennsylvania Department of Transportation | \$5,150,000 | | |
| FedEx Ground Roadway Improvements - State Route 987 (Airport Road) to be widened to three lanes southbound from north of City Line Road to Route 22, extending onto the Route 22 westbound ramp, with intersection improvements at Postal Road, Avenue A and City Line Road | Hanover Township | L | Pennsylvania Department of Transportation | \$5,000,000 | | |
| MacArthur Road Resurface - Highway resurface of MacArthur Road from Grape Street to State Route 329 | Whitehall Township | L | Pennsylvania Department of Transportation | \$4,933,190 | | |
| Linden Street - Highway reconstruction on State Route 3015 (Linden Street) from Elizabeth Avenue to Washington Avenue | City of Bethlehem | N | Pennsylvania Department of Transportation | \$4,775,461 | \$3,014,491 | |
| US 22 Section 400 - Phase 2 (Lehigh River Bridge) - Reconstruct US 22/Fullerton Interchange and major rehabilitation/widening of the US 22 Lehigh River Bridge to improve safety and congestion | Hanover, Whitehall Townships | L | Pennsylvania Department of Transportation | \$4,168,837 | | |
| Delivery Consultant Assistance - Consultant assistance for design aspects of approved Transportation Improvement Program projects, including highway, bridge and transportation alternative projects | Various | L N | Pennsylvania Department of Transportation | \$4,000,000 | | |
| LVTS Congestion Mitigation Air Quality-LANTA Flex - The replacement of ten diesel buses with compressed natural gas buses | Various | L N | Pennsylvania Department of Transportation | \$3,840,000 | | |
| LVTS Urban Intelligent Transportation System - Installation of Variable Message Signs (VMS) and Closed Circuit Television Cameras (CCTV) at various locations along US 22 | Various | L | Pennsylvania Department of Transportation | \$3,685,315 | | |
| US 22 Resurface - Roadway resurface from State Route 309 to I-78 | South Whitehall, Upper Macungie Townships | L | Pennsylvania Department of Transportation | \$3,553,420 | \$5,064,965 | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---|--------|---|-----------------------|---------------------|----------------------|
| State Route 29 - Shimersville Hill Safety - Safety improvements on State Route 29 (Shimersville Hill) from Buckeye Road to Route 100, including removing or relocating fixed objects, widening roadway for left turn lanes, upgrading outdated signals along the corridor and implementing systematic signing and pavement marking safety upgrades where applicable | Upper Milford Township | L | Pennsylvania Department of Transportation | \$2,914,400 | \$6,190,300 | |
| State Route 309 Center Valley Interchange - Improvements include changes of existing at-grade signalized intersection into a full direction grade-separated interchange to address current and future planned development | Upper Saucon Township | L | Pennsylvania Department of Transportation | \$2,652,250 | \$35,622,785 | |
| Transportation Alternatives Program Line Item - Transportation Alternatives Program line item for projects defined as transportation alternatives, including pedestrian and bicycle facilities, infrastructure projects that enhance mobility, community improvement activities, environmental mitigation, recreational trail projects and safe routes to school projects | Various | L N | Pennsylvania Department of Transportation | \$2,419,157 | | |
| 7th Street Multimodal Corridor - Planning study to identify expected growth of entertainment, employment and residential needs to improve traffic flow, business accessibility and pedestrian safety along 6th, 7th and 8th Streets bounded by Jordan Creek on the north and MLK Jr. Drive to the south | City of Allentown | L | Pennsylvania Department of Transportation | \$2,282,995 | | |
| 25th Street Hill Improvement - Safety improvements including drainage improvements, widening of shoulders, flattening of curves, re-grading and daylighting of the road, adding super-elevation to curves, intersection improvements, signage and guiderail improvements, and embankment removal | Palmer Township, West Easton, Wilson Boroughs | N | Pennsylvania Department of Transportation | \$2,169,540 | | |
| Easton Two-Way Street Conversion - Involves converting four one-way streets to two-way streets to improve traffic movement in Easton's Central Business District. Streets involved are 2nd Street, Spring Garden Street, 4th Street and Ferry Street | City of Easton | N | Pennsylvania Department of Transportation | \$2,041,059 | | |
| Easton Avenue Corridor Improvements - Corridor improvements to install new signal heads, adjust timings, add left turn stand-by lanes where appropriate and remove select trees along Easton Avenue from Stefko Boulevard to Willow Park Road | City of Bethlehem, Bethlehem Township | N | Pennsylvania Department of Transportation | \$1,556,341 | | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|---|---------------------------------------|--------|---|-----------------------|---------------------|----------------------|
| State Route 29/Cedar Crest Boulevard - Adaptive signal upgrades along State Route 29/Cedar Crest Boulevard | Salisbury Township | L | Pennsylvania Department of Transportation | \$1,443,470 | \$3,074,750 | |
| State Route 248 - Adaptive signal upgrades along State Route 248 (Lehigh Drive) in the Township | Lehigh Township | N | Pennsylvania Department of Transportation | \$1,435,570 | | |
| MacArthur Road Adaptive Signal Upgrade - Adaptive signal upgrades along State Route 145 (MacArthur Road) from 6th Street to Chestnut Street | City of Allentown, Whitehall Township | L | Pennsylvania Department of Transportation | \$1,187,710 | \$4,057,550 | |
| Bethlehem Corridor Safety Railroad Warning Devices - Replace antiquated equipment with one mast arm and cantilever where Brodhead Road, Township Line Road, Christian Springs Road, and Schoenersville Road cross Norfolk Southern track | City of Bethlehem, Bethlehem Township | N | Pennsylvania Department of Transportation | \$1,160,000 | | |
| State Route 33 Preservation - From State Route 1002 (Main Street) to State Route 1012 (Belfast Road) | Palmer, Plainfield Townships | N | Pennsylvania Department of Transportation | \$1,100,000 | | |
| Mauch Chunk Road - Adaptive signal upgrades along Mauch Chunk Road (State Route 1017) | South Whitehall Township | L | Pennsylvania Department of Transportation | \$1,054,615 | | |
| State Route 309 Coopersburg - Adaptive signal upgrades along State Route 309 | Coopersburg Borough | L | Pennsylvania Department of Transportation | \$1,043,385 | \$2,388,200 | |
| LVTS High Friction Sites - High friction surface treatment to various identified locations with the goal of reducing crashes | Various | L N | Pennsylvania Department of Transportation | \$950,000 | | |
| State Route 512 Adaptive Signal Upgrade - Adaptive signal upgrades along State Route 512, from Center Street to Jaindl Boulevard | Hanover Township | N | Pennsylvania Department of Transportation | \$836,725 | \$1,796,915 | |
| State Route 3005 Resurface (Main Street & Washington Street) - From State Route 2014 (Riverside Drive) to State Route 3007 (Pembroke Road) | Freemansburg Borough | N | Pennsylvania Department of Transportation | \$831,015 | \$1,449,125 | |
| Freeway Service Patrol - Two roaming tow trucks to respond to incidents on I-78 from State Route 100 to the Route 309 split and I-78/US 22, from State Route 100 to State Route 33 | Various | L N | Pennsylvania Department of Transportation | \$775,000 | | |
| Broad Street Nazareth Railroad Crossing - Replace antiquated equipment with one mast arm and cantilever to cover three lanes of southbound traffic where Route 191 crosses Norfolk Southern railway | Nazareth Borough | N | Pennsylvania Department of Transportation | \$732,423 | | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|-------------------------------------|--------|---|-----------------------|---------------------|----------------------|
| All Weather Pavement Markings - The maintenance and installation of all weather pavement markings in the region | Various | L N | Pennsylvania Department of Transportation | \$700,000 | | |
| Lehigh Street Betterment - Resurface of State Route 2005 (Lehigh Street) from PA 29 to PA 145 | City of Allentown, Emmaus Borough | L | Pennsylvania Department of Transportation | \$506,480 | \$6,609,610 | |
| LVTS Bridge Preservation and Repair - Consultant design and construction of bridge repairs and preservation of various bridges | Various | L N | Pennsylvania Department of Transportation | \$450,000 | | |
| Schoenersville Road Corridor - New signal timing plans, updated signal hardware and an upgrade in signal interconnection along Schoenersville Road, from Avenue C/Stoke Park Road to 8th Avenue | City of Bethlehem, Hanover Township | L N | Pennsylvania Department of Transportation | \$392,700 | | |
| Safety Line Item - LVTS - Reserved for cost overruns on approved highway and bridge projects from past and current TIP projects and future data-driven strategic highway safety projects such as intersection safety, clear sight triangles, pavement markings, enhanced signage, rumble strips and guiderails | Various | L N | Pennsylvania Department of Transportation | \$375,185 | \$21,059,506 | |
| 15th Street Corridor - Installation of new signal equipment such as large heads, back plates, LED lighting, 5-section head for advanced left turn phasing and coordinating signals at 15th Street, from Hamilton Street to Tilghman Street. Improve pedestrian intersection safety with signage, crosswalks and other methods | City of Allentown | L | Pennsylvania Department of Transportation | \$350,000 | | |
| Canal Road Railroad Crossing - This project involves replacing antiquated equipment with one mast arm and one cantilever to cover where Canal Road crosses the Norfolk Southern railway | City of Allentown | L | Pennsylvania Department of Transportation | \$350,000 | | |
| 13th Street Interchange Improvements - Includes a safety update to alleviate congestion on the exit ramp from US 22 onto State Route 2017. The project will include safety and pavement marking updates, pavement rehabilitation on ramps, minor bridge repairs, and guiderail updates | City of Easton, Palmer Township | N | Pennsylvania Department of Transportation | \$350,000 | | |
| Resurface Chestnut Street - Highway resurface State Route 248 to Barrall Avenue | Bath Borough | N | Pennsylvania Department of Transportation | \$331,552 | | |
| Route 512 Bath Railroad Crossing - Upgrade railroad safety equipment where Midway Street crosses Norfolk Southern railway | East Allen Township | N | Pennsylvania Department of Transportation | \$284,109 | | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|---|---------------------------------------|--------|---|-----------------------|---------------------|----------------------|
| Penn Avenue Railroad Crossing - An upgrade to railroad safety equipment where Penn Avenue crosses Norfolk Southern railway. | Alburtis Borough | L | Pennsylvania Department of Transportation | \$281,377 | | |
| Ruppsville Road Crossing Upgrade - Upgrade to the railroad safety equipment, including the replacement of one mast arm and one cantilever where Ruppsville Road crosses the track on Norfolk Southern railway | Upper Macungie Township | L | Pennsylvania Department of Transportation | \$270,200 | | |
| Transportation Alternative/Multi-modal Project Management - Consultant contract to assist local sponsors in developing approved transportation enhancement/alternative projects | Various | L N | Pennsylvania Department of Transportation | \$230,000 | | |
| Two Rivers Trail Gap - Pedestrian trail along State Route 33 from Sullivan Trail to Henry Road. Trail installation to include signage, pavement marking, and fencing | Plainfield, Bushkill Townships | N | Pennsylvania Department of Transportation | \$224,843 | | |
| MacArthur Road Multimodal Study - Planning study to identify multimodal corridor transportation, pedestrian and transit options from Tilghman Street to Mechanicsville Road | City of Allentown, Whitehall Township | L | Pennsylvania Department of Transportation | \$218,545 | | |
| Summit Lawn to American Parkway Study - Multimodal corridor study addressing traffic flow, pedestrian accessibility congestion, redevelopment potential, and transit improvements along South 3rd Street, Basin Street, South 4th Street, and South Pike Avenue from the Summit Lawn I-78 Interchange to American Parkway | City of Allentown, Salisbury Township | L | Pennsylvania Department of Transportation | \$200,000 | \$137,655 | |
| Environmental Impacts Resolution - Regional set-aside for monitoring, maintenance and repairs of constructed wetlands and federal requirements of the Environmental Protection Agency on approved highway and bridge projects from past and current Transportation Improvement Programs, as well as identifying sites for environmental mitigation | Various | L N | Pennsylvania Department of Transportation | \$200,000 | | |
| Union Street Railroad Upgrade - Union Street rail crossing signalization upgrades | City of Allentown | L | Pennsylvania Department of Transportation | \$185,000 | | |
| 611 Retaining Wall Rehab - Along State Route 611 (North Delaware Drive) | City of Easton | N | Pennsylvania Department of Transportation | \$163,905 | \$2,281,540 | |
| Weaversville Curve Study - Study of the State Route 1009 (Weaversville Road) curve to determine alternatives for realigning the road | Hanover, East Allen Townships | L N | Pennsylvania Department of Transportation | \$154,500 | | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---|--------|---|-----------------------|---------------------|----------------------|
| Center Street Resurface - Restoration from Fahy Bridge to just before the Monocacy Creek Bridge | City of Bethlehem | N | Pennsylvania Department of Transportation | \$100,000 | | |
| ITS Sign Upgrades - Turnpike - Installation of Intelligent Transportation System variable message signs (VMS) along Interstate 78, State Route 22, and State Route 309 near the Turnpike | South Whitehall, Upper Macungie Townships | L | Pennsylvania Department of Transportation | \$100,000 | | |
| LVTS Traffic Review Assist - Consulting staffing technical review assistance for traffic unit | Various | L N | Pennsylvania Department of Transportation | \$60,000 | | |
| Construction Assistance - Construction consultant assistance for projects in Lehigh and Northampton counties within the Lehigh Valley Transportation Study MPO region | Various | L N | Pennsylvania Department of Transportation | \$25,000 | | |
| Construction Assistance - Consultant assistance for inspection and oversight of approved Transportation Improvement Program construction projects eligible for federal funding including highway, bridge and transportation alternative projects within the Lehigh Valley | Various | L N | Pennsylvania Department of Transportation | \$25,000 | | |
| Corridor Signal Improvement Line Item - Reserve line item for corridor signal improvements to congested corridors that contain multiple signals for projects in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | \$18,012,733 | |
| Saint John Street (State Route 2005) Traffic Calming Improvements - Bumpouts, medians/curb realignment, and potential lane reductions along SR 2005, sidewalks on the west side of the road which are non-existent today, high visibility crosswalks, enhanced street and pedestrian lighting, and a new pedestrian bridge to connect Scott Park to Delaware Canal State Park | City of Easton | N | City of Easton | | \$10,800,482 | |
| Farmersville Road/Freemansburg Avenue Intersection Realignment - Align the north and south legs of Farmersville Road at Freemansburg Avenue to be directly across from each other, signalize intersection, and widen Freemansburg Avenue to the east | Bethlehem Township | N | Bethlehem Township | | \$7,071,744 | |
| Rehabilitation of Main Street - (State Route 3005) from Washington Street south to the Freemansburg Bridge (over the Lehigh River) | Freemansburg Borough | N | Freemansburg Borough | | \$1,928,657 | |

LONG-RANGE TRANSPORTATION PLAN

ROAD, RAIL, TRAIL PROJECTS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|--------------------------|--------|---|-----------------------|----------------------|----------------------|
| Resurfacing Line Item - Reserve line item for resurfacing of roads due to accelerated deterioration of condition throughout the Long-Range Transportation Plan timeframe | Various | L N | Pennsylvania Department of Transportation | | \$1,658,101 | |
| Freight Impacts Line Item - Reserve line item for freight impacts on the transportation system for projects in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | \$1,658,101 | |
| Slides Line Item - Reserve line item for natural disasters, such as slides, that may occur throughout the life-span of project planning | Various | L N | Pennsylvania Department of Transportation | | \$1,658,101 | |
| Cedar Crest Boulevard/State Route 222 Culvert Replacement - Replace pipe/culvert under Cedar Crest Boulevard near Burger King | South Whitehall Township | L | Pennsylvania Department of Transportation | | \$1,221,483 | |
| Bath Adaptive Traffic Signals - Walnut at Northampton, Chestnut at Northampton, Main at Race and Main at Walnut | Bath Borough | N | Pennsylvania Department of Transportation | | \$1,200,000 | |
| State Route 512 Realignment - Straighten State Route 512 in downtown Bangor Borough. Route 512 currently requires multiple difficult turns as the roadway traverses Market Street, South Main Street and Bill Scott Boulevard (East Bangor Highway) | Bangor Borough | N | Bangor Borough | | \$257,154 | |
| Route 22, Route 248 & 25th Street - Interchange Study | Palmer Township | N | Northampton County | | \$224,000 | |
| Main and Chestnut Street Improvements - Including over 20 intersections in the corridor, street lights, red lights, crosswalk areas and signals, traffic flow, congestion, and different safety issues, including ADA accessibility, pedestrian and bicyclist safety issues | Emmaus Borough | L | Emmaus Borough | | \$128,577 | |
| ROAD, RAIL, TRAIL PROJECTS TOTALS | | | | \$244,377,089 | \$362,702,756 | |

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|---|--|--------|---|-----------------------|---------------------|----------------------|
| State Route 378 Betterment Project - Main Street to US Route 22 | City of Bethlehem | L N | Pennsylvania Department of Transportation | | | \$19,956,006 |
| Bath Borough Turning Lanes and Signalization - PA 512 and Mill Street Intersection | Bath Borough | N | Lehigh Valley Transportation Study | | | \$14,238,469 |
| State Route 378 Betterment Project - Colesville Road to Brighton Street | Upper Saucon Township, City of Bethlehem | L N | Pennsylvania Department of Transportation | | | \$13,437,554 |

LONG-RANGE TRANSPORTATION PLAN

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---------------------------------------|--------|---|-----------------------|---------------------|----------------------|
| Corridor Signal Improvement Line Item - Reserve line item for corridor signal improvements for projects in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | | \$13,332,050 |
| Adaptive Signal Upgrades - Various intersections on Emmaus Avenue from South Albert Street to 31st Street | City of Allentown | L | City of Allentown | | | \$10,500,871 |
| Rectangular Rapid Flashing Beacon Installation & Adaptive Signal Upgrades - North Albert Street to North Wahneta Street and Hanover Avenue and East Linden Street | City of Allentown | L | City of Allentown | | | \$9,343,995 |
| One-Way to Two-Way Conversion, Signal Retimings/Installations - Center Street from Church Street to Elizabeth Avenue and Linden Street from East Fairview Street to Church Street | City of Bethlehem | N | City of Bethlehem | | | \$7,297,215 |
| Uhler Road/Sullivan Trail Intersection Improvement - Construction of left turn lanes on both the westbound and eastbound approaches of Uhler Road at the intersection with Sullivan Trail | Forks Township | N | Forks Township | | | \$7,119,235 |
| State Route 309 Resurfacing - Sand Spring Road (State Route 4010) to State Route 100 | North Whitehall, Heidelberg Townships | L | State Transportation Commission | | | \$6,908,711 |
| State Route 248 Resurfacing - State Route 191 to State Route 33 | Lower Nazareth Township | N | State Transportation Commission | | | \$3,931,000 |
| Resurfacing Line - Reserve line item for resurfacing of roads in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | | \$3,121,034 |
| Freight Impacts Line Item - Reserve line item for freight impacts on the transportation system in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | | \$3,121,034 |
| Slides Line Item - Reserve line item for natural disasters, such as slides, that may occur in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | | \$3,121,034 |
| State Route 378 Lighting - US Route 22 to Lehigh River | City of Bethlehem | L | State Transportation Commission | | | \$2,274,296 |
| Walnut Street Resurfacing - Mill Street to Barrall Avenue | Bath Borough | N | State Transportation Commission | | | \$1,378,000 |
| Walnut Street & Main Street - Intersection realignment improvements | Slatington Borough | L | Lehigh Valley Transportation Study | | | \$889,904 |

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION TOTAL **\$119,970,409**

LONG-RANGE TRANSPORTATION PLAN

ROADWAY EXPANSION

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|-------------------------------------|--------|------------------------------------|-----------------------|---------------------|----------------------|
| US Route 22 Widening - State Route 987 to State Route 512 | City of Bethlehem, Hanover Township | N | Lehigh Valley Transportation Study | | | \$162,827,510 |
| US Route 22/13th Street Interchange | City of Easton | N | State Transportation Commission | | | \$9,868,203 |
| US Route 22 & 191 Interchange | Bethlehem Township | N | Northampton County | | | \$7,500,000 |
| American Parkway - Intersections at Hamilton Street, Linden Street & Gordon Street - Improvements to include widening intersections, milling, paving, accessible ramps, concrete repair, striping and crosswalks. The Hamilton Street/American Parkway, the Linden Street/American Parkway and the Gordon Street/American Parkway intersections are proposed to be widened to establish dedicated left turn lanes | City of Allentown | L | City of Allentown | | | \$5,339,426 |
| Route 222 Widening Line Item for Preliminary Engineering - Berks County Line to Trexlertown Bypass | Upper Macungie Township | L | State Transportation Commission | | | \$851,304 |

ROADWAY EXPANSION TOTAL **\$186,386,443**

TRAFFIC MANAGEMENT

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|---|--------------------|--------|------------------------------------|-----------------------|---------------------|----------------------|
| The Borough of Catasauqua's Downtown Commercial District along the Lehigh River - Paving overlay, streetscape improvements and traffic signal improvements | Catasauqua Borough | L | Catasauqua Borough | | | \$1,308,137 |
| Traffic Signal Upgrades - Along Broad Street at Walnut Street, Belvidere Street and Center Street | Nazareth Borough | N | Nazareth Borough | | | \$889,905 |
| Signal & Sign Installation - Freemansburg Avenue at 9th Street and 9th Street at Hamilton Street | Bethlehem Township | N | Bethlehem Township | | | \$489,447 |
| Lehigh Valley Freight Study | Various | L N | Lehigh Valley Transportation Study | | | \$355,962 |
| Sullivan Trail Signalization - Update signalization along portions of Sullivan Trail, between Old Mill Road and Meco Road | Forks Township | N | Forks Township | | | \$177,981 |

TRAFFIC MANAGEMENT TOTAL **\$3,221,432**

LONG-RANGE TRANSPORTATION PLAN

BRIDGES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---|--------|------------------------------------|-----------------------|---------------------|----------------------|
| Cementon Bridge - Replacement/rehabilitation of the Cementon Bridge carrying State Route 329 (Main Street) over the Lehigh River | Whitehall Township, Northampton Borough | L N | Transportation Improvement Program | \$17,083,810 | | |
| PA 33 Northbound Bushkill Creek Bridge - Replacement/rehabilitation of the bridge that carries State Route 33 northbound over Bushkill Creek | Stockertown Borough | N | Transportation Improvement Program | \$12,070,879 | | |
| Hill-to-Hill Bridge Rehabilitation - Replacement/rehabilitation of the State Route 378 Bridge over the Lehigh River, Norfolk Southern railroad and city streets | City of Bethlehem | L N | Transportation Improvement Program | \$11,522,816 | \$75,869,905 | |
| State Route 29 over Norfolk Southern - Replacement/rehabilitation of the bridge carrying Chestnut Street over Reading Railroad | Upper Milford Township | L | Transportation Improvement Program | \$9,373,000 | | |
| Wire Mill Bridge - Replacement/rehabilitation of Lehigh Street (State Route 145) over Little Lehigh Creek | City of Allentown | L | Transportation Improvement Program | \$7,951,500 | | |
| LVTS Highway and Bridge Line Item - Reserve line for cost overruns on approved highway and bridge projects from past and current Transportation Improvement Programs within the Lehigh Valley Transportation Study MPO region | Various | L N | Transportation Improvement Program | \$7,060,764 | | |
| Jordan Creek Bridge Replacement - Replacement/rehabilitation of the State Route 145 (MacArthur Road) Bridge over Jordan Creek | Whitehall Township | L | Transportation Improvement Program | \$6,704,054 | \$9,536,036 | |
| Walnut Street Bridge - Replacement/rehabilitation of the bridge that carries South Walnut Street over Trout Creek | Slatington Borough | L | Transportation Improvement Program | \$6,305,175 | | |
| Water Street (3004) over Saucon Creek Bridge - Rehabilitation/replacement of the bridge that carries State Route 3004 (Water Street) over Saucon Creek | Hellertown Borough | N | Transportation Improvement Program | \$4,120,000 | | |
| Coplay/Northampton Bridge - Replacement/rehabilitation of the Coplay-Northampton Bridge on Chestnut Street over the Norfolk Southern Railroad, Lehigh River and Ironton Trail | Coplay Borough, Northampton Borough | L N | Transportation Improvement Program | \$4,055,000 | | |
| Gordon Street Bridge - Replacement/rehabilitation of Gordon Street Bridge over the Jordan Creek | City of Allentown | L | Transportation Improvement Program | \$3,924,300 | | |

LONG-RANGE TRANSPORTATION PLAN

BRIDGES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|--|--------|------------------------------------|-----------------------|---------------------|----------------------|
| Gap Bridge Repairs - Replacement/rehabilitation of State Route 873 (Lehigh Gap Bridge) over the Lehigh River and Norfolk Southern Railroad | Washington, Lehigh Townships | L N | Transportation Improvement Program | \$3,310,000 | \$21,786,295 | |
| Meadows Road Bridge in Hellertown - (continue to fund) | Hellertown Borough | N | Transportation Improvement Program | \$3,300,000 | | |
| State Route 1032 over Jacoby Creek-Mill Race Bridge - Replacement/rehabilitation of the bridge that carries State Street (State Route 1032) over Jacoby Creek and Mill Race | Portland Borough | N | Transportation Improvement Program | \$3,125,020 | | |
| LVTS Bridge Overlay Bundle - For the overlay of various bridges in the region to reduce priority bridge repair items | Various | L N | Transportation Improvement Program | \$3,000,000 | | |
| State Route 1015 over Martins Creek Bridge - Replacement/rehabilitation of the bridge carrying State Route 1015 (Lower South Main Street) over Martins Creek | Washington Township | N | Transportation Improvement Program | \$2,791,130 | | |
| Culvert Box Bundle- Round 1 - Box culvert replacements at various locations to reduce outstanding priority bridge repair items | Various | L N | Transportation Improvement Program | \$2,716,850 | | |
| Richmond Bridge - Replacement/rehabilitation of the bridge that carries State Route 611 (South Delaware Drive) over Oughoughton Creek | Washington Township | N | Transportation Improvement Program | \$2,548,815 | | |
| Howertown Road Bridge - Replacement/rehabilitation of the State Route 3017 (Howertown Road) Bridge over Dry Run | Allen Township | N | Transportation Improvement Program | \$2,431,860 | | |
| Race Street over Lehigh River - Replacement/rehabilitation of the Race Street Bridge over Lehigh River | Catasauqua Borough, Whitehall Township | L | Transportation Improvement Program | \$2,214,191 | \$6,955,645 | |
| LVTS Bridge Preserve and Repair 5 - Bridge preservation and rehabilitation contract for various bridges | Various | L N | Transportation Improvement Program | \$2,200,000 | | |
| Indian Trail Road over Hokendauqua Creek Bridge - Replacement/rehabilitation of the bridge carrying State Route 3016 (Indian Trail Road) over Hokendauqua Creek | Allen Township | N | Transportation Improvement Program | \$1,999,228 | \$2,343,675 | |
| Raubsville Road over Fry's Run Bridge - Replacement of Raubsville Road (State Route 2006) Bridge over Fry's Run | Williams Township | N | Transportation Improvement Program | \$1,718,946 | | |

LONG-RANGE TRANSPORTATION PLAN

| BRIDGES | | | | | | |
|--|-------------------------|--------|------------------------------------|-----------------------|---------------------|----------------------|
| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
| Powder Valley Road over Indian Creek Bridge - Replacement/rehabilitation of the State Route 2025 (Powder Valley Road) Bridge over Indian Creek | Upper Milford Township | L | Transportation Improvement Program | \$1,707,480 | | |
| Williams Township Canal Wall Replacement - Replacement of a retaining wall along State Route 611 (South Delaware Drive) | Williams Township | N | Transportation Improvement Program | \$1,571,290 | \$2,898,185 | |
| State Route 248 over Hokendauqua Creek Bridge - Replacement/rehabilitation of the bridge that carries State Route 248 (Pheasant Drive) over Hokendauqua Creek | Moore Township | N | Transportation Improvement Program | \$1,545,000 | | |
| Tilghman Street over Lehigh River and Railroad Bridge - Replacement/rehabilitation of the bridge carrying Tilghman Street (State Route 1002) over the Lehigh River, Norfolk Southern, and RJ Corman Railroads | City of Allentown | L | Transportation Improvement Program | \$1,470,000 | | |
| Mill Road over Saucon Creek Bridge - Replacement/rehabilitation of the State Route 2024 (Mill Road) Bridge over Saucon Creek | Upper Saucon Township | L | Transportation Improvement Program | \$1,323,825 | \$277,420 | |
| State Route 248/Tributary to Hokendauqua Creek Bridge - Replacement/rehabilitation of the bridge that carries State Route 248 (Pheasant Drive) over tributary to Hokendauqua Creek | Moore Township | N | Transportation Improvement Program | \$1,236,000 | | |
| Hollenbachs Bridge - Replacement/rehabilitation of Hollenbachs Bridge (State Route 4009) over Mill Creek & Newside Road | Lowhill Township | L | Transportation Improvement Program | \$1,189,225 | \$1,588,210 | |
| Limeport Pike over Saucon Creek Bridge - Replacement/rehabilitation of the State Route 2029 (Limeport Pike) Bridge over tributary to Saucon Creek | Upper Saucon Township | L | Transportation Improvement Program | \$1,132,125 | \$2,318,550 | |
| Kernsville Road Bridge - Replacement/rehabilitation of the bridge carrying Kernsville Road (State Route 4003) over Jordan Creek | Whitehall Township | L | Transportation Improvement Program | \$1,117,640 | \$4,086,445 | |
| State Route 248 / East Branch Monocacy Creek Bridge - Replacement/rehabilitation of the bridge carrying State Route 248 (Bath Pike) over the East Branch of Monocacy Creek | Upper Nazareth Township | N | Transportation Improvement Program | \$1,030,000 | | |
| 611 Culvert Replacement - Replacement/rehabilitation of the State Route 611 (S. Delaware Drive) culvert over tributary to the Delaware River | Williams Township | N | Transportation Improvement Program | \$871,265 | \$869,475 | |

LONG-RANGE TRANSPORTATION PLAN

| BRIDGES | | | | | | |
|--|-------------------------|--------|------------------------------------|-----------------------|---------------------|----------------------|
| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
| State Route 3020 over Tributary Monocacy Creek Bridge - Rehabilitation of State Route 3020 (Newburg Road) over tributary of Monocacy Creek | Lower Nazareth Township | N | Transportation Improvement Program | \$868,845 | \$2,104,085 | |
| Schantz Road/Tributary Cedar Creek Bridge - Replacement/rehabilitation of the State Route 2015 (Schantz Road) Bridge over tributary to Cedar Creek | Upper Macungie Township | L | Transportation Improvement Program | \$848,720 | \$2,107,106 | |
| Country Club Road over US 22 Bridge - Replacement/rehabilitation of the bridge that carries Country Club Road (State Route 2031) over State Route 22 | Bethlehem Township | N | Transportation Improvement Program | \$804,525 | \$3,520,720 | |
| State Route 2027 Hecktown Road Bridge - Replacement/rehabilitation of the State Route 2027 (Hecktown Road Bridge) over Route 22 | Bethlehem Township | N | Transportation Improvement Program | \$804,525 | \$2,567,215 | |
| Old Carriage Road Bridge Replacement - Replacement/rehabilitation of the State Route 3018 (Old Carriage Road) Bridge over tributary to Catasauqua Creek | East Allen Township | N | Transportation Improvement Program | \$734,095 | \$985,385 | |
| Front Street Bridge - Replacement/rehabilitation of the State Route 1015 (Front Street) Bridge over an abandoned railroad | City of Allentown | L | Transportation Improvement Program | \$667,977 | | |
| Beth-Bath Pike over Monocacy Creek Bridge - Replacement/rehabilitation of the State Route 512 (Beth-Bath Pike) Bridge over tributary of Monocacy Creek | East Allen Township | N | Transportation Improvement Program | \$655,620 | \$2,117,432 | |
| Box Culvert Bundle Round 2 - Box culvert replacements at various locations to reduce outstanding priority bridge repair items | Various | L N | Transportation Improvement Program | \$500,000 | \$5,627,750 | |
| Farmersville Road Bridge over US 22 - Replacement/rehabilitation of State Route 2029 (Farmersville Road) Bridge over US 22 | Bethlehem Township | N | Transportation Improvement Program | \$382,455 | \$3,957,193 | |
| Adams Road Bridge over I-78 Bridge - Replacement/rehabilitation of Adams Road (State Route 3015) Bridge over I-78 | Upper Macungie Township | L | Transportation Improvement Program | \$375,000 | \$8,082,970 | |
| Mosserville Road over Ontelaunee Bridge - Replacement/rehabilitation of the State Route 4024 (Mosserville Road) Bridge over Ontelaunee Creek | Lynn Township | L | Transportation Improvement Program | \$355,130 | \$1,500,057 | |
| Indian Creek Road over Leibert Creek Bridge - Replacement/rehabilitation of the State Route 2018 (Indian Creek Road) Bridge over Leibert Creek | Upper Milford Township | L | Transportation Improvement Program | \$355,130 | \$597,050 | |

LONG-RANGE TRANSPORTATION PLAN

BRIDGES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|-----------------------------|--------|------------------------------------|-----------------------|---------------------|----------------------|
| State Route 29/100 over Indian Creek - Replacement/rehabilitation of the bridge that carries State Route 29/100 (Chestnut Street) over Indian Creek | Upper Milford Township | L | Transportation Improvement Program | \$295,967 | | |
| Kecks Road over I-78 Bridge - Replacement/rehabilitation of Kecks Road (State Route 4003) Bridge over I-78 | Weisenberg Township | L | Transportation Improvement Program | \$250,000 | \$4,919,495 | |
| LVTS Bridge Preserve and Repair 3 - For the design and construction of bridge repairs for various bridges in the region | Various | L N | Transportation Improvement Program | \$250,000 | | |
| State Route 4019 Super Replacement - Bridge replacements at State Route 4019 (Bushkill Drive) over tributary to Bushkill Creek; State Route 4019 (Mountain Road) over West Fork Bushkill Creek and State Route 4019 (Mountain Road) over Horn Creek | Bushkill, Moore Townships | N | Transportation Improvement Program | \$143,067 | | |
| State Route 3020 over East Branch Monocacy Creek Bridge - Bridge rehabilitation or replacement of bridge that carries State Route 3020 (Newburg Road) over East Branch of Monocacy Creek | Upper Nazareth Township | N | Transportation Improvement Program | \$84,415 | \$28,980 | |
| State Route 1039 over Tributary Delaware River 01 Bridge - Replacement/rehabilitation of the State Route 1039 (River Road) Bridge over tributary of Delaware River | Upper Mount Bethel Township | N | Transportation Improvement Program | \$16,885 | \$5,796 | |
| State Route 1039 over Tributary Delaware River 02 Bridge - Replacement/rehabilitation of the State Route 1039 (River Road) bridge over tributary of Delaware River | Upper Mount Bethel Township | N | Transportation Improvement Program | \$16,885 | \$5,796 | |
| Hoch Road Bridge - Rehabilitation of two bridges on State Route 4007 (Hoch Road) over tributary of Hokendauqua Creek | Moore Township | N | Transportation Improvement Program | \$16,883 | \$5,796 | |
| Hoch Road Bridge - Replacement/rehabilitation of State Route 4007 (Hoch Road) Bridge No. 28784 over tributary of Hokendauqua Creek | Moore Township | N | Transportation Improvement Program | \$16,883 | \$5,796 | |
| State Route 4019 over Horn Creek Bridge - Bridge rehabilitation of State Route 4019 (East Mountain Road) over Horn Creek | Bushkill Township | N | Transportation Improvement Program | \$16,883 | | |
| State Route 4019 over Tributary of Bushkill Creek Bridge - Bridge rehabilitation of State Route 4019 (Bushkill Drive) Bridge over tributary of Bushkill Creek | Bushkill Township | N | Transportation Improvement Program | \$16,883 | | |

LONG-RANGE TRANSPORTATION PLAN

BRIDGES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|--|--------|---|-----------------------|---------------------|----------------------|
| Cedar Crest Boulevard over Little Cedar Creek Bridge - Replacement/rehabilitation of the bridge carrying State Route 1019 (Cedar Crest Boulevard) over Little Cedar Creek | City of Allentown | L | Transportation Improvement Program | \$10,000 | | |
| Main Street Ramp Bridge Rehabilitation - Connecting to Main Street from State Route 378 | City of Bethlehem | N | City of Bethlehem | | \$12,857,716 | |
| Pine Street Bridge - Spanning the Lehigh River between Whitehall Township and the Borough of Catasauqua | Whitehall Township, Catasauqua Borough | L | Lehigh County | | \$7,664,757 | \$62,362,339 |
| State Route 512 Bridge - Replacement bridge over the Monocacy Creek, approximately 350 feet north of Locust Road (T479) | East Allen Township | N | East Allen Township | | \$6,428,858 | |
| Market Street (State Route 512) Bridge - Bridge replacement over Martins Creek | Bangor Borough | N | Pennsylvania Department of Transportation | | \$4,500,201 | |
| South Main Street (State Route 1015) Bridge - Bridge replacement over Martins Creek | Bangor Borough | N | Pennsylvania Department of Transportation | | \$3,857,315 | |
| Northampton County Bridge 168 - High Street over Lehigh Canal & Norfolk Southern Railroad | Glendon Borough | N | Northampton County | | \$2,000,000 | |
| Glendon Hill (Hugh Moore Park) Bridge - Provide access to Hugh Moore Park and the National Canal Museum Study | City of Easton | N | City of Easton | | \$750,000 | |
| State Route 22 over Bushkill Creek Bridge - Cemetery Curve Bridge rehabilitation or deck replacement | City of Easton | N | Pennsylvania Department of Transportation | | | \$26,697,130 |
| Fourth Street Bridge - Replacement project for bridge carrying Fourth Street in the City of Allentown over Sumner Avenue and the Jordan Creek | City of Allentown, Whitehall Township | L | Lehigh County | | | \$14,238,469 |
| Hamilton Street Bridge - Bridge replacement over the Jordan Creek | City of Allentown | L | Lehigh County | | | \$14,238,469 |
| Northampton County Bridge #19 - Seidersville Road Bridge | City of Bethlehem | N | Northampton County | | | \$14,238,469 |
| State Route 611 Bridge - Rehabilitation of the bridge over the Lehigh River | City of Easton | N | Pennsylvania Department of Transportation | | | \$13,348,565 |
| Glendon Hill (Hugh Moore Park) Bridge - Provide access to Hugh Moore Park and the National Canal Museum | City of Easton | N | City of Easton | | | \$13,000,000 |
| Freight Impacted Bridges Line Item - For critical bridge repairs that may include emergency rehabilitation or maintenance | Various | L N | Lehigh Valley Transportation Study | | | \$10,000,000 |

LONG-RANGE TRANSPORTATION PLAN

| BRIDGES | | | | | | |
|---|-----------------------------|--------|---|-----------------------|---------------------|----------------------|
| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
| Jacksonville Road (Twp. Road 503) Bridge - Bridge over the Monocacy Creek | East Allen Township | N | East Allen Township | | | \$8,899,043 |
| Keystone Road Bridge - Bridge over Little Lehigh Creek | Salisbury Township | L | Lehigh County | | | \$8,899,043 |
| State Route 248 Bridge over Indian Creek - Bridge rehabilitation or replacement near Indian Trail Park | Lehigh Township | N | Pennsylvania Department of Transportation | | | \$8,899,043 |
| State Route 329 Bridge over Hokendauqua Creek - Bridge rehabilitation or replacement | Northampton Borough | N | Pennsylvania Department of Transportation | | | \$8,899,043 |
| State Route 145 Bridge Replacement - Over Fells Creek | North Whitehall Township | L | Pennsylvania Department of Transportation | | | \$6,229,330 |
| 8th Avenue (State Route 1011) Bridge Replacement - Over abandoned Norfolk Southern Railroad tracks | City of Bethlehem | L | Pennsylvania Department of Transportation | | | \$5,339,426 |
| Northampton County Bridge #31 Replacement - DePue Ferry Road over the Oughoughton Creek | Lower Mount Bethel Township | N | Northampton County | | | \$5,339,426 |
| Tatamy Road (State Route 2017) Bridge Replacement - Over Schoeneck Creek | Palmer Township | N | Pennsylvania Department of Transportation | | | \$5,339,426 |
| Kings Highway (State Route 2016) Bridge Replacement - Over tributary to Hosensack Creek | Lower Milford Township | L | Pennsylvania Department of Transportation | | | \$4,449,522 |
| Limeport Pike (State Route 2029) Bridge Replacement - Over Hosensack Creek | Lower Milford Township | L | Pennsylvania Department of Transportation | | | \$4,449,522 |
| Northampton County Bridge #149 - Carrying Cedar Drive over the Indian Creek | Lehigh Township | N | Northampton County | | | \$4,449,522 |
| Reading Road Bridge - Bridge replacement carrying Reading Road over the Cedar Creek | City of Allentown | L | Lehigh County | | | \$4,449,522 |
| Easton Road (State Route 2006) Bridge - Rehabilitation/replacement of bridge over Saucon Creek East Branch | Lower Saucon Township | N | State Transportation Commission | | | \$3,704,210 |
| Frost Hollow Road (State Route 2038) Bridge - Bridge replacement over tributary to Delaware; replace with box and improve road 500 feet in each direction | Forks Township | N | Pennsylvania Department of Transportation | | | \$3,559,617 |
| Male Road Bridge - Bridge replacement with additional turning lane, approximately 500 feet west of the intersection of Male Road and South Broadway (State Route 0512) | Wind Gap Borough | N | Wind Gap Borough | | | \$3,559,617 |

LONG-RANGE TRANSPORTATION PLAN

| BRIDGES | | | | | | |
|--|-----------------------------|--------|---|-----------------------|----------------------|----------------------|
| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
| Bridge Preventative Line Item - Reserves for line items on bridge projects in Lehigh and Northampton counties | Various | L N | Pennsylvania Department of Transportation | | | \$3,121,034 |
| Coffeetown Road (State Route 4005) Bridge Replacement - Over Coplay Creek | North Whitehall Township | L | Pennsylvania Department of Transportation | | | \$2,669,713 |
| Filetown Road (State Route 1006) Bridge - Minor rehabilitation and latex overlay of State Route 33 | Plainfield Township | N | Pennsylvania Department of Transportation | | | \$2,669,713 |
| North Dauphin Street Bridge - Rehabilitation/replacement of bridge over tributary to Lehigh River | City of Allentown | L | State Transportation Commission | | | \$2,569,138 |
| Middletown Rd. Bridge over Nancy Run Creek Replacement (Part of P3 program) | Bethlehem Township | N | Northampton County | | | \$2,135,770 |
| Douglassville Road Bridge Rehabilitation - Over Bushkill Creek | Bushkill Township | N | Northampton County | | | \$889,904 |
| Easton Road (State Route 1004) Bridge - Bridge rehabilitation over tributary to Delaware River | Lower Mount Bethel Township | N | State Transportation Commission | | | \$33,222 |
| Main Street (State Route 1002) Bridge - Bridge replacement over Shoeneck Creek | Palmer Township | N | State Transportation Commission | | | \$33,222 |
| Park Avenue (State Route 4014) Bridge - Bridge rehabilitation over tributary to Mill Creek | Heidelberg Township | L | State Transportation Commission | | | \$33,222 |
| State Route 512 Bridge Rehabilitation - Rehabilitation/Replacement of bridge over Brushy Meadow Creek | Bangor Borough | N | State Transportation Commission | | | \$33,222 |
| Vera Cruz Road (State Route 2027) Bridge - Bridge replacement over Hosensack Creek | Upper Milford Township | L | State Transportation Commission | | | \$33,222 |
| Bushkill Drive (State Route 4019) Bridge - Bridge rehabilitation over tributary to Bushkill Creek | Bushkill Township | N | State Transportation Commission | | | \$8,305 |
| East Mountain Road (State Route 4019) Bridge - Bridge rehabilitation over Horn Creek | Bushkill Township | N | State Transportation Commission | | | \$8,305 |
| Airport Road (State Route 987) Bridge - Bridge rehabilitation over abandoned railroad | East Allen Township | N | State Transportation Commission | | | \$8,305 |
| BRIDGES TOTALS | | | | \$144,207,961 | \$204,727,309 | \$268,830,208 |

LONG-RANGE TRANSPORTATION PLAN

PEDESTRIAN FACILITIES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|---|--------------------|--------|--|-----------------------|---------------------|----------------------|
| MacArthur Road Multimodal Access - MacArthur Road from the City of Allentown boundary to the northern Whitehall Township boundary. Study the existing conditions and identify potential improvements to provide improved multimodal access | Whitehall Township | L | Whitehall Township | | | \$19,577,895 |
| Traffic Calming and Pedestrian Accommodation Improvements - Northampton Street from 7th Street to 15th Street and 13th Street from Butler Street to Jackson Street | City of Easton | N | City of Easton | | | \$14,238,469 |
| Rectangular Rapid Flashing Beacon Installation - North Albert Street to North Wahneta Street and Hanover Avenue to East Linden Street | City of Allentown | L | City of Allentown | | | \$4,894,474 |
| Martin Luther King Jr. Drive - From Union Street to 24th Street. The project includes accessibility ramps, striping and crosswalks | City of Allentown | L | City of Allentown | | | \$2,669,713 |
| MacArthur Road north of US 22 for approximately one mile - Stormwater conveyance improvements which will reduce congestion on the MacArthur Road Corridor during storm events | Whitehall Township | L | Whitehall Township | | | \$1,957,790 |
| Bethlehem Transportation Center Area Improvements - Improvements to the LANtaBus hub at Broad and Guetter streets. Project to improve sidewalks, crosswalks, LANtaBus passenger waiting area and the Guetter Street public right-of-way | City of Bethlehem | N | Coalition for Appropriate Transportation | | | \$1,260,105 |
| West Broad Street Between Main Street and 13th Avenue - Improvements including bumpouts, medians, angled parking, etc. to increase pedestrian safety and slow traffic on Broad Street | City of Bethlehem | N | City of Bethlehem | | | \$889,904 |
| PEDESTRIAN FACILITIES TOTAL | | | | | | \$45,488,349 |

LONG-RANGE TRANSPORTATION PLAN

MULTI-USE TRAIL AND BICYCLE FACILITIES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|--|--------|------------------------------------|-----------------------|---------------------|----------------------|
| Delaware & Lehigh Trail Gap Closure - West Side of River Whitehall Township/City of Allentown Phase 2 | City of Allentown, Whitehall Township | L | Lehigh Valley Transportation Study | | | \$4,538,512 |
| South Eighth Street/Mack Boulevard/Emmaus Avenue/Main Street - Hamilton Street to Emmaus Triangle | Emmaus Borough, City of Allentown | L | Lehigh Valley Transportation Study | | | \$3,814,806 |
| Route 512 - Buss Street to Main Street Bangor, Pen Argyl, Plainfield Township and Washington Township | Bangor, Pen Argyl Boroughs, Plainfield, Washington Townships | N | Lehigh Valley Transportation Study | | | \$3,710,901 |
| Delaware & Lehigh Trail Gap Closure - West Side of Lehigh River in Phase 1 | City of Allentown, Whitehall Township | L | Lehigh Valley Transportation Study | | | \$3,559,617 |
| Mickley Road Pedestrian Path - East of MacArthur Road, from south of the US 22 overpass to the north, creating a pedestrian path adjacent from Mickley Road from the Olympic Garden sidewalk south of Olympic Drive north to the Hunsicker Historical Building and an interconnection to the Jordan Creek Trail | Whitehall Township | L | Whitehall Township | | | \$2,714,208 |
| Hanover Avenue and Hamilton Street Bridge - North 6th Street to Union Boulevard | City of Allentown | L | Lehigh Valley Transportation Study | | | \$2,560,522 |
| Liberty Street - Cedar Crest Boulevard to Jordan Creek | City of Allentown | L | Lehigh Valley Transportation Study | | | \$2,523,413 |
| Broad Street - Hanover Avenue to Stefko Boulevard | City of Bethlehem | N | Lehigh Valley Transportation Study | | | \$2,367,555 |
| MacArthur Road/7th Street - Union Street to Schadt Avenue | Whitehall Township | L | Lehigh Valley Transportation Study | | | \$2,308,180 |
| Northampton Street - Greenwood Avenue to Larry Holmes Drive | City of Easton | N | Lehigh Valley Transportation Study | | | \$2,263,650 |
| Hamilton Street - 6th to 26th Street | City of Allentown | L | Lehigh Valley Transportation Study | | | \$1,714,436 |
| North and South New Street and Fahy Bridge - Washington Avenue to South Bethlehem Greenway | City of Bethlehem | N | Lehigh Valley Transportation Study | | | \$1,224,597 |
| Community Bike Works Bike Education Programs - Full range of bicycle education programs out of Allentown bike shops in downtown East Allentown, and in schools in Allentown and in Bethlehem | Cities of Allentown, Bethlehem | L | Community Bike Works | | | \$996,693 |

LONG-RANGE TRANSPORTATION PLAN

MULTI-USE TRAIL AND BICYCLE FACILITIES

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|--------------------------|--------|--|-----------------------|---------------------|----------------------|
| Jordan Creek Greenway at Mauch Chunk Road (State Route 1017) Bridge - Preliminary engineering and study of a below-grade crossing | South Whitehall Township | L | South Whitehall Township | | | \$818,712 |
| Macungie Borough Trail System Connection - Connection of trails to the ones in Lower Macungie along Brookside Drive | Macungie Borough | L | Macungie Borough | | | \$711,923 |
| Citywide Study/Plan - A long-term plan for the installation of safe and efficient bicycle infrastructure in the City of Bethlehem | City of Bethlehem | L N | City of Bethlehem | | | \$355,962 |
| Educational Programming - In City of Easton, Palmer Township, Forks Township, Martins Creek, parts of Lower Mt. Bethel Township, (Elementary and Middle Schools of Easton Area School District), Nazareth Borough, Lower Nazareth Township, Upper Nazareth Township, local community centers and public events, Lower Macungie Township, City of Bethlehem, City of Allentown | Multiple | L N | Coalition for Appropriate Transportation | | | \$133,486 |
| Forks Township Transportation Plan - Study the entire active transportation system within the township | Forks Township | N | Forks Township | | | \$117,458 |
| Educational Programming - Focused in urban and suburban municipalities, including: City of Easton, Palmer Township, Forks Township, Nazareth Borough, Lower Nazareth Township, Upper Nazareth Township, local community centers and public events, Lower Macungie Township, City of Bethlehem and City of Allentown | Various | L N | Coalition for Appropriate Transportation | | | \$113,819 |
| Forks Township Walk/Bike Plan - Study current and proposed pedestrian and bicycle pathways throughout the township | Forks Township | N | Forks Township | | | \$90,494 |
| Jordan Creek to Lehigh River Feasibility Study - Beginning at Sumner Avenue/American Parkway and ending at The Waterfront (future Riverside Drive) to determine a safe, navigable, bicycle and pedestrian connection | City of Allentown | L | Wildlands Conservancy | | | \$80,091 |
| Educational Programming - Focused in urban and suburban municipalities | Various | N | Coalition for Appropriate Transportation | | | \$44,495 |
| MULTI-USE TRAIL AND BICYCLE FACILITIES TOTAL | | | | | | \$36,763,532 |

LONG-RANGE TRANSPORTATION PLAN

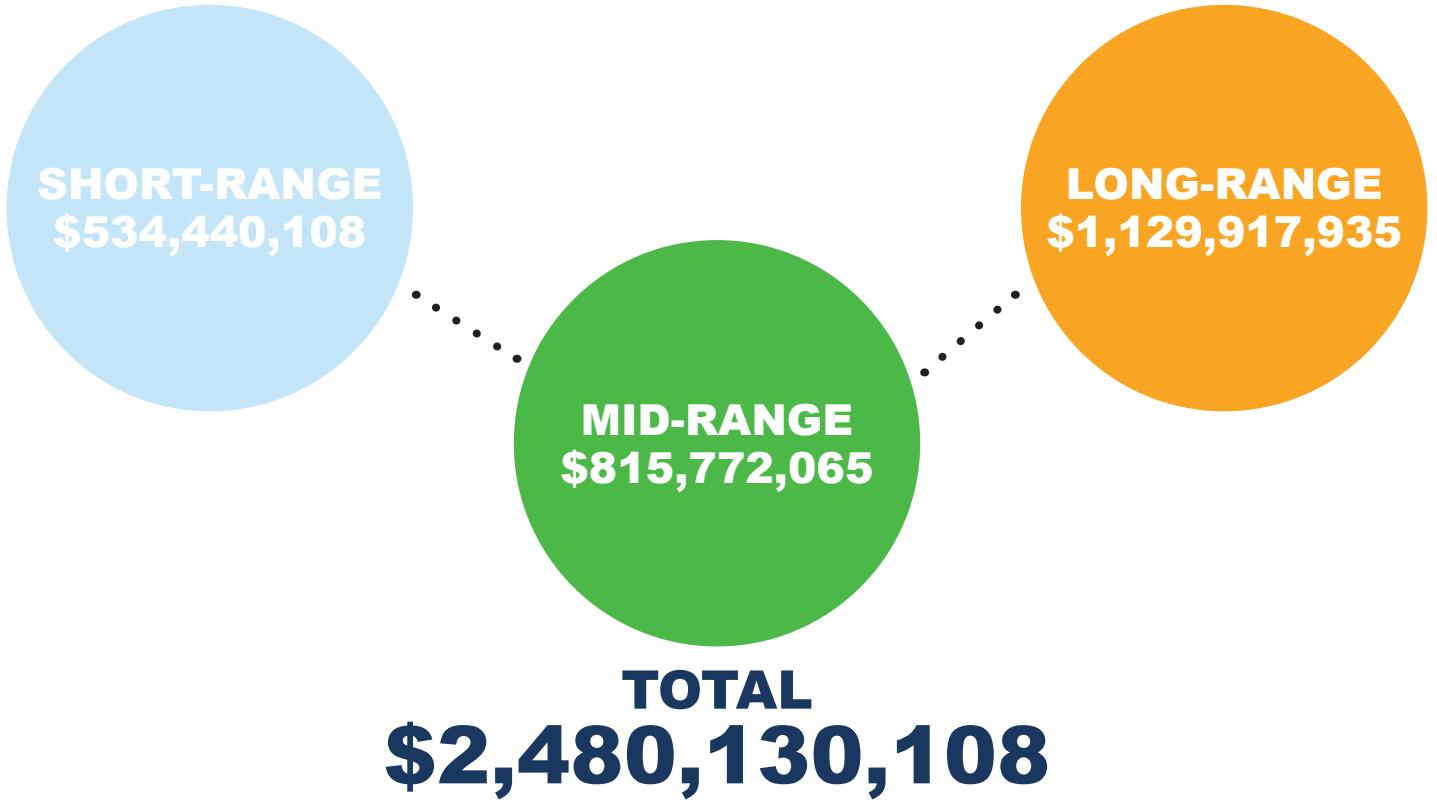
SAFE ROUTES TO SCHOOLS

| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
|--|---|--------|---------------------|-----------------------|---------------------|----------------------|
| Three Connections from State Route 412 to the Saucon Rail Trail - At Meadows Road, at Tumminello Park and at West Walnut Street. Work includes State Route 412 in both the Borough and Lower Saucon Township, as well as Walnut Street in the Borough and Polk Valley Run in the Township | Hellertown Borough, Lower Saucon Township | N | Hellertown Borough | | | \$1,964,460 |
| Crossing Safety Upgrade - Enhance the crossing of the Forks Township Trail at the intersection of Wagon Wheel Drive and Old Mill Road | Forks Township | N | Forks Township | | | \$341,723 |
| Crossing Safety Upgrade - Enhance the crossing of the Forks Township Trail over Mitman Road | Forks Township | N | Forks Township | | | \$341,723 |
| Crossing Safety Upgrade - Enhance the crossing of the Forks Township Trail over Wagon Wheel Drive | Forks Township | N | Forks Township | | | \$341,723 |
| Hecktown Road at Chester Avenue - Provide curb, sidewalk and curb ramps at the northwest corner and add rectangular rapid flashing beacons and high-visibility crosswalk markings and pedestrian crossing signs | Bethlehem Township | N | Bethlehem Township | | | \$222,476 |
| Oakland Road at Santee/Rambeau Roads - Provide a new concrete sidewalk and curb ramp at the northwest corner, update the curb ramp at the southwest corner and install rectangular rapid flashing beacons at an existing pedestrian crossing | Bethlehem Township | N | Bethlehem Township | | | \$222,476 |
| Pedestrian Route to School Safety Enhancements - Improve Main Street, Lerchenmiller Drive and Smith Lane by constructing some new sidewalks, adding handicapped accessible crossing features and adding some street trees along Lerchenmiller Drive | Northampton Borough | N | Northampton Borough | | | \$177,981 |
| SAFE ROUTES TO SCHOOLS TOTAL | | | | | | \$3,612,563 |

LONG-RANGE TRANSPORTATION PLAN

| TRANSIT | | | | | | |
|--|----------------|--------|------------------------------------|-----------------------|----------------------|----------------------|
| Project | Municipality | County | Project Sponsor | 2019-2022 Short-Range | 2023-2030 Mid-Range | 2031-2045 Long-Range |
| LANTA Annual Operating Assistance for Fixed Route System | Various | L N | LANTA | \$73,777,058 | \$142,480,000 | \$267,150,000 |
| LANTA Preventative Maintenance For Fixed Route Fleet | Various | L N | LANTA | \$20,600,000 | \$28,543,124 | \$50,693,338 |
| LANTA Heavy Duty Fixed Route Bus Replacement | Various | L N | LANTA | \$17,448,876 | \$23,736,462 | \$42,156,580 |
| LANTA Shared Ride Program on Paratransit System | Various | L N | LANTA | \$14,908,000 | \$28,216,000 | \$52,905,000 |
| LANTA Paratransit Van/Minibus Replacement | Various | L N | LANTA | \$5,703,750 | \$7,763,730 | \$13,788,588 |
| LANTA Enhanced Bus/Bus Rapid Transit | Various | L N | LANTA | \$5,389,939 | | \$7,604,001 |
| LANTA Americans With Disabilities Service Based on Fixed Route System | Various | L N | LANTA | \$3,400,000 | \$5,981,925 | \$10,624,056 |
| LANTA Engineering, Design, Renovation, Rehabilitation and Construction Activities at LANTA-Owned and Leased Facilities | Various | L N | LANTA | \$2,048,000 | \$7,135,781 | \$12,673,335 |
| Associated Capital Maintenance Items - Funding is being programmed over the 4-year period for the replacement and refurbishment of associated capital maintenance items which include: tire lease agreement, capital maintenance items | Various | L N | Transportation Improvement Program | \$1,800,000 | | |
| Intelligent Transportation Systems and Security Project - Purchase/replace/upgrade of communication or monitoring technology, computer hardware and software and servers, computers, printers and other computer technology for administration/operation of LANTaBus or LANTaVan systems | Various | L N | Transportation Improvement Program | \$521,860 | | |
| Service Vehicle Replacement - For the replacement of six (6) non-revenue service vehicles | Various | L N | Transportation Improvement Program | \$180,000 | | |
| LANTA Install Signs, Shelters, & Enhancements | Various | L N | LANTA | \$77,575 | \$285,431 | \$506,933 |
| LANTA Purchase/Replacement of Communications Equipment For Fixed Route & Paratransit Systems | Various | L N | LANTA | | \$2,854,312 | \$5,069,334 |
| LANTA Spare Parts Purchase/Lease For Fixed Route System | Various | L N | LANTA | | \$1,141,725 | \$2,027,734 |
| LANTA Non-Revenue Service Vehicle Purchase/Replacement | Various | L N | LANTA | | \$205,510 | \$364,992 |
| Bus Shelters Along Sullivan Trail | Forks Township | N | Forks Township | | | \$81,109 |
| TRANSIT TOTALS | | | | \$145,855,058 | \$248,342,000 | \$465,645,000 |

LONG-RANGE TRANSPORTATION PLAN FUNDING



UNMET NEEDS

A substantial number of projects and programs submitted for consideration onto the Long-Range Transportation Plan could not be included on the fiscally constrained programming budget. Projects that did not make the Long-Range Transportation Plan list are considered unmet needs and account for a funding deficit of \$4,031,717,944.

As a fiscally constrained document, the Long-Range Transportation Plan must not exceed the amount of funding reasonably expected through the year 2045. The budget for the Long-Range Transportation Plan includes commitments to the Transportation Improvement Program (TIP), years 2019-2020; the June 2019 release of the State Transportation Commission twelve-year budget, years 2021-2032; and an annual 3% inflation increase in funding for years beyond 2032.

Projects that could not be funded were submitted by project sponsors, including PennDOT, Lehigh and Northampton counties, LANTA, the Lehigh Valley Transportation Study, 43 Lehigh Valley municipalities and various non-profit groups. Anticipated costs for the unmet needs projects and programs were first submitted as current-year 2019 estimates. After the projects and programs were identified as unmet needs, their project costs were then recalculated with a Year of Expenditure 3% annual increase. All projects that are included in the unmet needs list were calculated in this plan at the mid-point between the years 2031-2045.

During the FutureLV: Open Call for Plans and Projects outreach campaign, a number of regionally significant projects and programs were identified for potential Long-Range Transportation Plan budget programming. Unfortunately, these projects essentially comprise the unmet needs list. Projects and programs were selected for the unmet needs list based on project evaluation and scoring methodology. Projects included on the unmet needs list scored lower for their role in the regional transportation system and economy, usage and potential usage, equity and housing performance, infrastructure condition and age, congestion reduction and air quality impacts, deficiencies and safety, multimodal elements and existing connections, consistency with regional plans, public engagement/risk assessment and cost-effectiveness.

The projects and programs submitted during the FutureLV: Open Call for Plans and Projects campaign are included as follows:

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--|--------|----------------------------|-----------------|
| I-78 /Route 222 Interchange Upgrades - Including lane reconfigurations, revised signalization, ramp modifications | Lower Macungie Township | L | Lower Macungie Township | \$53,394,259 |
| State Route 33 Betterment Project - From Belfast to State Route 512 | Plainfield Township | N | PennDOT Betterment Project | \$26,234,379 |
| State Route 222 Betterment Project - From Grimm Road to Cedar Crest Boulevard | Upper Macungie Township | L | PennDOT Betterment Project | \$25,807,225 |
| Lehigh Street (State Route 2005) Betterment Project - From Chestnut Street to State Route 145 | City of Allentown | L | PennDOT Betterment Project | \$24,917,321 |
| State Route 100 Betterment Project - From Kernsville Road to State Route 0309 | Lowhill Township | L | PennDOT Betterment Project | \$24,490,167 |
| State Route 309 Betterment Project - From Bethlehem Pike to I-78 | Upper Saucon Township | L | PennDOT Betterment Project | \$22,959,532 |
| US 22 Betterment Project - From 25th Street to New Jersey State Line | City of Easton | N | PennDOT Betterment Project | \$22,710,358 |
| State Route 6222/Hamilton Boulevard Betterment Project - From State Route 222 to Kressler Road | Lower Macungie, Upper Macungie Townships | L | PennDOT Betterment Project | \$20,912,752 |
| State Route 33 North/South Betterment Project - From US 22 to Tatamy Interchange (State Route 1002) | Bethlehem, Lower Nazareth Townships | N | PennDOT Betterment Project | \$19,132,943 |
| Airport Road Upgrade - Construct additional lanes and turning/center turning lane with intersection upgrades along Airport Road (State Route 987) from Schoenersville Road (State Route 1009) north to Hanoverville Road (T437 in East Allen Twp.) | Hanover Township | N | Hanover Township | \$17,798,086 |
| State Route 33 Betterment Project - From I-78 to US 22 | Bethlehem Township | N | PennDOT Betterment Project | \$17,620,106 |
| State Route 222 Betterment Project - Kutztown Road to Grimm Road | Upper Macungie Township | L | PennDOT Betterment Project | \$17,246,346 |
| State Route 33 Betterment Project - From Tatamy to Belfast | Palmer Township | N | PennDOT Betterment Project | \$16,445,432 |
| State Route 100 Betterment Project - From Creamery Road to Tilghman Street | Lower Macungie Township | L | PennDOT Betterment Project | \$15,466,537 |
| State Route 0145/South Pike Avenue Betterment Project - From State Route 309 to Church Road | City of Allentown | L | PennDOT Betterment Project | \$15,128,373 |

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--|--------|----------------------------|-----------------|
| MacArthur Road (State Route 145) Betterment Project - From Center Street to Clearview Road | North Whitehall, Whitehall Townships | L | PennDOT Betterment Project | \$14,905,897 |
| State Route 512 Betterment Project - From Main Street to State Route 611 | Bangor, East Bangor Boroughs, Upper Mount Bethel, Washington Townships | N | PennDOT Betterment Project | \$13,597,738 |
| Bath Borough Traffic Improvements - North Walnut Street from Barrall Avenue to Main Street, Northampton Street - from Walnut Street to Main Street, Main Street - from Northampton Street to Walnut Street | Bath Borough | N | Bath Borough | \$13,348,398 |
| State Route 33 Betterment Project - From State Route 512 to Monroe County Line | Wind Gap Borough, Plainfield Township | N | PennDOT Betterment Project | \$13,312,969 |
| State Route 309 Betterment Project - From I-78 to Chapmans Road | South Whitehall Township | L | PennDOT Betterment Project | \$13,010,401 |
| State Route 2025 Betterment Project - Bushkill Drive to Main Street | Palmer Township | N | PennDOT Betterment Project | \$12,903,613 |
| State Route 248 Betterment Project - From Hollo Road to Race Street (State Route 329) | Bath, Nazareth Boroughs, Lower Nazareth, Upper Nazareth Townships | N | PennDOT Betterment Project | \$12,460,440 |
| State Route 100 Betterment Project - Tilghman Street to Kernsville Road | Upper Macungie Township | L | PennDOT Betterment Project | \$11,746,737 |
| State Route 309 Betterment Project - From Chapmans Road to State Route 873/Main Street | South Whitehall, North Whitehall Townships | L | PennDOT Betterment Project | \$10,981,419 |
| State Route 100 Betterment Project - From Chestnut Street to Creamery Road | Lower Macungie Township | L | PennDOT Betterment Project | \$10,803,438 |
| MacArthur Road (State Route 145) Betterment Project - From Fairmont Avenue to Center Street | Whitehall Township | L | PennDOT Betterment Project | \$10,500,871 |
| State Route 309 Betterment Project - From State Route 100 to Mountain Road | Lynn, Heidelberg Townships | L | PennDOT Betterment Project | \$10,447,477 |

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--|--------|----------------------------|-----------------|
| State Route 309 Betterment Project - From State Route 873/Main Street to State Route 100 | North Whitehall, Heidelberg Townships | L | PennDOT Betterment Project | \$10,233,900 |
| State Route 222 Betterment Project - From Cedar Crest Boulevard to 15th Street | City of Allentown | L | PennDOT Betterment Project | \$9,966,928 |
| Race Street (State Route 1004) Betterment Project - From First Avenue to Airport Road | Catasauqua Borough, Hanover, Whitehall Townships | L | PennDOT Betterment Project | \$9,931,332 |
| MacArthur Road (State Route 145) Betterment Project - From Clearview Road to Cove Road | North Whitehall Township | L | PennDOT Betterment Project | \$9,788,948 |
| American Parkway - Ridge Avenue to Union Street milling, paving, ADA ramps, concrete repair, striping and crosswalks | City of Allentown | L | City of Allentown | \$9,788,948 |
| State Route 611 Betterment Project - From Browns Drive to Smith Avenue | Williams Township | N | PennDOT Betterment Project | \$9,415,188 |
| Linden Street (State Route 3015) Betterment Project - From Elizabeth Avenue to Old Nazareth Pike | City of Bethlehem, Bethlehem Township | N | PennDOT Betterment Project | \$9,148,216 |
| Intersection of State Route 248/State Route 145 and Intersection of State Route 248 and State Route 873 - Conduct study and install the needed improvements to both of these intersections | Lehigh Township | N | Lehigh Township | \$8,943,538 |
| Blue Mountain Drive (State Route 4001) and State Route 946 - Intersection realignment and traffic signal upgrades. Improvements include right-of-way acquisition, demolition of structures within the clear zone, utility relocation, auxiliary lane and shoulder widening and pedestrian accommodations | Lehigh Township | N | Lehigh Township | \$8,899,043 |
| Hamilton Boulevard (State Route 222) at Lincoln Avenue - Roundabout and road diet | South Whitehall Township | L | South Whitehall Township | \$8,899,043 |
| State Route 145/7th Street Betterment Project - From Church to Fairmont | City of Allentown, Whitehall Township | L | PennDOT Betterment Project | \$8,454,091 |
| State Route 611 Betterment Project - From Monroe County Line to Hester Street | Upper Mount Bethel Township | N | PennDOT Betterment Project | \$8,080,331 |
| State Route 611 Betterment Project - From Bucks County Line to Browns Drive | Williams Township | N | PennDOT Betterment Project | \$7,546,389 |
| Hamilton Boulevard (State Route 222) and Lower Macungie Road (State Route 2012) Roundabout | Upper Macungie Township | L | Upper Macungie Township | \$7,119,235 |
| Intersection of State Route 248 (Bath Pike) and State Route 946 (Daniels Road) - Updated traffic study of the Route 248/Route 946 intersection | Upper Nazareth Township | N | Upper Nazareth Township | \$7,119,235 |
| Uhler Road/Kesslerville Road Upgrade - Improve the signalization infrastructure at the intersection of Uhler Road and Kesslerville Road | Forks Township | N | Forks Township | \$7,119,235 |

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|--|--------------------------|--------|----------------------------|-----------------|
| State Route 248 Betterment Project - From Newburg Road to 7th Street | Palmer Township | N | PennDOT Betterment Project | \$7,048,041 |
| Airport Road (State Route 987) Betterment Project - From US 22 to Schoenersville Road | Hanover Township | L | PennDOT Betterment Project | \$6,674,282 |
| 25th Street (State Route 2012) Betterment Project - From Freemansburg Avenue to Berger Road | Palmer Township | N | PennDOT Betterment Project | \$6,674,282 |
| Fullerton Avenue (State Route 1015) Betterment Project - From Front Street to First Avenue | Whitehall Township | L | PennDOT Betterment Project | \$6,585,292 |
| Intersection of State Route 248 and Blue Mountain Drive (State Route 4001) - Intersection widening to include turning lanes in all directions and traffic signal upgrades | Lehigh Township | N | Lehigh Township | \$6,229,331 |
| Intersection of State Route 248 and Airport Road (State Route 3023) - Provide signalization, improved geometry, turning lanes and pedestrian/bicycle accommodations | East Allen Township | N | East Allen Township | \$6,229,330 |
| Blue Mountain Drive/Breadfruit Drive intersection Improvements - Roadway realignment and/or regrading to achieve the proper slope | Lehigh Township | N | Lehigh Township | \$5,339,426 |
| Martin Luther King Jr. Drive - Union Street to 24th Street milling, paving | City of Allentown | L | City of Allentown | \$5,339,426 |
| Walbert Avenue (State Route 1006)/Huckleberry Road/Columbia Street Intersection Improvements - Realign intersections | South Whitehall Township | L | South Whitehall Township | \$5,339,426 |
| State Route 611 Betterment Project - From Bushkill Drive to Frost Hollow Road | Forks Township | N | PennDOT Betterment Project | \$5,143,647 |
| State Route 378 Betterment Project - Main Street to US Route 22 | City of Bethlehem | L N | PennDOT Betterment Project | \$4,658,747 |
| State Route 987 Betterment Project - From Orchard Lane to Race Street (State Route 329) | East Allen Township | N | PennDOT Betterment Project | \$4,449,522 |

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|--|-------------------------|--------|----------------------------|-----------------|
| MacArthur Road/Mickley Road Area Improvements - This project will include stormwater conveyance improvements which will reduce congestion on the MacArthur Road Corridor during storm events and will improve pedestrian mobility | Whitehall Township | L | Whitehall Township | \$4,449,522 |
| State Route 6100/Trexlerstown Road Betterment Project - From Trexlerstown Road to State Route 100 | Upper Macungie Township | L | PennDOT Betterment Project | \$3,933,377 |
| Eberhart Road Jughandle Improvements - Eliminate the eastbound movement between Route 145 and the jughandle to allow for three westbound lanes and modifications of the jughandle intersection to improve the flow. Eberhart Road would return to two-way traffic from the jughandle eastward | Whitehall Township | L | Whitehall Township | \$3,737,598 |
| Auxiliary Turning Lanes and Signalization - Installation of auxiliary turning lanes and signalization at the intersection of Vera Cruz Road (State Route 2023) and Lanark Road (State Route 2039) | Upper Saucon Township | L | Upper Saucon Township | \$3,559,617 |
| Old Route 22 & Route 863 Intersection - Widening of the intersection | Weisenberg Township | L | Weisenberg Township | \$3,559,617 |
| Auxiliary Turn Lane Installation - At Intersection of Vera Cruz Road (State Route 2023)/Oakhurst Drive (State Route 2038) and Pike Avenue (State Route 145) | Upper Saucon Township | L | Upper Saucon Township | \$2,669,713 |
| Sullivan Trail/Newlins Road Intersection - Realign approaches and replace the existing culverts with an enlarged box culvert | Forks Township | N | Forks Township | \$2,669,712 |
| Sullivan Trail/Church Lane Improvements - Intersection to include full signalization and a turning lane on Sullivan Trail and Church Lane | Forks Township | N | Forks Township | \$2,580,723 |
| State Route 3005 Betterment Project - Shimersville Road to Pembroke Road | Freemansburg Borough | N | PennDOT Betterment Project | \$2,153,568 |
| State Route 4003 Betterment Project - From Main Street to Cherryville Road | Lehigh Township | N | PennDOT Betterment Project | \$1,121,279 |
| Mauch Chunk Road/Elizabeth Avenue Roundabout - Removing the all-way stop configuration and installing a roundabout | City of Bethlehem | N | City of Bethlehem | \$1,067,885 |
| Sullivan Trail (State Route 2025)/Richmond Road (State Route 2021)/Paxinosa Road Intersection improvements - Advanced warning signs and signaling devices on the approaches to the intersection of Sullivan Trail and Paxinosa Road | Forks Township | N | Forks Township | \$889,904 |

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--|--------|--------------------------|-----------------|
| State Route 329 Corridor Study & Plan - Include the entire length of State Route 329 in Lehigh and Northampton counties to identify safety issues, points of congestion, and residential neighborhoods impacted by present and increased through traffic | Various | L N | Northampton Borough | \$533,943 |
| Uhler Road Corridor Study - Analyze Uhler Road and its corridor within Forks Twp. - an engineering and planning analysis of the hazards and potential improvements along the Uhler Road Corridor from Bushkill Creek to Richmond Road | Forks Township | N | Forks Township | \$533,943 |
| Roundabout/Intersection Realignment Study - Haines Mill Road (State Route 2008) with Walnut Street, Mertz Lane and Dorney Park Road | South Whitehall Township | L | South Whitehall Township | \$444,952 |
| Easton Avenue Corridor Study - From Butztown Road to 5th Street including the Butztown Road, Willow Park Road, Santee Road and Hecktown Road/5th Street intersections with Easton Avenue. Coordination of the realignment of Hecktown Road with Fifth Street | Bethlehem Township | N | Bethlehem Township | \$355,962 |
| One Way Pair Modification Feasibility Study - Modifying the existing one way roadway pair between Bridge Street and Lehigh Avenue/Main Street | Whitehall Township | L | Whitehall Township | \$355,962 |
| Route 191/Linden Street Corridor Study - From the City of Bethlehem to Lower Nazareth Township | City of Bethlehem, Lower Nazareth, Bethlehem Townships | N | Bethlehem Township | \$355,962 |
| State Route 329 Corridor Study - Project/study involves evaluating the State Route 329 corridor to improve traffic flow at the two signalized intersections as well as along the corridor to improve traffic flow and to promote pedestrian and bicycle movement | Whitehall Township | L | Whitehall Township | \$355,962 |
| The Sullivan Trail Corridor Study Update - Encompass the entire roadway and trail corridor within Forks Twp. This study will provide an engineering and planning analysis of the hazards and potential improvements to the entire multimodal transportation corridor including: traffic counts and modeling for each intersection, community surveys, cost estimation of safe pedestrian crossings, signalization analyses, and an action plan | Forks Township | N | Forks Township | \$355,962 |

UNMET NEEDS

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--------------------------|--------|---|-----------------|
| Multimodal transportation study of potential future improvements to the Slate Belt portions of the Route 512 and Route 611 corridors - Encompassing roadway, intersection, bridge, and trail improvements, bicycle and pedestrian facilities, transit facilities and other needs within the transportation network | Various | N | Community Action Committee of the Lehigh Valley and Slate Belt Rising | \$266,972 |
| Walbert Avenue Corridor Study - Emphasize design and mobility along Walbert Avenue (State Route 1006) between Cedar Crest Boulevard and the City of Allentown | South Whitehall Township | L | South Whitehall Township | \$266,972 |
| Airport Road Northbound Ramp from Route 22 Westbound Ramp to Postal Road/Avenue A - Jughandle for left turns onto Postal Road | Hanover Township | L | Hanover Township | \$177,981 |
| Intersection of Freemansburg Avenue and Willow Park Road - Project would review the challenges of the current intersection geometry and provide recommended solutions that the Township would work toward implementing with PennDOT | Bethlehem Township | N | Bethlehem Township | \$177,981 |
| Water Street Culvert - East end of Eberhart Road at Water Street and adjacent to Lehigh River | Whitehall Township | L | Whitehall Township | \$177,981 |
| State Route 512 Traffic Control Improvements - Install red-blinking light at Route 512 and Park Road, reduce speed throughout East Bangor along Route 512 from 35 mph to 25 mph with appropriate signage, install radar speeds at suggested locations, and install pedestrian ahead signs along Route 512 | East Bangor Borough | N | East Bangor Borough | \$88,990 |
| Economic Revitalization Analysis for 2020 and Beyond Study - Study to look into the immediate needs to sustain its existing businesses, traffic and non-motorized infrastructure | Slatington Borough | L | Slatington Borough | \$81,871 |
| Betterment Line Item | Various | L N | Lehigh Valley Transportation Study | \$554,149,747 |

ROADWAY RECONSTRUCTION, MODERNIZATION, AUTOMATION TOTAL **\$1,289,521,224**

UNMET NEEDS

ROADWAY EXPANSION

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|--|--------------------------|--------|---|-----------------|
| US Route 22 from I-78 Split to Route 309 Interchange - Reconstruct US 22 and associated bridges, pipes, sign structures, etc., bring US Route 22 up to current standards, tie into 6-lane US Route 22 to the east, improve safety for travelers | South Whitehall Township | L | Pennsylvania Department of Transportation | \$533,942,593 |
| US Route 22 Widening - From State Route 309 to 15th Street | Lehigh County | L | Pennsylvania Department of Transportation | \$444,952,161 |
| William Penn Highway & Route 33 - Introduce a diverging diamond to accommodate existing and anticipated traffic growth | Bethlehem Township | N | Bethlehem Township | \$266,971,297 |
| US Route 22 Widening - From State Route 512 to State Route 191 | Northampton County | N | Northampton County | \$177,980,864 |
| US Route 22 Widening - From State Route 191 to State Route 33 | Northampton County | N | Northampton County | \$177,980,864 |
| US 22/15th Street Interchange Upgrade | Lehigh County | L | Lehigh County | \$88,990,432 |

ROADWAY EXPANSION TOTAL **\$1,690,818,211**

UNMET NEEDS

BRIDGES

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|--|--------------------------|--------|---|-----------------|
| Long's Bridge Replacement - Carrying Allemaengel Road over the Ontelaunee Creek | Lynn Township | L | Lehigh County | \$17,798,086 |
| State Route 611 Retaining Wall - Along Delaware River Canal and Delaware River | City of Easton | N | Pennsylvania Department of Transportation | \$15,051,940 |
| Northampton County Bridge #8 - Kressman Road over Fry's Run | Williams Township | N | Northampton County | \$14,238,469 |
| Rex's Covered Timber Bridge Rehabilitation - Bridge carrying Jordan Road over the Jordan Creek | North Whitehall Township | L | Lehigh County | \$8,899,043 |
| Wehr's Dam Covered Timber Bridge Rehabilitation - Carrying Wehr's Mill Road over the Jordan Creek | South Whitehall Township | L | Lehigh County | \$8,899,043 |

UNMET NEEDS

BRIDGES

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--------------------------|--------|---|----------------------|
| Ulrich's Mill Bridge Replacement - Carrying Ulrich's Mill Road over the Ontelaunee Creek | Lynn Township | L | Lehigh County | \$8,899,043 |
| Oswald's Bridge Replacement - Carrying Gun Club Rd. over the Ontelaunee Creek | Lynn Township | L | Lehigh County | \$8,899,043 |
| Ruhetown Bridge - Carrying Jordan Road over the Jordan Creek | Lowhill Township | L | Lehigh County | \$7,119,235 |
| Saeger's Bridge Replacement - Carrying County Bridge Road over the Trout Creek | Washington Township | L | Lehigh County | \$6,229,330 |
| Springhouse Road Bridge - Over the Ontelaunee Creek | Lynn Township | L | Lehigh County | \$5,339,426 |
| Werleys Corner Road (State Route 4019) Bridge Replacement - Over Sweitzer Creek | Lowhill Township | L | Pennsylvania Department of Transportation | \$5,339,426 |
| Palm Road (State Route 2029) Bridge Replacement - Over Indian Creek | Lower Milford Township | L | Pennsylvania Department of Transportation | \$4,449,522 |
| Keystone Street Bridge - Over Nancy Run | Bethlehem Township | N | Bethlehem Township | \$3,559,617 |
| Lehigh Street (State Route 2018) Bridge Replacement - Over Swabia Creek | Macungie Borough | L | Pennsylvania Department of Transportation | \$3,559,617 |
| Limeport Pike (State Route 2029) Bridge Replacement - Over tributary to Hosensack Creek | Lower Milford Township | L | Pennsylvania Department of Transportation | \$3,559,617 |
| Huckleberry Road (State Route 4004) Bridge Replacement - Over tributary to Jordan Creek | South Whitehall Township | L | Pennsylvania Department of Transportation | \$2,669,713 |
| Brookdale Road (State Route 3007) Bridge Replacement - Over Breinig Run | Upper Macungie Township | L | Pennsylvania Department of Transportation | \$2,669,713 |
| State Route 143 Bridge Replacement - Over tributary to Ontelaunee Creek | Lynn Township | L | Pennsylvania Department of Transportation | \$2,669,713 |
| Bridge Line Item Reserve 2 | Various | L N | Pennsylvania Department of Transportation | \$224,179,456 |
| BRIDGES TOTAL | | | | \$354,029,052 |

UNMET NEEDS

PEDESTRIAN FACILITIES

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--------------------------|--------|------------------------------------|---------------------|
| Emaus Avenue Intersection Upgrades - Eight intersection upgrades | City of Allentown | L | City of Allentown | \$5,339,426 |
| Butler Street (State Route 2020) Streetscape Improvements - South 25th Street (State Route 2012) and South 15th Street | Wilson Borough | N | Wilson Borough | \$3,168,059 |
| Sullivan Trail Lighting Enhancements - Lighting along Sullivan Trail | Forks Township | N | Forks Township | \$1,067,885 |
| Sullivan Trail Streetscape Improvements - Old Mill Road to Mecco Road | Forks Township | N | Forks Township | \$945,573 |
| Valley Plaza Shopping Center & Bethlehem Diner Improvements - Pedestrian crossings, striping/signage, upgrades to the signal, concrete and ADA ramps | Hanover Township | L | Hanover Township | \$912,152 |
| ADA Compliant Sidewalk Ramps - 55 ADA ramps, 30 ramps along Washington Street, 21 ramps along Lehigh Street, and four ramps along 3rd Street | Wilson Borough | N | Wilson Borough | \$785,341 |
| Airport Center Road & Airport Road - Traffic calming and pedestrian crossing upgrades crossing Airport Road and Airport Center Shopping Center area | Hanover Township | L | Hanover Township | \$444,952 |
| 100 Steps Project - Pedestrian connections to the public park | Slatington Borough | L | Slatington Borough | \$320,366 |
| Sidewalk/Ramp Reconstruction - Hay Terrace, South 21st Street, Butler Street, and South 24th Street | Wilson Borough | N | Wilson Borough | \$205,568 |
| Non-motorized Connectivity Study - Connect areas of the Borough with pedestrian, wheelchair, and bicycle-friendly transportation modes | North Catasauqua Borough | N | North Catasauqua Borough | \$170,417 |
| Forks Township Safe Crossings Study - Study of pedestrian and multimodal crossings | Forks Township | N | Forks Township | \$111,238 |
| Pedestrian Facilities Line Item - Funding reserve for pedestrian facilities | Various | L N | Lehigh Valley Transportation Study | \$28,421,369 |
| PEDESTRIAN FACILITIES TOTAL | | | | \$41,892,346 |

UNMET NEEDS

MULTI-USE TRAIL AND BICYCLE FACILITIES

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|--|---|--------|--|-----------------|
| The D&L Trail Gap Closure - Trail gap is a roughly 7-mile gap, 14 miles of trail connecting two existing sections of trail for a total of 14 miles on both sides of the Lehigh River, following the historic canal towpath on the east side and the historic railroad bed on the west side. This project would provide a trail connection for Lehigh Valley residents to both Lehigh Gorge State Park and Delaware Canal State Park | Various | L N | Delaware & Lehigh National Heritage Corridor | \$19,043,953 |
| The West Bethlehem Rail Trail - Construct trail connection between Allentown and Bethlehem on the 2.6-mile unused Norfolk-Southern rail corridor beginning at the eastern end of American Parkway in the City of Allentown and heading east to the Monocacy Way trail in the City of Bethlehem, connecting to Burnside Plantation | City of Bethlehem | L | City of Bethlehem | \$7,119,235 |
| Catasauqua Area Trail & Transit Initiative - A multi-municipal, multi-county project that spans the Borough of Catasauqua, Lehigh County and the Borough of North Catasauqua and Allen Township, Northampton County | Catasauqua, North Catasauqua Boroughs, Allen Township | L N | Catasauqua, North Catasauqua Boroughs | \$6,318,321 |
| South Bethlehem Greenway Trail Extension - Acquisition and construction of additional 0.9 mile stretch of Norfolk Southern rail line from the southern end of the South Bethlehem Greenway (at Traveller & Auburn Streets) to the northern end of the Saucon Rail Trail in Hellertown | City of Bethlehem | N | City of Bethlehem | \$6,229,330 |
| William Penn Highway/Easton Avenue - Linden Street to Hecktown Road to State Route 33 - One-way separated bike lanes, landscaped medians, traffic calming measures, Americans with Disabilities Act compliant crosswalks | Bethlehem Township | N | Lehigh Valley Transportation Study | \$3,748,010 |
| Hamilton Boulevard Corridor - Lower Macungie Road to Dorney Park - reduced lane widths, landscaped medians, street trees, shared-use paths, shared-lane markings, improved lighting | Various | L | Lehigh Valley Transportation Study | \$2,798,019 |
| Tatamy Trail Completion - Construct a missing trail link north of Main Street bridge, running along Bushkill Creek, connecting to Stockertown Trail | Tatamy Borough | N | Tatamy Borough | \$1,779,809 |
| West Easton Trail Construction - Complete a walking path that exists in Wilson Borough and stops at the border of West Easton. The path will travel through West Easton and end at the border of City of Easton | West Easton Borough | N | West Easton Borough | \$1,779,809 |
| Let's Connect Easton - New trail connecting Hackett Park with Karl Stirner Arts Trail, high visibility crosswalks, extend existing Larry Holmes Drive Trail | City of Easton | N | Lehigh Valley Transportation Study | \$630,853 |

UNMET NEEDS

MULTI-USE TRAIL AND BICYCLE FACILITIES

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|--|-------------------------|--------|------------------------------------|---------------------|
| West Ward/Karl Stirner Arts Trail Connection - At 12th Street/Chidsey Street/13th Street - Streetscape enhancements, street trees, curb extensions, lighting, shared lane markings, speed humps, pedestrian refuge islands | City of Easton | N | Lehigh Valley Transportation Study | \$541,792 |
| Pedestrian Connection in Forks Township - Between Penn's Grant Path, in Palmer Township, to the Forks Township Trail, in Forks along the border each municipality shares with the Bushkill Creek | Forks Township | N | Forks Township | \$315,916 |
| Accessible Pathways - Construct pathways connecting Windermere Park, Oakwind Park and the Breierwood communities to the Lone Lane Park | Upper Macungie Township | L | Upper Macungie Township | \$191,054 |
| Trail Connection to Stone Hills development - Complete the connection into Macungie Borough and bring trail through an existing park, then connect to sidewalks and trails that can be used to progress through Macungie | Macungie Borough | L | Macungie Borough | \$35,596 |
| Cement & Limestone Quarry Trail - Construct trail starting at SR 329 at northerly end of Lehigh Heritage Trail, then extending north along old Cement Haul Road to LaFarge quarry property near 24th Street, then south and along Hokendauqua Creek to NorBath Trail in Northampton Borough | Northampton County | N | Northampton Borough | \$26,697 |
| Multi-Use Trails & Bicycle Facilities Line | Various | L N | Lehigh Valley Transportation Study | \$42,993,764 |
| MULTI-USE TRAIL AND BICYCLE FACILITIES TOTAL | | | | \$93,552,158 |

UNMET NEEDS

SAFE ROUTES TO SCHOOLS

| Project | Municipality | County | Project Sponsor | Long-Range Cost |
|---|--------------|--------|-----------------|--------------------|
| Safe Routes to Schools Line Item - Funding reserve for Safe Routes to Schools projects | Various | L N | LVTS | \$5,154,258 |
| SAFE ROUTES TO SCHOOLS TOTAL | | | | \$5,154,258 |

UNMET NEEDS

| TRANSIT | | | | |
|--|----------------|--------|-----------------|----------------------|
| Project | Municipality | County | Project Sponsor | Long-Range Cost |
| LANTA Annual Operating Assistance for Fixed Route System | Various | L N | LANTA | \$242,052,777 |
| LANTA Preventative Maintenance For Fixed Route Fleet | Various | L N | LANTA | \$105,680,052 |
| LANTA Heavy Duty Fixed Route Bus Replacement | Various | L N | LANTA | \$87,883,531 |
| LANTA Paratransit Van/Minibus Replacement | Various | L N | LANTA | \$28,744,974 |
| LANTA Engineering, Design, Renovation, Rehabilitation and Construction Activities at LANTA-Owned and Leased Facilities | Various | L N | LANTA | \$26,420,013 |
| LANTA Americans With Disabilities Service Based on Fixed Route System | Various | L N | LANTA | \$22,147,897 |
| LANTA Enhanced Bus/Bus Rapid Transit | Various | L N | LANTA | \$20,133,476 |
| LANTA Purchase/Replacement of Communications Equipment For Fixed Route & Paratransit Systems | Various | L N | LANTA | \$10,568,005 |
| LANTA Shared Ride Program on Paratransit System | Various | L N | LANTA | \$6,788,311 |
| LANTA Spare Parts Purchase/Lease For Fixed Route System | Various | L N | LANTA | \$4,227,202 |
| LANTA Install Signs, Shelters, & Enhancements | Various | L N | LANTA | \$1,056,801 |
| LANTA Non-Revenue Service Vehicle Purchase/Replacement | Various | L N | LANTA | \$760,896 |
| Bus Shelters Along Sullivan Trail | Forks Township | N | Forks Township | \$286,760 |
| TRANSIT TOTAL | | | | \$556,750,695 |

OVERALL UNMET NEEDS:



ACKNOWLEDGEMENTS

Thank You

To the many citizens, community leaders, municipal partners and stakeholders who helped develop this Plan. *FutureLV: The Regional Plan* would not have been possible without their time, commitment, input and passion for making a great region even better.

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| Jennifer Massaro | Paul McNemar | Tom Nelson | Tom Nelson | Sara Pandl | Terry Powell | Jaime Reichardt | Kimberlee Rosario |
| Greta Mast | David McNerney | Amit Nema | Amit Nema | Ann-Marie Panella | Jackie Praedin | Carol Reichbaum | Ronald Roscioli |
| Matt Matejcek | Sharon McStine | Todd Nemura | Todd Nemura | Salvatore Panto | Lance Prator | Kerry Reider | Richard Roseberry |
| Andrew Mather | David J. McTish | Steve Neratko | Steve Neratko | Peter Paone III | Lisa Prator | Stephen Reider | Tina Roseberry |
| Tricia Matsko | Andy Mears | Sandra Newman | Sandra Newman | Bill Pappas | Michael Prendeville | Barry Reifinger | Liz Rosencrans |
| Melody Matter | Colleen Meiswich | Janet Ney | Janet Ney | Chandra Parasa | John Price | Bob Reilley | Rachel Rosenfeld |
| Diane Matthews-Gehring | Adelina Mejia | Christie Nicas | Christie Nicas | Holly Parkinson | Lynn Prior | James Reilley | Bill Ross |
| John Mauser | Kyra Melleby Meyers | Anne Nicodemus | Anne Nicodemus | Lindsey Parks | Tony Pristash | JB Reilly | David Rostron |
| Susan Mauser | Jane Mellert | Julia Nicodemus | Julia Nicodemus | Betty Parrish | Nathan Pritchard | Megan Reilly | Vicky Roth |
| Saleem Mawji | Roger Mellin | Sandy Nicolo | Sandy Nicolo | Scott Pasterski | Roman Prokopovych | Mark Reimann | Todd Rothermel |
| Pete Mayes | Debra Mellish | David Nikoloff | David Nikoloff | Steve Patterson | Brittany Prosoco | Jeff Reimer | Lynn Rothman |
| Fran McAnulty | E.J. Mentry | David Niles | David Niles | Bruce Paulus | John Pruzinsky | Steve Reimer | Ryan Rotzell |
| Bryan McAtee | David Mentzer | Janet Nitka | Janet Nitka | Herb Payung | Dan Przywara | Pete Reinke | Todd Rousenberger |
| Tyler McCann | John Merhottein | April Niver | April Niver | Jeff Pearsall | MaryPat Publicover | Mike Reis | Tom Rowader |
| Dan McCarthy | Lee Messinger | Casey Noble | Casey Noble | Crysta Peers | Allison Puchyr | Ken Remick | Larry Rowland |
| Adam McClellan | Ben Metz | John Noble | John Noble | Craig Peiffer | Elisha Pugliese | Jeff Remling | Bill Royer |
| Patricia McCloskey | Mike Mey | Tom Nolan | Tom Nolan | Natasha Pelak | Denny Puko | Carl Renna | Christine Roysdon |
| Rep. Jeanne McNeill | Brigitte Meyer | | | Haley Peluso | Dallas Pulliam | | Doug Roysdon |

| | | | | | | | |
|---------------------------|--------------------------|-----------------------|---------------------------|-----------------------|--|----------------------|-------------------|
| Dave Rubright | Jason Schiffer | Brett Showalter | Cynthia Sopka | Frank Summa | Dean Turner | Rose Wedde | Danielle Wolfrum |
| Jason Ruff | Virginia Schlegel | April Showers | Matt Sordoni | Blaine Summitt | Stephen Turoscy | Melissa Wehr | Molly Wood |
| Bryce Ruggieri | Thomas J. Schlegel | David Shulman | Teri Sorg-McManamon | Bob Sun | Nick Tylenda | Todd Weidman | Tim Woodbridge |
| Susan Ruggiero | Rosann Schleicher | Craig Siegfried | Kal Sostarecz | Desiree Sunday | Derek Tyner | David Weinstein | Justin Woodring |
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| Stan Rugis | Charlie Schmehl | Brian Signorella | Michael Spadafora | Larry Sutton | United Way of the Greater Lehigh Valley | Keith Weitknecht | Vicki Woodward |
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| Tim Rushton | David Schnaars | Troy Silfies | Anne Spanos | Jennifer Swann | Jessie Valentine-Geyer | Maurice Wells | Jason Worley |
| Rebekah Rusnock | Brian Schnable | Sherry Silliman | Lauren Spence | Jon Swartley | Thomas Van Leer | Tiffany Wells | Barbara Worman |
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| Scott Rutzmoser | Amanda Schumacher | Joseph Sirignano | Chris Stanford | Donna Taggart | Rob Velez | Robb Werley | Emma Yeh |
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| | | | | Matthew Tuerk | June Webre | Dana Wolfgang | Sharon Zondag |

RESOURCES

Throughout the process, a myriad of organizations, documents, plans and other resources provided the data and information that went into developing *FutureLV: The Regional Plan*. They include:

- Lehigh Valley Planning Commission and Lehigh Valley Transportation Study plans, reports and analyses:
 - *1LV* (2014)
 - *BuildLV* (2019)
 - *Climate + Energy Element* (2014)
 - *Comprehensive Plan The Lehigh Valley...2030* (2005)
 - *DataLV*
 - *Green Infrastructure Guidelines* (2017)
 - *Lehigh County Livable Landscapes* (2018)
 - *Lehigh Valley Hazard Mitigation Plan* (2018)
 - *Lehigh Valley Return on Environment* (2014)
 - *Lehigh Valley Equity Analysis* (2018)
 - *Northampton County Livable Landscapes* (2016)
 - *Monocacy Creek Watershed Act 167 Stormwater Management Plan* (2018)
 - *MoveLV: Lehigh Valley Regional Freight Plan* (2015)
 - *MoveLV: Long Range Transportation Plan* (2015)
 - *Southwestern Lehigh County Comprehensive Plan* (2017)
 - *Traffic Safety Plan* (2016)
 - *Transportation Improvement Program* (2019-2022)
 - *WalkLV: Regional Sidewalk Inventory* (2016)
 - *Walk/RollLV: Active Transportation Plan* (2019)

- Other plans and resources:

- American Planning Association
- Association of Metropolitan Planning Organizations
- Association of State Highway & Transportation Officials
- Ben Franklin Technology Partners
- Brookings Institution
- Center for Inclusive Design and Environmental Access
- Federal Highway Administration
- Forbes Magazine
- Greater Lehigh Valley Chamber of Commerce
- Lehigh County
- Lehigh and Northampton Transportation Authority
- Lehigh-Northampton Airport Authority
- Lehigh University
- Lehigh Valley Economic Development Corporation
- NASDAQ
- Northampton County
- Pennsylvania Department of Community and Economic Development, Governor's Center for Local Government Services
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Health
- Pennsylvania Municipalities Planning Code
- Pennsylvania Department of Transportation
- Pennsylvania Emergency Management Agency
- National Association of City Transportation Officials
- United Way of the Greater Lehigh Valley's Age-Friendly Community Forum
- University of Pittsburgh Graduate School of Public Health
- US Bureau of Labor Statistics
- US Census Bureau
- US Department of Agriculture
- US Department of Commerce
- US Department of Transportation
- University of Washington Institute for Health Metrics and Evaluation
- Workforce Board Lehigh Valley

MORE DATA, MORE MAPS, MORE RESOURCES, MORE FUN.



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More than two years in the making, this document has been the collaboration of dozens of government and community organizations, and the thousands of people who attended the more than 240 public meetings and events that went into creating a vision for the region's future. *FutureLV: The Regional Plan* was open for formal public review and comment August 9 through September 23, 2019. Data, plan maps and additional resources utilized to create this plan are available at:

www.lvpc.org

A summary of this report will be translated into Spanish. Readers may request a full translation into alternate languages by contacting Lehigh Valley Planning Commission, 961 Marcon Boulevard, Suite 310, Allentown, Pennsylvania 18109-9397, (610) 264-4544, planning@lvpc.org. Efforts will be made to provide translated documents in a reasonable timeframe.

THE

FUTURE

IS YOURS

“Someone is sitting in the shade today because someone planted a tree a long time ago.”

— *Warren Buffett*



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